

Financing Protected Area Management: Experiences from the Caribbean

Tighe Geoghegan
Caribbean Natural Resources Institute

Overview of Caribbean protected areas and their management

Protected area is the term now commonly used to refer to areas, whether marine, terrestrial, or coastal, that are managed with the objective of maintaining and enhancing their values for conservation, and often for recreation as well. National parks, marine parks, nature reserves, wildlife refuges, and historic sites all fall under the category of protected areas.

Protected areas have existed in the Caribbean as far back as the 18th century, when forest reserves were established in Tobago and St. Vincent (Putney 1992). By the middle of the 20th century, marine reserves, national parks, and forest reserves had been established in many countries of the region. But it was only following the establishment of the Virgin Islands National Park in 1956 that the link between protected areas and tourism development began to be recognized. By 1981, the benefit/cost ratio of the Virgin Islands National Park on the local economy was estimated at 11:1 (Island Resources Foundation 1981).

Throughout the last two decades in the Caribbean as in the rest of the world, there has been a rapid increase in the number of declared protected areas. A 1992 survey identified 175 protected areas in the insular Caribbean (Putney 1992), and that number is likely to have increased in the intervening years.

However, only a very small percentage of these declared protected areas exist in actual fact. Most are paper parks in which no management occurs. The motivation to establish protected areas is often based on the perception that such areas enhance a country's competitiveness in the tourism sector. However, while the political will to establish protected areas may be strong, the will to budget for their management has shown itself to be very weak, in the face of urgent national priorities and continuous fiscal crisis.

In recent years there have been increasing calls to transform paper parks into managed protected areas, and to establish new protected areas to tap the ecotourism market and to provide a measure of protection against development pressures, particularly in the coastal zone. Given the limited ability of most governments in the region to meet the costs of management, alternative sources of revenue are being explored.

Pressure to establish self-financing protected areas is also coming from international development and lending agencies, which often bear the capital start-up costs of protected areas and want to assure that their investments are secure. The implementation of mechanisms for financial sustainability has become a routine conditionality of loans and grants for protected areas.

Governments in the region are therefore looking at alternatives to government revenues for financing protected areas.

The region's success stories

The experience in the region to date demonstrates that self-financing is a viable option for many of the region's protected areas, particularly those that attract large numbers of visitors. Several protected areas now have effective revenue generation strategies, and as a result are among the best managed in the region. The following areas are particularly noteworthy for having achieved and maintained financial self-sufficiency over a period of years:

- Nelson's Dockyard National Park, Antigua
- Bonaire Marine Park
- British Virgin Islands system of marine protected areas
- Saba Marine Park
- Brimstone Hill Fortress National Park, St. Kitts
- Pigeon Island National Park, St. Lucia

In addition, recently established protected areas in Jamaica (Blue and John Crow Mountains National Park) and St. Lucia (Soufriere Marine Management Area) are working towards full or partial financial self-sufficiency. And in Belize, Dominica, Grenada, Trinidad and Tobago, and the Turks and Caicos Islands revenue generation strategies based largely on user fees are now being developed.

Brimstone Hill, Pigeon Island, and Nelson's Dockyard, all of which are historic sites, have successfully implemented visitor entry fees that provide significant income. In all cases, fees are quite reasonable, but visitation is high as these sites attract a large percentage of tourists in their respective countries.

In Bonaire, Saba, and the British Virgin Islands (BVI), fees are levied on users of the marine resources, including scuba divers, and, in the BVI, yacht charterers as well. The user fee systems are implemented in close collaboration with the commercial dive and charter boat operators, who collect the fees from their clients, keep records of use, and perform basic interpretive, information, and surveillance functions on behalf of the protected areas.

In most cases, entrance and visitor fees are supplemented by other sources. Souvenir and gift shop sales have been a particularly lucrative source for several protected areas. Visitor donations have been tapped in Saba ("Friends of the Saba Marine Park"), and special events staged at Pigeon Island, ranging from weddings to St. Lucia's annual International Jazz Festival, generate significant income.

The case of Nelson's Dockyard is rather unusual, as the historic site has been developed to provide a range of services through which income is earned. In addition to entry fees, other major revenue sources include yacht dockage fees, leases and rents, and gift shop sales.

