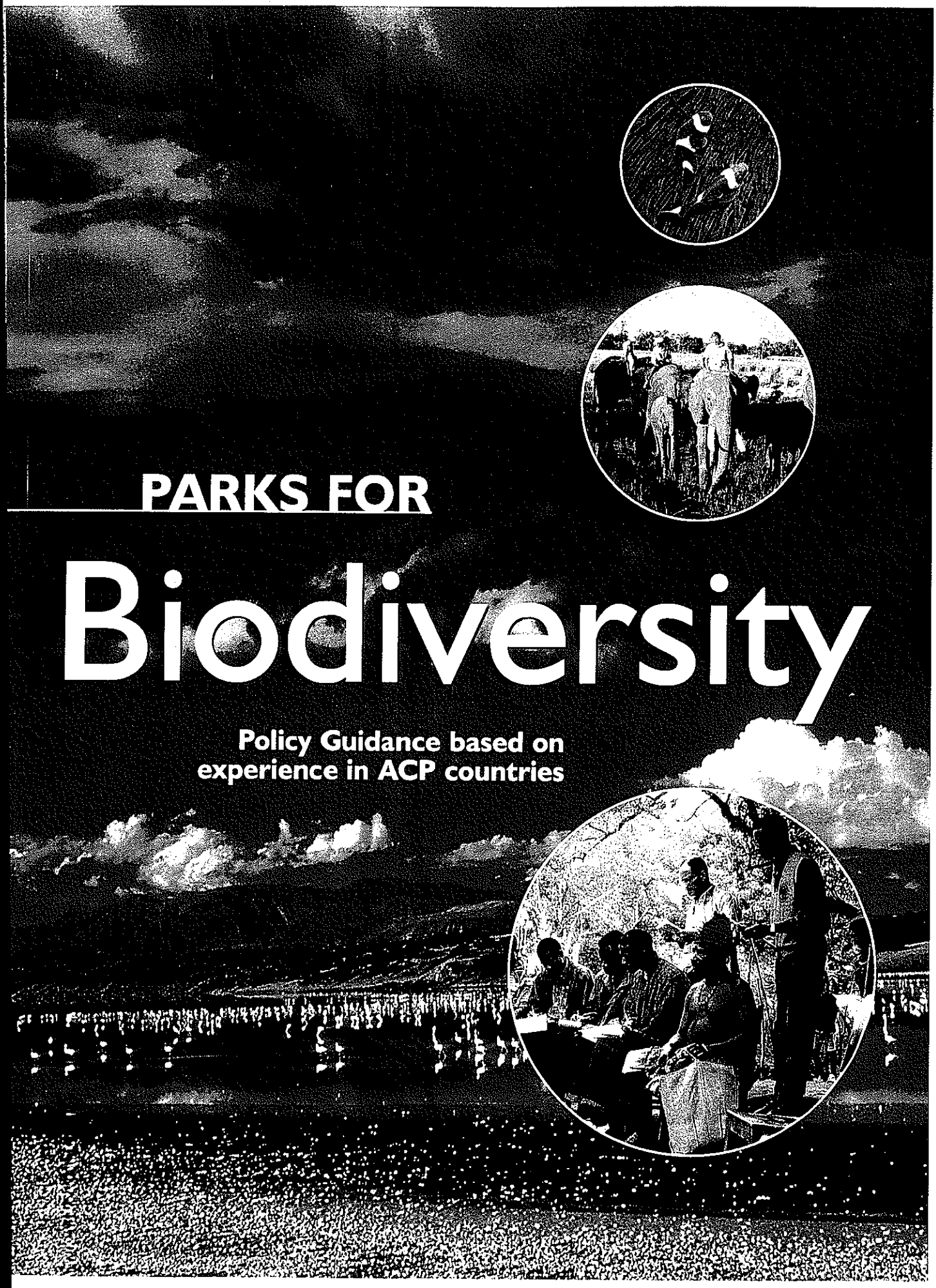


PARKS FOR Biodiversity

Policy Guidance based on experience in ACP countries

European Commission

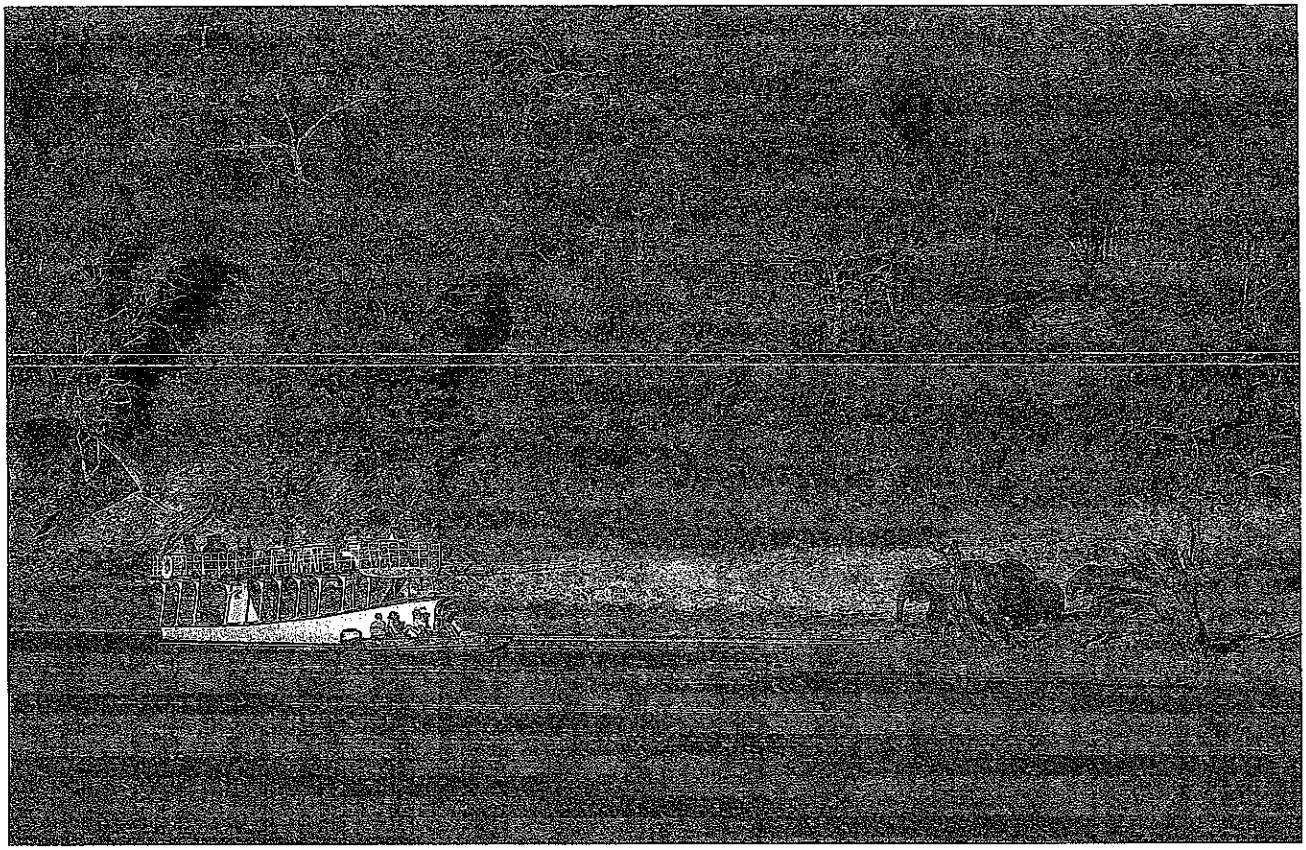
IUCN
The World Conservation Union

Parks for Biodiversity

Policy Guidance based on experience in ACP countries

Prepared by the World Commission on Protected Areas of IUCN – The World Conservation Union

European Commission, Directorate-General for Development (DGVIII), Brussels, 1999



Game viewing in Chobe National Park, Botswana

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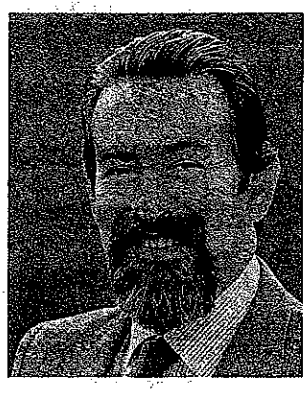
Foreword

by Professor J. Pinheiro, Member of the European Commission



Under the Lomé Convention, the European Union supports the ACP (Africa – Caribbean – Pacific) States in their efforts to achieve "the protection and enhancement of the environment and natural resources, the halting of the deterioration of land and forests, the restoration of ecological balances, the preservation of natural resources and their rational exploitation." Since 1977 the European Union has provided over 150 million Euro to support ACP countries in their efforts to establish and manage protected areas. In addition, Member States of the European Union support protected areas through their own aid budgets.

To help plan its development assistance to protected areas in ACP countries, the European Commission asked IUCN, the World Conservation Union, to provide policy guidance for support to protected areas, by drawing on best practice from the project experience of donors and partners in Africa, the Caribbean and the Pacific. The work was carried out by IUCN's World Commission on Protected Areas (WCPA, formerly CNPPA), which is a network of some 1300 protected area professionals around the world.

IUCN presented the European Commission with the three regional strategies, a set of case studies and associated documents. The Commission was keen that this material should be made more widely available, and asked IUCN to prepare a single publication summarizing the main points. This report is the result.

The title of this publication deliberately includes the word biodiversity. In this report biodiversity is treated as a point of emphasis: protected areas have many other functions besides conserving biodiversity – they safeguard vital water supplies for example – and are essential as part of the overall development path of a nation. But biodiversity conservation is the primary role of protected areas, and protected areas are the most important means of conserving biodiversity. Moreover, under the Convention on Biological Diversity, nations accept a commitment not only to conserve their own biodiversity but also to help each other and cooperate in this task.

The conservation of biodiversity in protected areas will only succeed in developing countries if it is part of an overall development strategy of poverty alleviation. The protected areas themselves usually have to have multiple goals to justify their existence; a typical protected area in an ACP country may be trying to balance tourism, water conservation and local use of resources, for example, with conservation of biodiversity.

Events in the protected areas field are moving very quickly and many traditional concepts have been radically overhauled. For example, many now consider that the limiting factors in biodiversity conservation in general and protected area management in particular are social rather than scientific or administrative: how to win the support of local people, and how to ensure the benefits they have received from the area in the past are maintained and enhanced rather than removed. As we have also learnt from our own analyses, capacity building is the name of the game.

We hope that this report will help our many partners in the vital but far from easy task of supporting biodiversity conservation in ACP States, and will be a useful contribution to the rather scanty literature on this important topic.

Brussels, June 1999

Contents

Executive Summary

Protected areas are part of humanity's most basic concerns. They may be defined as areas of land and/or sea dedicated to the protection of biological diversity and of natural and cultural resources, and managed through legal and other effective means. They include not only national parks, nature reserves and protected landscapes but also more recent approaches such as sustainable use reserves and wilderness areas.

Protected areas have many values. In addition to conserving biodiversity and cultural assets, they protect watersheds and coastlines, provide destinations for nature-based tourism, ameliorate local climates, provide natural products, sequester carbon, and provide sites for research. They can fulfil an important development function as nodes for a special kind of development that respects both people and nature and the benefits of which spill out into neighbouring areas.

The many benefits of protected areas are reflected in the numerous stakeholders, in particular from the public sector, the commercial sector, non-governmental organizations, research institutions and local communities. The challenge for protected area managers is to build relationships with stakeholders, partly by providing benefits to them, and so build the political and economic support needed to maintain the conservation status of the area concerned without degrading its natural assets.

The key principles for effective protected area management to achieve conservation objectives are:

- Plan and manage protected areas in their wider context;
- Involve and empower local communities;
- Strengthen the capacity to manage protected areas;
- Strengthen the funding available to protected areas;
- Encourage and utilize regional and international cooperation.

To succeed and be sustainable, most protected areas in ACP countries need external funding. Many are perilously underfunded. Experience shows the need for donors and partners to:

- Plan for long-term financial sustainability from the beginning;
- Make institution-building a part of every project;
- Develop professional and managerial capacity;
- Ensure that local communities participate fully in both the development and the implementation of the project, so that a sense of ownership is achieved;
- Extend the time frame of projects;
- Give more emphasis to the role of local NGOs, community-based organizations and other non-traditional partners in implementing projects;
- Wherever possible, use local expertise as project leaders and technical experts;
- Build more effective monitoring and feed-back mechanisms into projects;
- Adapt a process approach to allow for adjustments as the project progresses;
- Increase the speed and efficiency of project approval, fund release and procurement procedures.

Africa

African nations have created some 2 million sq. km of protected areas, a massive area ***four*** times the size of Spain. These protected areas are essential in conserving the biodiversity of Africa, but do have a high social and economic cost. The time of greatest growth in protected areas was in the 1960s, when the economic situation of African nations was much more favourable than it is today. In the 1990s, economic downturns and structural changes have led to massive reductions in government revenues. In Africa, protected areas are traditionally funded from government budgets, and so their funding has greatly declined too.

The Masai Mara, a large national reserve in Kenya famous for its wildlife.

African protected areas have received much international support. Sixteen African countries received as much as $100 m in 1996 for their protected areas. The experience of aid projects has been mixed, and the combined 'conservation and development' projects for individual protected areas have had a disappointing record. Many African protected area initiatives have responded to donor suggestions rather than emerged from local leadership, and project cycles may have been too short.

Since in most African countries the State owns 90% or more of the land, governments have been able to establish large protected areas. However, until recently there have been few incentives to work with local communities, some of whom have been moved from their traditional lands in the past, a process that created considerable resentment. Increasing rural poverty, augmented by population growth, allied to declining conservation budgets, means that the traditional approach to protected areas – of large areas "set aside" for wildlife conservation – is no longer appropriate or sustainable. Nor are their institutions well adapted to cope with rapid structural change. Protected area agencies are seen by African governments as a relatively low priority, and tend to be too centralized. Their staff structures may be out of date, staff training inadequate, and their enabling legislation too restrictive.

A promising new approach is emerging, based on the concept that protected areas must position themselves as nodes for rural development, contributing to development as well as conservation objectives. The key change is from single to multiple use. The trend is now to try and accommodate sustainable use in protected areas, such as animal harvesting, pastoralism, gathering of plant products and bee-keeping, while maintaining conservation values. Tourism can bring many benefits but tends to be most successful in the savannah areas of Eastern and Southern Africa; forest parks (unless they have gorillas) may have greater biodiversity but find it much harder to attract tourism revenue.

A key issue is how protected areas can generate more revenue. To do this, protected area agencies need freedom to raise funds in as many ways as possible. Reducing costs is equally valuable; co-management, in which local people jointly manage the site with conservation agencies, is one option being increasingly tried in Africa. To cope with this new agenda, agencies need to be more flexible and entrepreneurial. Protected area managers need to augment their considerable wildlife skills with more experience in social and business skills. The experience of the many and fast expanding private reserves in Africa is instructive.

With one or two possible exceptions, the revenues earned from tourism and wildlife use in Africa's protected areas will not be sufficient to cover day-to-day operating costs in the foreseeable future, and so continued external help is needed with the aim of safeguarding the present protected area network and making it financially and socially sustainable. Donor interventions should focus on the over-riding twin objectives of enabling parks to coexist in harmony with local communities and of

covering their costs. Protected area institutions need overall strengthening and modernizing. Local communities, the private sector and NGOs should be more involved and should be given increased access to donor funding.

The Caribbean

In contrast to Africa, most protected areas in the Caribbean have been created in the last 20 years, although the oldest goes back to 1765. The 1990s have been a good time for conservation in the region, with a flurry of initiatives to create protected areas following growing environmental awareness after the Rio 'Earth Summit'.

In the Caribbean, protected areas will only be accepted if they contribute to development. Their strongest economic contribution is by provision of clean water to towns and cities, but they also help maintain fisheries by conserving nursery areas where fish breed, are essential for tourism (which is the main growth industry in the Caribbean), and conserve vital biodiversity. They are an important symbol of nationhood and national pride.

So far there are about 640 protected areas in the Caribbean, with rapid growth in recent years. Over 100 of them are marine, and are of growing importance in conserving vital fisheries. Yet the network is uneven and far from complete, with gaps for example in Guyana, Haiti, Trinidad and Tobago, and some of the Lesser Antillean islands. Biological assessments are now giving a detailed picture of the protected areas needed to conserve the full range of biodiversity, but on the whole national and regional strategies to establish protected areas have not been successful.

Institutions to manage protected areas in the region vary greatly, but most are constrained by lack of staff and resources. Most Caribbean governments do not have staff available for conservation tasks, so a common trend is to devolve responsibility to, or share it with, NGOs or other bodies; for example the Bahamas National Trust is entrusted with the management of that country's entire protected areas network. Funding mechanisms also very greatly, with growing interest in the use of Trust Funds to cover recurrent costs. A range of external organizations, including the European Commission, provide support; support from the European Commission concentrates more on Guyana, Belize and Suriname than on the insular Caribbean.

In the Caribbean, establishment of marine protected areas lags behind that of terrestrial parks, as elsewhere in the world, but is seen as of growing importance because of the contribution that marine protected areas can make in maintaining and restoring fish stocks.

To succeed, protected areas in the region will have to fulfil multiple functions and support a range of sustainable uses. Tourism is a key use, but is a double-edged sword that brings great dangers to the natural environment. The Caribbean approach to protected areas demands a high level of public participation and support, especially by local people. Difficulties include the underlying narrowness of Caribbean economies, the lack of popular awareness about national parks, and a weak knowledge base.

The main limiting factor to the development of protected areas in the region is funding to pay for jobs. Donors should encourage ways of generating sustainable revenue for parks and continue to provide support until that revenue can take over; protected area managers in the region identify Trust Funds as an important component of the funding package. It is important too to encourage community participation in making the decisions that affect the people involved and to design protected areas that contribute directly to economic, social and cultural development at the community level.

Technical assistance projects should include a strong element of institution-building. In the Caribbean, partnerships are the way forward, since none of the major actors in protected area management – government agencies, international organizations, NGOs, local communities or the business sector – can provide all the resources needed to manage protected areas on their own. Help with strategic planning, personnel management, training within the region and improving the information base may also be appreciated. Encouraging regional cooperation, traditionally weak in the Caribbean, is also seen as important.

The Pacific

The Pacific is a region of small land masses scattered over the world's largest ocean. The economies of its countries are small and fragile, yet populations are growing quickly. Because of their small size, Pacific nations are especially vulnerable to unwise development encouraged from outside. As a result, species and habitats have been and are being lost very fast, especially in the last 20 years.

At the time of the Rio 'Earth Summit', there were virtually no effective protected areas in the Pacific outside territories such as Hawai'i. Attempts to set up conventional protected areas had not succeeded, principally because in the Pacific, in contrast to Africa, most of the land is owned not by the State but by local communities under traditional systems that are quite different from the practice in most other countries. Responding to this situation, in the early 1990s, Pacific countries developed the South Pacific Biodiversity Conservation Programme (SPBCP) through the South Pacific Regional Environment Programme (SPREP). The Programme is establishing Community-based Conservation Areas, with funding by GEF. This is promising to be a great success and is widely seen as the best way forward for protected areas in the region.

By the end of 1997, 12 countries had established or were establishing 17 Community-based Conservation Areas. The aim in each site is both to conserve biodiversity and to allow sustainable use of natural resources. The sites have a firm development focus, such as by maintaining water supplies, conserving fish stocks, and acting as key sites for ecotourism, which provides alternative sources of income from lodges and walking trails. The work is supported by National Environment Management Strategies (NEMS) and by a four-year Action Strategy for Nature Conservation in the South Pacific. However, external support to the programme, other than from GEF, has been small.

Moreover this network, and the other protected areas in the region, so far do not yet cover the ecosystems and species of the region. Coverage is particularly weak for marine ecosystems, which are of paramount importance in the Pacific. Socio-economic pressures are a major constraint on conservation of biodiversity, even through the Community-based Conservation Areas.

Pacific nations need external help to continue funding the establishment of Community-based Conservation Areas and other marine protected areas. Emphasis should be put on encouraging income-generating activities. The community should naturally be involved in all projects. Strengthening institutions, involving NGOs, increasing training opportunities, improving the information base, creating better public awareness – these should all be part of the project approach.

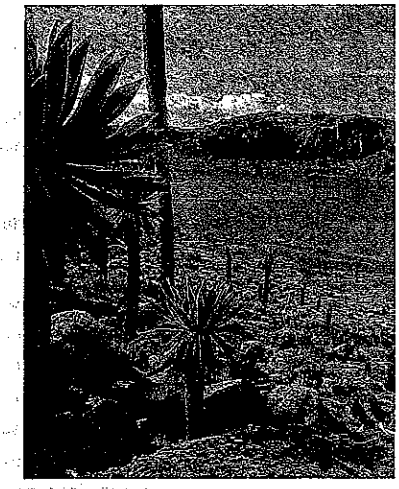
An area of natural forest is lost on Vanuatu. Whereas there are good opportunities for biodiversity conservation on some islands, notably Papua New Guinea, the Solomons and New Caledonia, options are rapidly foreclosing on most others.

PART I

Chapter 1: What are Protected Areas ?

Context

Protected areas are not an end in themselves, but are part of humanity's most basic concerns. Simply stated, they are tools for development – a special kind of development that respects both people and nature; a development conceived to meet the needs of today without sacrificing the potential for tomorrow.



Inside the Bale Mountains National Park, Ethiopia

As this report shows, protected areas contribute to development in many ways – as a sustainable supplier of natural products, as a store of valued biodiversity, as protectors of vital water supplies, as centres for tourism, and as cultural assets, for example. In the best cases, the protected area can act as a motor for development, attracting to an area investment and expertise, the benefits of which spread out into the neighbourhood to help alleviate poverty. This is the context in which protected areas become a priority for development assistance.

For, if protected areas are to contribute fully to sustainable development, they must meet people's needs. People are both the creators and the beneficiaries of development. Food, clothing, shelter and good health are the most basic of needs, and ones to which protected areas contribute. But these material benefits cannot be widely enjoyed unless accompanied by social harmony, education, security, recreation, cultural expression and artistic creation. Protected areas contribute to all of these.

