Masoala National Park Business Plan
Published 2003

All financial information based on the calendar year 2002, the last complete fiscal year at the time of analysis. The figures presented in this plan do not include any overhead costs for ANGAP at the provincial or the headquarters in Antananarivo, which we estimate to be an additional 15% of the total annual budget.

The information in this plan must not be quoted without the written consent of the Wilderness Conservation Society and ANGAP

All photographs are the property of Steve Bruner, James MacKinnon, Peter Erts, Mario Grunreif, David Lees, Priska Ketterer, David Haring, Masoala National Park, Scott Edwards, Samuel Fürrer, and Zürich Zoo.

Copies of this business plan may be obtained at www.masoala.org
Introduction

The National Parks Business Plan Initiative (BPI) originated in 1998 as a joint program between the US National Park Service and the National Parks Conservation Association (NPCA). Over the past six years the initiative has helped over 60 national parks develop business plans. A business plan is a tool commonly used in the private sector to attract investors, inform stakeholders about the activities of operations, and improve management decision-making.

For parks and protected areas, a business plan is essential for achieving financial sustainability; however, many developing countries remain in the preliminary stages of developing business plans for their protected areas. Most parks have prepared and regularly use management plans and budgets as their primary planning and management tools, but have not yet adopted a more comprehensive planning approach that: addresses cost management and income generation from alternative sources; involves the design and implementation of cost-savings measures and income-generating opportunities; in short, brings about significant increases in operating effectiveness and efficiency.

A business plan for protected areas can play a crucial role in achieving conservation objectives by addressing the management effectiveness and the funding challenges that underpin many problems facing protected areas throughout the world. These plans also become an important tool for increasing visibility and attracting donations and investment, as they help communicate the financial statues of the protected area to key stakeholders.

This plan was developed as part of a partnership between the NPCA and the Wildlife Conservation Society to develop business plans for two parks outside of the US. Tijuca National Park in Brazil and Masoala National Park in Madagascar participated in this pilot International Business Plan Initiative, and presented their business plans at the World Parks Congress in September 2003. The Masoala National Parks Service (ANGAP) is considering adopting the approach at all of its parks.

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Manager’s Foreword

Madagascar is known throughout the world as an island-continent. The island’s isolation created conditions that allowed a unique and exceptionally rich and varied fauna and flora to develop. Many primitive families of species that went extinct elsewhere, still survive today on Madagascar. At the same time, the pressures on the natural environment in Madagascar are amongst the most intense anywhere in the world. The National Parks Service (ANGAP) has the mission of “establishing, conserving and sustainably managing a national network of parks and reserves that are representative of the biological diversity and natural heritage of Madagascar”. In implementing this mission “the national parks, sources of national pride for today’s and for future generations, must be areas of preservation and recreation, and they must contribute to the development of adjacent communities and to the economy”.

It is within this national context that the country’s largest national park was created at Masoala in March 1997. The diversity of habitats, and particularly the coastal forests and the lowland and mid-altitude primary forests, constitute the most important aspect of Masoala National Park. These habitats are probably home to the greatest diversity of animal and plant life anywhere in Madagascar. As one of the most diverse protected areas in a country with one of the highest levels of endemic species in the world, Masoala is a natural treasure for which protection and rational use must be a priority, not just for the Malagasy people, but also for the international community.

It is with great pleasure that I present this Business Plan for Masoala National Park. This document defines and explains the activities that are currently carried out at the park, and identifies the resources necessary to ensure that Masoala’s biodiversity survives in the future.

I think there is currently a great urgency in ensuring that Masoala National Park has a bright future. This future will depend on many people: the park managers, the tourism operators, the local people, the local authorities, visitors to the park, and the donors. By reading this plan and understanding the challenges ahead, you are already contributing to Masoala’s future. But if you contribute to ensuring that some of what is written in this document happens, then you will be making an extremely important contribution to the survival of Masoala’s treasures. Let’s work together to ensure Masoala’s success!
Executive Summary

Created in 1997, Masoala National Park is the largest protected area in Madagascar, a country that ranks as one of the world’s top five “hotspots” for biodiversity. Masoala NP consists of seven different units, including three marine parks. The park is rich in rare and threatened species including a fantastic variety of palms, a recently discovered variety of ancient flowering plant, ten lemur species, and marine turtles.

Park Management

Since April 2000, the National Park Service (ANGAP) has been working in a co-management agreement at Masoala with the New York-based conservation NGO, the Wildlife Conservation Society. WCS provides both financial and technical support to the Masoala National Park staff.

Fund Sources

In 2002, 55% of funds came from NGOs, 30% came from the Global Environmental Facility, 12% came from the Government of Madagascar, and the remaining 3% came from other foreign government donors. Fifty-eight percent of these funds were acquired by WCSand 42% by ANGAP.

2002 Operating Expenditures

Non-investment 2002 expenditures equaled $263,000. Of this, 38% was devoted to the functional area of Resource Management & Protection, 22% to park Management & Administration (this includes funds spent on one partnership, without which, the percentage would be 15%), 17% on both Community Development & Outreach and Facility Operations & Maintenance, and 6% on Public Use and Enjoyment.

2002 Investments

In addition to the $263,000 spent on general park operations, Masoala spent $180,000 on investments in 2002. Within this Business Plan, investments are generally defined as significant one-time expenditures of funds to build a structure, restore natural or cultural resources, acquire technical assistance to establish baseline park management practices, or other similar one-time activities.

Financial and Staffing Shortfall

Based on the analysis of the Business Plan Initiative, $555,000 of annual funding is required to operate the park at standards set by park management. With 2002 operating expenditures of $263,000, this leaves a funding gap of $292,000. From a personnel standpoint, a total of 90 full-time equivalents (FTEs) are required to operate Masoala at appropriate standards. In 2002, 72 FTEs worked in the park, leaving a shortage of 18 FTEs. Note that this means most of additional required funding is needed to implement activities rather than employ more staff.

Future Funding Prospects

At the time of writing, in September 2003, the only firm commitments for funding at Masoala during 2004-2008 are from the NGOs. The park is aiming for financial sustainability in large part through an innovative partnership with the Zürich Zoo. The zoo’s new Masoala Exhibit, which opened in June 2003, will generate revenues to help cover park management costs. A trust fund is also being established to provide future funding.
Park Overview

The Park at a Glance

Masoala National Park is one of the crown jewels of Madagascar’s National Park System and represents one of the most biologically diverse protected areas in the world. The park was created in 1997 as the eighth and largest park in Madagascar. The park is located in the northeast region of Madagascar and comprises nearly 210,000 hectares.

The natural habitat of the area is rainforest, which can be found from sea-level up to the highest peaks at 1300m. This region of Madagascar averages over 7,000 millimeters of rain annually, and the healthy condition of the park provides critical protection from soil erosion and flooding that scars many other areas of the country. It can be visited from the towns of Antalaha and Maroantsetra. These towns have relatively large populations of 15-20,000 inhabitants; both are important for the export of vanilla and timber.

Masoala is made up of distinct units comprising the Masoala Protected Areas Complex (referred to as Masoala National Park in this plan). The complex includes three marine parks, three detached parks, most of the rainforest on the Masoala Peninsula, and the island of Nosy Mangabe. The park protects habitats as diverse as coral reefs, mangroves, lowland rainforest and stunted montane forest as well as many species that are unique to the peninsula. The region is of exceptional importance in terms of global biodiversity.