Institutional aspects

Typically, national parks and other protected areas are managed by government agencies, which either have been established for that purpose or have compatible objectives (e.g., Departments of Forestry). Significantly, none of the self-financing protected areas in the region follow this pattern. Nelson's Dockyard, the BVI marine protected areas, and Pigeon Island are managed by quasi-governmental statutory bodies, and Bonaire and Saba Marine Parks and Brimstone Hill are managed by non-governmental organizations through collaborative agreements with government. These extra-governmental management arrangements allow greater flexibility in the establishment and administration of revenue generation systems, within the framework of enabling government legislation and policy.

The major obstacle faced by government departments in implementing revenue generating mechanisms such as user fees, public donations, or gift shop sales, is that it is generally difficult to segregate such revenue for management of the protected area, since all government income is expected to be paid into the consolidated fund and allocated according to national priorities.

On the other hand, non-governmental organizations may not have adequate systems for financial accountability, and their authority as management agents and revenue collectors may be questioned by users and management partners and collaborators.

Statutory bodies are thus generally in a better position than either governments or NGOs to implement revenue generation mechanisms and strategies. However, creative partnerships between governments and NGOs have also overcome the constraints faced by each. In these cases, government provides the legislation, policy context, and regular fiscal oversight, while the NGOs are responsible for implementation of the revenue generation systems.

Guidelines for designing revenue generation strategies

The experience in the region over the past ten years suggests some general guidelines that should be followed in developing revenue generation strategies for protected areas or protected area systems:

- 1. Fundraising strategies should begin with the development of a budget for managing the area or system at the desired level.* The aim of the strategy should be to completely cover the management costs based on the budget. It is surprising how often entry fees and other revenue generating mechanisms have been considered or introduced without any regard to actual financial needs.
- 2. The preparation of a fundraising strategy should be a consultative process that involves all interested parties, particularly representatives of major user groups.* Consensus among all involved should be reached before any elements of the strategy are implemented. The lack of consultation has created numerous difficulties in implementing fundraising strategies. In the case of the Bonaire Marine Park, an initial attempt to implement a user fee had to be abandoned because of resistance from the island's dive operators, who were not consulted. A fee system was developed and successfully established several years later with their full participation and cooperation.

3. *A diversified funding base provides greater security and flexibility than reliance on a single source of funding.* In particular, strategies that rely heavily on entry fees and other revenues from visitors can be severely threatened by often unpredictable downturns in the tourism industry. The most effective revenue generation strategies aim to bring in a surplus in years of high visitation that can cover shortfalls in times of difficulty. Figure 1 presents an analysis of many of the mechanisms that can be considered in developing a strategy.

4. *Strategies should aim to reduce, but not eliminate, the level of direct government support.* In most countries of the Caribbean, it is unrealistic to believe that governments will be able to bear the full costs of protected area management any time in the foreseeable future. It is only through reducing dependence on this inadequate source of support that protected areas can succeed in meeting the costs of proper management. However, complete financial independence from government can result in reduced policy and technical support as well, and should therefore be avoided. Even a small annual financial or in-kind contribution secures government's stake in the protected area and its management.

5. *Partnerships and co-management agreements can increase management efficiency and reduce costs.* Since the aim of revenue generation is finance management, other approaches that reduce management costs can be as valuable as money. Beneficiaries of protected area management are often willing to contribute time and services or able to carry out management functions at a lower cost than the designated management agency. Arrangements with commercial users to collect fees and maintain records of use are good examples of how partnerships can reduce the financial cost of management without reducing its quality.

6. *The principle of equity should apply in allocating the costs and distributing the benefits from revenue generation strategies.* It is generally agreed that those who benefit most directly from protected areas and the services they provide should bear most of the cost of their management. If a protected area is well managed, entry fees and fees for the use of infrastructure and services are generally perceived by users as reasonable and fair. By the same token, benefit sharing can provide a way to compensate those who have been negatively affected by the protected area's management activities. These often include traditional users of the area's resources, such as fishers or dislocated small-scale entrepreneurs. Benefits can come in the form of new business or employment opportunities or improvements to community services or infrastructure.