Definition

Traditionally viewed as national parks, nature reserves and protected landscapes, today the term 'protected area' encompasses more recent approaches such as sustainable use reserves, wilderness areas and World Heritage sites. Although the term 'protected area' is used throughout in this report, 'conservation area' would probably be a more suitable term.

IUCN defines a protected area as:

> "An area of land and/or sea especially dedicated to the protection of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means".

IUCN divides protected areas into six types, depending on their objectives:

Category I – **Protected area managed mainly for science or wilderness protection** (Strict Nature Reserve/Wilderness Area);

Category II – **Protected area managed mainly for ecosystem protection and recreation** (National Park);

Category III – **Protected area managed mainly for conservation of specific natural features** (Natural Monument);

Category IV – **Protected area managed mainly for conservation through management intervention** (Habitat/Species Management Area);

Category V – **Protected area managed mainly for landscape/seascape conservation and recreation** (Protected Landscape/Seascape);

These categories were adopted at the 19th Session of the IUCN General Assembly, Buenos Aires, January 1994, slightly amending an earlier, long-standing set of categories. A fuller explanation, with examples of protected areas in each category, is given in IUCN (1994), *Guidelines for Protected Area Management Categories*, prepared by WCMC and CNPPA, published by IUCN.

Box 1

WHAT IS BIODIVERSITY ?

Biological diversity (biodiversity for short) is the variability of life in all its forms, levels and combinations. This diversity occurs at three principal levels:

- **Ecosystem diversity** – the variety and frequency of different habitats or ecosystems, such as rainforests, coral reefs and grasslands;
- **Species diversity** – the frequency and diversity of different species;
- **Genetic diversity** – the frequency and diversity of different genes and/or genomes, in other words the genetic diversity within each species.

This definition is very broad. It includes marine and aquatic life, as well as life on land. It includes microorganisms.

The term '**genetic resources**' is used for those plants and animals that are used by people or are of potential value. It includes, for example, all plants used as food and medicines. It includes their wild relatives, which are vital to plant breeders as a source of attributes such as resistance to pests and diseases. It also covers plants (and animals) at all stages of domestication, including the land-races of crops (varieties developed in traditional farming systems by selection).

The importance of genetic diversity is that the unit of conservation is normally the individual plant or plant population, since the valuable characteristic needed for human use, such as resistance to a pest or disease, or medicinal potency, may occur not across the whole species but in only a few individuals of that species.

Category VI – **Protected area managed mainly for the sustainable use of natural ecosystems** (Managed Resource Protected Area).

The categories reflect a gradient of management intervention. In Categories I and II, natural processes are paramount and the manager's job is essentially to ensure these processes continue unharmed by human action. (The main difference between Category I and II is that in Category I no visitation is allowed whereas it is allowed in the more commonly used Category II.) In Category IV, in effect the managed nature reserve, the manager intervenes so as to conserve one set of species over another. Category V is about protecting lived-in landscapes, with farms and other forms of land-use. The new Category VI, the sustainable use reserve, is a protected area deliberately set up to allow use of natural resources.

In Africa, Category II is the traditional form of protection, in the form of national parks, but increasingly this is being blended with forms of Category VI, to allow sustainable use by local people of some of the products. In the Caribbean, protected areas are of many types, but because of the pressures on land, a closely zoned mixture of categories is the usual approach. The Pacific region is pioneering a new approach, the Community-based Conservation Areas, that are innovative examples of Category VI but with a strong protective element.

The values of protected areas

Protected areas have very important economic and social functions in conserving biological diversity. This means maintaining the diversity of ecosystems, species and genes that are a fundamental part of the heritage of a region. This diversity is used to meet vital human needs, for example in agriculture and medicine, by providing new crops and raw materials for biotechnology. It also enables evolution to continue.

In addition protected areas also:

- **Protect watersheds** for downstream hydroelectric, irrigation and water supply installations;
- **Protect coastlines** against damage from storms (especially coral reefs and mangroves), and absorb heavy rainfall (especially wetlands and forests);
- Provide destinations for **nature-based tourism** and provide **sites for recreation** to nearby communities;
- **Ameliorate local climate conditions, control soil erosion and recycle nutrients;**
- Can provide **a wide range of natural products**, such as game meat, medicinal plants and non-timber forest products, on a sustainable basis;
- **Sequester carbon**, so contributing to global efforts to counter climate change;
- **Provide sites for scientific research** on a wide range of ecological, social and economic topics;
- **Conserve culturally important sites and resources**, and demonstrate the nation's interest in its natural heritage (list prepared by J.A. McNeely).

In addition, protected areas are often **home to communities of people** with traditional cultures and irreplaceable knowledge of nature.

These benefits tend to be delivered at different levels: carbon sequestration, for example, is a benefit principally to the world as a whole, whereas forest products are mainly a benefit to local communities. A key theme in the regional sections that follow is that most of the benefits, at least those captured in economic terms so far, tend to be at national and global levels, whereas much of the costs, especially the opportunity costs, tend to be borne locally. The report therefore suggests ways to redress this balance by increasing the benefits to local communities. The principle is of equitable sharing, so that local people, many of whom may be living in poverty, receive an appropriate share of the benefits in return for the assets they may have foregone.

Finding ways for the international community to contribute to the costs of protected areas because of their global values – in effect paying a rent for the global benefits – remains a challenge to be met. The Convention on Biological Diversity provides a vital context and justification for considering these questions.

Stakeholders

The many benefits of protected areas are reflected in the numerous stakeholders. These can be grouped into five:

- **The public sector** – for example, electricity providers who use hydropower that depends on protected areas upstream, water companies who have similar needs, health ministries who may need reservoirs of medicinal plants.
- **The commercial sector**, who may be interested in managing operations in protected areas for profit, in exploiting finds in protected areas, especially through biotechnology, and in sponsorship.
- **Non-governmental organizations** who have a commitment to conservation, and who can help with publicity, technical advice, funding and, at times, management tasks undertaken under contract.
- **Research institutions**, who may wish to use protected areas for research and monitoring but can also provide scientific advice to management.
- **Local communities**, eager to make use of the resources of the protected area, whether directly through collecting produce or indirectly through tourism, in pursuit of sustainable livelihoods.

In the search to cover management costs and to provide benefits to local people, the management of a large protected area is tending to become a collaborative joint venture involving a range of organizations from these sectors, drawing on the strengths of each. For example, local people may be able to deal with many day-to-day threats better than government agencies can, but only governments may be able to resist major abuses such as mining or commercial timber extraction.

Care, however, needs to be taken that in this modern inclusive approach, the core values of the protected area – the values it was created to protect – are not degraded. First and foremost, protected areas must be managed to maintain their ecological integrity, so they can continue to deliver their many benefits to society.

Box 2

Protected Areas and the Biodiversity Convention

"The Convention on Biological Diversity has marked a significant shift in the perception of protected areas by governments. It has linked protected areas to larger issues of public concern such as sustainable development, traditional knowledge, access to genetic resources, national sovereignty, equitable sharing of benefits, and intellectual property rights. Protected area managers are now sharing a larger and more important political stage with agricultural scientists, NGOs, anthropologists, ethnobiologists, lawyers, economists, pharmaceutical firms, farmers, foresters, tourism agencies, the oil industry, indigenous peoples, and many others. These competing groups claim resources, powers, and privileges through a political decision-making process in which biologists, local communities, the private sector, and conservationists have to become inextricably embroiled". (McNeely & Guruswamy, 1998).

The Convention, now ratified by 172 States, balances three aims:

- The conservation of biological diversity;
- The sustainable use of the components of biological diversity;
- The fair and equitable sharing of benefits arising from the use of genetic resources, including:
  - Appropriate access to genetic resources taking into account all rights over those resources;
  - Transfer of relevant technologies; and
  - Funding.

The Articles on the conservation of biodiversity include provisions requiring Parties to:

- Establish a national system of protected areas;
- Develop guidelines for the selection, establishment and management of protected areas;
- Rehabilitate and restore degraded ecosystems;
- Promote the recovery of threatened species;
- Promote environmentally sound development in areas adjacent to protected areas;
- Identify ecosystems, species and genomes important for conservation and sustainable use.

The interim funding mechanism for the Convention is the Global Environment Facility (GEF), administered by the World Bank and UNDP.

Source: J.A. McNeely, *Mobilizing broader support for Asia's biodiversity: how civil society can contribute to protected area management*. Asia Development Bank, Manila, in press.

Extent

At present there are some 27,400 protected areas covering over 13 million sq. km – almost 8% of the earth's land surface. Virtually every country in the world has some protected areas and recent evidence shows that the rate of growth of protected areas is not slowing. This indicates the commitment of governments to ensure that this generation passes on to the future a world as diverse and productive as the one we enjoy today.

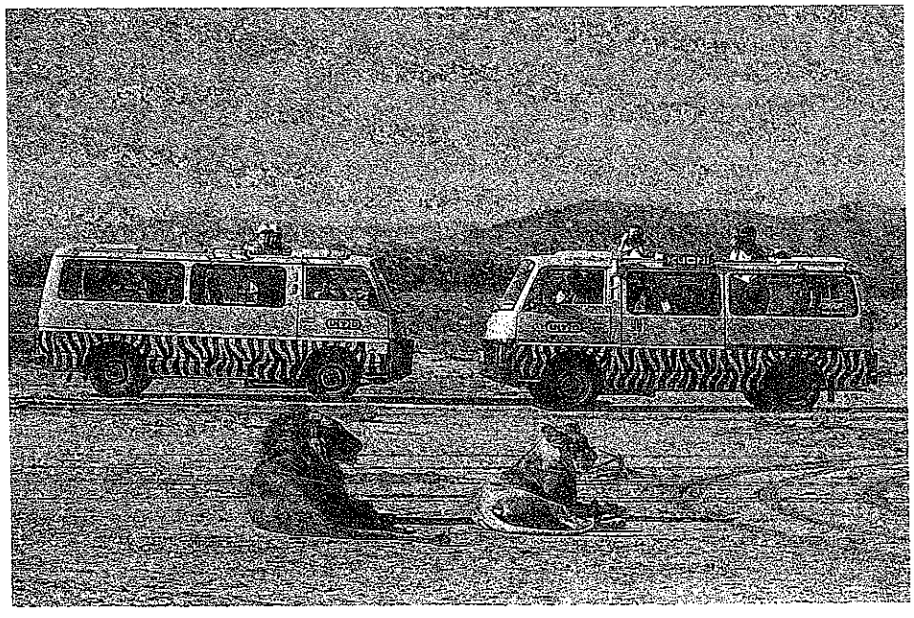
At sea, however, establishment of protected areas has lagged far behind that on land. This is particularly true in the Pacific, much the world's largest ocean, where except in a few countries and territories, marine protected areas barely exist. Only now are proposals being drawn up for the very large, multiple-use marine protected areas that are so clearly needed. This is clearly a very large gap in the global coverage of protected areas.

Threats

Despite the numerous initiatives taken at international, national and local levels in support of protected areas, more such areas are needed in many countries, existing protected areas everywhere are under threat, and these threats mount year by year.

The main dangers are the ever-increasing demands for land and resources, much of it to meet basic human needs in poorer countries. Pollution, commercial exploitation of resources, climate change and excessive tourism add to the pressures. Too often protected areas lack political support and are poorly funded. As this report shows, funding is an ever-present problem, especially in Africa which has a large and long-established system of protected areas.

So there is an increasing credibility gap. On the one hand, the values of protected areas are clear, and indeed more and more such areas are being set up: on the other hand, progress is thwarted by the even greater pressures placed on these areas and by the limited financial resources available for their management. The rhetoric which often accompanies the establishment of protected areas has to be contrasted with the reality of there being many "paper parks" – protected areas legally in existence but not functioning in practice. This is the great challenge facing the protected areas profession in the next millennium.

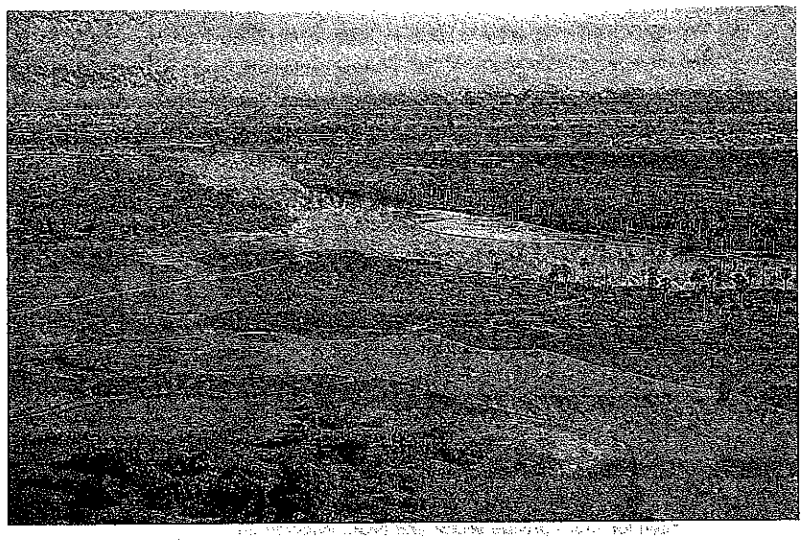


Amboseli National Park, Kenya. Sometimes national parks can become too popular for their own good and the visitors themselves become a threat to the park's ecological integrity.

Chapter 2: The Principles of Protected Area Planning and Management

The following principles may help guide the establishment and management of protected areas in ACP countries. They are derived from the Caracas Action Plan, the global framework for collective action on protected areas that was adopted at the IVth World Congress on National Parks and Protected Areas (Caracas, Venezuela, 1992). This gathering brought together over 1800 protected area professionals from 130 countries.

Of course no general prescription will be right for every country. Each country needs its own action plan and each protected area its own unique set of measures. However, the Caracas Congress did agree some particular targets for collective action and worldwide cooperation, as outlined in the five points below. Experience since 1992 has further emphasized the importance of these approaches (see Box 3).



Selous Game Reserve, Tanzania, is the largest area designated for wildlife in East Africa. After losing most of its elephants and rhinos to illegal hunters, it has been at the centre of efforts to channel revenues from legal hunting to local communities.

1. Plan and manage protected areas in their wider context

Protected areas should not be seen in isolation. Regions and nations exist in an interdependent world in which environment and development are increasingly linked. And different sectors of environmental policy are connected to each other. Thus protected areas should be planned and managed as an integral part of the wider political, economic and social systems.

1.1 Integrate protected area systems into larger frameworks for sustainable development

Many countries, especially developing countries, are preparing, or have prepared, National Environmental Action Plans, National Conservation Strategies or National Strategies for Sustainability, and, more recently, the Biodiversity Action Plans or Strategies required under the Biodiversity Convention. By requiring an intersectoral approach to conservation planning, with political impetus from the highest level, these have proved to be good ways of linking protected area planning both to other environmental policies and to the wider priorities for the nation's economic and social development.

Protected areas can greatly benefit from this linkage. The health ministry may be interested in supporting protected areas as genetic reservoirs of medicinal plants used in primary health care. The ministry responsible for water will need to make sure mountain forests are effectively protected – most protected areas with mountain forests in the tropics are vital water catchments for towns and cities. And the tourism ministry will wish to see attractive sites for wildlife and scenery well protected with good visitor facilities to boost foreign earnings.

Protected areas should therefore be fully considered in the development process. In the case of large development projects, environmental impact procedures should be used to identify possible damage to existing protected areas, damage which can then be avoided or at worst mitigated. For example it may be possible to create or expand protected areas as part of large infrastructure projects, especially to protect the watersheds of large hydro-dams.

Box 3

Recent trends in protected area management

The World Parks Congress in Caracas, Venezuela (1992), set out a number of objectives and high priority actions for protected areas worldwide in The Caracas Action Plan, the main source for this chapter. Over five years of concerted effort have proved the validity of the Plan, but experience since 1992 has led protected areas managers to give even more emphasis to:

- **Bioregional planning**, as an integrated approach to link protected area management to use of land and water in the surrounding landscape, with emphasis on linking up protected areas into biological corridors;
- **Co-Management**, covering not only good relations with the local community but also their active involvement in the planning and management of the area.
- **The changing structure of management**: The trend has been for more private sector and NGO involvement in the management of protected areas, following devolution of government functions as part of democratization and other trends.
- **Financial sustainability**: A greater emphasis on the need for protected areas to be financially self-sustaining, by generating their own income and not relying on government budgets as their main source of funding.
- **The use of protected area models in which people live and work**, as a way of combining conservation of biodiversity with continuation of local livelihoods and services. As a result, protected areas in Category V (protected lived-in landscapes) and Category VI (sustainable use reserves) are increasingly used.
- **The Convention on Biological Diversity**, agreed soon after Caracas and now ratified by most countries, which has raised biodiversity and protected areas up the political agenda. See Box 2 on page 9 for a fuller discussion.

1.2 Plan and manage protected areas as part of the surrounding landscape

At a more local level, it is vital to plan and manage protected areas as part of the wider landscape. By adopting effective land-use planning systems which control construction, building, engineering, agriculture, forestry, mining, etc., countries will reinforce the protection given to their natural and cultural resources, both within and outside protected areas.

Integration with the wider landscape can include maintaining corridors of semi-natural or natural habitat between protected areas and the creation of support zones (often previously called buffer zones) around them. It may be desirable too to restore degraded ecosystems inside the protected areas and extend this work to neighbouring areas.

Planning should also develop ways to ensure that any use of natural resources by the local community is equitable and sustainable, ideally not only inside but also outside the protected area.

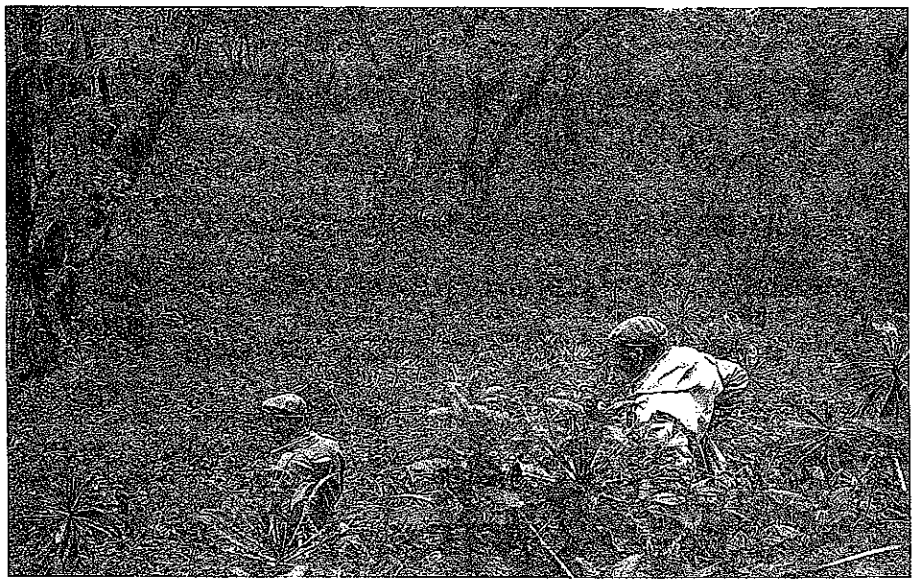
1.3 Where appropriate, develop system plans for protected areas

Each country should treat its protected areas as a system, with different parts providing different benefits to different stakeholders. The tool for doing this is the system plan, which sets out the nation's plans and policies to strengthen the management and extend the coverage of its network of protected areas.

System plans should:

- Outline the key protected area issues and the approach to be taken;
- Identify the strengths and weaknesses of the existing protected area system, and identify the main threats;
- Set out objectives for each protected area;
- Identify where new protected areas are needed, e.g. to make sure all major ecosystems are adequately covered;
- List priorities for action.

National System Planning for Protected Areas, published by IUCN (1998), provides guidelines on the preparation of system plans.



Gorilla guards in the Volcans National Park, Rwanda. The gorilla is the economic lifeline of this park.

It is important that all relevant agencies, institutions and individuals – not just those dealing with protected areas and biodiversity conservation – participate in developing the system plan so as to ensure long-term support. The plan should cover the full range of types of protected areas, addressing the needs of relevant interest groups including agriculture, forestry and fisheries. It should also encompass all sites managed for conservation objectives, including tribal lands, forest sanctuaries and sites managed by private land-owners.

However, the system plan approach is not always successful: as Part III explains, many system plans have been prepared for Caribbean countries, but most have had little impact. Politicians are understandably unwilling to adopt a plan for a whole protected area system in one decision, and prefer to move ahead step by step as circumstances permit. The prime need is for a strategic planning process that involves all relevant stakeholders, is fully supported from the government sector, and has a commitment and resources for implementation, rather than to produce a particular document.

1.4 Assess, quantify and explain the benefits of protected areas to society

Protected area managers frequently say that they lack information, in the language of economics, on the benefits of their sites to society and on the loss to society when natural systems are damaged. More effort is needed to quantify the economic benefits of conservation of natural resources in general and protected areas in particular. Valuable approaches include:

- Developing methodologies for the economic valuation of protected areas;
- Commissioning and assembling studies on particular benefits, including those which are hard to quantify in monetary terms, such as the existence value of a potential medicinal plant, and making sure they reach decision-makers;
- Preparing comprehensive inventories of the assets of each protected area – landscapes, cultural and historic sites, ecosystems, species, genetic resources.

IUCN's recent publication *Economic Values of Protected Areas: Guidelines for Protected Area Managers*, prepared by a WCPA Task Force and edited by A. Bagri, F. Grey and F. Vorhies (IUCN, 1998), gives practical guidance and case studies on economic valuation.

In doing this, it is necessary to identify the audience for the valuation. For example, the jobs created by a national park are a benefit in the eyes of the local community, but if paid from central funds they are a cost to the taxpayer.