Approximately 50% of Madagascar’s plant species are thought to occur in the forests around the Antongil bay and the diversity of other groups such as the mammals, birds, reptiles and amphibians is similarly high. Species such as the beautiful red-ruffed lemur, the tomato frog, red owl, the Masoala pitcher plant and numerous palm species are known only from Masoala. Other animals that are difficult to see elsewhere, such as the aye-aye, the helmet vanga, and the malagasy serpent eagle are frequently glimpsed at Masoala. The large size of the park means that it may be one of the only places where healthy populations of large predatory species such as the elusive fossa and the serpent eagle are able to survive in the future.

Two habitats are particularly important at Masoala: the lowland rainforest and the coastal forest. Approximately 25% of the remaining lowland rainforest (< 400m) in Madagascar is in the Masoala National Park, and ensuring its protection will be a major challenge for the park managers in the future. Similarly the coastal forests of Eastern Madagascar are critically endangered, and even the three small patches at Masoala represent half of all the coastal forest that is protected within the country.

Three marine parks covering a total of 10,000 ha protect coral reefs, sea grass beds and mangroves around the peninsula. Although the marine life of Madagascar does not attract as much attention as the unique terrestrial fauna and flora, it is home to some of the largest coral reef systems in the Indian Ocean. To date, over 300 species of fish have been recorded in the parks, and research is continuing. The main function of the marine parks is to improve marine resource management and protect habitats such as reefs, sea-grass beds, and mangroves that are important nursery habitats for fish. In addition to the parks, the Antongil Bay is thought to be an important nursery area for the Indian Ocean’s humpback whales. Large numbers of whales congregate in the bay each July and August to give birth and mate.

The main threat to Masoala is posed by tavy, subsistence agriculture based on slash-and-burn rice cultivation. Approximately 85,000 people live in the peripheral zone of the National Park, and many of them are involved in this slash-and-burn agriculture, gradually moving up the river valleys and hillsides from the coast and fragmenting the forests at the heart of the peninsula. The movement inland is driven by the essentially infinite demand for land to grow rice, as well as to some extent by overuse of marine resources along the coast. Tavy is part of the local culture.
In the 150 years or more since it was first recognized as a destructive practice, efforts to introduce more sustainable agricultural techniques have largely failed. Secondary pressures on the park are exerted by the illegal cutting of tropical hardwoods, in particular rosewood and ebony. The park also suffers from the hunting of endangered lemurs.

But all of the threats to Masoala National Park are not solely related to the flora and fauna. Though encouraging efforts have been made, underfunding is a constant threat in the years ahead. In the past, subsidies have been in the form of conservation or development aid provided by large international donors such as the World Bank, foreign governments, and Non-Governmental Organizations, and delivered in the context of 3-5 year projects. As a part of the Malagasy (Madagascar) government’s “National Environmental Action Plan”, international donors have been assisting the Malagasy government with the management and funding of national parks for the past ten years. This cooperative effort by international organizations has provided millions of dollars and the funding for scores of scientific studies designed to assess a baseline and implement systems to protect and preserve the rich biodiversity of Madagascar’s protected areas. We are currently in phase three of the action plan, which focuses on the financial sustainability of national parks. For the foreseeable future, the Malagasy government will not be able to afford to fully pay for conservation or sustainable development initiatives. Therefore, it is up to the National Park Service (ANGAP) to develop its own form of sustainable financing, essential for its long-term survival.

To this end, Masoala National Park has continued to seek financial assistance and technical support from outside sources, working collaboratively with the Wildlife Conservation Society and the Zürich Zoo, and receiving other significant funding from the World Wildlife Federation, the Dutch government, and the World Bank.

Enabling Legislation

On March 2, 1997, the Government of Madagascar, by decree 97-141, established Masoala National Park as the eighth national park in Madagascar.

On December 14, 1965, the Government of Madagascar, by decree 65-795, created the Special Reserve of Nosy Mangabe.

On 11 February, 2003, the President of Madagascar, by law 2001-005, legislated the code relating to management of protected areas (COAP).

Mission Statement

To protect the original natural and cultural heritage of Masoala National Park whilst encouraging recreational and educational activities within the park.

Masoala NP Inventory

Natural Features: 230,000 ha (2,300 km²)
7 units, including: 3 marine parks, 3 detached parks and a rainforest park, which are managed together with Nosy Mangabe Special Reserve (520ha).
- Lowland rainforest (0-400m)
- Mid-altitude rainforest (400-800m)
- Montane rainforest (800-1311m)
- Littoral forest
- Littoral swamp forest
- Coral reefs
- Mangroves
- Seagrass beds

Cultural and Historic Features:
- Traditional Burial sites
- Archaeological sites
- Sacred sites

Flagship Species:
- Malagasy Serpent eagle
- Madagascar red owl
- Helmet vanga
- Dusky greenbul
- Ten species of lemur, including: Aye-aye & red-ruffed lemur
- Humpback whales
- Marine turtles
- Dugong
- Tomato frog
- Parson’s chameleon
- Endemic palms
- Endemic orchids
- Masoala pitcher plant
Historical Context

Fund Source Analysis

The original Masoala Project (1989-1992) was operated by Missouri Botanical Gardens (MBG) and a Malagasy NGO (SAFAFI), with the Malagasy Ministry of Water and Forests (MEF) through a grant from the United States Agency for International Development (USAID). In 1992, the MBG-led consortium gave way to a second group consisting of CARE International, the Wildlife Conservation Society (WCS), the Peregrine Fund, the newly-created national parks service (ANGAP) and once again the Ministry of Water and Forests, which joined together to submit a proposal to USAID for an ambitious Integrated Conservation and Development Project (ICDP) at Masoala. The ICDP was funded by USAID under its SAVEM program (1993-97), with matching funds provided by CARE and WCS. While CARE tackled the development needs of the people living on the peninsula, WCS worked with ANGAP and MEF to create a new national park, with technical support from The Peregrine Fund for bird inventories and ecological monitoring. The CARE-led project continued with Dutch Government funding until April 2000, when ANGAP and WCS took over park management, which continued to be funded by the Dutch government via a sub-contract with CARE.

Since July 2001, Masoala's staff salaries and park operations costs have been included in ANGAP's general operating budget, plus a significant private contribution (now over $150,000 annually) from WCS. Since September 2000, WWF (Switzerland and Finland) have also made an important contribution of approximately $45,000 annually to support the marine parks.

In 2002, 87% of all park funding came from the international community. ANGAP sought funding from the Global Environmental Facility (GEF) and the Malagasy Government, while WCS garnered additional funding from other NGO's. Looking ahead, the park is aiming for financial sustainability in large part through an innovative partnership with the Zürich Zoo. The zoo's new Masoala exhibit, which opened in June 2003, will generate revenues to help cover some park management costs. A trust fund is also being established to provide future funding beyond PEIII.

It is clear that although the Malagasy government continues to increase its funding efforts, they are in no position to assume total funding of the park. Within the next 5 years, as predetermined funding programs come to an end, ANGAP will need to be financially sustainable. For that to happen, they will need to have more of the type of international relationships that they have established at Masoala.