The way forward for Caribbean protected areas

Governments of the region must recognize that protected areas can only contribute to national development if they are managed in a way that respects their conservation objectives, encourages their active use, and creates linkages to other economic sectors. Whether or not Caribbean governments are able by themselves to meet the costs of this type of management, they must recognize those costs and create the conditions under which they can be met. They therefore need to assure that legislation establishing protected areas makes provision for financing and revenue generation and that the

institutional arrangements for protected area management include systems for revenue generation and financial management. Where fees are charged, they must be clearly linked to the costs of management so that users of protected areas, both visitors and commercial entrepreneurs, can see the benefits they are deriving from their payment. For the smooth and efficient operation of revenue generation strategies, partnerships like those described earlier, with non-governmental organizations, community groups, and commercial users, should be fully exploited. The management of protected areas requires cooperation among managers and users, and offers the region an excellent opportunity to explore the potential of collaboration between governments and civil society.

Figure 1
FRAMEWORK FOR SELECTION OF APPROPRIATE FUNDING MECHANISMS

Mechanism	Conditions Required	Constraints
Government subvention	Participation and lobbying in budgeting process.	Usually inadequate for full management. Encourages political interference.
International assistance agency	Government request. Ongoing relationship or cooperative agreement.	Generally not available to NGOs. Usually not flexible: requires preparation of and adherence to project document. Can require use of foreign consultants.
Foundation grants	Prospect research, initial inquiry, proposal submission, and follow-up.	Generally not available to governments. Usually not flexible: requires preparation of and adherence to project document. Limited field of interest of most foundations.
Donations and membership associations	Personnel and mechanisms for making requests and following up.	Generally only available to NGOs.
User fees	Provision of "valued" services. Personnel and system for collection. Legislation or regulation (sometimes).	System must be set up to assure that fees available to management agency; not returned to general fund.
Souvenir sales	Retail outlets . Funding to manufacture sale items.	Can only be expected to provide small percentage of total revenue required; useful in conjunction with other mechanisms.
Concessions	Sufficient market for services offered. Personnel and system for monitoring and collection. Infrastructure (usually).	Can be perceived as competition with existing businesses in area. Requires cost/benefit analysis prior to implementation. Can result in pressure to exceed carrying capacity.
Debt swaps	Discounted commercial debt for sale. Source of capitalization. Agreement of government. Involvement of experienced advisors.	Not worthwhile if debt discount minimal.
Trust funds	Source of capitalization. Professional involvement in investment and management. Governing Board and management body.	Implementation and management require NGO or private sector involvement. Capitalization must be at least 10 times required annual income.
Nature tourism	Attractions appealing to ecotourism market. Relationship with tour companies. Personnel and other support resources. Mechanisms for capturing portion of revenue.	Little initial return; follow-up required. Need to break into market; industry now focusing on other regions. Can result in pressure to exceed carrying capacity.

Source: Geoghegan 1994

Appendix: Case Studies

Nelson's Dockyard National Park, Antigua

The English Harbour in Antigua has been a major regional yachting centre for at least the past forty years. In the colonial era, the harbour served as a base for the British Navy, complete with a dockyard, forts, and other facilities. In the 1950's a volunteer group, the Friends of English Harbour, began to restore the old buildings and other structures for adaptive use. The site soon began to attract large numbers of visitors. As the scale of the operation grew and its role in development of the country's tourism sector increased in importance, the legitimacy of the Friends of English Harbour to manage the area came into question.

In order to provide more comprehensive management of the area and better integration with national development policies, the Nelson's Dockyard National Park was established in 1984, and management was turned over from the Friends of English Harbour to the newly established Antigua and Barbuda National Park Authority. The Authority, established under the National Park Act, was charged with developing the Park as a self-financing operation geared towards stimulating new economic opportunities for Antiguans in the tourism industry within the context of conservation and interpretation.

With significant bilateral funding for infrastructure development, the Authority developed a plan to generate revenue through leases to appropriate local businesses, entry fees to the site, sales, and operation of the yacht dockage facilities. The Park currently houses around 25 small businesses, the vast majority of which are locally owned.