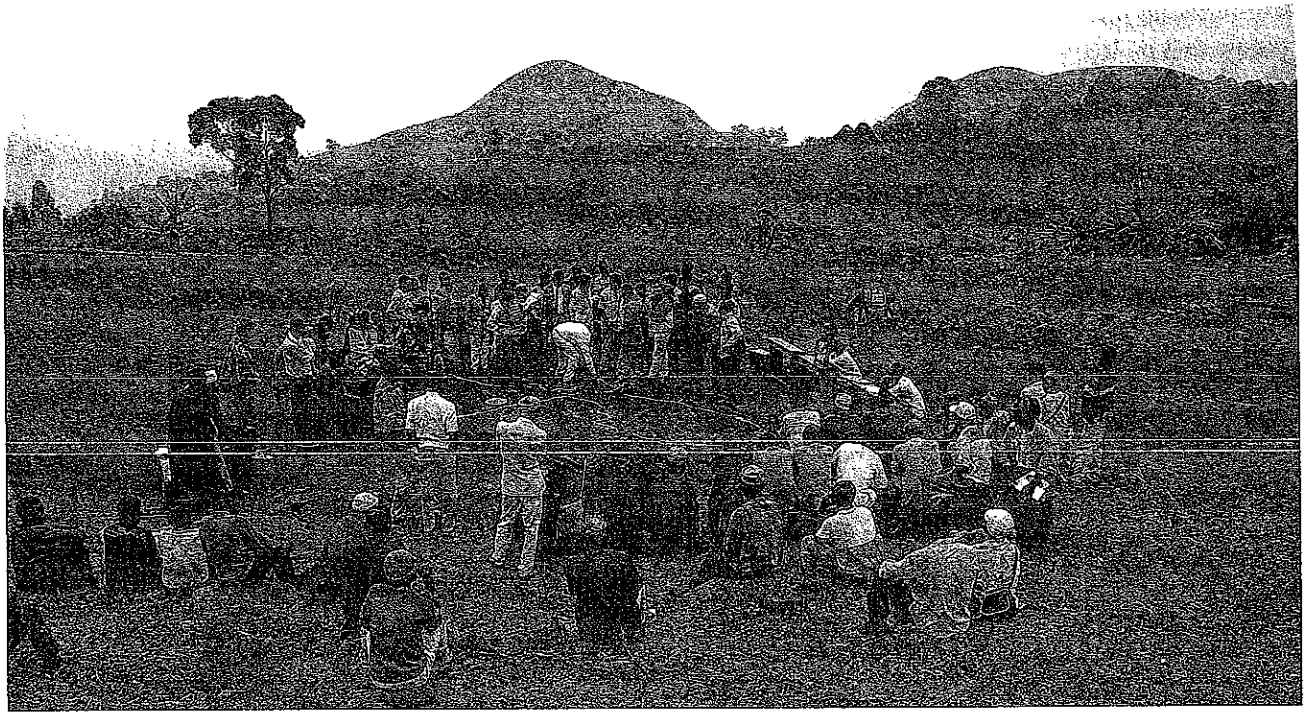
Nor is the valuation on its own sufficient. It is after all just a set of figures. It should be used to design economic and other incentives that will guarantee the protection of the area. These could be changes to the tax regime, bringing in charges, or providing grants to land-owners. It may be just as important to remove "perverse incentives" – incentives that work in the wrong direction – as to craft new and positive incentives.

Increasingly, countries are "privatizing" some of the assets of nature, by creating flexible, market-based mechanisms where rights to use wildlife and other benefits of protected areas can be traded. For example, in Southern Africa, rights to use large animals are assigned to local communities, as in the CAMPFIRE programme, or in some cases auctioned, as with some hunting rights. One advantage of this approach is that it makes the economic values clear to all.

2. *Involve and empower local communities*

It is vital to increase community involvement in protected areas. In the long run, only planning and management which encourages participation is likely to succeed, even though it may be more expensive and complex than approaches that do not.

Experience has shown that protected areas without community support tend to require enormous investment in policing, which is anyway unlikely to result in effective conservation. Conversely, strong community support often leads to reduced



Local participation is essential in planning a protected area. Here, villagers in Cameroon plot a protected area in the soil as part of a planning exercise.

costs, as local people act as unofficial – and often unpaid – guardians of an area. The case study from Mt Elgon, Uganda, shows this approach in action (p. 55).

2.1 Involve local communities in the planning of the protected area

The first step is to identify the interests of the key groups involved, both the obvious ones, such as pastoralists and bee-keepers, and the less obvious ones, such as religious groups and the military.

IUCN has developed an approach called Participatory Action Research to encourage local people to do much of the necessary research, especially into resource use. It encourages them to use this as a way of reflecting and acting upon the vital issues facing their community, especially relating to questions of population size and composition. By so doing, the approach helps them take charge of the future of their community and so play an effective role in the planning and management of the protected area. In the past, the tendency has been for conservationists and health and community workers to come in from outside with pre-designed solutions, whether for a protected area or for rural development. Participatory Action Research seeks a better approach, based on local people finding locally-derived solutions.

Our People, Our Resources, by G. Borrini-Feyerabend, A. De Sherbinin and P. Warren (IUCN, 1997) is a guide to support local communities in carrying out participatory action research on population dynamics and the local environment. *Beyond Fences: Seeking Social Sustainability in Conservation*, edited by G. Borrini-Feyerabend (IUCN, 1997, two vols), provides a general guide to help those involved in conservation initiatives identify the relevant social concerns, and assess implement the most suitable options. It includes many case studies on co-management.

2.2 Involve local communities in the management of the protected area

Local communities should be involved in the management of a protected area, both formally and informally. Management boards, co-management structures and other participatory mechanisms are to be encouraged, so that local communities can fully participate in decision-making. Protected area managers should use the knowledge of local people as a resource; many communities, especially of indigenous peoples, have traditional ways of protecting and using important species and ecosystems that have proved to be sustainable in the long term. The Community-based Conservation Areas in the Pacific region (see p. 98) are designed to make best use of this expertise.

Poverty is often a great threat to protected areas. Degradation of the natural environment is frequently due to the daily needs of survival. Where appropriate, protected areas should therefore include programmes to improve the standard of living of those who live nearby. But such programmes should be tied to the conservation of the core area: in the past, some so-called Integrated Conservation and Development Projects

separately supported traditional conservation activities in the core zone and conventional development assistance in the surroundings. The result was often to encourage more people into the area, increasing pressure on the core area without corresponding gains for conservation.

Responsibility for a protected area should be devolved to the lowest possible level for effective management, and local leadership encouraged – though the finance provided must be devolved down as well. One way to do this is to encourage and welcome local ideas on the management of protected areas. Another is to support local initiatives and community groups. Local achievements can be recognized and encouraged through award schemes and public ceremonies – and above all, by direct personal contact.

2.3 Stimulate informed advocacy so as to expand the constituency for protected areas

Major efforts are needed to increase public awareness about the importance of protected areas. Public awareness campaigns should make maximum use of opinion-formers, including religious leaders, politicians, village elders, newspaper editors and popular entertainers, for example. Information provision should be appropriate to the target audience and, wherever possible, produced in local languages. The involvement of all relevant groups, including those not normally associated with conservation, should be encouraged through awareness and outreach schemes. Efforts in schools and colleges, too, are necessary.

3. Strengthen the capacity to manage protected areas

A prime aim of all protected area projects should be to build up capacity. This will reduce reliance on donors and ensure that the good work started can continue and develop further.

Problems in protected areas and biodiversity conservation should not be defined and solved from the outside. Instead, local solutions and initiatives should be encouraged, maximizing responsibility, flexibility and discretion at the local level. Interventions should be able to adapt and respond quickly to local conditions. They should also be "fine-tuned" in the light of experience.

3.1 Build the institutions needed to manage protected areas

Effective planning and management of protected areas depends first on having good institutions. This is often a weak point with protected area systems, especially recent ones. The structure and form of these institutions will vary greatly from one country to another, but three principles should underpin all of them:

- The directors of protected area agencies for a country should have direct access to relevant decision-makers and ministers;
- A single body should oversee protected area policy for a country;
- Within each protected area, responsibility and accountability should be precisely defined.

The regional sections that follow emphasize the need to:

- Provide a clear mission statement for the organization;
- Find effective leaders and provide an efficient management structures;
- Offer long-term career paths for staff with commensurate remuneration;
- Provide adequate buildings, vehicles and other equipment.

Guards in the Virunga National Park, Dem. Rep. Congo. The dedication and commitment of national park staff, often in difficult circumstances, is a critical factor in the success of park management.

3.2 Provide training opportunities at all levels

In the past protected area systems tended to be run by natural scientists and administrators. The trend now is to put more emphasis on the social science dimension, including politics, economics, markets, conflict resolution, participation and community development. After all, the factors limiting the achievement of objectives set for protected areas are rarely scientific and administrative but far more often concerned with the social, cultural and development agendas.

Action needed on training includes:

- Expanding and strengthening the protected area training colleges in the countries themselves, with emphasis on the regional training establishments, in particular to prepare protected areas personnel for senior posts;
- Developing relevant in-service training opportunities and short courses for protected area staff at all levels, tailored to the needs of the country;
- In training courses, emphasizing skills in a) participatory and collaborative management at all levels, and b) in business and general management skills;
- Establishing a set of professional standards for protected area staff and improving the capacity of protected area managers to monitor their own performance though indicators of management effectiveness.

3.3 Encourage technical excellence in management

Innovation is a vital part of protected area management. Possible approaches include:

- Finding creative solutions to problems, particularly those which can reduce operating costs:
- Privatizing and devolving activities that can be carried out more efficiently by other institutions;
- Achieving management tasks using other than regular staff, such as conservation volunteers and youth corps groups, for example.

Excellence partly comes from fostering a learning culture, where past practice is evaluated and monitored, and lessons learnt. This is an area where much protected area management is weak and could benefit from business expertise.

3.4 Prepare and use protected area management plans

The responsible authority for each protected area should prepare, or keep up-to-date, a management plan for that area. This should:

- Set out the objectives for the area;
- Indicate how these will be achieved;
- Establish the resource needs (staff, equipment, finance, etc.);
- Put in place a system of monitoring to check if the objectives are being met;
- Establish a timetable for accomplishment.

3.5 Improve the application of science and information to management

It is important to ensure that management is science-based, and that research carried out in protected areas contributes to management. Where feasible, research by protected areas staff or external researchers can be extended to help surrounding communities and resource users.

Coordinating Research and Management in Protected Areas, edited by David Harmon (IUCN, George Wright Society, Science and Management of Protected Areas Association, and European Commission, 1997) is a guide to 3.5.

Priority should be given to research on acute and chronic management problems, including land-based marine pollution and other pollution outside protected areas, control of exotic species, fire control, and management of small populations of wildlife.

To ensure effective collaboration between managers and scientists, networks of scientists and managers could be established. Documentation centres provide a good base for collecting information and making it available to the public. Links with universities should be encouraged.

3.6 Give emphasis to marine protected areas

Worldwide, the development of marine protected areas lags behind that on land. As Part IV shows, this is particularly acute in the Pacific region, where the trend to establish large multiple-purpose marine protected areas is only just beginning.

For this reason, park managers and planners should give special emphasis to the establishment and management of marine protected areas. Integration is even more crucial than on land, since the coast and in-shore waters are rarely under a single jurisdiction and are often used by a wide range of sectors. In the coastal zone, Integrated Coastal Zone Management is the preferred approach.

The modern concept for a marine protected area emphasizes its value to artisanal and other fishers by providing a safe nursery area that exports fish to fishing grounds.

4. Strengthen the funding available to protected areas

Institutions may be strong but if they lack the funding essential for their work success will be hard if not impossible. Funding has proved the critical limiting factor for many protected areas in the 1990s. As needs and expectations expand, political support and pressure from conservationists lead to more protected areas being declared, but at the same time central government budgets are slimming down and the resources for many park authorities are decreasing. Thus financial sustainability should be at the heart of protected area management.

4.1 Seek methods of self-financing, to ensure financial sustainability

Increasingly the trend is for protected areas to build up their own revenue to fill the gaps left by a declining government subvention and to be allowed to keep at least part of the revenue they raise. Approaches include:

- Encouraging environmentally-based tourism;
- Increasing user-fees;
- Sales of goods, such as postcards and curios;
- Permitting sustainable natural resource utilization where appropriate;
- Increasing the opportunity for more private sector investment and sponsorship.

In the light of declining funds, many park planners, supported by IUCN, have advocated the development of Environment Funds as a way of ensuring financial sustainability. They see it as a good way of balancing donor support, which is often short-term, whereas their main cost – staff salaries – is recurring. Although much liked by

Box 4

World Heritage and Ramsar – Two Conventions for Protected Areas

The Convention Concerning the Protection of the World Cultural and Natural Heritage, known as the World Heritage Convention, entered into force in 1976 and now has 156 States Parties. UNESCO provides its Secretariat.

Its rationale is that there are elements of the cultural and natural heritage of individual countries that are of such outstanding, universal value that their protection should be the concern and responsibility of the international community.

Sites are nominated by governments and, following acceptance by the World Heritage Committee, are inscribed on the World Heritage List, as Natural, Cultural, or Mixed Natural/Cultural Sites. By the end of 1997, the World Heritage List contained a total of 552 sites – 418 Cultural, 114 Natural and 20 Mixed. The Convention has proved a powerful lever in preventing damage to listed sites, which can be added to a World Heritage in Danger list. Some financial assistance is available from the World Heritage Fund, provided by UNESCO's Member States.

The Ramsar (or Wetlands) Convention (1971) has as its mission, "The conservation and wise use of wetlands by national action and international cooperation as a means of achieving sustainable development throughout the world". Although initially focused on wetlands for migratory waterbirds, the Convention now takes into account the full range of wetland functions and values, and the need for an integrated approach to their management.

One principal obligation of Contracting Parties is to designate sites for the Ramsar List of Wetlands of International Importance. Sites on the List must be managed to avoid changes in their "ecological character". There are currently 110 Contracting Parties and over 950 listed sites (Ramsar Sites) worldwide, most at least partially covered by protected area designations at national or sub-national level. Parties are assisted by an active Secretariat, the Ramsar Bureau, which shares an office with IUCN in Gland, Switzerland.

park authorities, this approach may pose difficulties to donors, who may not be able to allocate public funds to investment vehicles rather than to match actual spending needs.

4.2 Encourage partnerships with NGOs and the private sector

Another route that characterizes the 1990s approach to park management is increasing partnerships with NGOs and the private sector, as some of the examples in this report show. This is likely to increase further in future. Approaches include:

- Reforming protected area agencies on parastatal lines such as in Kenya and Tanzania – see page 36;
- Creating a National Trust or similar charitable body to run national parks, as in Bahamas (see page 75);
- Contracting an NGO to run a protected area, as in Jamaica, where a special structure has been created for this purpose (see page 82).

5. *Encourage and utilize regional and international cooperation*

In an increasingly interdependent world, cooperation across national and regional frontiers is assuming ever greater importance. Protected areas have always attracted international attention and protected area managers tend to see themselves as part of a global community. It is important therefore to maintain and support the systems for international and regional cooperation.

5.1 Use and support regional and international conventions

As part of the process of globalization, the international conventions on the environment have a steadily increasing potency and competency. Countries are giving them more importance than before and policy-makers transfering more and more decisions from national policy-making to the international community within the structure of these agreements.

Particularly significant is the Convention on Biological Diversity, which provides a framework for most policy decisions on biodiversity and in particular requires countries to develop national plans for their protected area systems (see Box 2, page 9). Also important are the World Heritage Convention and the Ramsar or Wetlands Convention, under both of which States nominate sites for protection (see Box 4).

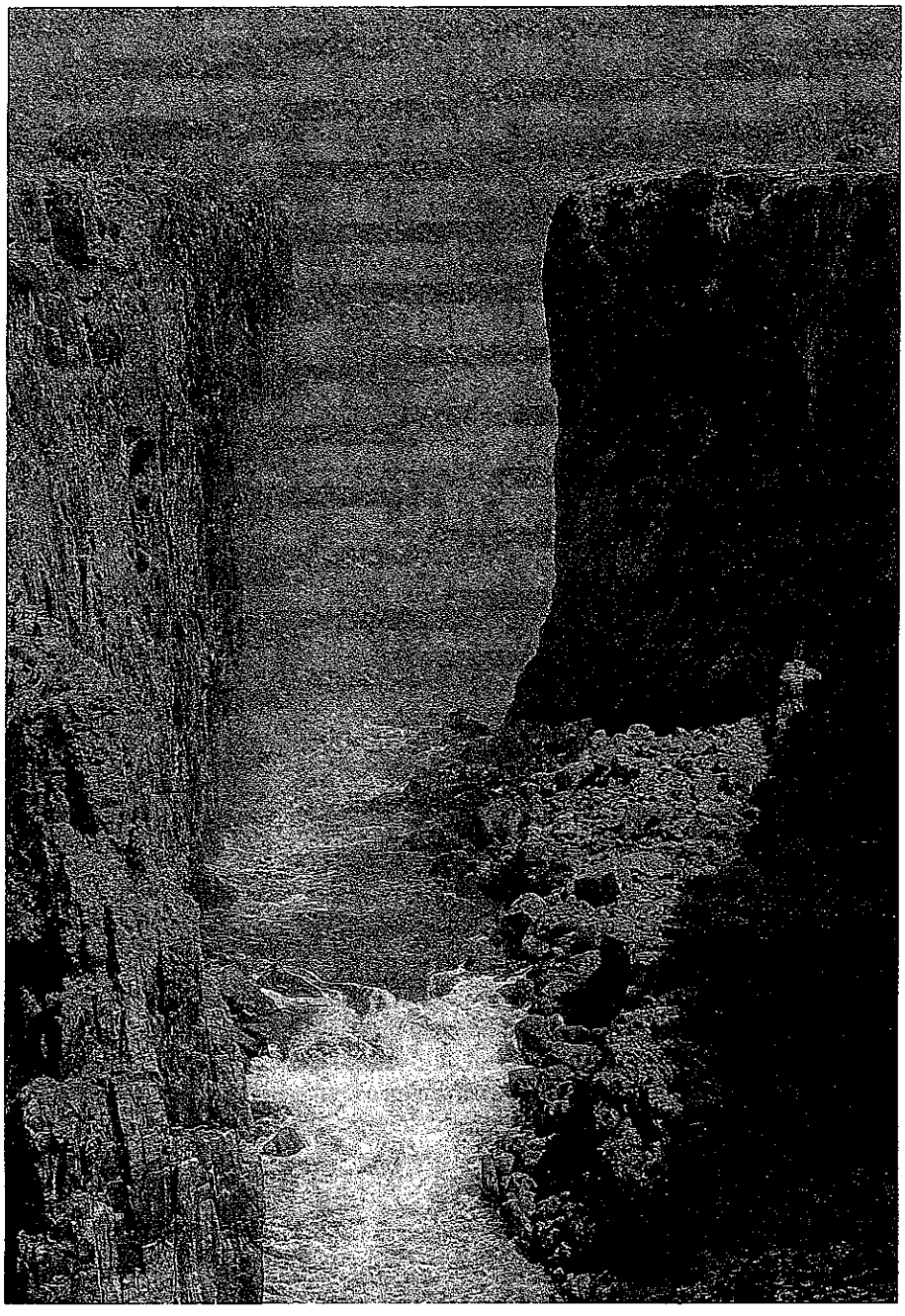
5.2 Invigorate frameworks for regional and international cooperation

International frameworks for cooperation on protected areas include:

- IUCN's World Commission on Protected Areas (WCPA), the largest global network of protected areas professionals;
- The ten-yearly World Congress on National Parks and Protected Areas, coordinated by WCPA and next due in Africa in 2002;
- UNESCO's Man and the Biosphere Programme, especially the work to develop the concept and network of biosphere reserves around the world;

- The World Heritage Convention and the Ramsar (or Wetlands) Convention (see Box 4)
- The World Conservation Monitoring Centre, which acts as the data-management arm of WCPA and with IUCN produces the *UN List of Protected Areas*.

Regional frameworks for conservation greatly vary from one region to another and are outlined in the regional sections. They are important for each of the regions and, in the case of Africa and the Caribbean, may need further strengthening. A case can also be made for cooperation on small island issues between the Caribbean and Pacific regions.



The famous Victoria Falls on the border of Zambia and Zimbabwe. Effective conservation and management of a shared resource demands close partnership between the countries concerned. Here, IUCN has helped facilitate a complex operation to assess the management issues and help the countries prepare a joint conservation plan in the face of burgeoning tourism, especially on the Zimbabwe side, and much unplanned tourism development.

Chapter 3: Guidance for External Support to Protected Areas

Most protected areas in ACP countries need external funding if they are to succeed and be sustainable. Many are perilously underfunded. They are a crucial part of a nation's development and are the prime means of conserving biodiversity for the whole world. In countries committed to the aims of the Biodiversity Convention, therefore, a greater proportion of development assistance should be allocated to protected areas. Donors should make long-term commitments to support particular national protected area systems and projects, and should build protected area components into other infrastructure projects.

How can donors best support protected areas? Here are some of the lessons that have been learnt from past experience. They centre around the concept of capacity building, which should be the strategic objective of all technical assistance projects (see Box 5).

Local tour operators in the Turks and Caicos Islands contribute financially to the National Trust, who manage the Iguana Reserve at Little Water Cay.

1. *Plan for long-term financial sustainability from the beginning*

Without ensuring the financial sustainability of a protected area, external funding is unlikely to have an enduring benefit. Few if any ACP governments are in a position to provide the funding from their central budget to maintain protected areas to the required level once an initial aid allocation has ended. In most cases, therefore, a mixture of public and private finance, government subvention and income generation, is the only long-term solution.

Donors can help protected area agencies achieve this by encouraging innovative long-term funding mechanisms, for example by:

- Including components in their projects to establish revenue-generating activities, for example through tourist development such as lodges and walking trails, and ensuring that the proceeds of these activities are used to benefit the protected areas system and local communities;
- Ensuring that the institutions supported become financially sustainable themselves;
- Involving the private sector as part of the partnership for a protected area;
- Permitting part of their funding to be used in Environment Funds, perhaps financed by Debt-for-Nature swaps. A good example is the $4.3 m Trust Fund for Bwindi and Mgahinga in Uganda, which was supported by GEF, the United States and the Netherlands.

In some cases, protected areas will need to cross-subsidize each other, with those which generate tourism income being used also to support those which are less well placed to exploit this source of income.