**Historical Fund Sources**

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These figures include funding for both annual operations and long-term construction/investments.

Additional figures will be added for the final version of this plan.

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Within the next 5 years ... ANGAP at the national level will need to be financially sustainable. For that to happen, they will need to have more of the type of international relationships that they have established at Masoala.

**2002 Fund Sources**

- WCS Private Funds: 38%
- Malagasy Government: 12%
- Global Environmental Facility: 30%
- CARE/Dutch Govt: 3%
- WWF (Switzerland & Finland): 12%
- Zürich Zoo: 5%

58% of funding acquired by WCS.

42% of funding acquired by ANGAP.
Adjusted Base Budget

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Masoala Budget History

The helmet vanga is a representative of a bird family found only on Madagascar, and is rare throughout the rainforests.
Analysis of Expenditures

As described in the previous section, the management, funding, and accounting for what is now Masoala National Park has changed hands a number of times over the past decade. Determining accurate historical expenditures by the categories shown below is reliant upon having significant institutional knowledge. As such, for this analysis, data from 2001 and 2002 is the most reliable, as it was compiled by the current managers.

Basic funding for operations in 2002 (total expenditures minus construction, technical assistance provided by WCS, and other investments), were low, due in large part to administrative difficulties that reduced the flow of PEII funds (GEF and Malagasy government) to the field.

Because the park is so young, a large portion of expenses are one-time expenses for construction, investment in programs, and technical assistance that will be phased out in the future.

2002 Terrestrial/Marine Expenditures

Terrestrial 88%
Marine 12%

Historical Expenditures by Category

Additional figures will be added for the final version of this plan.

Other Investments includes important technical assistance, paid for by WCS, which will be phased out over the life of this business plan.
Visitation

The number of visitors to Masoala has been rising steadily since the creation of the national park in 1997, but the park saw decreases in visitation in both 2000 and 2002. This is in part due to the overall decrease in visitors to Madagascar during those years - cyclone Hudah devastated the Masoala peninsula and surrounding area in 2000, and a political crisis stopped almost all tourism to Madagascar in 2002.

The park has an established system for the collection of visitor statistics, monitoring date of visit, purpose of visit, and nationality. Of all visitors to Madagascar, a proportionally high number of visitors to Masoala are American, due to the efforts of a US-based tour operator. It is expected that the opening of the Masoala exhibit at the Zürich Zoo will attract increasing numbers of Swiss.

In 2001, more than three quarters of the visitors to Masoala National Park made their way to Nosy Mangabe. This small island, located just a few kilometers off the coast and near the principal town of Maroansetra, provides the easiest access to hiking trails, camping, and wildlife, including lemurs, frogs, chameleons, and the leaf-tailed gecko.

Antongil Bay is also a primary attraction for visitors, especially during the months of July through September when the humpback whale migrates from Antarctica to breed in the bay. The forest of Andranoanala, located on the eastern shore of the peninsula, is a relatively accessible destination where visitors can spot the extremely rare carnivorous pitcher plant, water birds, lemurs and crocodiles.

The main constraints on tourism at Masoala are the relatively high cost of getting to Maroantsetra or Antalaha, the lack of places on planes, the high cost of boat transport to the park and the relative lack of tourism activities in the region apart from visiting Masoala and Nosy Mangabe. There is a need for more hotels on the peninsula offering good quality service. Tourism operators based in Maroantsetra or the peninsula also have to cope with poor transportation and communications infrastructure.

The provision of park infrastructure, visitor facilities and training to local guides will be an ongoing process undertaken by the park authorities. The current park infrastructure is appropriate for the relatively low numbers of tourists who currently visit Masoala, and it will be improved gradually as visitor numbers increase.

Historical Visitation

...cyclone Hudah devastated the Masoala peninsula and surrounding area in 2000, and a political crisis stopped almost all tourism to Madagascar in 2002

A variety of hotels, catering to all types of visitors, are available in the gateway towns to Masoala.
Current Park Operations

This business plan differentiates between two types of expenditures: Operations & Maintenance, and Investments & Construction. Operations & Maintenance requirements are those funds needed to carry out everyday operations at the park. Some examples include annual payroll costs, utilities bills, and printing expenses. Investments & Construction are significant one-time costs that the park incurs in order to fix current problems or provide for future park development. They may include projects or purchases such as updating telecommunications equipment, developing a new community outreach program, building a visitor center, or buying a new boat.

In order to describe park operations for this business plan, park activities are divided into five functional areas, which provide one way to describe all areas of business for which the park is responsible. The five functional areas are Resource Management and Protection, Community Development and Outreach, Public Use and Enjoyment, Management and Administration, and Facility Operations and Maintenance. These are then further divided into 28 programs that more precisely describe park operations. Programs are general in order to cover a broad suite of activities that should be occurring in the park and the totality of financial need associated with them. Division chiefs are the backbone of this process.

Statements of work are developed by division chiefs to describe the suite of activities encompassed by each program. Operational standards are then generated to describe the duties and responsibilities required to meet the critical functions of the program as stated in the statement of work. These standards are then used to determine the total financial resources required to perform the standard tasks of the program. The final step is to compare current park activities to the operational standards to identify the gaps between required and available resources.

The following pages discuss each of the functional areas in detail.

Resource Management and Protection
Encompasses all activities related to the management, preservation and protection of the park’s cultural and natural resources. Activities include patrolling, research, restoration efforts, species-specific management programs, wild land fire management, threat mitigation (MPAP), historic site protection, and information integration activities.

Community Development and Outreach
Includes all programs designed to inform, educate, and connect with local groups. Involves the development and maintenance of positive relationships with constituents, both visiting and non-visiting, including formal environmental education in schools, public meetings and events, community activities, distribution of funds to local projects, and other education campaigns.

Public Use and Enjoyment
Encompasses all park activities directly related to ecotourism, visitor revenue generation, marketing, promotion, and concessions management. This area also includes providing visitors with an enjoyable and educational experience while at the park, such as interpretation, visitor center management, interpretive media, and management of trails and campgrounds.

Management and Administration
Encompasses all park wide management and administrative support activities. It includes all park communications and external affairs activities, fundraising and partnership development, park level planning, human resource management, park leadership, and financial management, as well as insuring the safety of both visitors and employees.

Facility Operations and Maintenance
Includes all activities required to manage and operate the park’s infrastructure on a daily basis. Buildings, roads, utilities, vehicles, and telecommunications equipment require a range of operational activities from basic upkeep to more large scale maintenance.

Current Park Operations 2002 Expenditures

- Resource Protection & Management: 17%
- Community Development & Outreach: 6%
- Public Use & Enjoyment: 22%
- Management & Administration: 38%
- Facility Operations & Maintenance: 17%

Note: Management and Administration includes funds spent on the partnership with Zoo Zurich. Without these expenditures, the percentage would be a more reasonable 15%.
Resource Management & Protection

The Resource Management & Protection functional area encompasses all activities related to the management, preservation and protection of the park’s natural and cultural resources. With three distinct units comprising the parks and the main peninsula, natural resource protection and management efforts at Masoala are subdivided into “terrestrial” and “marine” divisions, effectively doubling the impact of this functional area on park resources. The Resource Protection and Management functional area is made up of the following programs:

Patrolling: Prevention of illegal activities in the park; inspection of visitor permits.