By developing the Park to high standards and marketing it aggressively, particularly to the yachting community, the Authority has been able to rapidly increase revenues, which by 1994 had exceeded one million U.S. dollars per year. Management costs are also high, however, and several years of surplus were followed in the mid-1990's by two successive years of shortfalls. A restructuring programme was implemented in 1995 in order to reduce unnecessary costs and bring expenditure back in line with revenue.

source: Martin et al. 1995

British Virgin Islands Reef Conservation Fee

The economy of the British Virgin Islands has long relied heavily on marine-based tourism. Charter boating around the islands attracts a large percentage of the more than 250,000 visitors each year. Scuba diving is also extremely popular.

Popular dive sites and anchorages were already showing signs of degradation by the 1970's. Damage and pilferage to the highly popular Wreck of the Rhone dive site were a particular concern both to the territory's dive operators and the government. To provide some measure of protection, the Wreck of the RMS Rhone Marine Park was established in 1980. Under the Marine Parks Ordinance of the previous year, the National Parks Trust, a statutory body established in 1961, was charged with managing the Park. The Ordinance provides for the licensing of commercial users and for the collection of fees "for any of the services provided in Marine Parks and Protected Areas".

Initially, the National Parks Trust (NPT) lacked the resources to manage the Park, and relied on the assistance of the territory's dive operators, who in 1985 voluntarily installed dive boat moorings to protect the wreck and surrounding reefs from anchor damage. But without regular maintenance, the moorings soon fell into disrepair.

When funding became available in 1989 to replace the moorings, the NPT, government, and commercial users (dive and charter boat operators) participated in a series of consultations to develop a fee system that would fund the installation and regular maintenance of moorings at all the territory's heavily visited and sensitive anchorages. These consultations resulted in consensus on a user fee system to be implemented by the NPT and the commercial users. Following a lengthy review of the recommendations of the consultation, the Government enacted the necessary regulatory framework for fee collection. The system, which has been in place since 1991, is based on permits purchased by users of the moorings, both divers and boaters.

Most of the funds are collected through the charter boat and dive operators and passed on to the Trust (non-commercial users purchase permits directly from the Trust), which is responsible for maintenance of the moorings and other management functions. Revenue is tracked and applied against the annual budget for the Rhone Marine Park and fourteen other sites throughout the territory where moorings are in place. Major expenses include the salaries of four wardens and the system administrator, and boat and mooring maintenance and depreciation. The system became fully self-financing in 1994 with revenues of US\$165,000.

The role of the commercial users in collecting the fees, orienting and controlling visitors, and providing supplemental surveillance, has been critical. The system is essentially a partnership between these users and the Trust. The major difficulties encountered in implementing the system have been securing full compliance from commercial users based outside the Territory and in gaining the cooperation of the Customs Department in collecting fees from private users. If these obstacles are overcome, revenue from the system may be sufficient to contribute to other programmes of the Trust.

Sources: Brown 1995; DeRavariere et al. 1993; Virgin Islands Ordinance No. 8 of 1979.

Saba Marine Park

Saba is an extremely small island in the Netherlands Antilles. Steep terrain, undeveloped infrastructure, and few beaches have impeded tourism growth. In 1984, with a stagnating economy and net population loss, the government began promoting the island's high quality marine environment for dive tourism. In 1987, after extensive research, the Saba Marine Park was established, comprising the inshore waters surrounding the island.

Establishment of the Park was funded by the Dutch and Saba governments and Dutch conservation organizations. It was the intention of management, however, to make the park self-sufficient within five years. In order to do so, a three-pronged fundraising strategy was put in place, consisting of dive fees, donations, and souvenir sales. In order to best implement the strategy and maximize management effectiveness, the running of the Park was turned over to a conservation NGO, the Saba Conservation Foundation. The local government remains actively involved in Park affairs, however, and the Legislative Council participates in and approves all major management decisions.

With the cooperation of local commercial operators, a fee of \$1 per dive was established. (The fee was later raised to \$2 per dive.) Licensed operators collect the fees from their clients and pass them on to the Park. Since the establishment of the Park, Saba's dive industry has grown considerably, from 11,664 dives in 1988 to 19,607 in 1993. The dive fees represent the largest source of revenue for the Park.

