

An analysis of the financial needs of the Ecuadorian National System of Protected Areas

Executive Summary



ministerio del
ambiente

Introduction

This is an analysis of the financial needs of the thirty-three areas that, at the time of this study, made up the Ecuadorian National System of Protected Areas (ENSPA)¹, with a special emphasis on the continental areas. It is the basis for the development and implementation of a Financial Sustainability Strategy for the ENSPA. This initiative is the result of a joint effort of several non-governmental and cooperation organizations (the Promoting Group)², lead by the Ministry of the Environment, and will contribute in a positive way to the fulfillment of the Convention on Biological Diversity's Programme of Work on Protected Areas.

Ecuador has been catalogued as one of the world's 17 "megadiverse" countries. Covering less than 0.2 percent of the Earth's surface, it contains approximately 18 percent of the world's species of birds, 18 percent of the species of orchids, almost 10 percent of the species of amphibians, and 8 percent of the species of mammals. Relative to its size, Ecuador has more biodiversity than any other country. A large share of this natural heritage is contained within its thirty-three protected areas, which cover 18.7 percent of its total area³. Protected areas are important sources of ecological goods and services such as water for human consumption in many major cities and the generation of hydropower (approximately 60 percent of the country's energy), as well as for agricultural irrigation, the final use of 80 percent of the water used in Ecuador. Additionally, protected areas attract domestic and international tourism, and constitute axes of local and national development.

-
- 1 In 2006, El Zarza Wildlife Refuge and El Quimi Biological Reserve were incorporated, and thus the number of ENSPA areas rose to 35.
 - 2 Constituted by The Nature Conservancy (TNC), Conservation International – Ecuador (CI – Ecuador), Kreditanstalt für Wiederaufbau (KfW), United States Agency for International Development (USAID), The World Conservation Union (IUCN) – Education and Communication Commission, EcoCiencia, Fundación Natura, Fondo Ambiental Nacional (FAN; National Environmental Fund), and Mentefactura Consulting.
 - 3 National Direction of Biodiversity, Protected Areas, Wildlife, Biosecurity and Access to Genetic Resources; Ministry of the Environment, Environmental Information Center (CIAM), 2004.



One of the motivations for this analysis was the lack of information about the actual costs of maintaining and managing the country's protected areas. Since these areas are a vital element for the conservation of biodiversity and the sustainable development of Ecuador, this lack of information becomes an obstacle when looking for sustainable and long-term funding. Therefore, this study aims at quantifying the financial resources that have maintained the ENSPA during 2003, and at determining the financial needs within two scenarios, "basic" and "integral". In addition, this analysis will contribute to the definition of a "Financial Sustainability Strategy for the ENSPA" that will be developed during 2006 and 2007.

Methodological Approach

The main methodological challenge was the absence of basic policy tools, such as an ENSPA Strategic Plan, management plans for many protected areas, and systematized financial data on the System's incomes and expenditures. In order to evaluate the financial needs, two management scenarios were built. The first is a "basic" scenario, conceptualized as fundamental and indispensable to maintain the presence of the environmental authority in a protected area, guarantee its integrity, and facilitate its participatory management. The second one, "integral", entails a broader implementation.

The "basic" management scenario includes the implementation of two programs: (1) Administration, Control and Surveillance, and (2) Participatory Planning. The "integral" scenario includes the implementation of a wide range of activities that would guarantee the fulfillment of the protected area's long-term objectives. This scenario consists of the two basic programs plus three additional ones: (3) Community Development and Environmental Education, (4) Tourism and Recreation, and (5) Research, Natural Resources Management, and Environmental Monitoring.

To define these scenarios and assess the financial needs of the country's reserves and parks, eight regional workshops were carried out with the involvement of more than 200 professionals working in protected areas, including the public officials responsible for their management, as well as personnel from non-governmental and cooperation organizations.

Baseline Results, Year 2003 ■

The results of the analysis show that the total investment in ENSPA during the year 2003 was US\$8,718,650, equivalent to just 0.05 percent of the Central Government's National Budget. Seventy percent of these resources go to the Galápagos National Park and Marine Reserve, areas under a special legal regime, in contrast to all other protected areas, which are continental.