Inventory, Monitoring & Research: Data collection to improve knowledge for park management and interpretation.

Habitat Restoration and Wildlife Management: Control, eradication, and mitigation of invasive species; restoration of threatened habitats.

Zoning and Boundaries: Marking of zone and boundary limits of the park.

Information Integration and Analysis: All GPS/GIS activities and their analyses.

Threat Mitigation (MPAP): Providing alternative technologies to replace agricultural or fishing techniques that threaten the park’s natural resources.

Wildland Fire Management: Suppression and pre-suppression of all wildland fire.

Cultural Resource Management: Archeology, ethnography, library, museum and archives, historic structures, cultural landscapes management and related program development for interpretive activities.

Rangers at Masoala provide much of the front line efforts to protect the resources. Their task is immense, as they spend 15 days each month patrolling the boundaries and park interior on foot, collecting data for future interpretation, educating villagers about destructive activities in the park, and continuing the ongoing project of marking the entire 526 kilometers of park boundary with signs and red paint marks on trees.

Note: FTE refers to “Full-time Equivalent”, or the amount one person would work in one year. In this business plan, 1 FTE = 8 hours/day x 5 days/week x 52 weeks/year.
peninsula. Most of these logging activities required too much investment and were not profitable. Remains of sawmills and rail tracks that were used for transporting the wood out to the sea can still be seen today.

One of the biggest challenges facing this functional area is “Threat Mitigation”, the ongoing education of local residents on more sustainable hunting, fishing, and farming practices. For example, fishermen have traditionally broken and killed coral while catching octopuses and other fish that make coral reefs their homes. As a result, this valuable habitat is disappearing. The park service is tasked with providing these fishermen with alternative approaches to this activity, which will leave the reefs intact. Ultimately, the long-term health of Masoala National Park comes down to its ability to curtail such harmful practices. Significant personnel and resources are needed to bolster this program.

Recreating lost forest

When the park was created in 1997, several areas within fragile forest corridors had already been deforested. An innovative restoration program has been running since 1998 to reestablish the forest in one of these corridors. After 5 years, the initial results are encouraging and demonstrate that it is possible to restore areas of rainforest in Madagascar. Seeds of trees native to the corridor area were collected, planted in a tree nursery and then the young trees were transplanted at an age of 1-2 years. Substantial maintenance is necessary to cut back Longoza (Afromomum sp.), a rapidly growing invasive species of the ginger family, which out-competes young trees if it is not controlled. In other forests in eastern Madagascar, Longoza is known to have stopped natural forest regeneration for periods of more than fifty years.

Many of the first trees that were planted are now 5-6 meters tall, and it is now clear that many primary forest species can tolerate unshaded areas. The trees were planted in linked clusters and many produce fruit known to be favorites of lemurs. The clusters of trees that have grown up now attract lemurs and birds, which continue the forest regeneration process by dispersing seeds.

After the success of this pilot program, the park managers now plan to restore other priority sites within the park which have been disturbed in the past and which are unlikely to recover without management intervention.
Community Development & Outreach

Community Development and Outreach at Masoala National Park includes all programs designed to inform, educate, and connect with local groups. In any park, the development and maintenance of positive relationships with local communities is critical for long-term viability. As a young park, Masoala is still building its base of local support.

Of the cumulative hours worked by all park personnel, 20% of it is devoted to Community Development and Outreach. Nearly 80% of the staff work in some way on these efforts.

The Park’s Environmental Education program offers support to school based education programs. This includes time spent by employees in helping with lessons, production of teacher guides and other environmental training. As the students of today become the community leaders of tomorrow, their support of Masoala National Park will become ever more crucial. Continuing work on this program will certainly help to foster strong future backing.

Public Outreach and Information involves activities such as public meetings and the release of public information such as special reports, news briefs, and other statements to the press. It also includes the coordination of public events such as World Environment Day, World Tourism Day, and the Masoala National Park Anniversary.

The Local Development and Assistance program helps local associations implement projects designed to improve the social or economic well being of communities living within the periphery of the Park. Assistance includes training, advice on funding options, and in some cases, direct funding of the project, such as the construction of hospitals, wells, schools, and paths (when additional private donations have been available). In addition to managing the national parks, ANGAP is often expected to provide social services that should normally be provided by other agencies.

Visitor entrance fees earned by the park are managed as part of a unique program, referred to here as Tourism Fee Management. In keeping with ANGAP’s national policy, half of all fees collected by the park are redistributed to local communities by Visitor Revenue Management Committees (COGES). Though the distribution of funds to local projects seems a worthy use of these funds, this program also provides a noteworthy challenge in that visitor revenues are low and there are 85,000 people living around the perimeter of the park.

The shortfalls in this functional area are spread across each of the programs, and include funds for training, operations, travel and per diem, materials and equipment, and personnel (mostly in the form of environmental education instructors).
Cyclones are a fact of life for the people living on the eastern coast of Madagascar, and it is estimated that any single place on the coast will be hit by a cyclone every 25-30 years. In April 2000, the northern part of Masoala national park, and the communities living around it were devastated by one of the strongest cyclones to hit Madagascar since records began. The storm destroyed entire villages and huge areas of agricultural land. The wildlife in the park also suffered: many trees were knocked over and killed and surveys of lemur populations showed that endangered red-ruffed lemur and brown lemur numbers were halved in the areas that were the most damaged.

In the aftermath, humanitarian aid programs were established by CARE International, the World Food Program, and Medecins du Monde. Although such work is not normally the job of a national park service, the Masoala staff were also able to play their part in easing the hardship. Through the international relationships that the park’s existence has formed, funds were raised for school repairs, and the reconstruction of paths that are the lifelines of some communities. The park was also able to give some logistical help to the humanitarian organizations as they became established in the region. As the number of people who have visited the region increases, the international friendships that are created are likely to have other similar benefits for the people of the Masoala peninsula.
Public Use and Enjoyment

The Public Use and Enjoyment functional area at Masoala National Park encompasses all activities directly related to ecotourism, including marketing and promotion, concessions management, interpretation, visitor center operations, and upkeep of trails and campgrounds. In short, the purpose of this functional area is to attract visitors to Masoala, and then provide them with an enjoyable and educational experience during their visit. The program areas that make up this functional area are defined as follows:

Visitor Revenue Generation: sales of souvenirs and other commercial products.
Marketing and Promotion: website creation and maintenance; development of advertisements, flyers, videos and other materials; and specific efforts to raise film revenues and independent research.
Interpretative infrastructure and services: interpretive activities such as guided walks, campground presentations and visitor center interpretive programs; interpretive media such as signs and visitor centers.
Trails: management and maintenance of trails in the park, including signage, sweeping, redirection, vegetation and/or rockfall removal, hazard tree removal, construction of foot bridges, or other related activity.
Campgrounds: regular management of campgrounds and their facilities including toilets, tent shelters, and other areas within the campground.
Concessions Management: price evaluation, product and service inspections, and contract negotiations with concessionaires.

Masoala National Park is breaking new ground in Madagascar by looking to concessionaires to help provide visitor services and generate revenue for the park. The first concessions contract should be complete by the end of 2003, and the goal is to establish two more by 2008.