A support group, the Friends of the Saba Conservation Foundation, was established to receive donations for the Park. Through an arrangement with a U.S. conservation organization, donations from U.S. citizens are tax deductible. Several thousand dollars are raised for park management this way each year. Local "Friends" also provide the Park with a number of volunteer services, including assisting with fundraising and administration and functioning as support divers and research assistants.

A number of souvenir items were developed for sale, including guidebooks, logo pins, polo shirts, and posters. These also bring in significant income, which should increase when a planned gift shop is established. The Park is now investigating the possibility of "corporate sponsorships," allowing businesses to use the Park's logo and name for an annual fee.

The government subvention ended in December 1992, and since then, the Park has been fully self-sufficient. Employees include a manager and an assistant manager, who are well supported by a cadre of volunteers. Saba Marine Park is considered one of the best managed marine parks in the world. It has an active programme of patrolling, enforcement, public information, and reef monitoring. A mooring system has been in place since 1987.

Adapted from Geoghegan 1994.

Pigeon Island National Historic Park, St. Lucia

The headquarters for Admiral Rodney during the time of the famous Battle of the Saintes, Pigeon Island in the north of St. Lucia is rich in historic sites and artifacts. The island, which is close to the centres of both population and tourism in St. Lucia, was connected to the mainland by a causeway in 1970. It was vested to the St. Lucia National Trust (SLNT) in 1978 and legally established as a national park in 1982.

From its opening in 1979, Pigeon Island has encouraged visitation, establishing amenities including trails, toilets, benches, and eventually a restaurant and a gift shop. The statute establishing the national park also established an entry fee to be set and collected by the SLNT. For many years, the fees were minimal (US\$1 for visitors and EC\$1, or about US\$0.35, for residents).

In the early 1990's, with funding from the Canadian SPIF programme, a major infrastructure project was implemented, consisting of new signage and brochures, jetty improvements, and restoration of a historic building to contain an interpretive centre, shop, and office. To diversify both revenue and use, the SLNT constructed a wedding gazebo and began to lease the island out for special events, starting with St. Lucia Jazz Festival concerts in 1992. The infrastructural improvements, coupled with a significant increase in both hotel and cruise ship tourism in St. Lucia, resulted in rapidly growing visitation during the 1990's (from around 40,000 visitors in fiscal year 1991 to over 65,000 in fiscal year 1997). The entrance fee was increased twice during this period, and is now around US\$ 4 for visitors and US\$ 2 for residents. This increase was partially offset by the elimination of a separate fee for the interpretation centre. The increased visitation and higher fees have resulted in a fivefold growth in revenue, from around US\$ 34,000 in fiscal year 1992 to over \$175,000 in fiscal year 1997.

Other sources of revenue include weddings (grossing about \$25,000 last year), fees for cruise ships anchoring off Pigeon Island (around \$12,000), special events, restaurant concessions, and a souvenir shop, which is run by the SLNT and made its first net profit last year. Despite having little initial experience in the shop trade, the Trust decided to retain the shop rather than lease it in order to maintain control of the products and their quality. Performance has improved as experience has been gained, and is expected to improve further with advertising and promotion that will start in 1998.

With increasing visitation fed by upgraded infrastructure and a diversified funding base that includes non-traditional sources such as weddings, Pigeon Island has gone in only three years from a net revenue loser to bringing in a profit for the SLNT of nearly US\$ 100,000 in fiscal year 1997. This profit was instrumental in getting the Trust through a year of serious fiscal austerity with the cutting of its government subvention by fifty percent.

source: St. Lucia National Trust records

References

Brown, N.A. 1995. Revenue generation for marine protected areas: the moorings system in the British Virgin Islands (BVI). CANARI Technical Report no. 105:1pp. Paper prepared for the Workshop on Revenue Generation for Protected Areas. Saba, Netherlands Antilles, June 1995.

DeRavariere, R., J. Banks, P. Elliott, and J. Seal. 1993. British Virgin Islands National Park Trust: reef protection programme and mooring system five year plan 1993-1998. British Virgin Islands National Parks Trust. 24 pp.

Geoghegan, T. 1994. Financing strategies for protected areas in the insular Caribbean. *Parks* 4(2):28-38.

Island Resources Foundation. 1981. Economic impact analysis of the Virgin Islands National Park. Prepared under contract for the United States Department of the Interior, National Park Service. 53 pp.