Of the US\$2,705,788 received by the 31 continental protected areas, only US\$215,741 went to investments, while the remaining US\$2,490,047 covered current expenses, including personnel (46 percent of the total amount), maintenance and operational costs. Of each dollar invested in continental areas, 42 cents went to cover indirect costs of the management of these protected areas, such as the operation of the Central Office and the Regional Districts.

The ENSPA holds US\$5,848,196 worth of goods and equipment, of which the continental areas possess 27 percent. This difference between continental and oceanic areas can be partially explained by Galápagos' remarkable capacity to generate income: during 2003, it generated 4.8 times more self-generated resources than the total of the continental areas. The institutional consolidation and strengthening processes in Galápagos have turned into important models for the rest of ENSPA areas.



In 2003, 306 persons worked for the Galápagos protected areas, of which only 30 percent belonged to the Ministry of the Environment. During the same period, 277 persons worked for the continental areas, of which 158 had a contractual relationship with the Ministry, while 119 were remunerated with resources from projects and cooperation initiatives. The areas with larger human resources are Cayambe Coca Ecological Reserve (34 people) and Cajas National Park (22 people), the latter not directly administered by the Environmental Authority. Five areas have no assigned personnel, while the Amazonian areas are the ones most understaffed for their size. The analysis of Yasuní National Park and Cuyabeno Fauna Production Reserve shows that each park warden was in charge of more than 80,000 hectares, a figure that clearly shows the need to revise and strengthen staffing policies.

Of the total amount invested during 2003 for the continental areas, 35 percent was financed by tax-related resources, 31 percent by resources generated by the areas themselves (tourism licenses, visitors' fees), 15 percent by contributions of donors, cooperation agencies and national and international organizations, 10 percent by means of the '*protected areas fund*' (*fap*) within the National Environmental Fund, and 9 percent through agreements with private enterprises. The contribution from self-generated resources to the financing of the System is important if one considers that in the international context there are few protected areas, and even fewer protected areas systems, that have demonstrated a capacity to generate resources for their management. Together, the State investment and the self-generated resources are a significant counterpart for new investments by other stakeholders, and it is therefore necessary to maintain at least the present level of expenses, since it recognizes the State commitment towards the functioning of the ENSPA.

Self-generated resources come almost exclusively from selling tourism operation licenses and from visitors' fees. In 2003, 88 percent of the income was generated in five protected areas (National Parks Cotopaxi and Machalilla and Ecological Reserves Cuyabeno, Chimborazo, and Cotacachi Cayapas). Of these areas, only Machalilla and Cotacachi Cayapas own equipment valued at more than US\$150,000, while the inventory of Chimborazo and Cotopaxi do not exceed US\$14,000. These figures have repercussions for the quality of services offered to visitors by these areas. In the other end, three areas did not show any self-generated income, while six of them generated less than US\$1,000 per year.

The continental ENSPA areas received 260,745 tourists in 2003, including 82,887 foreigners (32 percent). Sixty-eight percent of the tourists visiting protected areas were Ecuadorians, an important figure since internal tourism equals approximately 50 percent of the total amount of resources generated by this sector. If the foreign tourists that visited Galápagos are included, 42 percent of the total number of tourists that came to the country in 2003 entered ENSPA areas. Tourism is the fourth income source in the country; however, the benefits obtained by the ENSPA from the income generated in this sector are a mere 0.001 percent.

Results of the Analysis of Financial Needs ■

The 31 continental areas analyzed require US\$6,293,455 annually to be able to meet the basic scenario, and US\$12,211,681 in order to meet the integral scenario. These values sound reasonable if we take into account that this is the investment needed to maintain a complex set of areas covering 18.7 percent of the country. Table 1 details ENSPA expenditures during 2003, as well as the financial projections for the two management scenarios.