It is expected that the partnership with the Zürich Zoo will increase visitation in the years ahead. The goal for the park is to have revenue generated from visitors (other than entrance fees) pay for all trail and campground maintenance, annual marketing and promotion costs, and souvenir production. In other words, this functional area can be, in large part, self-supporting.

The biggest funding gap in this area results from the need to establish and develop an interpretive program. Local guides play a big role in this area, providing guided walks and hands-on educational experiences. All visitors are required to hire a guide to escort them during their time in the park. Guides are trained by the park to help ensure that they are operating at an acceptable level. With interpretive centers in Antalaha and Maroantsetra in the design stage, annual operating support is needed to grow this program to include physical pieces of interpretive media to complement the work of the guides.
The mango trees at the northern end of Nosy Mangabe are just one of the traces that still remain from the European presence in the 17th and 18th centuries. One of the others is a footpath that was constructed to link the Dutch Beach to another bay, on the western side of the island, where crops could be grown. Stone steps were built on steep slopes along the footpath, and a stone causeway as a shortcut across a section of swamp along the way. Zigzags were cut into the hillsides to surmount the steepest sections and the path contoured in such a way that the team of Malagasy trail engineers who recently re-designed the path between the two bays was able to retrace much of the old path perhaps 300 years later. During the work the trail team discovered the remains of an old sword scabbard that had lain for centuries in the leaf litter. The team was especially impressed by the volume of stone moved to make the causeway—certainly by slaves rather than their Dutch and French overseers.

Accounts from ship captains who visited the island in the 16th and 17th centuries, and the accounts of Count Benyowski, who tried to establish a French colony at Maroantsetra, give us a glimpse into the history of human occupation on the island.
Management & Administration

The Management & Administration functional area encompasses all park wide management and administrative support activities. It includes all park communications and external affairs activities, fundraising and partnership development, park level planning, human resource management, park leadership, and financial management, as well as ensuring the safety of both visitors and employees. The program areas that make up this functional area are defined as follows:

General Administration: procurement, contracting, filing, typing, and general office logistics.

General Management: management and oversight of staff, also regular short-term planning and institutional relations.

Financial Management: all budget, accounting, and financial analysis activities, as well as annual reporting requirements.

Parkwide Safety: search and rescue, structural fire protection, emergency medical services, vehicle and boat safety, and coordination and planning efforts with outside emergency evacuation providers.

Fundraising and Partnerships: development of alliances and relationships with national and international groups interested in supporting park activities, acquisition of grants or in kind gifts.

Planning: large scale structural or programmatic planning, including responses to legal threats, design of new buildings and architecture needs, and land acquisition.

For the time being, both the technical and financial responsibilities of park management at Masoala are shared by WCS and ANGAP (see sidebar on the next page). WCS provides a “Technical Advisor” to the park, which does not show up in the park’s 2002 operational expenditures. It is hoped that the current park management team will be able to pick up any slack that is created as this position is phased out over the next couple of years. There should also be ample staffing in the Management and Administration functional area to handle any growth in park operations. One exception comes in the area of financial management. With increasing expectations from both donors and ANGAP itself, Masoala N.P. is in need of some additional support for its financial management program area. The remaining shortfall in this functional area stems from a general need for office equipment and supplies (paper, photocopier, printer, computer programs, ink), as well as some training for staff.

It is important to note the large percentage of resources connected with fundraising and partnerships. This can be explained almost entirely by the park’s relationship with the Zürich Zoo. The zoo pays for the cultivation of plants on the Masoala Peninsula for the zoo’s exhibit in Switzerland. Expenses include two staff salaries, nursery running costs, and the costs of transporting plants. This also helps to explain part of the 22% of park expenditures attributed to Management and Administration in 2002. Without these expenditures, this would be 15%. As the park grows, and this functional area is held in check, this percentage will decrease.
Management Partnership at Masoala

Since April 2000, ANGAP has been working in a co-management agreement at Masoala with the American-based conservation NGO, the Wildlife Conservation Society. WCS provides both financial and technical support to the Masoala National Park staff. Important contributions of this partnership are the investments being made in activities and infrastructure to ensure that Masoala has a good management system, and the efforts being made to develop long-term sustainable financing of the park.

The partnership between ANGAP and WCS extends beyond the vital areas of park management and administration and into the field. WCS provides particular support in the areas of ecological monitoring, community outreach and education, and protecting ecological links between Masoala and the remaining forests of eastern Madagascar. WCS’s complementary work on integrated coastal zone management in neighboring Antongil Bay also provides important support to improved natural resource management efforts on the mainland.

The overall objective for WCS activities at Masoala over the next three years is to develop Masoala NP as a model for protected area management in Madagascar.

Plants are cultivated on the Masoala Peninsula for export to the exhibit at the Zurich Zoo. This innovative partnership will help cover a portion of park operating costs in the years ahead.
Facility Operations & Maintenance

The Facility Operations and Maintenance functional area encompasses all activities required to manage and operate the park’s infrastructure (buildings, utilities, boats, vehicles, and communications equipment) on a daily basis. This functional area covers numerous activities, from basic upkeep to more large scale maintenance.

Telecommunications maintenance and operations refers to anything related to radios and telephones. Much of internal park communications occurs via two-way radio. It is the only means of communication between the main park office in Maroantsetra and the six ranger bases in the park. Rangers on patrol have no way to communicate with other rangers or with their patrol stations. Although telephone communication is possible between Maroantsetra and the WCS office in Antananarivo, the radio is often preferred (there are a limited number of communal phone lines in Maroantsetra, and are often busy during the day). Email and internet access are also not yet a reality at the park office. Satellite technology is available, but cost prohibitive.

As the graph shows, the biggest cost in this functional area, and one of the biggest costs of the park, is the operation and management of the park fleet - vehicles and transportation systems such as trucks, boats, motorbikes and mountain bikes. Boat operations and maintenance make up the bulk of these costs, which are associated with fuel and specific supplies to provide for their cyclic repair and rehabilitation. The park owns two boats, both seven meters long, which it uses to access the Masoala Peninsula, Nosy Mangabe, and the three marine parks. Given the proximity of Masoala to park headquarters, reliable boat transportation is critical to park operations.

Building and Utilities operations and maintenance at Masoala is becoming a bigger job as the park continues to construct new facilities. With each new building come the periodic costs of roof replacement, exterior repair, and pest control.

Very few structures are equipped with electricity and plumbing. However, the offices have utilities costs to bear.

It is common practice in Madagascar to have guards stationed outside of buildings such as the ANGAP office 24 hours a day, 7 days a week. The shortfall in FTE in the Building and Utilities program area stems from a need to have two guards on duty at night in both Maroantsetra and Antalaha, due to rising crime rates.

Some national parks throughout the world are responsible for maintaining roads which provide access to their respective park. In those cases, such upkeep might include plowing, grading dirt roads, maintaining bridges, clearing rockfall, replacing signs, or other cyclic maintenance. In the case of Masoala National Park, there are no roads in or near the park that receive regular traffic.
There is no doubt that Masoala’s forest and marine resources are still so pristine because the area is so difficult to access. Masoala is the only place left in Madagascar where primary rainforest reaches down to the sea, even despite colonial efforts to establish successful commercial forestry. Whilst the peninsula’s inaccessibility is its greatest conservation strength, this poses the park’s managers with added logistical complexity and costs; a problem shared with managers of many of the other last great wildernesses across the globe.