Martin, A.M., W. Ferrance, and D. Russell. 1995. Nelson's Dockyard National Park, Antigua, WI: a case study in economic diversification. CANARI Technical Report no. 107:21 pp. Paper prepared for the Workshop on Revenue Generation for Protected Areas. Saba, Netherlands Antilles, June 1995.

Putney, A.D. 1994. Caribbean. Pages 323-345 *in* McNeely, J.A., J. Harrison and P. Dingwall. (eds.). *Protecting nature: regional reviews of protected areas*. IUCN. Gland, Switzerland. 402 pp.

Revenue Generation for Caribbean Protected Areas

Annotated Bibliography

Ashton, R.E., Jr. and P.S. Ashton. 1993. An introduction to sustainable tourism (ecotourism) in Central America. Paseo Pantera Ecotourism Program. 103 pp.

Includes an excellent chapter on generating revenue for protected area management through tourism, with particular attention to user fees.

Baldares C., M.J. and J.G. Laarman. 1990. User fees at protected areas in Costa Rica. The FPEI Working Paper No. 48. The Forestry Private Enterprise Initiative. Southeastern Center for Forest Economic Research, North Carolina. 29 pp.

Analysis of the results of a willingness-to-pay survey undertaken in 1989 by the National Parks Service of Costa Rica for the purpose of revising its entrance fee structure.

Barzetti, V. ed. 1993. Parks and progress: protected areas and economic development in Latin America and the Caribbean. IUCN, Washington, D.C., USA. 243 pp.

Includes a chapter on financing protected area systems that summarizes the experience to date from Latin America and the Caribbean. Reviews the advantages and disadvantages of a range of financing mechanisms and strategies that have been used in the region.

Brown, N.A. 1995. Revenue generation for marine protected areas: the moorings system in the British Virgin Islands (BVI). CANARI Technical Report no. 105:1pp. Paper prepared for the Workshop on Revenue Generation for Protected Areas. Saba, Netherlands Antilles, June 1995.

Case study of the British Virgin Island's successful marine park user fee system, which has been in operation since 1991.

Butler, P. 1995. Trails: conservation that makes dollars and sense. Rare Center, Philadelphia, Pennsylvania, USA.

A step-by-step guide to the development of a trail system as a mechanism for revenue generation. Includes detailed guidance on siting, design, costing, financing, constructing, and managing a trail system.

Dillenbeck, M. 1994. National Environmental Funds: a new mechanism for conservation finance. *Parks* 4(2):39-46.

Overview of the benefits and limitations of national environmental funds as a mechanisms for financing conservation action. Includes brief descriptions of national environmental funds which support parks, including the Jamaica National Parks Trust Fund.

Dixon, J.A. 1993. Economic benefits of marine protected areas. *Oceanus* 36(3):35-40.

Through case studies from the U.S. Virgin Islands and the Netherlands Antilles, examines the requirements for balancing the economic and ecological benefits of protected areas. Includes a summary of the analysis presented in Fallon Scura and van't Hof 1993.

Dixon, J.A., Scura, L.F. and T. van't Hof. 1993. Meeting ecological and economic goals: marine parks in the Caribbean. *Ambio* 22 (2/3):117-125.

Through an analysis of case studies from the region, particularly that of the Bonaire Marine Park, demonstrates how the costs of management of a marine protected area can be determined and allocated to the beneficiaries.

Dixon, J.A. and P.B. Sherman. 1990. Economics of protected areas: a new look at benefits and costs. Earthscan Publications Ltd., London, UK and Island Press, Washington, D.C.. 234 pp.

An excellent analysis of the benefits and costs associated with the establishment and management of protected areas. Provides a good overview of the different techniques used to value goods and services provided by protected areas.

Dixon, J.A. and T. van't Hof. 1997. Conservation pays big dividends in the Caribbean. *Forum for Applied Research and Public Policy*. Spring 1997:43-48.

Through brief case studies from the region, demonstrates how effective revenue generation strategies, particularly those based on user fees, can result in improved management of protected areas.

Fallon Scura, L, and T. van't Hof. 1993. The ecology and economics of Bonaire Marine Park. The World Bank, Environment Department, Divisional Paper No. 1993-44. 48 pp.