Table 1. Financial needs (annual) for current expenses and investment, Basic and Integral Management Scenarios (in 2004 US dollars)

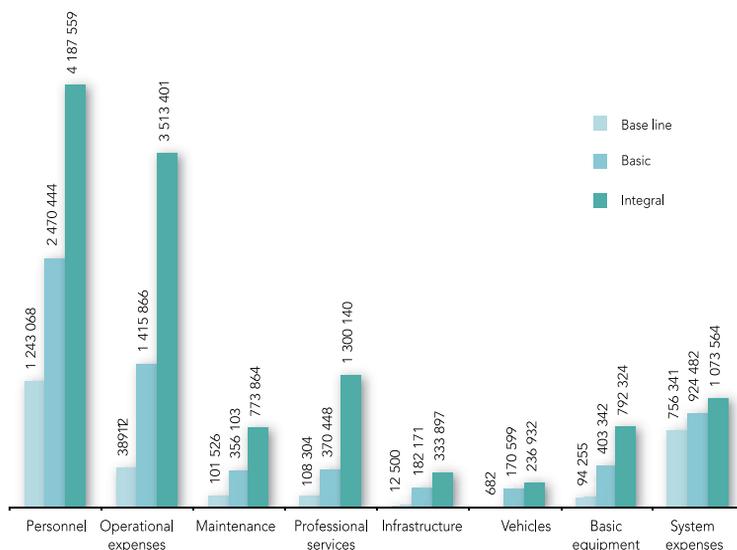
N°.	Protected Area / SCENARIO	Base line	Basic			Integral		
		Current Expenses US\$	Current Expenses US\$	Annualized Expenses US\$	TOTAL	Current Expenses US\$	Annualized Expenses US\$	TOTAL
1	Yasuni National Park	88 130	281 974	66 461	348 434	545 928	153 753	699 681
2	Cuyabeno Fauna Production Reserve	46 214	182 830	37 085	219 915	357 345	100 033	457 378
3	Sangay National Park	130 366	273 670	62 400	336 070	599 139	128 268	727 407
4	Cayambe-Coca Ecological Reserve	159 474	327 519	58 354	385 873	834 333	92 267	926 599
5	Cotacachi Cayapas Ecological Reserve	98 333	245 533	56 072	301 605	531 809	119 403	651 212
6	Llanganates National Park	45 952	105 629	29 824	135 453	204 706	82 396	287 102
7	Sumaco Napo-Galeras National Park	94 709	165 315	64 759	230 074	331 103	112 896	443 999
8	Los Ilinizas Ecological Reserve	30 570	206 651	43 845	250 496	394 053	130 003	524 056
9	Podocarpus National Park	103 461	247 620	42 569	290 189	387 778	113 357	501 135
10	Antisana Ecological Reserve	82 662	213 320	141 309	354 629	353 349	191 702	545 051
11	Mache-Chindul Ecological Reserve	50 241	146 140	74 413	220 553	248 598	119 369	367 967
12	Chimborazo Fauna Production Reserve	67 910	125 265	22 126	147 391	163 621	49 451	213 072
13	Machalilla National Park	117 781	269 168	46 725	315 893	474 013	106 025	580 038
14	Cofán-Bermejo Ecological Reserve	33 703	134 164	33 497	167 661	200 547	81 059	281 606
15	Cayapas-Mataje Ecological Reserve	52 752	153 567	34 901	188 468	231 309	75 608	306 917
16	Manglares Churute Ecological Reserve	47 744	84 935	26 653	111 588	182 252	66 643	248 895
17	Cotopaxi National Park	72 577	150 444	28 136	178 580	266 279	91 272	357 551
18	Cajas National Park	190 104	213 373	71 531	284 904	316 749	150 871	467 620
19	Arenillas Ecological Reserve	7 831	56 748	14 999	71 747	206 842	50 519	257 361
20	El Ángel Ecological Reserve	23 033	76 950	23 905	100 855	127 064	74 999	202 063
21	Manglares El Salado Fauna Production Reserve	525	31 791	13 124	44 915	134 417	48 952	183 368
22	Limoncocha Biological Reserve	18 783	40 211	12 024	52 235	95 732	52 639	148 371
23	Pululahua Geobotanical Reserve	29 466	67 307	22 653	89 960	250 184	44 451	294 635
24	Manglares Estuario Rio Muisne Wildlife Refuge	41 418	62 393	37 759	100 152	87 016	75 784	162 800
25	El Cóndor Bi-national Park	0	7 865	7 993	15 858	37 068	41 920	78 988
26	Parque Lago National Recreation Area	197	32 823	10 287	43 110	173 168	46 372	219 540
27	La Chiquita Wildlife Refuge	394	24 087	6 942	31 029	105 184	45 456	150 640
28	Isla Corazón Wildlife Refuge	0	33 643	7 164	40 807	113 395	51 243	164 638
29	Pascocha Wildlife Refuge	48 010	77 178	10 816	87 994	193 071	65 138	258 209
30	El Boliche National Recreation Area	45 493	157 257	13 491	170 748	208 815	55 273	264 088
31	Isla Santa Clara Wildlife Refuge	5 872	47 046	4 745	51 791	119 956	46 178	166 134
SUBTOTAL		1 733 706	4 242 413	1 126 560	5 368 973	8 474 824	2 663 293	11 138 117
SYSTEM EXPENSES		756 341			924 482			1 073 564
Annualized investment of other stakeholders		215 741						
TOTAL		2 705 788			6 293 455			12 211 681