Access to the park from the gateway town of Maroantsetra is by boat, which is both expensive and unpredictable since the weather during much of the year makes sea travel impossible. Access from Antalaha, north of the park, is just as difficult and requires days on mountain bike and foot.

Communications with Maroantsetra and Antalaha are slowly getting better, but neither has a reliable telephone service yet, which is certainly an impediment when electronic communications are becoming the norm for the outside world. Recent investments by the park in both HF and VHF radio equipment have made communications between the park headquarters and staff on the peninsula much easier, which is already bringing important improvements in efficiency.
Financials

Summary Financial Statement

Based on the results of the International Business Plan Initiative analysis, there are significant gaps in Masoala National Park’s operations. From an overall funding perspective, $555,000 of annual funding is required to operate the park at appropriate standards. Non-investment 2002 expenditures equaled $263,000, leaving a funding gap of $292,000. From a personnel standpoint, a total of 90 full-time equivalents (FTEs)* are required to operate Masoala at appropriate standards. In 2002, 72 FTEs worked in the park, leaving a shortage of 18 FTEs.

The 2002 Required Funds by Functional Area chart at the right illustrates these shortfalls by functional area. The data is further illuminated by the Summary Financial Statement on the following page, which details the surplus/deficit of each specific program.

Resource Protection and Management shows the largest deficit, requiring an additional $168,000 per year. The vast majority of this stems from the understaffed Threat Mitigation (MPAP) program. The Zoning and Boundaries and Patrolling programs make up a significant portion of the remaining deficit.

The Community Development and Outreach functional area has a shortfall of $55,000. Though many members of the community recognize the need for the restrictions placed on the use of Masoala National Park, others still need convincing. Therefore, it is very important for ANGAP to continue fostering its relationship with surrounding communities.

Shortfalls for the remaining three functional areas revolve around simply meeting operating standards.

*FTE refers to "Full-time Equivalent", or the amount one person would work in one year. In this business plan, 1 FTE = 8 hours/ day x 5 days/ week x 52 weeks/ year.
This financial statement has been prepared from the books and records of Masoala National Park. The resources available reflect the total operations and maintenance expenses incurred during January to December 2002. The resources required represent the funding needed to operate the park while fully meeting operational standards as defined in the business plan supporting documentation. Program requirements are presented as a five-year planning tool based on salary and wage tables from the same fiscal year, given current resource inventories, and the current park infrastructure. Changes resulting from one-time projects and capital improvements (e.g., investments and construction) may have a resulting impact on the operational requirements present.

The financial statement presents the available and required resource for the operational activities of the park only. Investment and construction expenditures for capital improvements or other one-time projects are not accounted for in this statement. For more information on the park's investment expenditures, please read further.

<table>
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<tr>
<th>FUNCTIONAL AREAS &amp; PROGRAMS</th>
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<th>SURPLUS/(DEFICIT)</th>
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<td><strong>MANAGEMENT &amp; ADMINISTRATION</strong></td>
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<td><strong>FACILITY OPERATIONS &amp; MAINTENANCE</strong></td>
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<td>-</td>
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<tr>
<td>Subtotal</td>
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<td>Grand Total</td>
<td>89.6</td>
<td>554,666</td>
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</table>
Funded Investments

In addition to the $263,000 accounted for on the Summary Financial Statement, Masoala spent $180,000 on investments in 2002. Within this Business Plan, investments are generally defined as significant one-time expenditures of funds to build a structure, restore natural or cultural resources, contract technical assistance to establish baseline park management practices, or fund other similar one-time activities. These are expenses that should not show up in accounting of annual operating budget. Because Masoala is a young park, and still developing its infrastructure and services, it is reasonable to expect that such investments will make up a large portion of total annual expenditures. The following projects represent Masoala National Park’s 2002 commitment to investing in its future:

**Construction of park infrastructure**
For management purposes Masoala National Park is divided into six zones at which agents are based. The park plans to construct bases in each zone and at each of the three marine parks. Funding for eight of the nine buildings was available during 2002-2003.

**Compensation payments for relocation**
When the park was created, some people had land, or were already living inside the park. Relocation agreements involving compensation payments based on the value of the land and buildings have been agreed with all the people concerned and the compensation payments and relocations were made over the period 2001-2003.

**New trail construction**
New trails were created on the west of the peninsula at two sites: Tampolo and Lohatrozona, and an additional trail was established in the Andrananala forest on the east coast.

**New campsite construction**
Campsites were constructed at each of the marine parks, and at the Andrananala forest. In preparation for the increased number of visitors that are predicted as of 2004.

<table>
<thead>
<tr>
<th>2002 Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction, Technical Assistance, &amp; Other Investments, $179,416</td>
</tr>
<tr>
<td>Operating Expenditures, $263,120</td>
</tr>
</tbody>
</table>
Projection of Funding and Need

As this business plan shows, 2002 was a difficult year for Masoala National Park, since the funding available was approximately half of the requirement to reach the program standards. In fact, the funds should have been available from the funds promised to ANGAP, as part of Madagascar's second phase of the environmental program, PEII, but these were not forthcoming due to administrative difficulties. Some of these administrative difficulties were overcome through the flexibility of the co-management agreement between ANGAP and WCS, which allowed WCS to advance the GEF and government contribution. However, this was not a perfect solution and was discontinued towards the end of 2002. Unless the administrative difficulties that plagued the direction of PEII funds to protected areas are overcome in the administrative setup of the PEIII, then the immediate future of most of Madagascar's national parks is bleak.

Masoala is better placed than most, since a large advance has been made towards sustainable financing (see Strategies for Increasing Funding).

In the immediate future, funding will need to come from the PEIII funds and NGO contributions. Visitor revenues and concession fees will be negligible but are predicted to increase slowly over the next five years to approximately $25,000 per year.

At the time of writing, in September 2003, the only firm commitments for funding at Masoala during 2004-2008 are from the NGOs, and the park management has requested the need shown in the graph below from the PEIII funds.

Five-year Projection of Funding & Need

(assuming 5% inflation and including investments and technical assistance)

Note: This chart does not yet include investment estimates or concessions revenues. 5-9-03

The endangered red-ruffed lemur is one of the most beautiful of the world's primates, and is found only on the Masoala Peninsula.
Priorities & Strategies

Operations & Maintenance Priorities

Operations and maintenance priorities refer to large recurrent costs that need to be met by the park, but for which funds were not available in 2002. The main priorities that were identified by functional area are:

Resource Management and Protection
- A second annual over-flight of the park
- Boundary marking of an additional 120km annually
- Ecological monitoring of key species
- Promotion of alternative land-uses which reduce impacts on the park
- Investment in field equipment

Community Development and Outreach
- Regular organized nature visits to the park with school children and local groups
- Resources for regular radio and TV programs

Public Use & Enjoyment
- Marketing and promotional materials
- Creation of park souvenirs to increase visitor revenue
- Trail and campground maintenance

Management & Administration
- Regular equipment inventory
- Investment in office equipment
- Resources for the office supplies needed to support activities
- Implementation of a park-wide safety program

Facility operations and maintenance
- Buildings maintenance
- Replacement of boats, motors and 4x4 vehicle

Encouraging school children to take an interest in local wildlife is a priority for the park.