2. *Make institution-building a part of every project*

A limiting factor for protected areas is often the weakness of the parent institutions. In most countries, it is probably better to help modernize existing institutions and to help them sustain themselves, rather than to encourage the creation of new institutions. In capacity-building, it is important to focus not only on the official protected area agencies but also on the other partners in protected area management, such as non-governmental and community-based organizations.

A clear message of this report is that the old forms of conservation are no longer working. Protected area institutions may therefore need help in adapting their work programmes to new approaches. Many of their staff, especially at middle levels, may need retraining and re-orientating in the new agenda of multiple use, stakeholder benefits and participation.

Donors should increase cooperation and collaboration between donor and national institutions and other agencies at all stages of project planning and implementation. All financing proposals should include an exit plan with clear milestones – right from the beginning.

3. *Develop professional and managerial capacity*

Most conservation projects have a training component, but often the training does not have the required benefit. Special attention needs to be paid to:

- Providing the right training in each case and ensuring it addresses priority needs;
- Ensuring all relevant staff receive training as needed, not just the managers;
- Funding long-term training programmes and not just isolated courses.

It is particularly important to focus on skills in business management, financial appraisal and planning, conflict resolution, community development and participation, as well as the traditional skills of the natural sciences and wildlife management.

Behind most successful environmental projects stands a unique individual or group of individuals. More than most other types of endeavour, success in an environmental project demands leaders who are highly capable and committed. Such people should be sought out and then backed and supported to the full. Environment projects will rarely succeed if local leadership is lacklustre and bureaucratic. Protected areas can rarely be managed effectively "by the book".

Box 5

SOME ADVICE FROM THE OECD

The Development Assistance Committee of OECD recently issued advice on how to achieve capacity development in the environment (CDE), defined as "the ability of individuals, groups, organizations and institutions in a given context to address environmental issues as part of a range of efforts to achieve sustainable development."

It describes the CDE approach as:

- Based around the **development process**;
- **Integrative**, balancing environmental quality with development for human needs;
- **Multi-faceted**, including consideration of ethics, norms and culture;
- Orientated to **process** rather than product;
- **Systemic**, i.e. taking account of the relationships and interactions that prevail in society;
- Belonging to and driven by the **community** in which it is based;
- Strengthening **institutional pluralism** in civil society;
- Taking **gender issues** fully into account;
- Seeking to develop appropriate approaches to **all disadvantaged groups** in society;
- **Comprehensive** in method, involving a variety of management techniques, analytical tools, incentives and organizational structures.

Such general advice provides the principles which should guide projects supporting protected areas.

From: Donor Assistance to Capacity Development in Environment. OECD Development Co-operation Guidelines. Paris, 1998.

4. *Ensure that local communities participate fully in both the development and the implementation of the project, so that a sense of ownership is achieved*

A recurrent theme in this report is the overriding need to involve local communities, both in the planning and in the implementation stages of a protected area. Donors should be suspicious of any protected area project that does not have activities with the local community at its heart. Donors should also watch for projects that have development in the buffer zone for local people as a separate, add-on component; development activities for local people must be linked to commitments by those people to the conservation of the core area and to their involvement in its management. It is important also to take gender issues fully into account, recognizing the leading role that women play in many societies in using and looking after natural and cultural resources.

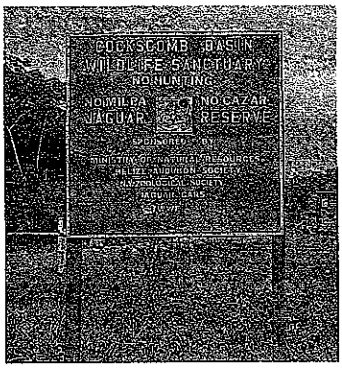
5. Extend the time frame of projects

The process of participation needs time. People may withdraw if the process is pushed too quickly. Even if the final objective is clear, it is hard to predict how long it may take, for example, to set up a hunters' cooperative or women's forestry group. Protected areas therefore typically need long periods of funding, though often the total amount needed may be rather modest in aid terms.

Unlike many items of a country's infrastructure, such as telecommunications and airports, protected areas do not normally have a large capital cost. Instead the main cost is usually staff salaries. Buildings are needed, but are not usually a major cost and in most cases should be relatively small and unobtrusive anyway. The equipment required, such as vehicles, uniforms, computers and radios, tends to have a short life and a high ratio of maintenance to purchase cost. So high budget projects to help a protected area over a short time, say 2 to 3 years, are likely to be wasteful, unsustainable and raise expectations that cannot be fulfilled. Far better is limited funding – say in the range of 100–250,000 Euro per year – but spread over a long time.

In response to these needs, donors are extending the length of their projects beyond three years, in the case of GTZ up to 12 years, recognizing that a 3–5 year period is too short to establish new institutions or to change behaviour. As the Summary Report evaluating environmental performance of DGVIII and DG1B projects notes, "It is perhaps unrealistic to assume that most environment projects can realize their intended objectives within a 3–5 year period."

6. Give more emphasis to the role of local NGOs, community-based organizations and other non-traditional partners in implementing projects



The NGO Programme for Belize has created large protected areas, with funding mainly from donors in the UK and USA and with help from the European Commission.

This report shows that many innovative partnerships are being designed for a wide range of partner bodies to help establish and manage protected areas. These bodies include the private sector, indigenous peoples' organizations and local government units. Such bodies are often able to provide cost-effective, on-the-ground management with close links to the local community.

The Rio Conference boosted the growth of indigenous NGOs in developing countries. Increasingly donors can use such NGOs not just for environmental education activities, often their traditional role, but to work with local communities and increasingly to manage whole protected area projects. As Parts II to IV show, one of the dominant shifts in conservation in the 1990s is the growing role of indigenous NGOs and community-based organizations in conservation management, often working in partnership with government.

Since the late 1980s, donors have used large international NGOs for implementing protected area projects in developing countries, and this has been a cost-effective solution. But there are now many in-country, indigenous NGOs who have the capacity to manage such projects themselves. These NGOs often now find they are at a disadvantage in competing for donor funds with the large international NGOs. More help may be needed to enable them to put in bids and compete effectively; after all, if a local NGO is given the contract, there is a permanent presence and institutional benefit long after the project has ended. In the European Commission, more budget lines may be needed that are accessible to NGOs from outside the Member States.

7. Wherever possible use local expertise as project leaders and technical experts

The main limiting factors to making a protected area a success are social and political, rather than scientific and technical – getting the local people on side, involving

them in planning and making sure they benefit rather than lose out; and ensuring the essential political support. These tasks can usually best be done by nationals of the country or at least of the region.

The best role for outsiders is to provide moral and technical support, to act as a shield for probity, and to evaluate progress. One model used by a leading conservation NGO is to provide external expertise in the form of regular visits, perhaps spending a week or so with the project once or twice a year, rather than as a resident adviser. The outsider can then give moral and technical as well as financial support, but allow the project team the space and time to define their own priorities and develop their own ways of achieving them.

If a specific piece of expertise is needed, it is generally better for the person responsible in the field to travel for the relevant training course or to see a case where the problem has been solved, rather than to import an expert from outside to train him or her. This way motivates and broadens experience of those in the front line. Exchange visits both within a region and with other regions also work well, usually benefitting both partners. The EC-funded Partnership and Exchange Programme (which has not so far not focussed on ACP countries but on exchanges between protected areas in Latin America and Asia and those in Europe) provides an example of the benefits from structured partnerships and exchanges.

Similarly, local and regional networks can provide much needed advice and help. Bodies like SPREP in the Pacific (see p. 96) and CANARI and CCA in the Caribbean (see p. 79) can be good partners, since they know the needs across the region and have excellent long-standing contacts in the various countries.

A tour guide shows visitors around the Community-based Vatthe Conservation Area, Vanuatu (see page 99). Capacity building in ecotourism provides revenue to the protected area and jobs for local people.

8. *Build more effective monitoring and feed-back mechanisms into projects*

All projects should have a built-in a capacity for monitoring and feedback, so they can adjust to changing circumstances as they happen rather than having to wait for the results of periodic appraisals and evaluations. An important output of any protected area project is the lessons learnt, especially as part of the process of adapting to local contexts.

As part of project cycle management, measurable indicators of success, especially in capacity building, should be established from the beginning in relation to the objectives of the project and used rigorously in the evaluation stages.

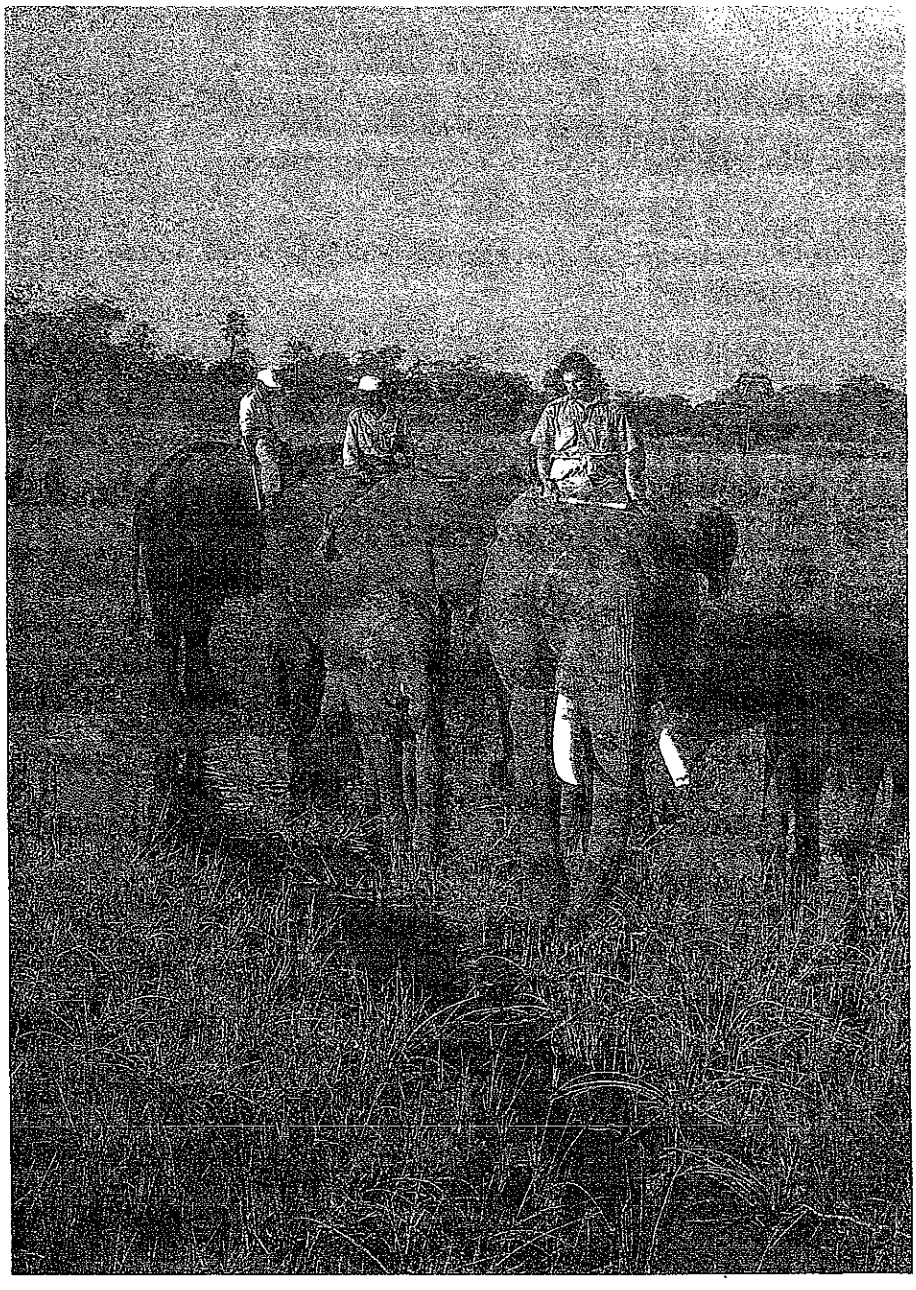
9. *Adapt a process approach to allow for adjustments as the project progresses*

The development of every new protected area is different and inevitably throws up problems that were not foreseen at the beginning. Most protected area proposals have a long history – indeed many of the areas covered by projects have long existed as 'paper parks' awaiting implementation – and the number of stakeholders involved can be large. A good project therefore makes allowances for the unforeseen, for example by giving the project leader a degree of flexibility in budget allocation and project workplans, while maintaining a clear focus on the overall objective.

Many protected area projects in the past have failed, often because the local community did not participate. Donors should therefore be prepared to accept shifts in emphasis and changes in activities as the project develops from year to year. Rarely can protected areas be designed from scratch; the only way is usually the step-by-step approach and learning through experience.

10. Increase the speed and efficiency of project approval, fund release and procurement procedures

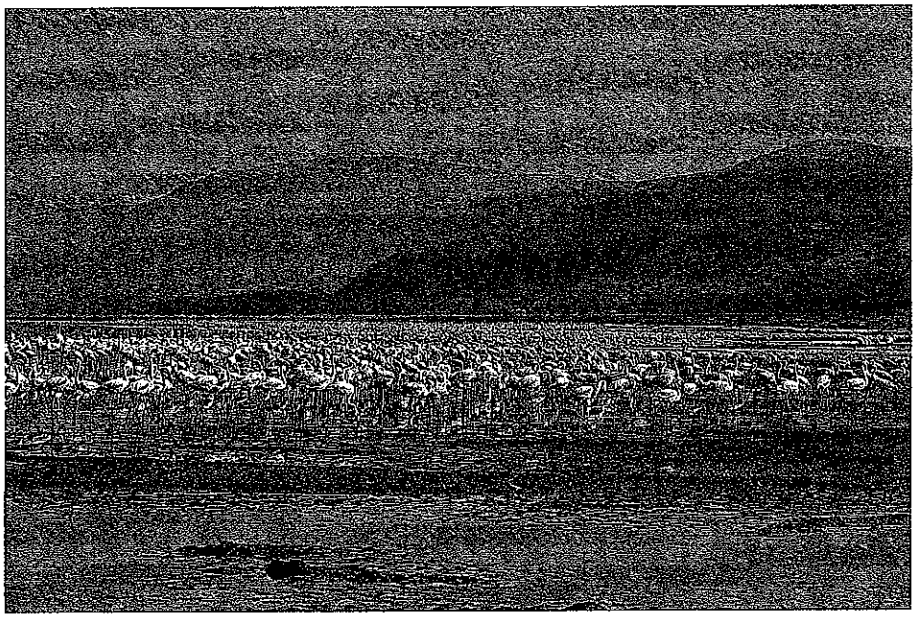
Prompt dispersal of funds may be vital, especially to small NGOs in ACP States since they are unlikely to have substantial cash reserves of their own. Valuable time can be lost awaiting bureaucratic approval, sometimes resulting in loss of an opportunity to get protection in place and discouraging local enthusiasm for conservation.



The African elephant provides the basis for a private sector eco-tourism venture in the massive wetlands of the Okavango Delta, Botswana.

PART II: Africa

Chapter 1: An African Perspective



Lake Nakuru National Park, Kenya, famous for its immense numbers of flamingos, is one of over 2000 protected areas in Africa.

Note

This section covers Africa south of the Sahara. Unless otherwise mentioned, the term 'Africa' as used here omits the countries of North Africa – Morocco, Algeria, Tunisia, Libya and Egypt (although they are covered on Maps 1 and 2).

African nations have created over 2 million sq. km of protected areas.

This massive size – ***four*** times the size of Spain – reflects both the vast size of Africa and a high level of commitment by African nations to the principles of conservation and sustainable development.

It also reflects the rich biological diversity of Africa. The continent may be best known for its open plains but its rich tapestry of vegetation varies from desert to rain forest, the latter centred around Cameroon and Gabon, stretching west along the coast and east through Democratic Republic of Congo to Uganda. There is dry forest, too, in particular the massive bloc of deciduous low *miombo* woodland centred on Zambia and Zimbabwe. The vegetation of Africa tends to be arrayed in great bands, as shown by the map on page 41, showing gradations on an immense scale with latitude and altitude. Interspersed in these bands of vegetation are the high mountains of Africa, like Mt Kiliminjaro and Mt Cameroon, and the Great Lakes which run along the path of the mighty Rift Valley.

There are not only sharp differences between these biogeographical regions but also within them. As the climate has changed, so have vegetation islands been isolated, in some cases as refuges of moist, species-rich vegetation isolated by climate change in the Pleistocene era. For example, the rainforests of Cameroon and Gabon are in general much more species-rich than those of the much larger Democratic Republic of Congo. African mountains too tend to have unique vegetations and floras.

Human cultures are equally diverse, as people have adapted to the vast array of environments in Africa.

Over thousands of years, people have been developing lifestyles to enable them to live in all the environments of Africa except the highest peaks and the driest deserts. Nomadic pastoralists in the Sahel, hunter-gatherers in the tropical forest regions,

small farmers in the fertile East African hills, fishing communities around the Great Lakes – all are part of the rich tapestry of Africa.

People traditionally have strong tribal affiliations, which usually cross national boundaries. There are also powerful linguistic links across countries: people speak the Fulani language throughout the Sahel, from West Sudan to the Atlantic coast of Senegal, across 15 separate countries. And Bantu languages predominate from Ethiopia as far south as Botswana and South Africa.

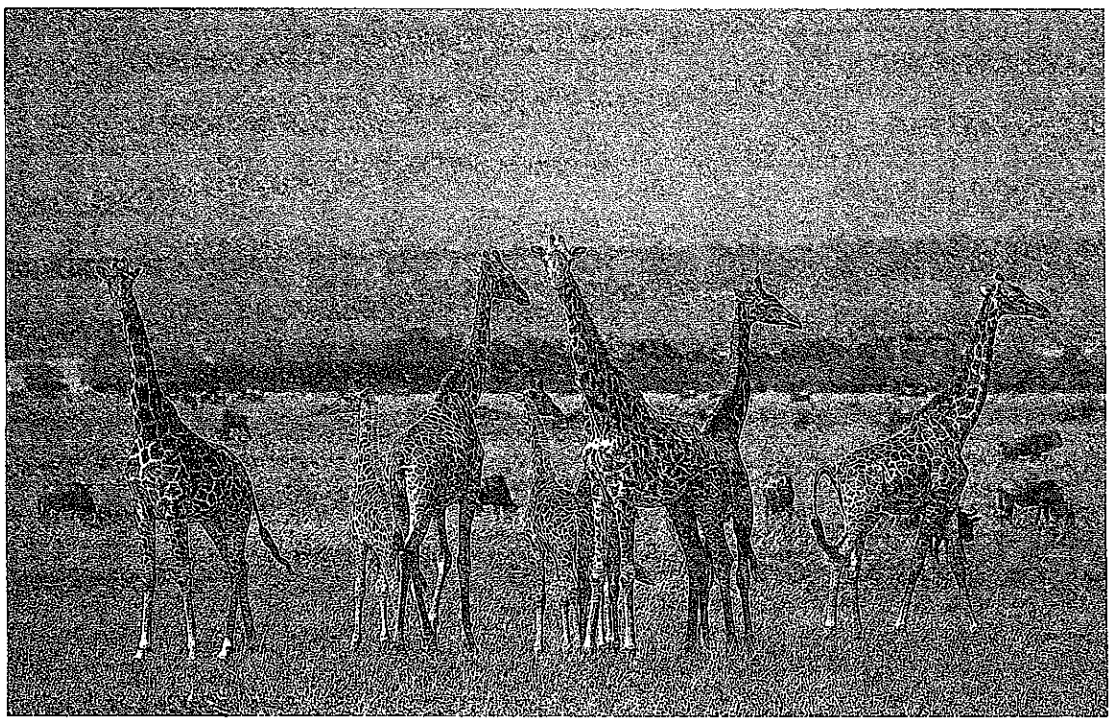
An important fact of African life, often forgotten in protected area planning, is that nomadic people roam over vast parts of Africa. In the Sahel, part of the population moves seasonally to exploit grazing, though most have bases in particular villages (seasonal transhumance). Over three quarters of Kenya is marginal land used by pastoralists, most of whom do not have a settled home. The numbers of people may be relatively small but the amount of land affected is huge.

Before the colonial era, Africa was self-sufficient as a centre of wealth and trade with the rest of the world.

Ivory, gold and spices were the main source of Africa's wealth. Merchants traded gold from what is now Ghana and Côte d'Ivoire through Tombouctou and across the Sahara to the Mediterranean, providing a major source of economic wealth to Mediterranean economies. There was also a large trade with Arabia and Oman into Asia and a parallel but smaller trade down the Nile to Egypt. Trading relationships within Africa were also abundant and complex.

In the colonial era, Africa was divided up by European nations, creating political divisions that were not representative of tribal affiliations on the ground. Different European countries left different impressions on the region, influences that last to this day and affect, among other things, the approach to conservation and management of natural resources.

In the 1960s, in the well-known "wind of change", country after country in Africa gained its independence. Each country unit tended to include a wide variety of ethnic groups, most of which also had members in neighbouring countries. In Africa the nation state is a recent entity.



Giraffes with wildebeest at the Masai Mara National Reserve, Kenya. Enormous numbers of wildebeest migrate from the Masai Mara to the Serengeti plains of Tanzania and back again – one of the wildlife spectacles for which Africa is famous.

Since independence, there has been a gradual process of political change, which is continuing and intensifying in the 1990s with increased democratization and decentralization.

The process has been led by some West African countries, which are re-emerging as the economic driving force for Africa. Many countries have become more democratic in the 1990s, with free elections and a free press, but this process has proved difficult for many reasons.

Change has been stimulated by three external events: the collapse of Communism in the former Soviet Union and the consequent ending of the Cold War; conditionality from donors who are encouraging greater decentralization and accountability; and, following the democratic elections in 1994, the re-emergence of South Africa after years of isolation to play a leading role in the continent.

The rural economy of Africa is at the centre of new initiatives in natural resource conservation.

The 1990s have been extremely difficult times for African economies.