The “personnel” heading of the budget accounts for 39 percent of the basic scenario expenses, with 589 people, and 34 percent of the integral scenario expenses, with 838 people. The management efficiency directly correlated to the amount of people available for the area. A crucial aspect is the betterment of human resources management through investments in training and improvements in salaries and labor conditions, which will allow the recruiting and retention of the necessary staff. Presently, unsatisfactory salaries, a lack of incentives, and labor instability are decisive factors in personnel-related issues. The second important budget heading relates to operational expenses, such as travel allowances, per diem, basic services and transportation, the most disregarded heading in the present expenses structure (Figure 1).

The most important investment headings have to do with equipment and vehicles. Those areas created after 1995 show a higher need for infrastructural development, while more consolidated areas are particularly in need of vehicles (Figure 1). This tendency can be explained by referring to the support from projects such as SUBIR, Debt Exchange (Fundación Natura) and, especially, the biodiversity conservation GEF-funded project (1994-1999), where important investments were made in equipment and motor vehicles; unfortunately, nowadays they are in an obsolete and deteriorated condition.



Figure 1. Distribution of anual expenses by management scenarios



Source: Workshops
Author: Consulting Team, 2004.

The per-hectare expenditure in the basic and integral scenarios is, respectively, US\$4.20 and US\$10.32. Although this cost is reasonable, it is distorted since for smaller protected areas the estimated cost is three times higher than for larger ones. It is necessary to analyze more deeply the requirements of the smaller areas in relation to strengthening strategies and long-term projections.

The analysis of the Galápagos protected areas began with the hypothesis that their management level was greater than the basic scenario; thus, it was developed only for the integral scenario. The annual amount needed to manage these protected areas is US\$24,367,090, divided virtually half-and-half between the two Galápagos areas.

Conclusions ■

The results obtained show that the financial situation of the ENSPA has not improved since 1998, a year when comparable data were produced (Valarezo V., et.al., 1999)⁴. Moreover, a deficit is evident in key resources, such as personnel, vehicles and equipment. The system now has eleven more protected areas than in 1998, and has stopped getting important contributions from the Galápagos National Park since the issuing of the 1998 Special Law on Galápagos⁵ and the 2004 Amendments to the Municipal Regime Law⁶. In addition, the results indicate that three of the seven protected areas managed by other institutions are in a better financial situation than the mean of the System.

During 2003, the State made virtually no investments in infrastructure, equipment, and means of transportation. Most of the infrastructure and civil works within the ENSPA was carried out during the nineties and is, on the average, in the middle of its economic life. Maintaining these items requires an important investment: the amount expended equals 5 percent of the present value of the inventory of goods and equipment, which, given their age and condition, is insufficient. The present financing receives a substantial contribution from the State and from self-generated resources that together come to more than 65 percent of the total. This contribution is supplemented by other private and public sources, including the *'fondo de áreas protegidas'* (*fap; protected areas fund*), that, while starting in 2001, covers almost 10 percent of the current funding.

4 Valarezo, V., et.al., Informe de Evaluación sobre la Eficiencia de Manejo del SNAP; Quito, Ecuador, Proyecto INEFAN-GEF, 1999.

5 Ley de Régimen Especial para la Conservación y Desarrollo Sustentable de la Provincia de Galápagos. Registro Oficial No. 278. 8 de marzo de 1998 (Law of Special Regime for the Conservation and Sustainable Development of the Province of Galápagos. Official Record 278, March 8 1998).