A frequently cited report on a study of the benefits and costs of the Bonaire Marine Park, based largely on interviews with residents and park visitors. Provides a useful methodology for determining appropriate visitor fee levels.

Geoghegan, T. 1995. Financing Grenada's system of national parks and protected areas: case study of the development of a national revenue generation strategy. CANARI Technical Report no. 104:21 pp. Paper prepared for the Workshop on Revenue Generation for Protected Areas. Saba, Netherlands Antilles, June 1995.

Case study examines the evolution of a revenue generation strategy for Grenada's system of protected areas. The strategy was developed in 1993 as part of a consultancy to provide recommendations on the management of a new protected area. To date, only some aspects of the strategy have been implemented, but the case study is useful in that it clearly spells out the steps required in developing a revenue generation strategy.

Geoghegan, T. 1994. Financing strategies for protected areas in the insular Caribbean. *Parks* 4(2):28-38.

Most comprehensive published overview of the Caribbean experience in financing protected areas. Reviews the advantages and disadvantages of existing financing mechanisms and includes a framework for the selection of appropriate mechanisms. Examines the institutional requirements for establishment of a revenue generation system, and briefly looks at the roles of the private sector, local communities, and co-management arrangements.

Geoghegan, T. 1992. Financing wildland systems in the insular Caribbean. Paper prepared under contract to IUCN as a contribution to the IVth World Congress on National Parks and Protected Areas, Caracas, Venezuela, February 1992. CANARI Communication no. 29:15 pp.

Unpublished paper which formed the basis for the article by Geoghegan in *Parks* (1994) and for much of the chapter on financing protected area systems in Barzetti (1993).

Geoghegan, T., ed. 1989. Innovative funding strategies for protected areas. *Lesser Antilles Park and Protected Area News* 2(2). Caribbean Conservation Association and Eastern Caribbean Natural Area Management Programme.

Somewhat outdated but still useful review of potential funding mechanisms, including brief case studies from around the region.

Geoghegan, T. 1995. Revenue generation to sustain coral reef conservation. Pages 22-24 in A.J. Hooten and M.E. Hatzioles, eds. *Sustainable financing mechanisms for coral reef conservation. Proceedings of a workshop on environmentally sustainable development. Proceedings Series No. 9.* The World Bank, Washington, D.C. CANARI Contribution No. 224.

Paper presented at a World Bank workshop on sustainable financing mechanisms for coral reef conservation. Draws lessons from successful experiences from the region in the implementation of marine protected area user fees, and emphasizes the need for close collaboration with commercial users and non-governmental agencies.

de Groot, R.S. 1992. Functions of nature: evaluation of nature in environmental planning, management and decision making. Wolters-Noordhoff, Netherlands. 315 pp.

A detailed overview of socio-economic evaluation of environmental functions and its use in environmental planning and decision-making. Includes a case study applying the methods presented to the Galapagos National Park.

IUCN, The Nature Conservancy and WWF. 1994. Report of the First Global Forum on Environmental Funds. Santa Cruz, Bolivia. 30 May - 2 June 1994. IUCN, Washington, DC. 128 pp.

Discusses the role of national environmental funds in financing conservation programmes, including protected areas, and reviews the requirements for establishing and managing such funds. Includes summary descriptions of existing national environmental funds throughout the world, including those in Jamaica (Environmental Foundation of Jamaica and the Jamaica National Parks Trust Fund), the Dominican Republic (Pronatura), and Belize (Belize Protected Area Conservation Trust).

Leclerc, A. 1997. Générer des revenus chez soi, une approche souhaitable au financement durable des programmes de conservation. Paper presented at the workshop on the management of protected areas and the financing of biodiversity conservation in Haiti. 9 pp.

Practical suggestions and guidelines for revenue generation for protected area management, based on experiences in Canada and elsewhere. In French.

Lindberg, K. and J. Enriquez. n.d. An analysis of ecotourism's economic contribution to conservation and development in Belize. Vol. 2: Comprehensive report. World Wildlife Fund. 110 pp.

An analysis of the existing and potential economic impact of tourism in Belize's protected areas, and recommendations for optimizing the tourism's contribution to protected area management. Includes detailed recommendations on the development and components of a revenue generation strategy for the country's protected areas.