African nations are extremely vulnerable to downturns in the global economy. Their economic development is still not at a stage where they can respond to such changes and shocks by diversifying their economies. Indeed, the economies of most remain dependent on agriculture and the production of primary products for export. Few have been able to diversify on a large enough scale into manufacturing and service industries. One after another, their economies have collapsed due to external pressures. In some cases, the products are no longer needed – the world uses far less copper than it once did, dealing a death blow to Zambia's once prosperous economy. So too with uranium. In other cases, developed nations have found substitutes, such as artificial fibres for sisal and rape for palm oil. In others, new entrants and increased production have led to a dramatic decrease in price, as most notably in tea and coffee.

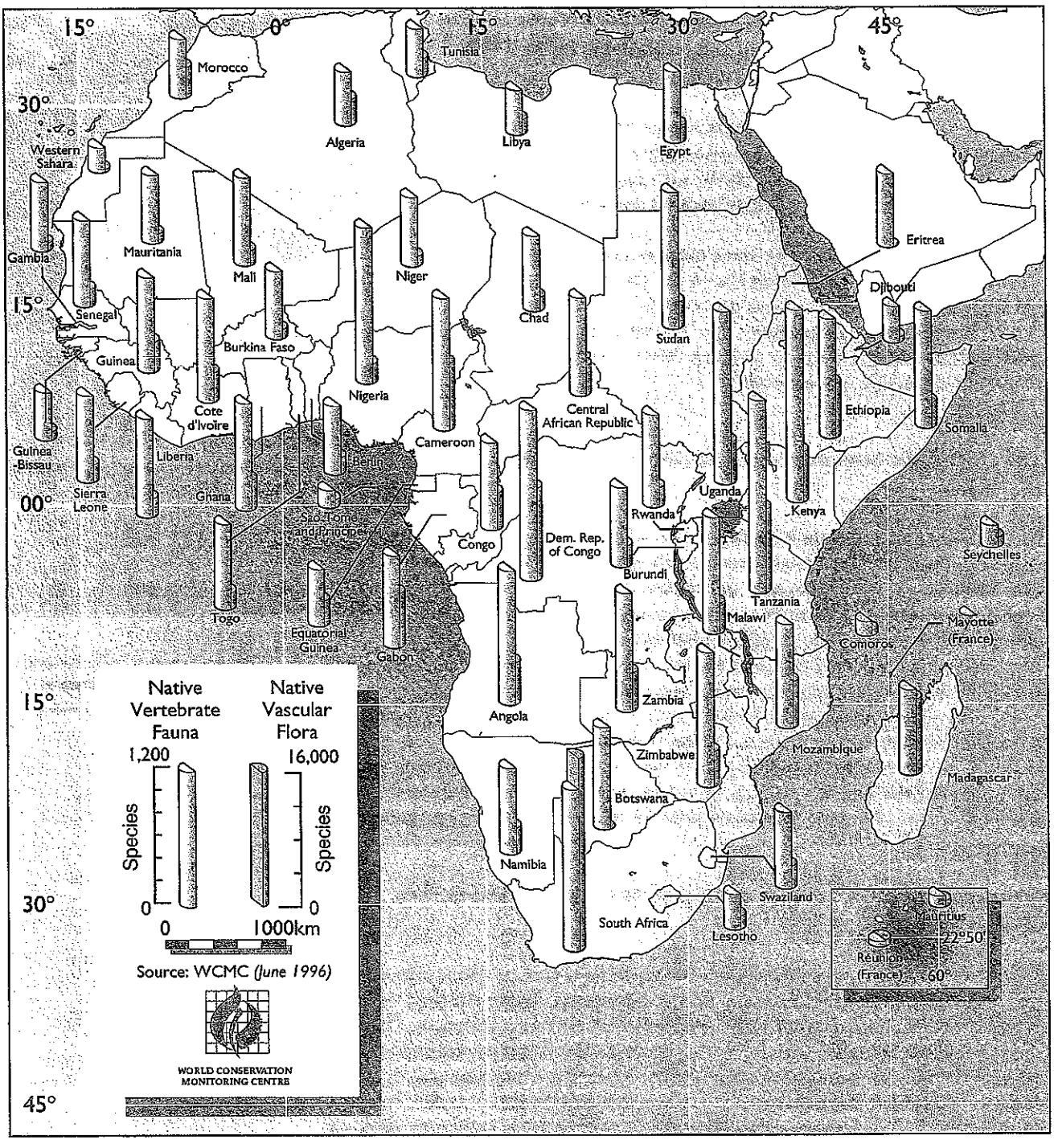
Economic difficulties have led to massive reductions in government revenue.

In the past most countries funded their treasuries from taxes of commodity exports, and could not collect substantial amounts of income tax. Today, the main source of revenue is taxing imports, which inevitably acts as a brake on development. The large drop in revenue coincides with increasing demands from a rapidly expanding population, especially for better health care and for education of the massively increased number of children. The high costs of servicing foreign debt can also take a large slice of the revenue. The critical consequences for protected areas, which in Africa are traditionally funded by government, are considered later and are a major theme in the chapters that follow.

Whether in towns or rural areas, directly or through friends and relatives, Africans have close links with nature.

Biodiversity in Africa has multiple values:

- **As animal and plant products that can be eaten and sold.** West Africa in particular has a long tradition of harvesting wild animals as food. In Ghana, over 75% of the population eat wild sources of animal protein and the market value of wild animal meat may be as much as $300 million per year, making it one of the most valuable industries in Africa. This has removed the need for a similar amount of livestock meat, which could only be produced at great expense and with massive veterinary controls.



Map 1

The numbers of plant and animal species in each African country

Whereas the animal diversity of Africa is relatively evenly spread, with large concentrations of mammals and birds in particular, the plant diversity is much more uneven, with massive concentrations of plants in South Africa and very small numbers in the arid countries of the Sahel. Countries with rain or montane forests, such as Tanzania, Democratic Republic of Congo and Cameroon also tend to have high numbers of plant species.

- **As fuel and building materials.** Wood from wild trees is still the main source of fuel and building materials for most rural Africans. According to a study in 1990, for example, wood and dung together provided over 90% of the total domestic energy used in Tanzania and Malawi.
- **As natural grasslands for grazing.** Natural grasslands provide grazing both for livestock and for large populations of wildlife. The economic opportunities for joint development of these resources side by side are the basis for some of the most significant conservation initiatives in Africa today.
- **As plants for medicine.** In Africa, health care uses predominantly traditional methods that depend heavily on wild plants. Practitioners have an immense knowledge of the medicinal properties of plants: for example, surveys under the ECOFAC programme (see p. 37) in Dja Wildlife Reserve, Cameroon, have identified 45 remedies from 22 different plants for fevers and malaria.
- **As a means of survival in times of stress,** whether from drought, livestock epidemics, civil unrest and war, or when items such as fertilizers, modern seeds or medicines are not available. In remote areas, too, animal products are often the only source of protein.
- **As fish and marine life for food,** vital for all the coastal countries and those bordering the lakes of the Rift Valley. Typically, fish are both used for subsistence and sold in markets. For example, freshwater fish from the Niger Delta far inland in Mali are dried on the spot and sold all over West Africa, even on the coast. Fish from the coasts are also traded well inland.
- **As animals that can be enjoyed – and thus paid for – by tourists** (see below).

Thus biodiversity still exerts enormous influence on the lives and economies of people in Africa.

Protected areas are the principal means of conserving this essential biodiversity in Africa, but do have a high cost.

Protected areas:

- **Conserve the wealth of Africa's rich biodiversity.** In particular they are vital reservoirs of wildlife that spill into neighbouring areas and can be a source of meat. They are also crucial reserves of medicinal plants, many species of which have become decimated from the countryside, especially in great swathes around large cities. Many town-dwellers, especially in South Africa, still use their traditional medicinal plants, which are brought into the towns by collectors from the wild.
- **Are at the centre of tourist development in Africa and can generate significant economic benefits.** Tourism is a leading economic activity in much of Africa, especially in the east and south, and is centred around protected areas. Some 35% of Kenya's GDP comes from its annual 800,000 tourists. In South Africa, the majority of visitors cite wildlife and scenary as the main reason for their visits and government regards the tourism sector as the one with the most potential to

Box 1

AFRICA HAS A GREAT DIVERSITY OF PLANTS AND ANIMALS

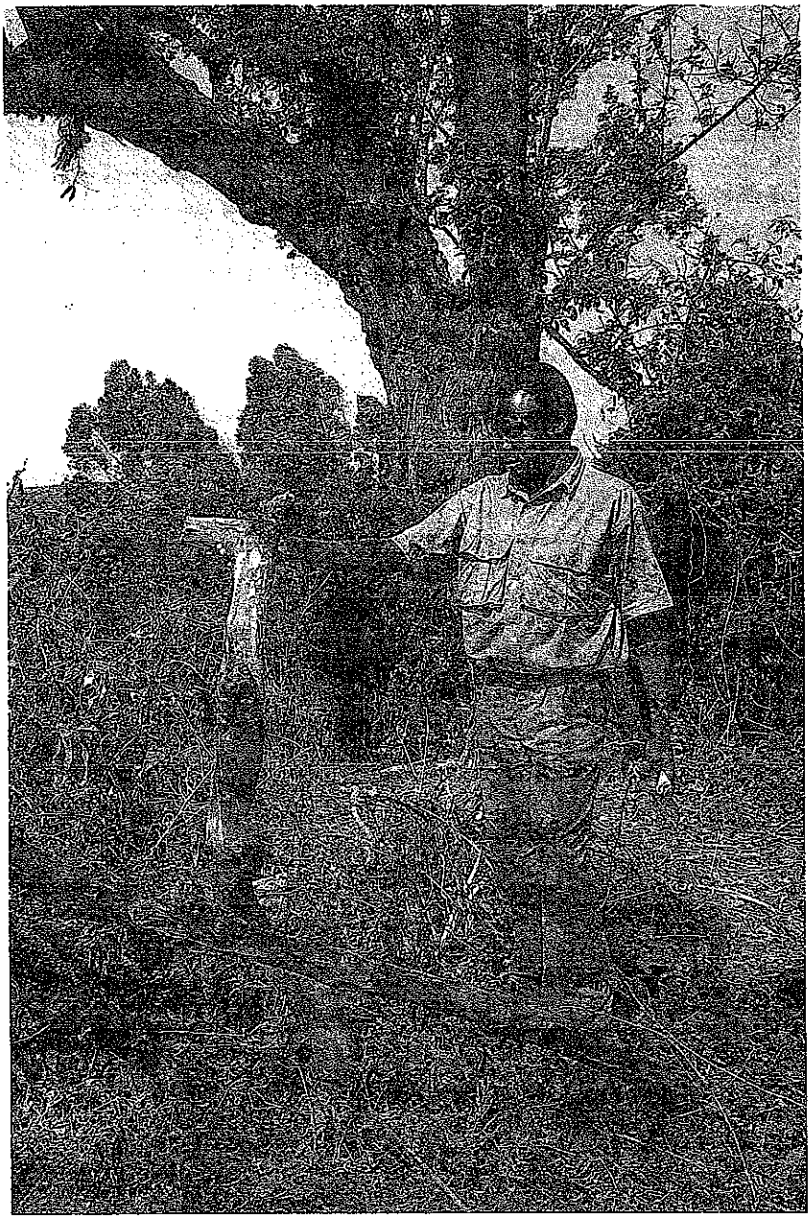
Africa is famous for the wildlife of its open plains. The large herds of grazing ungulates and attractive species such as elephant, rhino, buffalo, lion, leopard, gorilla and chimpanzee are legendary. This is the most diverse and abundant mammal fauna of any continent, and attracts hundreds of thousands of marvelling visitors each year.

Africa can offer some of the greatest spectacles in any part of the animal kingdom. However, this is only a small part of Africa's biodiversity. Africa has coral reefs, mangrove forests, wetlands, deserts and semi-deserts, open savannahs, closed woodlands, lowland and upland rainforests, and high mountain systems. The southern part of the continent supports more than 2500 species of butterflies, while the tiny S and SW Cape Region of South Africa has the most diverse flora in the world with a staggering 8600 different plant species.

The great lakes of East and Central Africa contain large numbers of endemic fish species. All but 3 of the 150–170 cichlid species in Lake Victoria are endemic, as are all but 4 of the c. 200 species in Lake Malawi. For arid-land species, important centres of endemism include Somalia, Ethiopia and Namibia.

Most oceanic islands off the coast of Africa also have high numbers of endemic species. Examples include the Comoros, Mauritius, São Tomé and Príncipe, and the Seychelles. Endemic species are particularly susceptible to extinction because of their small geographic ranges and vulnerability to introduced species.

Madagascar, known as the Island Continent, is believed to have separated from Africa some 160 million years ago. Its flora and fauna evolved in relative isolation, resulting in a unique set of species that includes the famous lemurs and baobabs. An astonishing 80% of its 10,000 vascular plants are endemic, making it the island with by far the most endemic plants in the world. Yet its flora is poorly known and, as the map on page 44 shows, much of its unique vegetation has been devastated in recent years.



Medicinal plants are valuable not just for home consumption but as exports. Here a forest botanist in Cameroon inspects damage to a Prunus africana tree stripped of its bark, which is used to treat prostate cancer. Since this treatment was discovered, the wild trees have been debarked so much they would have become extinct in ten years. Conservation groups have successfully encouraged villagers to grow the trees in community forests, and so take pressure off the wild trees.

contribute to the reconstruction and development of the nation's economy. In fact, tourism is the world's largest industry and is growing at around 5% per year. Africa has the world's most spectacular displays of wildlife but, according to the World Tourism Organisation, receives only 1.8% of global tourism. This declines to 1.1% if South Africa is not included in the figures. So the potential for developing tourism is huge.

- **Protect watersheds to safeguard water supplies.** Protected areas, and in particular mountain protected areas, are vital sources of quality water supplies, especially in the drier parts of the continent. Many capital cities in Africa depend on mountain catchments for their water supplies. Moreover, areas like Mount Kenya and Aberdare National Park in Kenya attract rainfall, and so permit the growing of vegetables and fruit for sale at home and abroad. In South Africa, which is a water-poor country, statutory protection of water catchment areas has led to very extensive mountain protected areas. The Drakensberg-Maloti mountain region, straddling the border between South Africa and Lesotho, is the principal source of water for agriculture and industrial development in South Africa.

However, protected areas can have a high cost:

- **They take out of agriculture and forestry land that before was usually used by local people.** In other words, there is a high opportunity cost of most African protected areas. One study showed the net cost to Kenyans of their protected area system was $161 million, despite one of Africa's largest tourist industries.
- **The wildlife that spills out of protected areas can cause great damage to people and their livelihoods.** Rural Africans accept damage to their crops and homes from marauding animals. Elephants can destroy villages and trample over crops and large predators will take livestock. Parents worry about lions when their children walk to school. Africans accept dangers from large animals to an extent that few Europeans would tolerate.
- **They also have a high management cost, requiring a wide array of staff, most of which is paid for by the taxpayer.**

In fact, most of the benefits of protected areas are at the national and global levels, whereas much of the costs are borne by local people, who are excluded from land they may have used in the past. The chapters that follow explore the twin themes of how to make better use of the benefits and how to find ways of covering the financial and opportunity costs of what all agree are a vital part of global biodiversity conservation.

Chapter 2: Where do we stand?

The Status of Protected Areas in Africa

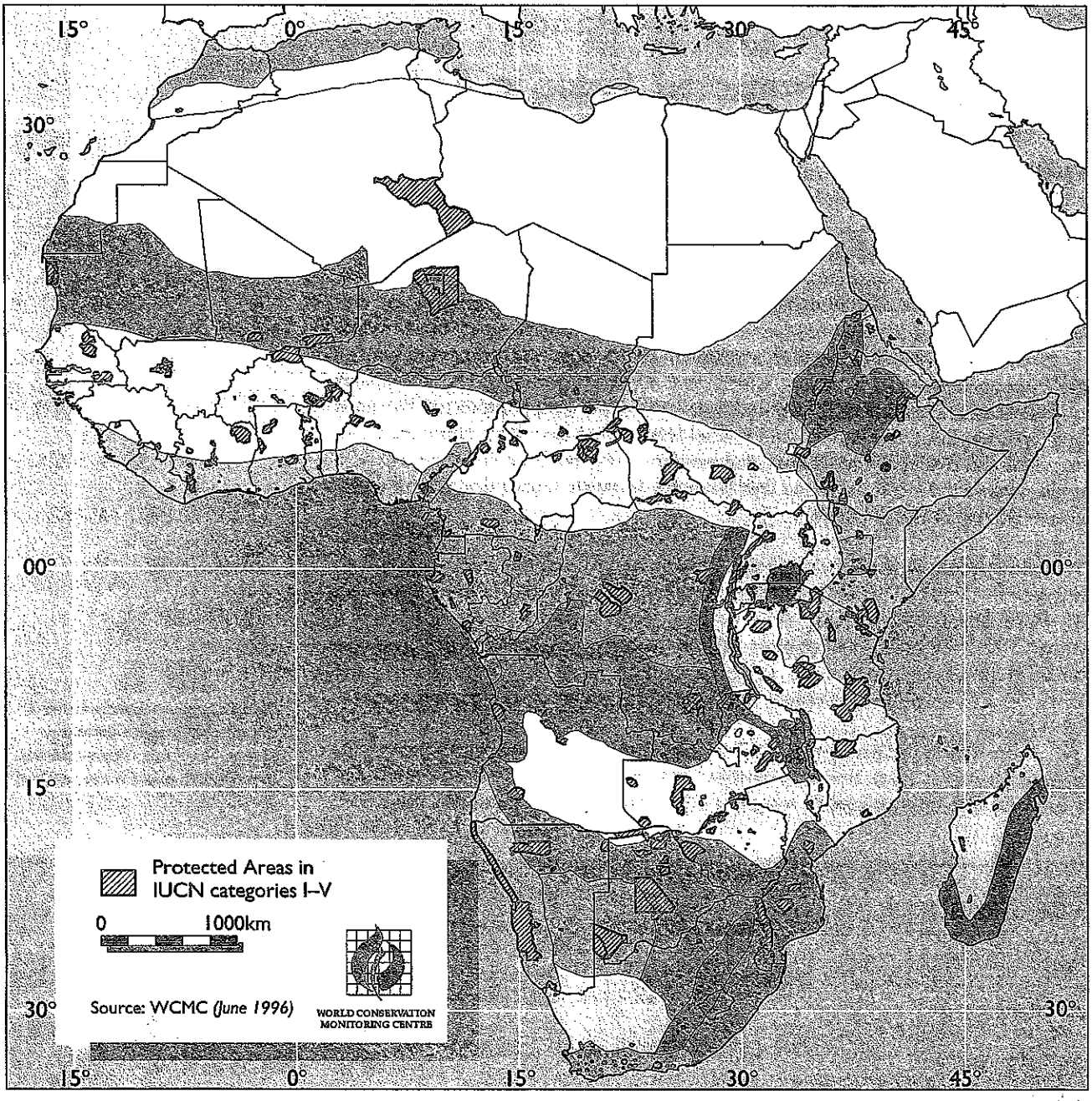
Protected areas in Africa have a long but varied history.

Conservation areas have a long tradition in Africa. Historically many species of plants and animals, and sometimes the places where they grew and lived, were protected by cultural and social traditions. Traditional societies negotiated access rights between them to common resources, especially to shared wetlands and dry-lands. Access was often controlled at particular times of the year, for example by only grazing forests in the dry season, to avoid damage. Societies had strong traditions of protecting isolated forest patches, which were conserved for cultural and religious reasons. In coastal Kenya, for example, the Mijikenda people protected the *kaya* forests which today retain plant and animal species that have been eliminated over much of the region by agriculture and tourism. The Boabeng-Fima sanctuary, a traditional sacred forest in Ghana, has become a favourite tourist destination where people go to visit the monkeys.

The first African national park was the Albert (now Virunga) NP created in 1925 in the Belgian Congo (now the Democratic Republic of Congo), soon followed by Kruger in South Africa (1926). Many more national parks followed throughout colonial Africa. Following independence most African governments, recognizing the importance of protecting their living natural resources, have further expanded their protected area networks encouraged by conservation groups from outside the region.

The main reason for national parks has been to protect Africa's spectacular large mammals, which have attracted tourists. However, national parks and protected areas have also been created to safeguard other features, both scenic and biological.

Africa's largest protected area is the Aïr and Ténéré National Nature Reserve in Niger, covering over 70,000 sq. km in the north of the country.



Key to biogeographic provinces (Udvardy, 1975)

- Central African Highlands
- Congo Rain Forest
- Congo Woodland/Savanna
- East African Highlands
- Ethiopian Highlands
- Guinean Rain Forest
- Kalahari
- Karroo
- Lake Malawi (Nyasa)
- Lake Rudolf
- Lake Tanganyika
- Lake Ukerewe (Victoria)
- Malagasy Rain Forest
- Malagasy Thorn Forest
- Malagasy Woodland/Savanna
- Miombo Woodland/Savanna
- Namib
- Sahara
- Somalian
- South African Highlands
- South African Woodland/Savanna
- West African Woodland/Savanna
- Western Sahel
- Cape Sclerophyll
- Atlas Steppe
- Mediterranean Schlerophyll

Mount Kenya and Mount Kilimanjaro National Parks were established for the beauty of their landscape, and Lake Malawi National Park was set up to protect its abundance of endemic fish. Sometimes conservation action has focused on individual species, such as the African rhino and elephant. Most Forest Reserves were set up to protect watersheds, but often do not feature in analyses of protected areas.

African nations have allocated large proportions of their territory to conservation.

African nations have set an example to the world in establishing large areas of land for conservation – in all over 2 million sq. km. Indeed, the amount of protected areas is proportionately much higher than in many developed countries. This has been possible because of the low population density, the existence of large, little used areas, and the vast size of the continent. We will return to the consequences of this very large protected area estate later. (For number and extent see Table 1 and for distribution of the larger areas Map 2.)

Despite its great size, however, the protected area networks do not encompass samples of all the different ecosystems. In general, the ecosystems that are least protected are coastal systems (including mangroves), wetlands, lagoons, lakes and forests. A study by the World Conservation Monitoring Centre in 1995 found that mangrove, inland swamp forests and lowland rain forests were under-protected compared to other forest types. The study also found that two types of ecosystem – lowland rain forests below 300 m in Madagascar and wooded grassland with baobabs in Angola and Congo (Dem. Rep.) – had no protected areas at all.