6 Ley Orgánica Reformatoria a la Ley del Régimen Municipal. Registro Oficial No. 49. 7 de septiembre del 2004. Modifica al Art. 8 de la Ley 67, eliminando el 5% de los Ingresos del Parque Nacional Galápagos (Organic Amendment of the Municipal Regime Law. Official Record 429 September 2004. Amends Art. 8 of Law 67, eliminating the 5 percent of Galápagos National Park income).

Continental ENSPA areas require US\$ 6,293,455 annually for the basic scenario, and US\$ 12,211,681 for the integral scenario. The implementation of three additional management programs to the basic scenario implies a duplication of the current expenses and a quintuplication of the investment expenses. From a financial perspective, this reinforces the need to identify the basic scenario as the minimum threshold for the raising of resources, for it presupposes the maintenance of the indispensable conditions to manage the areas. The additional investment of resources to be able to implement the integral scenario has repercussions on the improvement of the conservation status and on the capacity of multiplying the benefits that ENSPA areas generate for society.

If the sources that sustain the System are maintained, the annual breach within the basic scenario is US\$ 3,587,667, which implies a 1.3 base-line growth. Within the integral scenario, the breach is much larger, and the amount goes up to US\$ 9,505,893, i.e. a growth of 3.5 in the present amount of system investments. The figures identified seem reasonable if one considers that this is the investment needed to maintain a complex System covering 18.7 percent of the country.

The financial needs, especially of those areas with more than 5,000 hectares, are within an international range of US\$ 0.9 – US\$ 9 per hectare, according to several studies cited along the final document. In the two scenarios, values are influenced especially by the requirements of those areas with less than 5,000 hectares. These, besides being the less regarded ones within the system, validate the hypothesis that the management costs of an area are inversely proportional to its size.

The difference in the financial amounts between continental and oceanic protected areas is a reflection of the fact that Galápagos has special conditions needing a sophisticated and complex level of management and administration. Moreover, it is necessary to recognize that the level of pressures and threats is very different in Galápagos in comparison to the realities of the continental areas.



It needs a higher level of complexity and, consequently, of costly conservation activities. The Galápagos National Park was created 69 years ago, and this stretch has allowed an important level of consolidation compared to the rest of the areas. It is vital to capitalize on this accumulated experience to foster the consolidation and strengthening of the continental protected areas.

Finally, this study makes recommendations in the following three areas: (I) Administration, (II) Management, and (III) Financing of protected areas, and concludes that the investment to conserve the ENSPA areas has a high benefit-cost ratio, for it deals with one of the highest biodiversity protected areas systems in the world. Hence, this comparative advantage of Ecuador should be exploited through a consolidation of the System that shows clear policies and norms, a strong institutionalization that generates governance, as well as higher levels of efficiency and transparency in the management of resources, for the benefit of all Ecuadorians.

Recommendations

Recommendations gathered throughout the process are presented in three main sections: (I) Administration, (II) Protected area management, and (III) Financing, as follows:

(I) Administration

1) Develop a system of information and planning for the ENSPA.

It is necessary to think of the generation, updating, systematizing, and availability of the financial information presented in this study. The quality, dependability and dissemination of this type of information have been a major bottleneck for the ENSPA, an aspect that requires strengthening. The implementation of the following activities is suggested:

- a) Guarantee the generation, systematization, updating and dissemination of financial information.
- b) Include other stakeholders' input to the system of administrative and financial management.
- c) Implement a standardized mechanism to measure the management efficiency.
- d) Simplify the operational chain and generate explicit links with other management areas.

The setting up of an administrative and financial management system for the ENSPA will allow the restructuring of the administrative and financial management of the ENSPA, generating uniform management criteria while diminishing the uncertainties related to information management, and making possible the systematic coordination, screening and monitoring of the investments done by the Central Government and other stakeholders.



(III) Protected Area Management

1) It is necessary, as a minimum, to double ENSPA's personnel.

In the short run, the situation of the five areas without any personnel should be analyzed, and also that of those areas with an index of more than 40,000 hectares per park warden. Even if there are policies that prohibit the creation of budgetary lines within the Ministry of the Environment, the possibility has to be considered of including new personnel through flexible contractual agreements, as well as through mechanisms of community involvement.

2) Communicate the costs and benefits of the conservation of the System to the local and international societies.