Small improvements to rice irrigation schemes in the valley bottoms reduce the need for people to clear forest and plant hill rice.
Investment Priorities

Investments are one-time strategic expenditures. Each item below would significantly further Masoala National Park’s mission. Many more projects will require funding from a variety of sources each year. The list shows only the park’s most urgent priorities:

**Construction of park headquarters in Maroantsetra. ($210,000)**
Currently the park operates from rented buildings, but in the long-term they require their own headquarters in Maroantsetra. Land has been acquired to build an office, director’s housing and a visitor center at the edge of town at a site with access to the river, and an excellent view over Nosy Managbe.

**Design and construction of a visitor center ($171,000)**
The park plans to construct a visitor center in Maroantsetra and in Antalaha. Interpretative materials for both buildings will need to be designed and fabricated.

**Construction of a ranger base at Ampokafo ($25,000).**
Ampokafo is the last management zone around the park which does not yet have a ranger base. The inaccessibility of the site makes the cost of construction here higher than at other towns.

**Official boundary marking ($150,000)**
All protected areas in Madagascar should have detailed surveys and be marked officially by the “Service des Domaines”, according to the COAP. The surveying process and the official marking of the boundaries will be an expensive process that involves aerial surveys, all the perimeter to be mapped, and physical marking with cement markers at 75 points that were defined in the decree of the park.

**Implementation of a park wide safety plan ($15,000)**
A medical evacuation plan was written for Masoala in 2001, but has not yet been implemented due to limited resources for the activity. Some additional aspects need to be included to cover day-to-day safety issues. Some investment and regular replacement of medical equipment is needed and the plan requires substantial training and testing before it will be

**Establish a state-of-the-art ranger based monitoring program. ($20,000)**
Investments in new Global Positioning Systems and hand-held computers running GIS software will give the park an extremely advanced ranger-based monitoring system that would increase management effectiveness.

**Training of field agents in the application of the new COAP law ($13,500)**
The new COAP law defines the legislation relating to protected areas in Madagascar, and it mandates ANGAP to enforce this legislation.

**A large scale Biodiversity survey ($25,000)**
For many groups of organisms there has been little research done at Masoala and even for the better-known groups such as birds and mammals, some parts of the park have never been visited. A large scale biological survey of Masoala would give extremely valuable information to the park managers.
Establishment of two advisory centers to support local associations ($6,000)
Many opportunities exist for well organized associations to receive funding for projects that are outside the mandate of ANGAP. These advisory centers would provide documentation on the funding sources available, free advice and training on creating and managing associations, and access to computers and office supplies to help associations make their requests. The park management intends to provide a room and these facilities in both Maroantsetra and Antalaha to catalyze local development initiatives.

Diving equipment for the marine parks ($12,000)
There is currently no diving equipment at the marine parks, but investment in scuba gear would provide new possibilities for improved monitoring and could help in a variety of the marine park’s other activities.

Buoys for anchoring tourist boats ($10,000)
Damage to coral reefs from anchors is a major problem caused by tourism at many marine national parks. To control this problem, buoys to which tourism boats can easily attach will be placed at the sites open to tourism in each of the marine parks.

Establishment of training and activity monitoring plans for the park ($15,000)
Long-term systematic training and monitoring and evaluation plans need to be established for Masoala. These plans would require two one-year contractants to work with the park team to put in place schemes that can be easily followed by the park management.
Strategies for Reducing Costs

The park is already surviving on less than the minimum requirement. In 2002, the operating costs of the park without considering personnel (or investments) were less than $112,000, and this leaves little room for cutting costs.

One of the major expenses incurred by the park is due to the region’s inaccessibility, which makes movements between Maroantsetra and Antalaha expensive and makes getting to the peninsula to be an expensive boat voyage. The recent investments in radio equipment will mean that more decisions can be made without staff having to travel to and from the peninsula. Similarly, it is hoped that within the next five years a road connecting Maroantsetra to the rest of the country via Tamatave will be constructed and this will reduce costs of staff missions to participate in provincial and national planning exercises.

New costs associated with maintaining many of the infrastructure investments that were made in 2002 and 2003, will also have to be met in the future. In the case of infrastructure relating to tourism, the park has introduced a system of camping fees which are intended to cover the costs of maintaining the campsites and trails.

Other possibilities that the park management have considered to reduce costs include reducing the number of personnel, more efficient sourcing of suppliers, reducing telephone and office supply use, better planning of activities to reduce the movement of boats, and establishing better procedures for maintaining equipment. However these strategies have already been pursued and no further savings are likely.
Strategies for Increasing Funding

When the PEIII comes to an end in 2008, international donors are expecting the protected areas system to be self-financing. ANGAP and its partners are already taking steps to establish a national parks trust fund that would be used to cover many of their operating costs. However, the scale of the fund that is currently being discussed will be insufficient to meet all of ANGAP’s needs and individual parks will also need to pursue additional revenue generation options. Masoala has already started down the path of financial self-sufficiency and this will be an important aspect of the activities of the park managers over the next 5 years.

The most promising and reliable avenue for funding in the years ahead stems from the park’s relationship with the Zürich Zoo. Zürich’s model is an exciting one for conservation in general as it links the public relations and fund-raising capacity of a modern and successful zoo with one of the world’s most important wildernesses. The Masoala exhibit closely parallels WCS’s own Congo Forest at the Bronx Zoo in New York, which earns funds for conservation programs in central Africa. Revenues that are raised at Zürich will be used to directly support activities at Masoala, and a portion will also feed into a trust fund that will be established specifically for Masoala. The zoo projects that it will raise a minimum of $100,000 per year, with $75,000 per year being used to cover operational costs and $25,000 to be invested in the trust fund. In addition to this regular income, the zoo will also act as an ambassador for Masoala in Zürich and may be able to help finding donors to pay for specific, one-off investments.

Currently, half of all visitor revenues come back to the park and are spent on community development projects around the periphery. Even assuming that there is an average 20% increase of visitors per year, these revenues will remain relatively unimportant as far as covering park costs are concerned. However in the future more emphasis can be put on raising money through the sale of park souvenirs and through collecting camping fees at the main camp sites. The park management expects that these additional revenues will at least pay for the upkeep of visitor infrastructure.

To date there have been no tourism concessions in national parks in Madagascar, but the first one was established at Masoala during 2003. Concessions are an important part of visitor revenue generation at parks elsewhere in the world and such relationships with the private sector would bring additional non-financial benefits, such as additional employment for people living in the park periphery. In the case of Masoala, the park management intends to create two additional tourism concessions within the national park before the end of 2008. One of the hurdles for potential concessionaires is the difficulty of establishing a business in Madagascar, and the park should actively try and help concessionaires who demonstrate that they will be beneficial partners.

Until 2008, the main source of financing for Masoala National Park will continue to be from the funds allocated to the National Environmental Action Plan. Over the course of this five year period the establishment of a trust fund through the relationship with Zürich zoo, increased visitor revenues and funds from concessionaires will need to fill the gap that will be left at the end of PEIII.