Box 2

AFRICA HAS IMPORTANT CENTRES OF ENDEMISM AND DIVERSITY.

Mainland areas with particular concentrations of endemic species include:

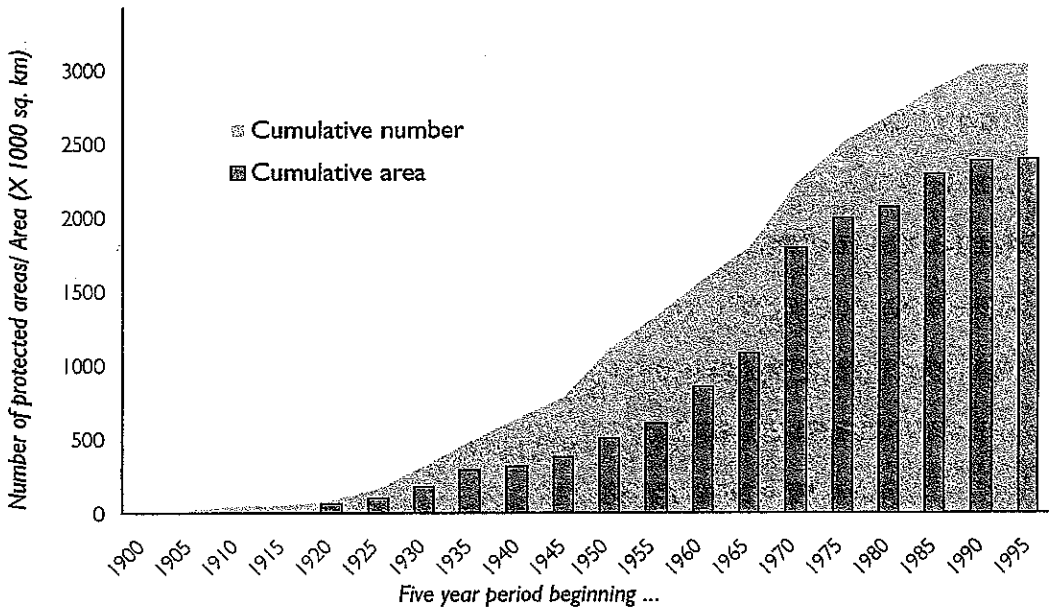
- the lowland forests of Côte d'Ivoire and Liberia;
- the montane and lowland forests of Nigeria, Cameroon and Gabon;
- the forests of the western escarpment of Angola;
- the lowland and montane forests of eastern Democratic Republic of Congo, western Uganda and Rwanda;
- the Ethiopian Highlands;
- the coastal forests of Kenya and the forests of eastern Tanzania;
- the Cape region of South Africa.

Wetlands of particular importance for their bird life include:

- the inner delta of the Niger River in Mali;
- the seasonally inundated floodplains of northern Central African Republic and southern Chad;
- the Sudd region of southern Sudan;
- Lakes Victoria and Kyoga in Uganda;
- the swamps of western Tanzania, southern Democratic Republic of Congo and parts of Zambia; and
- the Okavango region of northern Botswana.

Growth in African protected areas has now slowed down.

As the graph below shows, the most rapid growth in African protected areas was in the 1960s, the years immediately after independence. Compared to other tropical



Growth of Protected Areas in Africa

Source: WCMC

Map 2. Protected areas in Africa (including North Africa) by biogeographic province

Table 1

Protected areas of Africa by country and management category

Country	Country Area	I/Ia/Ib		II		III		IV		V		VI		TOTAL	
		Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
Angola	1,246,700			54,230	4.35			27,482	2.20	100	0.01			81,812	6.56
Benin	112,620			7,775	6.90							4,850	4.31	12,625	11.21
Botswana	575,000			45,515	7.92			59,453	10.34					104,968	18.26
Burkina Faso	274,122			5,343	1.95			23,209	8.47					28,552	10.42
Burundi	27,835							1,441	5.18					1,441	5.18
Cameroon	475,500			10,318	2.17			10,656	2.24					20,974	4.41
Cape Verde	4,035														
Central African Rep.	624,975	860	0.14	31,020	4.96			19,217	3.07			3,359	0.54	54,456	8.71
Chad	1,284,000			4,140	0.32			110,800	8.63					114,940	8.95
Comoros	1,860														
Congo	342,000			5,132	1.50			10,318	3.02			1,550	0.45	17,000	4.97
Congo, Dem. Rep.	2,345,410	2,700	0.12	99,166	4.23			41	0			44,467	1.90	146,374	6.24
Côte d'Ivoire	322,465	1,280	0.40	17,625	5.47			950	0.29					19,855	6.16
Djibouti	23,000			100	0.43									100	0.43
Equatorial Guinea	28,050														
Eritrea	117,600							5,006	4.26					5,006	4.26
Ethiopia	1,104,300			30,357	2.75			24,818	2.25			131,823	11.94	186,998	16.93
Gabon	267,665	150	0.06					7,080	2.65					7,230	2.70
Gambia	10,690			184	1.72			35	0.33					219	2.05
Ghana	238,305	386	0.16	10,584	4.44			66	0.03			1,645	0.69	12,681	5.32
Guinea	245,855	1,253	0.51	382	0.16									1,635	0.67
Guinea-Bissau	36,125														
Kenya	582,645			34,520	5.92			524	0.09			10,315	1.77	45,359	7.79
Lesotho	30,345							68	0.22					68	0.22
Liberia	111,370			1,292	1.16									1,292	1.16
Madagascar	594,180	5,695	0.96	1,753	0.30			3,752	0.63			1,106	0.19	12,307	2.07
Malawi	94,080			6,962	7.40			3,623	3.85					10,585	11.25
Mali	1,240,140			3,500	0.28	4,000	0.32	37,820	3.05					45,320	3.65
Mauritania	1,030,700	3,100	0.30	11,860	1.15			2,500	0.24					17,460	1.69
Mauritius	1,865			66	3.54			68	3.65					134	7.18
Mayotte (France)	376			42	11.17							5	1.33	47	12.50
Mozambique	784,755			19,670	2.51			28,120	3.58			22,000	2.80	69,790	8.89
Namibia	824,295			97,750	11.86			60	0.01	8,348	1.01	6,000	0.73	112,158	13.61
Niger	1,186,410	12,800	1.08	2,200	0.19			81,941	6.91					96,941	8.17
Nigeria	923,850	492	0.05	22,264	2.41			7,449	0.81					30,205	3.27
Réunion (France)	2,510							111	4.42					111	4.42
Rwanda	26,328			2,640	10.03			981	3.73			340	1.29	3,961	15.04
São Tome and Principe	964														
Senegal	196,720			10,124	5.15			11,683	5.94			600	0.31	22,407	11.39
Seychelles	404	350	NA	90	NA									440	NA
Sierra Leone	72,325							820	1.13			713	0.99	1,534	2.12
Somalia	630,000							1,800	0.29			3,444	0.55	5,244	0.83
South Africa	1,184,825	1,410	0.12	41,214	3.48			23,156	1.95			235	0.02	66,015	5.57
Sudan	2,505,815			84,990	3.39			1,430	0.06			36,070	1.44	122,490	4.89
Swaziland	17,365							352	2.03			249	1.43	601	3.46
Tanzania	939,760			41,000	4.36			97,164	10.34			124,453	13.24	262,617	27.95
Togo	56,785			3,573	6.29			712	1.25					4,284	7.54
Uganda	236,580			8,762	3.70			10,271	4.34	65	0.03	30,022	12.69	49,120	20.76
Zambia	752,615			63,585	8.45	51	0.01					162,832	21.64	226,468	30.09
Zimbabwe	390,310			27,019	6.92	20	0.01	183	0.05	3,456	0.89	19,251	4.93	49,929	12.79
TOTALS	24,126,429	30,476	0.13	806,747	3.34	4071	0.02	615,160	2.55	11,969	0.05	605,329	2.51	2,073,753	8.60

Areas are in square kilometres. Excludes protected areas not assigned a management category.
Source: "1997 UN List of Protected Areas", World Conservation Monitoring Centre/IUCN, 1998

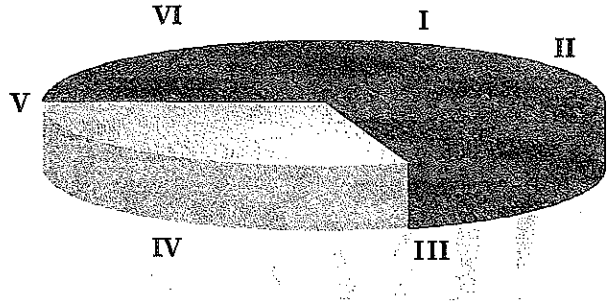
Three cheetah survey their domain. Effective conservation of large predators like these requires sensitive management. They are very vulnerable to disturbance by tourists.

regions, notably Latin America, there has been little growth since the late 1980s. Kenya, for example, has decided the country does not have space for any more protected areas, a decision that incidentally is leading to conservation being marginalized in the political process according to some observers. However, the graph does disguise some upgrading of protected areas: for example, Uganda has recently converted six Forest Reserves into National Parks.

The selection of the areas has been driven by a combination of political expediency and biological needs.

The areas protected, although large, were not always the first choice of the conservationists. For example, Tsavo National Park in the south of Kenya was created in response to lobbying by hunters for a large park in the north of the country, a proposal rejected by the Land Commission of the time because of strong local claims to the land. Tsavo, now treasured as one of the jewels of the Kenyan parks, was then seen as poorer in wildlife than neighbouring areas but was available because it had no permanent residents. However, the Taita Hills, a major centre of plant endemism, were excluded from the park because many people lived there.

In Botswana, Malawi, Zambia and Zimbabwe, many protected areas are in boundary areas between different ethnic groups. Because of tsetse, people did not travel to the limits of their lands, and so these areas developed abundant wildlife. Areas around international boundaries became protected areas for similar reasons, as was the case with the string of protected areas shown on page 32 between Zimbabwe and Zambia.



Distribution of protected areas in Africa by IUCN management category (by area). Unlike developed regions, Africa has few protected landscapes (category V), but a growing extent of sustainable use reserves (Category VI).

Marabou Stork in Africa's oldest national park, Virunga in the Democratic Republic of Congo.

A characteristic of many parks in Africa was that local people were excluded, in some cases even moved out of their lands. This policy, now seen as unjust and mistaken, has left a powerful legacy behind, and, as we discuss in the next two chapters, reversing it is a crucial part of the new approach to park management. In short, the old policy was single-use, resulting in conflicts and compromises over allocation of land for parks. The modern approach is multiple use, trying to find the best land management approach for each site of importance to biodiversity that will deliver both conservation and sustainable, satisfying livelihoods for the people that live there.

Present institutional arrangements are complex and sometimes fragmented.

During the 1940s and 1950s, authorities in the countries then under British rule began to separate the various conservation responsibilities, such as for forestry or wildlife, both legislatively and administratively, whereas the French authorities tended to keep parks as a subsidiary of forestry. Until recent reforms, Uganda, for example, had a Forest Department, a Game Department, and a National Parks Department.

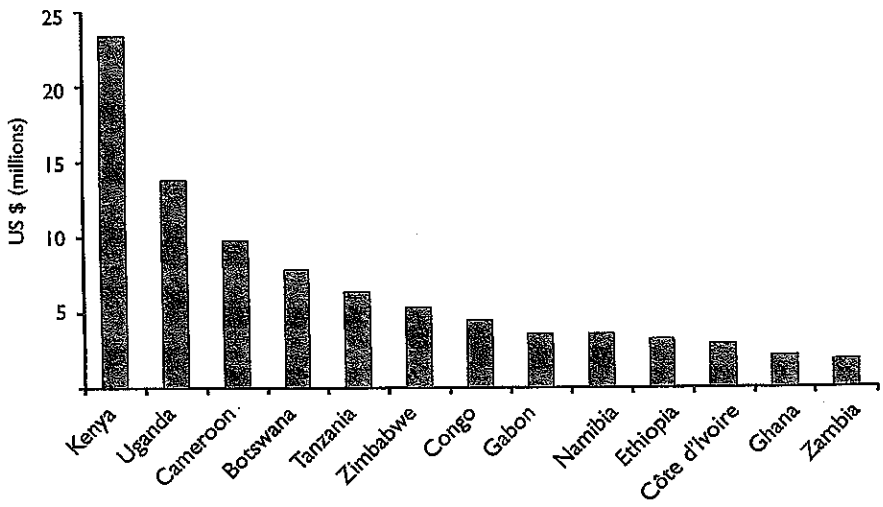
Many countries are now recognizing that the arrangements they inherited are not satisfactory and are seeking more efficient structures that avoid duplication. This is leading to fragmented departments coming together, to the creation of parastatals and to the greater use of NGOs for park management. Above all, many governments want to experiment with new arrangements.

Today, managers of protected areas may include tourism departments, fisheries departments, museums and research institutes. Creating parastatal bodies has been a popular approach, with the advantage of freeing the agency from government bureaucracy and joining wildlife skills with management expertise from the private sector. For example, Kenya replaced the former Wildlife Department with the Kenya Wildlife Service as a parastatal in 1989. An early case comes from Tanzania, which created Tanzania National Parks (TNP) as a parastatal in 1965. It has its own board of trustees and is encouraged to raise its own revenue. It has done well in the succeeding years, maintaining its independence and surviving difficult times. Although it has never received major donor support, it is in better shape now than ever before and has become a well-endowed agency by Tanzanian standards.

In recent years, most countries have established Environment Ministries, encouraged by donors and in particular by the World Bank's NEAP (National Environment Action Plan) approach, which has a strong emphasis on how environment is handled at the centre of government. The new Ministries, often with coordinating and cross-sectoral rather than executive roles, have yet to establish their reputations and sometimes sit uncomfortably alongside existing structures for conservation.

Aid to wildlife and protected area projects in selected African countries, 1996

Source: The Environment and Development Group



Protected areas in Africa have received a great deal of international support.

There is a long tradition of external support to protected areas in Africa. A study by the Environment and Development Group (Oxford, UK) showed that allocations to wildlife and protected area conservation projects in 16 African countries by external donors grew by 33% p.a. from 1992 to 1996, reaching almost US$ 100 million in 1996. Kenya received the most – $23 million – as shown in the chart (left). Interestingly, West Africa received only 8% in contrast to 48% for East Africa, indicating a strong skew towards parks with tourism potential.

Like other donors, the European Commission has funded a wide range of projects in Africa, designed to combine conservation and development. Major ones include ECOFAC in Central Africa (see Box 3) and CAMPFIRE in Zimbabwe (Box 7, p. 53). It has also aided groups such as WWF, notably for Korup National Park in Cameroon (p. 50). Not all projects have been successful, as the story of support to Benin's national parks shows (Box 6, p. 50). Other large projects supported include:

- Serengeti National Park, Tanzania: capacity building on tourism services, conservation education and outreach to neighbouring communities;
- Uganda, assisting the reconstruction of national parks, notably Murchison, Queen Elizabeth and Kidepo through the 1980s;
- Botswana: two projects which together provide management planning for the country's protected areas with subsequent implementation.

In the countries of the Indian Ocean, the European Commission is supporting a five-year, 11 million Euro project in Madagascar, Comoros, Seychelles and Mauritius on the

Box 3

ECOFAC is the European Commission's Largest Protected Area Programme in Africa.

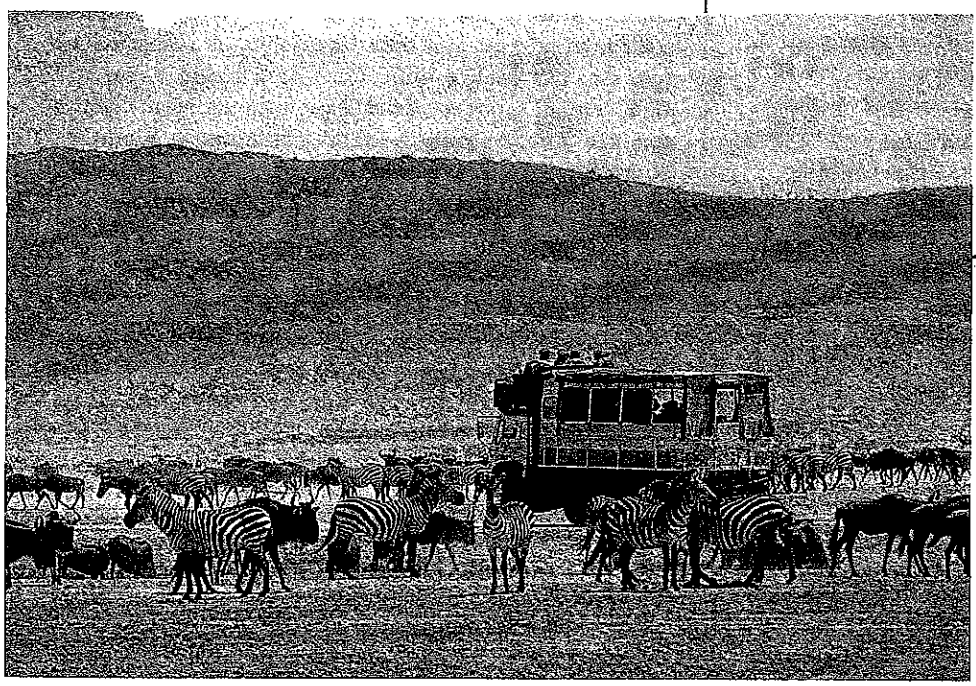
The Programme for Conservation and Rational Utilization of Forest Ecosysems in Central Africa (ECOFAC) started in 1992 and had received some 40 million Euro under the 6th and 7th European Development Funds. It answers a request by the region's governments that a substantial part of EDF funds be allocated to forest conservation.

The aim of ECOFAC is to conserve some protected areas vital for biodiversity. It does this by promoting the development of the neighbouring forest communities in ways that will benefit the protected areas. For example:

- In Dja Wildlife Reserve, Cameroon, ECOFAC offers local people around the reserve economic activities that are labour intensive and use local materials as a more profitable alternative to hunting.
- In CAR, working with a logging company, it has produced a forest management plan under which in return for European Commission help the company agrees to abide by logging rules drawn up by ECOFAC and the Government;
- In Lossi, Congo, southwest of Odzala National Park, ECOFAC promotes tourism to see the lowland gorillas. Local people agreed to designate their traditional hunting grounds as a sanctuary; they will share the income from the visitor permits and get jobs to guide and look after the tourists.
- In São Tomé and Príncipe, it has identified key areas to be protected, developed a management plan for two sites and started implementation.

The programme has a strong research component, producing inventories on the distribution and abundance of resources in such as primates, birds and plants. The message is spread by a range of media – cartoons, plays, local newspapers and a web site (www.ecofac.org).

Source: ECOFAC Regional Programme, European Commission, DGVIII.



The European Commission has provided support to the Serengeti National Park and adjacent areas including Ngorongoro Conservation Area, Tanzania. One aim of the project was to build the park's capacity to attract tourists, who are vital in generating protected area revenue.

protection of the coastal zones, with biodiversity as one of its themes. A strategy for the whole coastal zone has been prepared and pilot projects are now underway.

NGOs play a major role in protected areas in Africa.

Many African countries have national and local NGOs dedicated to wildlife conservation, such as the Ghana Wildlife Society, the Conservation Society of Sierra Leone and the East African Natural History Society, based in Kenya. Many countries have wildlife clubs, which tend to focus on interesting schoolchildren in conservation. The influence of national and local NGOs is high and increasing, despite their small size.

International NGOs have a long record of activity in African protected areas. They include the African Wildlife Foundation (AWF), BirdLife International, Conservation International (CI), Fauna and Flora International (FFI), Frankfurt Zoological Society (FZS), Wildlife Conservation Society (WCS) and WWF (World Wide Fund For Nature/World Wildlife Fund). IUCN itself, as a hybrid – it is a Union of States, Government Agencies and NGOs – has the largest of its regional programmes in Africa, with offices and activities in many countries, with the intention of building the capacity of its member organizations through shared projects. Protected areas have often been a key part of IUCN's programme in the region, with the Union working to build development activities and local community involvement into protected areas on the ground.

The tendency to channel aid through NGOs is rapidly increasing their effectiveness and ability to take on jobs formerly done by government agencies. Donors such as US-AID, and in Europe German, Dutch and British aid, now have substantial components of flexible support to NGOs in their conservation projects, resulting in lots of little projects. This has genuinely built capacity. Problems, however, may arise for donors because NGOs are not independent facilitators but have agendas of their own which may be focused on the interests of their members, interests that do not always match the needs of local communities or the host nation. Also, NGOs seek funds for their own projects and offer themselves as managers, a twin role that can lead to difficulties. As a recent report to UK's DFID remarks, project identification should ideally be done by the host agency not by an NGO. Furthermore, the increasing strength of NGOs is to some extent achieved at the expense of government agencies, from whom they tend to recruit staff.

Box 4

African nations strongly support the World Heritage Convention.

By the end of 1997, 31 Natural (or mixed Natural/Cultural) sites from Africa south of the Sahara were inscribed on the World Heritage list. These include some of the most diverse and breathtaking sites in Africa, such as:

- The largest protected area on the continent – the 7.7 million ha Réserve de l'Aïr et du Ténéré in Niger;
- The famous Ngorongoro Conservation Area, Serengeti and Selous in Tanzania, among the finest places for wildlife on earth;
- Mountains – notably Mt Rwenzori in Uganda, Mt Kenya, and Mt Nimba (shared between Guinea and Côte d'Ivoire);
- Forests – including the plant-rich Bwindi Impenetrable Forest in Uganda, the Taï Forest in Côte d'Ivoire and Dja Faunal Reserve in Cameroon;
- Wetlands – sites such as Djoudj National Park in the Senegal river delta and Banc d'Arguin National Park in Mauritania, famous for its bird life.