Notwithstanding its intrinsic value, it is necessary to heighten the level of conscience and knowledge about its contribution towards national development. Instrumental to that effect could be an economic valuation of the goods and services provided by the ENSPA. Moreover, it is necessary to connect the System's conservation to the poverty reduction agenda, identifying the added value brought in by the ENSPA in each economic sector to the generation of employment and to the maintenance of strategic resources for local populations.

3) Establish policies to regulate the relationship between the Ministry of the Environment and other stakeholders in the management and/or financing of protected areas.

It is possible to take advantage of the information of this study to establish the political and normative bases for the negotiation of agreements of co-management, concession, delegation, outsourcing, and other participatory alternatives. It is necessary to define a policy and pin-point mechanisms that would orient the relationship between protected areas managers and the Ministry of the Environment, taking into account the System's functionality and unity, and the consolidation of the Environmental Authority.

4) Cluster protected areas with similar features and develop common strategies.

An opportunity to draw on this study is the generation of expense-regulation policies and differentiated criteria for resource allotment to groups of protected areas, as a way to clarify the priorities of investment and the most strategically important areas, both in the generation and allocation of resources.

5) Analyze the requirements of those areas with less than 5,000 hectares.

Probably, some of them are not going to need autonomous resources such as personnel, infrastructure and vehicles; instead, they could strategically be part of a shared management framework.

(III) Financing

1) Maintain the annual State investment. Given that the State current expenses mainly are concentrated in the personnel line, it is important that newly raised ENSPA resources have a complementary and not a substitutive character.

2) Diversify the self-generated income sources, making use of mechanisms such as payment for environmental services, payment for installed infrastructure, etc. To reach this, it is necessary to strengthen the environmental authority and to foster a favorable ju-

dicial framework, not only to permit these payments but also to ensure that this income be reinvested in the System and not diverted to sectors outside protected areas.

3) Continue with the capitalization of the 'fondo de áreas protegidas' (fap), as a strategy of long-term support towards the financial sustainability of the System, based on the advances in its implementation since 2001.

4) Improve the sharing of the System's scarce resources. Throughout this study, conclusive data have been presented about the inequity in the sharing of the scarce available resources. This poses a challenge at two levels: the promotion of the consolidated protected areas, and the generation of a foundation for those areas that virtually lack resources.





5) Mobilize investment resources, including means of transportation. At present, the existing means of transportation have a mean age of 11 years. Priority should be given to cover investment costs, which have proven to be the least significant within the current financial structure.

6) Make explicit and formalize the “subsidiarity” principle of the System. During the financial planning, it is necessary to consider that there are protected areas that, due to certain special features, will not be able to reach a financial sustainability, at least in the medium term. Therefore, it is necessary to avoid the loss of economic contributions from the five ENSPA areas that collect the bulk of the income from tourism, since this will deepen the finance deficit and would endanger the unity of the System.

7) Develop an ENSPA tourism strategy. A strategic projection is needed of the tourism potential at a System level that will allow understanding which protected areas have a potential for these activities at short and medium terms. Thus, it would be possible to know where an investment for tourism development would be a priority, and, more importantly, to value the protected areas’ tourism potential.

Perspectives ■

Since early 2006, the Ministry of the Environment leads the design of the **Financial Sustainability Strategy** for the ENSPA, which has the following objectives:

1. Diversify income sources and ensure that the Ecuadorian government increases its present level of funding.
2. Identify priorities and develop an action plan to overcome the main legal, administrative, and political obstacles to achieve the financial sustainability of the System.
3. Make visible the contribution of the ENSPA to the economic and social development of the country, and link its insertion into national and sectoral plans and policies.
4. Strengthen the capabilities of financial planning and management tool application for conservation.

The Financial Sustainability Strategy for the ENSPA has foreseen 24 interrelated activities that will be executed in the period 2006-2007. It is hoped that they will back up as a priority the basic ENSPA financing scenario.



Personnel of the Ministry of the Environment, especially the persons responsible for the protected areas, Biodiversity Leaders, Organization Development Leaders, and Technicians from the Direction of Biodiversity, Protected Areas, Wildlife, Biosecurity, and Access to Genetic Resources, participated in the gathering and research activities of this study. In addition, the collaboration, both technical and financial, of the Promoting Group (see below) has been fundamental.