The key to future success is partnerships. Continuing to cultivate, form, and foster relationships is imperative.
Recreating Masoala in the Heart of Europe

The Masoala Regenwald exhibit, which opened on 29th June 2003 at Zürich zoo, is as impressive as it is ambitious. Just over one hectare of Masoala’s forests has been recreated in a huge greenhouse that simulates the tropical humidity and rain. The building measures up to 30m tall and is large enough for the biggest of rainforest trees. Some of the trees have come from the Masoala peninsula itself: collected, planted and shipped to Switzerland to add local realism to the exhibit. Most of the animals came from zoo collections already existing around the world, and some, such as the family of red-ruffed lemurs, were already in Zürich and they now enjoy a relative freedom in this new rainforest. The overall effect is the recreation of an entire ecosystem.

But the exhibit is not simply a display of animals and plants, and a key part is the interpretative center which explains local Malagasy culture, the lifestyles of people living in the environs of the park, and the challenges that are faced by the park management team. Panels, videos, a terrarium, a marine aquarium, and even several buildings shipped all the way from Maroantsetra recreate the atmosphere of life on the peninsula.

An important aspect of the exhibit will be to build up a cadre of friends of Masoala and to raise funds to help protect the real Masoala National Park. Maintaining regular links with the Masoala N.P. staff and getting up-to-date news from the field will be an important part of this relationship.

If one lesson has been learned during the project, it is that it will be easier to protect the real Masoala than to try and replant it in the future.

www.masoala.ch
Tourism and the Local Economy

The current situation
Tourism is not yet an important contributor to the local economy. Hotels in Maroantsetra and Antalaha cater mostly to visitors on business trips, particularly during the busy vanilla buying periods. Nevertheless the steady increase in visitors has provided local incentives for investment in improved tourism infrastructure. In 2001, the peak year for tourism in Maroantsetra, several local businessmen made tourism investments. New rooms and improvements were made to existing hotels, two new hotels were opened, a new restaurant catering to tourists was opened, and several new speedboats were bought and equipped for tourist trips for whale watching and visits to the park. There are additional small hotels planned in Maroantsetra and on the Masoala peninsula, but these projects have been delayed because of the political crisis during 2002 which stopped almost all tourism to Maroantsetra.

A Masoala ecotourism committee was established in 1999 with groups in both Maroantsetra and Antalaha which include hotel and restaurant owners, boat operators, and other interested stakeholders. The aim of the committee is to plan tourism development in the region such that it contributes to the well-being of the local population and promotes the protection of the environment. Although these committees still exist, they were not as active as was initially hoped by the Masoala project. This inactivity is largely a result of the relatively low numbers of visitors that are visiting the area, little interest by investors and therefore a perception amongst the members that the committees are not yet needed. In Maroantsetra, the relatively large numbers of tourists that visited in 2001 and the expected increase in publicity for Masoala that has been created by the Masoala Regenwald exhibition in Zürich, has re-motivated the tourism operators, and they currently have an active association.

Constraints on tourism
The main constraints on tourism at Masoala are the relatively high cost of getting to Maroantsetra or Antalaha, the lack of places on planes, the high cost of boat transport to the park and the relative lack of tourism activities in the region apart from visiting Masoala and Nosy Mangabe. There is a need for more hotels on the peninsula offering good quality service. Tourism operators based in Maroantsetra or the peninsula also have to cope with poor transport and communications infrastructure.

Plans for tourism development
The provision of park infrastructure, visitor facilities and training to local guides will be an ongoing process undertaken by the park authorities. There are already good trails and camping facilities on Nosy Mangabe and the Masoala peninsula, and there are knowledgeable guides based in Maroantsetra. The current park infrastructure is appropriate for the relatively low numbers of tourists who currently visit Masoala, but it will be improved gradually as visitor numbers increase. There are also plans to construct an information centre in Maroantsetra. A visitor centre catering mostly to local schoolchildren, but also of interest to tourists, was opened in Antalaha in January 2002, and additions are planned.

Improvements to the Route Nationale 5 which runs between Tamatave and Maroantsetra have long been planned by the government. Some improvements were made to this road in 2002, but it is still extremely difficult and inappropriate for transport of tourists, unless they want a 4x4 adventure. Improvement to the road infrastructure within Maroantsetra and Antalaha are planned by the local government. In Antalaha, there is

Approximately 35% of all visitors to Masoala are Malagasy.

Whalewatching is a popular tourist activity.
already a mobile phone network. However the land-line phone network at Antalaha is unreliable. In Maroantsetra, there is no mobile phone network and land lines are only available at the post office and a privately run communications service in town (an "Espatel" offering phone and fax service). Both towns have good banking facilities where it is possible for tourists to change foreign currency, traveller’s cheques and credit cards are accepted. Hospital facilities in both Antalaha and Maroantsetra are of a poor standard.

The biggest impediment to tourism at Masoala is the number of spaces on planes. During 2001 and early 2002, a rival airline was established to serve the east coast of Madagascar. They operated a plane with 44 seats, that flew three times a week between Tamatave, Mananara, Maroantsetra and Antalaha in addition to the normal Air Madagascar schedule, which had a similar capacity. Both airlines were consistently full, and the numbers of tourists visiting the park increased dramatically over previous years during this period. The airline is no longer operating, and Air Madagascar has increased its service, but it is clear that there is already a demand for more planes flying this route than currently operate, and that the current seating capacity limits tourism to Masoala. The waiting list to get to Maroantsetra from Antananarivo can be several weeks during the busiest times of year (August to December), which means that most foreign visitors need to have already booked their internal flights before arriving in Madagascar.

The current hotel infrastructure, park facilities, boat transport capacity and capacity of the local guides to welcome tourists to Maroantsetra is much greater than the number of tourists who currently visit the region. In Antalaha, hotel capacity is much greater than the number of visitors. The road that runs from Antalaha to Cap Est and the Parc détachée of Andrananala has been damaged in cyclones in 2000 and 2002, but it is currently open again and the park can be easily reached either by public transport “taxi brousse” or vehicles that can be rented with a driver in Antalaha. Previously there was a good hotel at Cap Est, but this was also damaged by cyclones, and is now being renovated again. Currently there is only one basic hotel open at Cap Est, with 16 small bungalows. In addition to Andrananala, there are coral reefs for snorkeling and potential for diving at Cap Est. New visitor trails are currently being constructed in Andrananala and further training is being given for the local guide association members to promote more visits to the park from people living in Antalaha, as well as to cater for foreign visitors.

**Investment opportunities**

There is a clear potential for growth of the tourism sector in the Masoala region. Most of the infrastructure and facilities for successful tourism ventures are already present and will grow with increasing demand, but there are relatively few tourism agencies that organize trips to Masoala, even though there are already good hotels, well-equipped boats to visit the park, trails and trained guides. In addition, there are several specialized activities that could be developed, such as provision of diving facilities in the marine parks and at Cap Est, river Kayaking, sailing, and boat-based tours around the peninsula.
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It was a great pleasure for Masoala National Park to be chosen as a pilot site for this important International Business Plan Initiative. We hope that the collaborations we have started and the experience we have acquired during the elaboration of this document will lead to the application of the business planning process at the other sites in Madagascar, and around the world.

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