Yet there are still many more sites which would qualify for inclusion, especially in southern Africa where World Heritage coverage is weak. Moreover, World Heritage status is not a guarantee that the conservation status of an area will be safeguarded. Of the 22 sites on the World Heritage in Danger list, 7 of them are natural sites in Africa. They include Manovo-Gounda St Floris National Park in Central African Republic, a vast savannah rich in wildlife, where widespread illegal grazing and poaching, and the death of 4 park staff in 1997, have brought conservation and tourism activities to a halt. Three of the four sites from Democratic Republic of Congo are on the danger list, notably Garamba due to the massive influx of refugees from southern Sudan.

Following Rio, African nations have enthusiastically ratified the Biodiversity Convention and are preparing Biodiversity Strategies and Action Plans (BSAPs).

By mid-1998, all but five Sub-Saharan nations had ratified the Convention on Biological Diversity, a remarkable achievement considering that the Convention was agreed only in 1992. Funded by the Global Environment Facility, virtually every country has prepared or started its BSAP, which is required under the Convention as the national plan for implementation. This is obliged to cover all the aims of the Convention – sustainable use, technology transfer and benefit-sharing as well as conservation – but inevitably protected areas are at the heart of these documents, with emphasis on increased coverage and improved management.

Table 2

Participation of African countries in conservation treaties

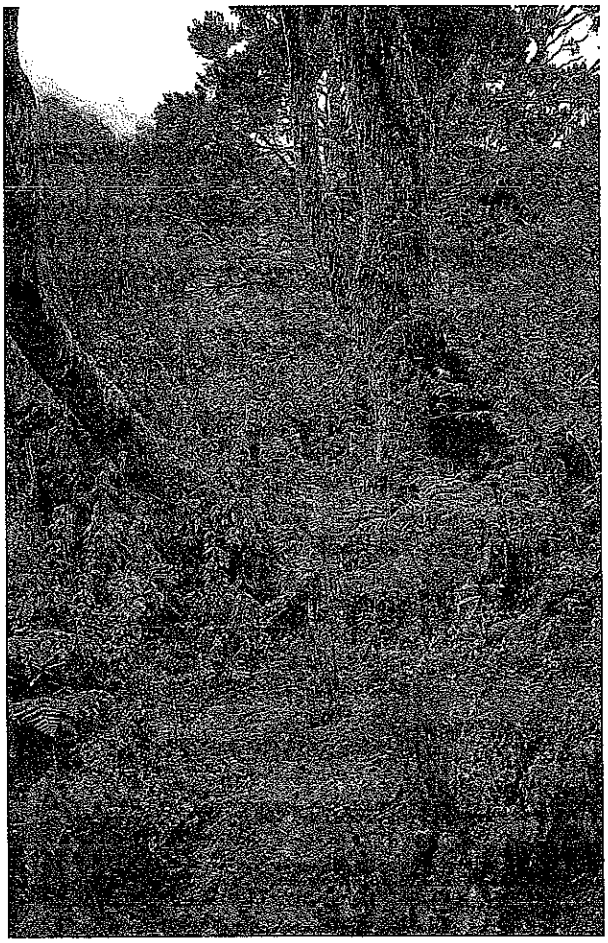
Country	World Heritage Convention		Ramsar Convention		CITES	Bonn Conv.	Biodiversity Conv.	African Conv.
	Date	Sites	Date	Sites	Date	Date	Date	Date
Angola	1991						1998	
Benin	1982				1984	1986	1994	
Botswana			1997	1	1977		1995	
Burkina Faso	1987		1990	3	1989	1989	1993	1969
Burundi	1982				1988		1997	
Cameroon	1982	1			1981	1981	1994	1978
Cape Verde	1988						1995	
Central African Republic	1980	1			1980		1995	1970
Chad			1990	1	1989	1997	1994	
Comoros			1995	1	1994		1994	
Congo	1987		1998	1	1983		1996	1981
Congo, Dem. Republic of	1974	5	1996	2	1976	1990	1994	1976
Côte d'Ivoire	1981	3	1996	1	1994		1994	1969
Djibouti					1992		1994	1978
Equatorial Guinea					1992		1994	
Eritrea					1994		1996	
Ethiopia	1977	1			1989		1994	
Gabon	1986		1987	3	1989		1997	1988
Gambia	1987		1997	1	1977		1994	
Ghana	1975		1988	6	1975	1988	1994	1969
Guinea	1979	1	1993	6	1981		1993	
Guinea-Bissau			1990	1	1990	1995	1995	
Kenya	1991	2	1990	2	1978		1994	1969
Lesotho							1995	
Liberia					1981			1978
Madagascar	1983	1			1975		1996	1971
Malawi	1982	1	1997	1	1982		1994	1973
Mali	1977	1	1987	3	1994	1987	1995	1974
Mauritania	1981	1	1983	2	1998	1998	1996	
Mauritius	1995				1975		1992	
Mayotte (France)	1975		1986		1978		1994	
Mozambique	1982				1981		1995	198
Namibia			1995	4	1990		1997	
Niger	1974	2	1987	1	1975	1980	1995	1970
Nigeria	1974				1974	1986	1994	1974
Réunion (France)	1975		1986		1978		1994	
Rwanda					1980		1996	1980
São Tome and Principe								
Senegal	1976	2	1977	4	1977	1988	1994	1972
Seychelles	1980	2			1977		1992	1977
Sierra Leone					1994		1994	
Somalia					1985	1985		
South Africa	1997		1975	16	1975	1991	1995	
Sudan	1974				1982		1995	1973
Swaziland					1997		1994	1969
Tanzania	1977	4			1979			1974
Togo	1998		1995	2	1978	1995	1995	1979
Uganda	1987	2	1988	1	1991		1993	1977
Zambia	1984	1	1991	2	1980		1993	1972
Zimbabwe	1982	2			1981		1994	

Dates indicate the year when a country acceded to or ratified a Convention.
For the World Heritage Convention, only natural and mixed sites are listed.
Prepared by the World Conservation Monitoring Centre. Updated August 1998.

The Biodiversity Convention has proved of great value in Africa, enabling parks departments and others to repackage a wide range of existing proposals under the politically attractive banner of biodiversity. It has also enabled them to refocus their work more strongly on biodiversity, including birds, plants and insects as well as the large mammals that have been the traditional focus of conservation in Africa.

African nations have widely supported the other international treaties on biodiversity and conservation.

Most African nations have ratified the other international conservation conventions, notably World Heritage (Box 4, p. 38), Ramsar (wetlands) and CITES. However, these agreements are not well known among local people and have had most impact among those professionally involved in conservation. Many in Africa see the challenge is to make these agreements more meaningful on the ground, to make them more inclusive and so more effective in building local support for protected areas.



The dripping, mossy, plant-rich montane forest of the Rwenzori Mountains, on the border of Uganda and Dem. Rep. Congo (Centre of Plant Diversity No. Af 77). Rwenzori National Park in Uganda was inscribed on the World Heritage List in 1994.

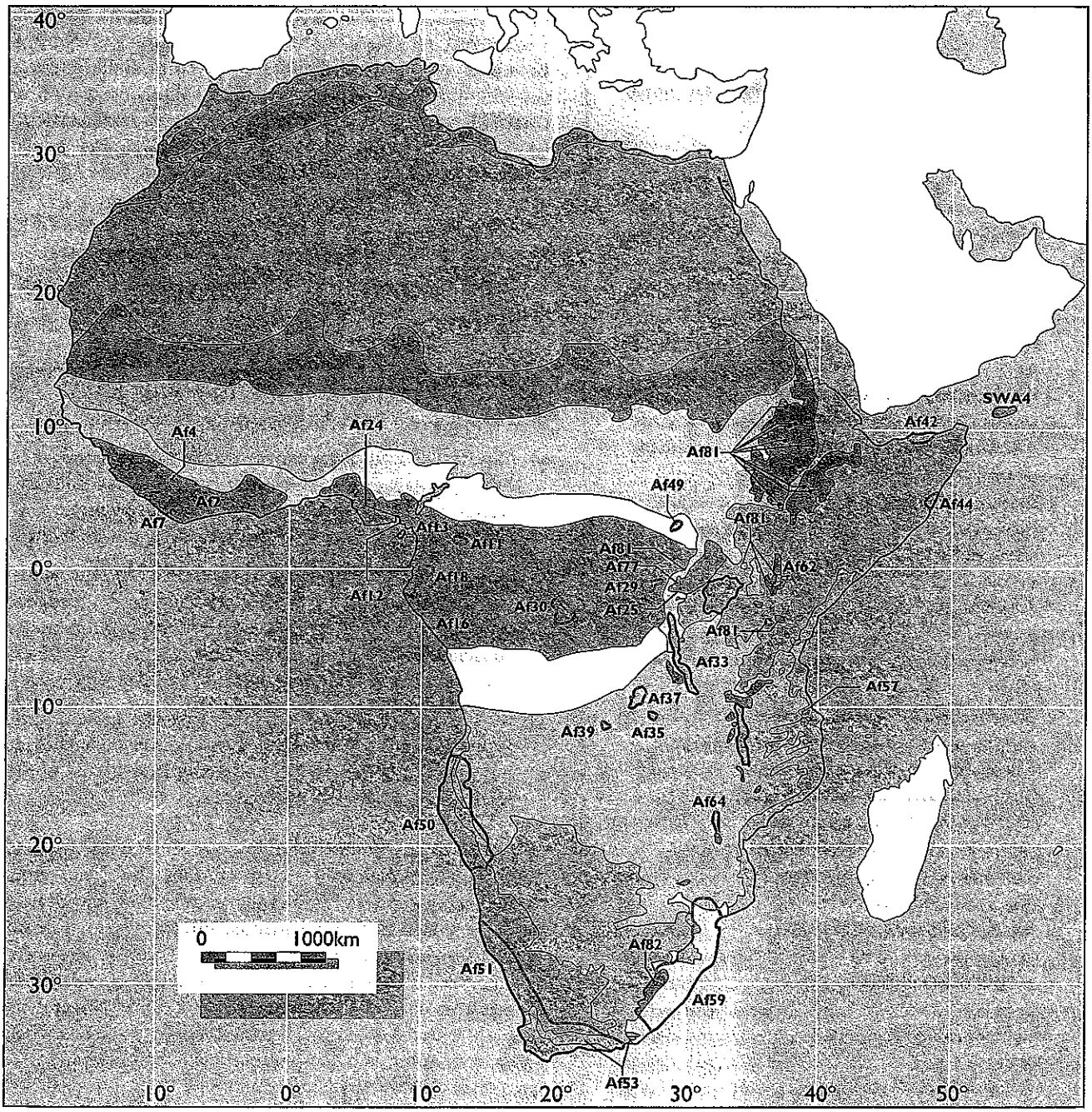
▶ *Map 3*

Selected centres of plant endemism in Africa

One of the analyses of protected area needs in Africa has been to identify Centres of Plant Diversity, an approach that works particularly well in Africa because many of the areas of plant diversity, typically forests and mountains, are isolated geographical features surrounded by large areas of low plant diversity. Bird and plant diversity correlates well in Africa, but the areas of highest plant diversity are not usually those areas best known for their mammal fauna. The map opposite shows some of the 84 sites identified, on a backdrop of the phytogeographical (plant-geographical) zones of Africa.

Key to Centres

Af2	Taï National Park (Côte d'Ivoire)
Af4	Mont Nimba (Guinea, Liberia, Côte d'Ivoire)
Af7	Sapo National Park (Liberia)
Af11	Forest zone, River Dja region (Cameroon)
Af12	Korup National Park (Cameroon)
Af13	Mount Cameroon (Cameroon)
Af16	Mayombe (Congo, Cabinda, Dem. Rep. of Congo)
Af18	Cristal Mountains (Gabon)
Af24	Cross River National Park (Nigeria)
Af25	Bwindi (Impenetrable) Forest (Uganda)
Af29	Maïko National Park (Dem. Rep. of Congo)
Af30	Salonga National Park (Dem. Rep. of Congo)
Af33	Mahale-Karobwa Hills (Tanzania)
Af35	Kundelungu (Dem. Rep. of Congo)
Af37	Upemba National Park (Dem. Rep. of Congo)
Af39	Zambezi source area (Zambia)
Af42	Cal Meadow (Somalia)
Af44	Hobyo (Somalia)
Af49	Garamba National Park (Dem. Rep. of Congo)
Af50	The Kaokoveld (Angola, Namibia)
Af51	Western Cape Domain (Succulent Karoo) (Namibia, South Africa)
Af53	Cape Floristic Region (South Africa)
Af57	Rondo Plateau (Tanzania)
Af59	Maputaland-Pondoland Region (South Africa, Swaziland, Mozambique)
Af62	Mount Kenya (Kenya)
Af64	Mount Mulanje (Malawi)
Af71	East Usambara Mountains (Tanzania)
Af77	Rwenzori Mountains (Uganda/Dem. Rep. of Congo))
Af81	Afroalpine Region (East and North-east Africa)
Af82	Drakensberg Alpine Region (Lesotho, South Africa)
SWA4	Socotra



Phytogeographical areas in Africa

- Guineo-Congolian regional centre of endemism
- Zambezeian regional centre of endemism
- Sudanian regional centre of endemism
- Somali-Masai regional centre of endemism
- Cape regional centre of endemism
- Karoo-Namib regional centre of endemism
- Mediterranean regional centre of endemism
- Afromontane archipelago-like regional centre of endemism
- Guinea-Congolian / Zamezia regional transition zone
- Guinea-Congolian / Sudania regional transition zone
- Lake Victoria regional mosaic
- Zanzibar-Inhambane regional mosaic
- Kalahari / Highveld regional transition zone
- Tongaland-Pondoland regional mosaic
- Sahel regional transition zone
- Sahara regional transition zone
- Mediteranean / Sahara transition zone

Box 5

DOCUMENTS OUTLINING PROTECTED AREA NEEDS IN AFRICA INCLUDE:

- **Review of the Protected Areas system in the Afrotropical Realm** (1986) by John and Kathy Mackinnon for IUCN reviews the extent to which the major bioregions (Phytochoria) are covered in protected areas and the major conservation issues in each. It identifies species in need of attention, potential additions to the protected area system to improve ecosystem coverage and priorities for regional action. The process is then repeated for each country.
- **Key Forests for Threatened Birds in Africa**, by ICBP, now BirdLife, identifies and prioritizes key forests for bird conservation in Africa on the basis of their importance to rare and threatened bird species.
- **Biodiversity in sub-Saharan Africa and its Islands: Conservation, Management and Sustainable Use** (1990), by S.N. Stuart, R.J. Adams & M.D. Jenkins explains the concept of biodiversity, identifies threats, priority actions and key areas for the conservation of biodiversity. It provides information on critical sites, critical species, threats, current conservation measures, and suggested conservation activities, for each country in turn.
- **Identification, Establishment and Management of specially protected areas in the WACAF Region: National and Regional Conservation Priorities in Terms of Coastal and Marine Biodiversity** (1992) by IUCN and UNEP defines conservation priorities for coastal and marine areas in Mauritania, Senegal, the Gambia, Guinea-Bissau, Guinea, Sierra Leone, Ghana, Côte d'Ivoire, Togo, Benin, and Nigeria.
- **Ecologically Sensitive Sites in Africa**, in 5 volumes covering the various parts of Africa (1993), by WCMC for the World Bank, defines Ecologically Sensitive Areas (ESAs) as areas of natural value, suggests ways by which World Bank activities can support ESAs, provides some design guidelines for protected areas, identifies "tropical wildlands of special concern", and provides a country-by-country listing of known protected areas and unprotected ESAs.
- IUCN and WWF's **Centres of Plant Diversity** (1994) identifies 84 sites in Africa which if protected would "catch" the greatest proportion of plant diversity (map on p. 41).
- IUCN's **Framework for Action for Protected Areas in the Afrotropical Realm** (latest version 1996), the product of a WCPA meeting in South Africa in 1994, sets out 5 goals and a hundred or so individual activities to be carried out.

(Each is fully cited on page 117.)

At a regional level, the Africa Convention (African Convention on the Conservation of Nature and Natural Resources, or Algiers Convention), agreed in 1968, outlines the commitment of African nations to the conservation of their soil, water, flora and faunal resources. It provides definitions for strict nature reserves, national parks and special reserves, but these appear to be less used now.

Many regional strategies for protected areas have been prepared, but have not been as effective as had been hoped.

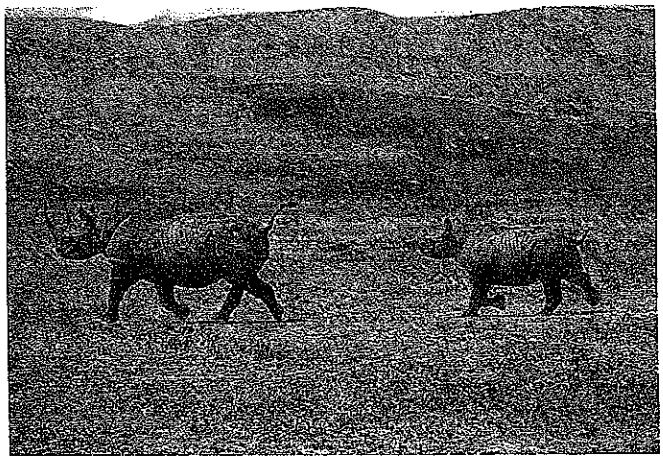
The large canvas of Africa has long attracted conservation planners and many documents have been prepared, as outlined in Box 5. Most have important limitations:

a) Many have been prepared by external advisors and institutions without the consultation, participation and consensus-building essential for successful implementation. As a result, they have not been widely used in planning.

b) There is little relationship between the various plans. Each focuses on a specific species or group of organisms, or on a region. They did not emerge from a policy consensus on local and national protected area objectives and needs in the context of regional and global priorities.

c) Most focus on ***what*** should be done but provide little guidance on ***how*** it should be done. In particular they do not link proposed activities to named institutions nor to realistic predictions of available funds.

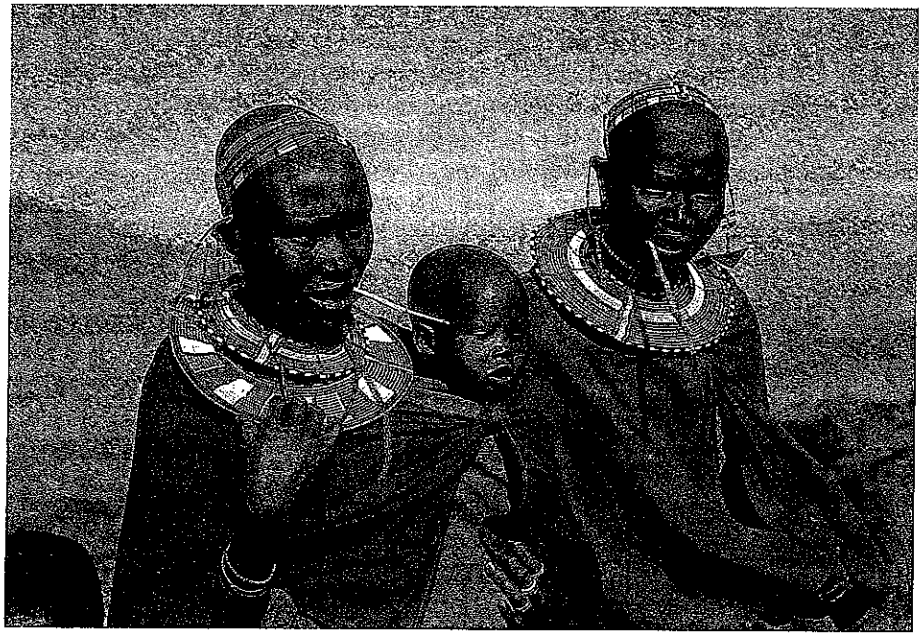
In effect, these should probably best be seen as essential background assessments based on biological data from particular perspectives, e.g. marine, plants, birds, rather than as plans that can be implemented directly. What is really needed in conservation planning is the essential consensus and political commitment without which implementation stands little chance. If well managed, the BSAP process (see page 38) is one way of providing this consensus and commitment, combining as it does political ownership with a link to the potent Biodiversity Convention.



The best efforts of wildlife agencies in Africa failed to prevent the decline of the black rhino, hunted for its vulnerable horn. 95% have been killed over the last 25 years.

Chapter 3: The Issues facing Protected Areas in Africa

Africa today is in transition. Protected areas are caught up in this process as are many other sectors of society. This chapter considers the underlying driving forces and how they affect protected areas. This provides the context for outlining the formidable and growing difficulties that protected areas face. In the next chapter, we consider how these difficulties can best be tackled.



The Maasai are one of the largest and most widely spread of the pastoral peoples of Africa. Integrating their interests into those of wildlife conservation is a major contemporary challenge.

PEOPLE AND LAND

In most African countries, the State owns up to 90% of rural land.

In contrast to the Pacific and Caribbean regions, in Africa, with the exception of South Africa, governments own most of the land. Before the colonial era, most people used land collectively, with traditional systems of shared tenure and negotiated access rights. Under the colonial administrations, the State became legally responsible for the land with the intention of holding it in trust for the people who occupy it. Since no one group had tenure, it was relatively easy for administrations to take over the land and disenfranchise those who had traditional rights of use and access. Moreover, the colonial administrator may have seen a large tract of land as "empty" and so ripe for settlement, but to local people this might have been land they knew well, used regularly and for which they were waiting for the next shower of rain before using again. Of such misunderstandings are land ownership patterns made.

This policy also enabled the colonists to "give" land to foreign settlers, who would develop the export crops needed to pay for the colonial administration. This happened in Kenya, Tanzania, Zambia and Zimbabwe, for example, but not in Ghana, Nigeria and Uganda, where the colonists found existing land ownership systems that they accepted. As a result these countries were never heavily settled by foreigners.

Another consequence was that governments could declare large tracts of land as national parks and forest reserves. This led to the creation of many protected areas in which local people were dislodged from ownership and excluded from involvement in the management of the plant and animal resources, resources they may well have used and depended upon in the past.

Increasing poverty, augmented by continued population growth, is the backdrop to all conservation activities.

Human populations across Africa continue to rise steeply, putting great pressure on government budgets and straining the capacity of agriculture to provide the food needed. In most African countries, population growth has peaked or is peaking at 3.1–3.5% per annum, a doubling time of only about 20 years. The countries that have been relatively successful in reducing population growth have seen declines to about 2.6%, yet that still means the population doubles every 30 years.