Mahony, R. 1992. Debt for nature swaps: who really benefits? *The Ecologist* 22(3):97-104.

A critical analysis of the impact of debt-for-nature swaps on conservation action and debt reduction in developing countries.

Martin, A.M., W. Terrence and D. Russell. 1995. Nelson's Dockyard National Park, Antigua, W.I.: a case study in economic diversification. CANARI Technical Report no. 107:21 pp. Paper prepared for the Workshop on Revenue Generation for Protected Areas. Saba, Netherlands Antilles, June 1995.

Case study of the development of a self-financing strategy for a national historic park in Antigua, based on leases, concessions, and a range of user fees, as well as bi-lateral loans and grants for capital investment. Describes in detail the innovative institutional structure put in place to manage the system. The financing strategy has allowed the Nelson's Dockyard National Park to develop into one of the major tourism attractions in the region.

McCalla, W. 1997. The Belize Protected Areas Conservation Trust: a case study of use of its financial mechanisms. Unpublished paper. 10 pp.

Describes the system that was established in 1996 to finance the development and management of Belize's system of protected areas. The system includes an innovative conservation fee charged to all visitors to Belize upon their departure from the country.

McNeely, J.A. 1988. Economics and biological diversity: developing and using economic incentives to conserve biological resources. International Union for Conservation of Nature and Natural Resources. Gland, Switzerland. 236 pp.

While not directly relevant to the subject of financing protected areas, provides guidelines on stimulating community involvement in management and in one chapter discusses funding mechanisms.

Munasinghe, M. and J. McNeely (eds.) 1994. Protected area economics and policy: linking conservation and sustainable development. World Bank and World Conservation Union (IUCN). Washington, D.C. 363 pp.

Papers presented at a 1992 workshop on the economics of protected areas. Subjects covered include economic policy and incentives, economic valuation of protected areas, and ecotourism and funding mechanisms.

Pearson, M. 1995. Sustainable financing of protected areas in southern Sinai. Pages 72-77 in A.J. Hooten and M.E. Hatzios, eds. Sustainable financing mechanisms for coral reef conservation. Proceedings of a workshop on environmentally sustainable development proceedings series no. 9. The World Bank. Washington, D.C.

Case study of the successful implementation of a hotel room tax developed through consultation with the tourism sector in the southern Sinai in Egypt. In conjunction with a national park entry fee, the hotel tax will fully finance the management of a conservation area of over 12,500 km².

Putney, A.D. 1994. Caribbean. Pages 323-345 in McNeely, J.A., J. Harrison and P. Dingwall. (eds.). Protecting nature: regional reviews of protected areas. IUCN. Gland, Switzerland. 402 pp.

Includes a useful table showing the funding mechanisms that have been used for protected area management in each country of the insular Caribbean. Although prepared in 1991, the table is still largely accurate.

van't Hof, T. and K.C. Buchan. 1995. A self-financing marine park: the Saba case. CANARI Technical Report no. 106:10 pp. Paper prepared for the Workshop on Revenue Generation for Protected Areas. Saba, Netherlands Antilles, June 1995.

The most current of several case studies on the financing strategy that has been implemented at the Saba Marine Park, which made it the world's first fully self-financing marine protected area. The history of the implementation of the system can be further traced in the two documents that follow.

van't Hof, T. 1989. Making marine parks self-sufficient: the case of Saba. Paper presented at the Caribbean Conference on Economics and the Environment. Barbados, 6-9 November 1989. 11 pp.

Walker, S. 1992. Attempt at financial self-sufficiency: the case of the Saba Marine Park, Netherlands Antilles. Paper presented at the IVth World Congress on National Parks and Protected Areas. Caracas, Venezuela. 10-21 February 1992. 15 pp.

Walters, R. 1991. The Brimstone Hill Fortress National Park: how it is managed. Pages 133-139 *in* Cambers, J. (ed). Proceedings of the Regional Symposium on Public and Private Cooperation in National Park Development. Tortola, British Virgin Islands, August 23-25, 1991. British Virgin Islands National Park Trust. 139 pp.

History of the development and management of an important historic site in St. Kitts as a privately managed and self-financing national park.

January 1998