As a result, demand for resources is increasing. Today almost all of Africa's protected areas face local pressure for access to their resources – for meat, building poles, water, grazing and cultivation. The Tanzania Government, for example, recently decided to sanction cultivation in the Ngorongoro Conservation Area, a World Heritage Site. In several African countries, demand is rising to degazette some protected areas entirely and make them available for cultivation and settlement.

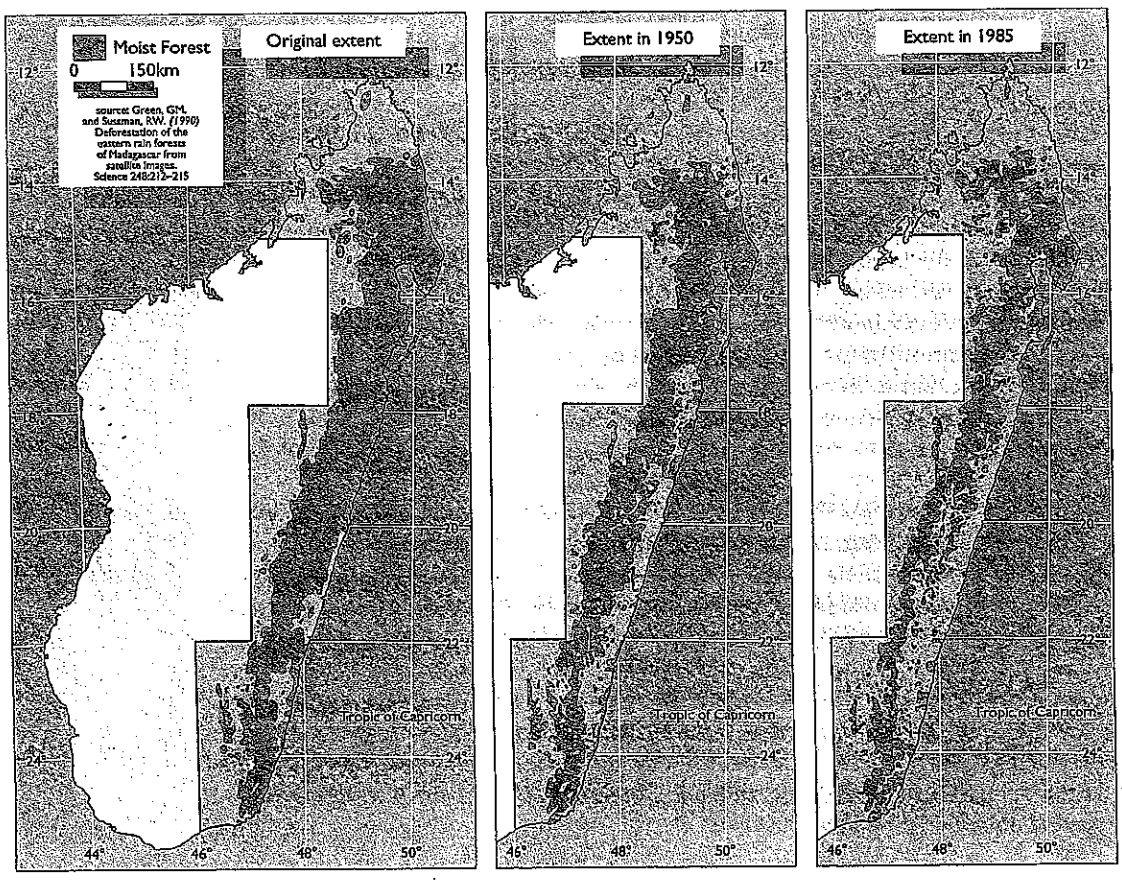
Around the continent, unsustainable harvesting is putting great pressure on many protected areas. Experience has shown that trying to stop such exploitation by force, as with anti-poaching operations, is extremely costly and usually has only limited success, especially with elephant and rhino. Instead, the route ahead has to be partnership and collaboration.

Map 4

The deforestation in Madagascar's eastern rain forests illustrates what is happening to the rural landscape in much of Africa.

Areas rich in biological diversity are shrinking rapidly, foreclosing conservation options.

According to the World Resources Institute, an estimated 65% of Africa has been converted to agricultural and other uses. To find a home and make a living people have had to use more and more land, much of it marginal land that can be easily damaged and of which people often need to use larger and larger extents to provide the basic resources they need. Forests are reduced, often to relatively small enclaves, range-



lands degraded, and wild animal populations reduced. One consequence of the declining natural resource base is that rural communities are more vulnerable than before to droughts or famine, social dislocation or civil unrest.

It is, however, a mistake to see human intervention as always reducing biodiversity. A study in Sierra Leone showed that forest fragments survive around the villages, maintained by villagers who need them; these forests have disappeared elsewhere in the country. People can increase biodiversity, especially if they use traditional methods: for many centuries the inhabitants of the rainforest in Gabon lived by shifting cultivation and created numerous forest edges as part of the process. A by-product was the increased dominance of the valuable *Okoumé* tree (*Aucoumia grandiflora*), which now accounts for 90% of Gabon's timber exports.

Protected areas will become more isolated as surrounding lands are converted to agriculture.

As land outside protected areas is cultivated and grazed more and more intensively, protected areas will become more isolated in the landscape. This is likely to lead to the local extinction of some species, particularly animals, where the number remaining in a particular area is too small to provide a genetically viable population. The rapid disappearance of fauna from the Sahel over the last 20 years is likely to be due in part to the problems associated with small, unviable populations of animals.

Such effects will be intensified by climate change, which in Africa as elsewhere will put pressure on vulnerable ecosystems and cause considerable losses of biodiversity, especially of species at the edge of their ranges. It will intensify the effects of isolation and increase the rate of loss of species within protected areas. It is also predicted to increase desertification in Africa and so may make worse the effects of the periodic droughts such as the Sahel experienced in the 1980s.

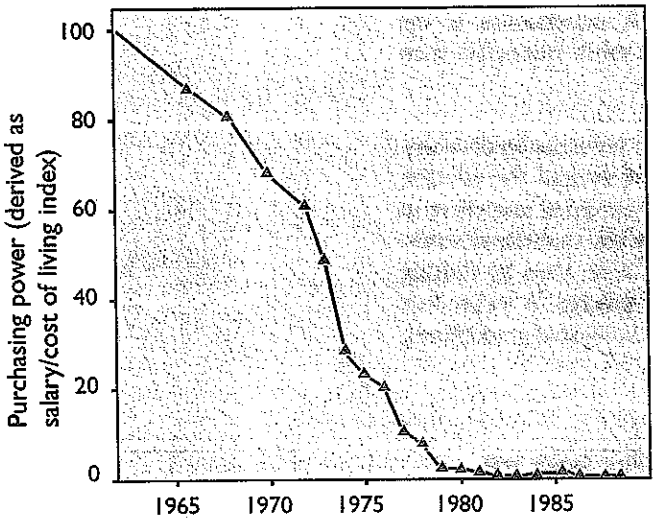
In the drier areas of southern Africa, increasing competition for water is likely to threaten river flows and groundwater supplies in downstream protected areas (though one benefit might be that upstream protected areas will be able to justify themselves through their value as water catchment). Issues such as access to water and grazing lands, and transmission of diseases, are also likely to create conflict between wildlife and domestic animals.

Pastoralism is part of the economy of Africa, but in dry areas, excessive grazing can prove devastating to fragile vegetation.

Civil unrest continues in some countries.

Breakdowns in law and order can be devastating for the people and institutions caught up in them. Protected areas can be targets, as armies see them as convenient sources of land-rovers, radios and other useful equipment. Wildlife too can be decimated by trigger-happy and hungry soldiers. Protected areas can be affected in other ways: at the time of the civil war in Rwanda, the Virunga National Park across the border in what was then Zaïre became home for tens of thousands of refugees. Protected areas in many other African countries, such as Angola, Mozambique and Uganda, have also suffered greatly.

The problems tend to be worse where protected areas have been imposed on local communities by distant central administrations. At times of unrest, these may become targets for local hostility. Decentralized systems based around NGOs and community groups have proved better able to cope. Sapo National Park in Liberia, for example, is reported to have survived despite threats to its resources from the civil war, because the local community was involved in the park's management. When the central government of Madagascar was paralysed by a general strike for over six months, the 340 nature protection agents working under the Forestry



Decline in purchasing power of a Ugandan Forest Officer's salary over 30 years.

Source: Peter Howard, 1994.

Department/WWF Debt-for Nature project were little affected because administration of the programme was decentralized to regional and local levels.

ECONOMIC TRENDS

Declining national economies and reduction in government revenues mean that most governments have sharply reduced funding to protected areas.

As noted in Chapter 1, government revenue in most African countries is static or declining, yet has to be spread increasingly thinly to cope with demands from a rapidly increasing population for education and health care, as well as servicing burdensome foreign debt. As a result, in many countries, funding to protected areas from government is much less than it was. This is particularly serious in Africa because the State is the main source of funding for protected areas.

To give one telling example: in 1970, Zambia National Parks had over 1000 staff, 120 vehicles, 6 aircraft and even a helicopter, all funded from the nation's profitable copper exports. The agency's financial resources today have dropped by over 90% in real terms, yet the protected area estate is actually larger than it was then. The net result is that protected area staff are poorly paid and equipped. Materials and equipment are in poor supply. Boundaries are not marked or maintained. Infrastructure is non-existent or poorly maintained. Poaching becomes rife.

The sums available to some park authorities are tiny.

A study by the World Conservation Monitoring Centre showed that for its 1991 protected areas budget, Chad allocated $100,000 ($1 per sq. km managed), Burkina Faso $50,000 ($2), Ethiopia $251,000 ($4) and Sierra Leone $4600 ($6). Even wealthier countries were spending relatively small amounts: Côte d'Ivoire, Dem. Rep. Congo (then Zaïre), Ghana, Niger and Nigeria all had budgets of around $1 million.

Frequently protected area staff are obliged to turn to other ways of supporting themselves. Senior staff may have to supplement their salaries, for example through the per diems paid for attending international meetings.

African protected area systems are unlikely to become financially self-sufficient within the foreseeable future and tourism is not the universal panacea for African parks.

In some countries, protected areas do contribute to national economies, producing income through use of wildlife, including game meat harvesting and sport hunting. However, this is true mainly for East and Southern Africa, and not for West Africa or the Sahel where it is difficult to conceive sustainable income sources.

Tourism is often seen as the way to provide the funds protected area managers need so badly but it is only practical for a small proportion of protected areas in Africa – parks that are accessible and where the animals are easy to see, as in the case of large game reserves in East and Central Africa. The wet forests of Africa, biologically far richer than the open plains, are not very attractive to visitors unless they have mountain gorillas. It is easy too to be over-optimistic about tourist revenues: the

international community has spent over $20 million developing the Korup rainforest in Cameroon as a national park on the assumption that tourism would pay its ongoing costs, but the park receives less than 300 visitors a year. In some cases, though, revenues could be greatly increased. For example, visitors to Virunga National Park spend hundreds of dollars in fees to be close to the mountain gorillas.

Pressure to generate revenues from tourism may have damaging conservation consequences. Tourism development in the Masai-Mara National Reserve in Kenya has harmed the environment, although steps have been taken to repair the damage. Moreover, reliance on foreign holiday-makers leaves protected areas exposed to sudden changes in earnings. In January 1998, Kenya announced staff cutbacks in the wildlife service as visits to the country's parks were 60% below expectations.

Furthermore, tourism may be seen as a way of financing not only protected areas but government budgets as a whole. Tourism revenues from protected areas are increasingly the subject of competition between:

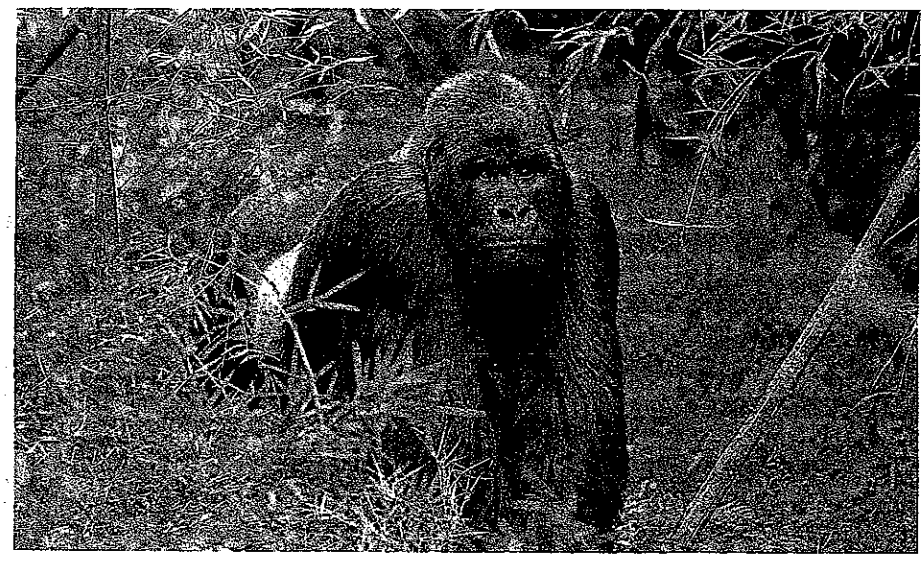
- Central government, which wants general treasury revenues;
- Protected area agencies, which want funds for their entire system;
- Individual protected areas, which want to retain their earnings;
- Local authorities, which want a return from lands that they cannot tax;
- Local communities, which want compensation for the lack of access to natural resources over which they may have had traditional rights.

INSTITUTIONS

The agencies responsible for protected areas are a relatively low priority for African governments at present.

Combined with the financial difficulties already outlined, this leads to a wide range of problems.

- **Protected area agencies have a weak hand in the all-important negotiations with other departments.** This might be over pressures to mine in a national park or to cross it with electricity pylons, both examples which have happened recently in East Africa.
- **They tend to be marginalized in budget allocations.** One consequence of this is that they do not attract the best staff, as there are more appealing career paths available elsewhere.



The mountain gorilla in Rwanda. Without assets like these, it is hard for forest national parks in Africa to generate much revenue from tourism.

- **Institutional arrangements for managing protected areas are often inefficient,** with overlapping, competing or conflicting functions between departments and institutions.
- **The capacity for planning and monitoring is weak.** Numerous plans have been made but have tended to be too theoretical and not close enough to the realities of park management.

As noted in Chapter 2, many governments have recently created environment agencies or ministries, but most lack resources and influence and are relatively low in the government hierarchy.

They are still too centralized.

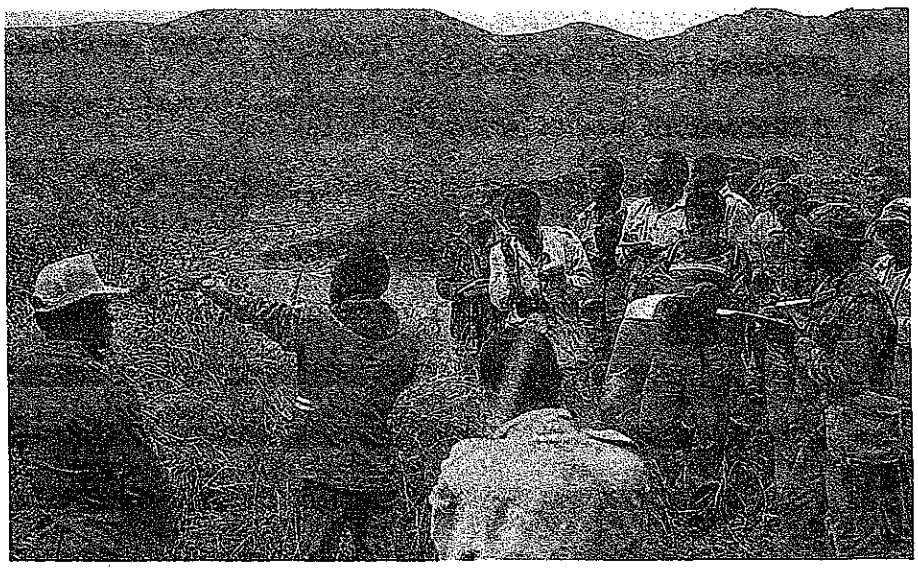
Protected areas are rarely integrated into local administrations and local institutions. Management and planning structures tend to be top-down and do not usually involve local people sufficiently. Many protected areas agencies still have a militaristic style that is unsuited to their modern role as partners in rural development. Moreover, dominance of conservation by government institutions can lead to bureaucratic inefficiency and lack of transparency, accountability and incentives.

As a result, protected area agencies can be unpopular at a local level. Communities often see the protected areas as land alienated for the benefit of a distant government and its foreign visitors, especially if the park management deprives them of access to resources that they used to use and does not offer comparable benefits in return. Buffer zones have often been seen as a way of extending the power of protected area authorities rather than of building links with surrounding communities.

The lack of linkages to local, regional or national planning and management systems can also lead to incoherent development. Planning proposals for road construction, dams, drainage schemes and the like may reach an advanced stage before protected area authorities hear of them. Requirements for Environmental Impact Assessments (EIAs) help to ensure that negative impacts are reduced, but do not on their own lead to coordinated planning.

Staff structures and recruitment processes need to be modernized.

The usual approach is to recruit school-leavers and turn them into wardens who will rise through the organization. However, the changing scope of the duties suggest that it would now be better to have a staff structure in which people can be recruited at all stages in their careers according to their skills and abilities.



Students from Mweka Wildlife College in the field. A project funded by the European Commission is helping to broaden the skill base of park staff being trained at Mweka.

More fundamentally, the necessities of the job of being a protected area manager run somewhat counter to the culture and aspirations of ambitious professionals, who want to live and work in the capital city. Being posted to a far-away rural area can be seen as a demotion rather than as an opportunity for career development.

Many personnel are inadequately trained for the jobs they have to do.

Training is fundamentally outdated at all levels. Junior protected area staff are generally trained in-country. Mid-level staff are trained to certificate or diploma level (2 or 4 years after secondary school) at the two long established regional training institutions – Mweka in Tanzania and Garoua in Cameroon – now joined by the Southern African Wildlife College in Kruger, South Africa. These institutions suffer from a lack of funding and resources. There are few opportunities for additional training. It is hard therefore for protected area managers to keep in touch with developments elsewhere and to upgrade their skills. To counter these inadequacies, the European Commission is funding a project to strengthen wildlife training at Mweka and at Masters' level at the University of Zimbabwe.

Managers are rarely trained in the professional skills necessary for effective liaison and collaboration with local people. Most senior staff have a technical background in fields like wildlife management, zoology or forestry, and have little or no management training.

Protected area legislation is often out of date.

For historical reasons protected area legislation is often fragmented with different laws for forest reserves, game reserves, watershed reserves, national parks and wildlife. This leads to confusion, duplication and occasionally conflict. In one country, for example, it is reported that staff from two departments once arrested each other in a conflict over who was responsible for a Forest Park.

Moreover, much protected area legislation is not responsive to present needs, in particular controlled local use of resources within protected areas. The government may be in favour of community participation but the laws may be too prescriptive and prohibitive to allow it to happen. In particular, if the legislation insists that all wildlife and trees are the property of the State, it is hard to develop local community management of natural resources. To counter this, several countries, including Zambia and Zimbabwe, are trying to revise their legislation to transfer wildlife rights from the State to landowners or other legitimate occupants of the land.

The welcome processes of democratization and decentralization pose great challenges to central government agencies such as parks departments that are responsible for vast amounts of rural land.

The process of democratization is releasing a great deal of pent-up concern as people feel free for the first time to challenge government policies and practices. As protected areas in Africa are almost entirely government structures, they tend to get blamed for government failures in other parts of the economy. When inhabitants of the Karamoja region of Uganda were interviewed by an EC-funded project about a proposal to upgrade a game reserve into a national park, their answer was: "You haven't delivered development. And now you want to take this land away from us too!"

Another consequence is growing pressure for land reform. In Africa, land reform is largely an adjudication process, in which people are given the choice to decide at local level what rights over land should be, who has ownership and how rights of use be negotiated. This is obviously a fundamental challenge for protected areas, especially ones that in the past have moved people from their land or reduced access rights. But

it is also a great opportunity for such parks and reserves to move to a co-management approach, as outlined in the next chapter, and put right past mistakes and injustices.

The challenge is to make institutions more accountable to their constituents. Governments in Africa are not very good at this, but without it protected areas in the government sector will find it hard to survive with their biological values intact.

Box 6

Short term Support may be Ineffective: An example from Benin

From 1985 to 1992, the European Commission provide 3.5 million Euro to the National Parks Management and Environmental Protection Project, Benin, following an earlier FAO/UNDP protected area planning project. The objectives were: to create the infrastructure necessary for improving Benin's northern protected areas; to establish an ecological monitoring system; to improve law enforcement; and to establish an institution responsible for managing the parks.

The park staff rehabilitated 800 km of tracks and constructed 262 km of new tracks, one bridge, three game-viewing hides, 12 ranger posts, one ecological research station, and a park headquarters. Protected area boundaries were cleared and marked with signs. The project also employed 80 law enforcement staff and equipped them with four-wheel-drive vehicles, motorcycles and mopeds. Poaching was significantly reduced and much ecological data collected.

From the beginning, however, the Benin Government was unable to meet its financial commitments to the project. At the completion of the project, large numbers of staff were laid off, including 50% of the law enforcement personnel. Vehicles and equipment were no longer maintained, tracks started to fall into disrepair, and poaching increased again.

Source: Zeba and Tchabi, 1993

THE ROLE OF DONORS

Combined 'conservation and development' projects for African protected areas have a poor record of success.

In the 1980s and 1990, donors have funded a number of 'conservation and development' projects for individual protected areas in Africa in which support has focused on the twin objectives of building up the protected area infrastructure and management on the one hand and providing rural development to surrounding communities on the other. In general, they have not succeeded, principally because the two aspects pulled in different directions: the provision of rural development in the surroundings has tended to focus on social service provision – e.g. schools and health centres – rather than on securing sustainable livelihoods, which would link people to their natural resource base. The mistake has been not to integrate the conservation and development aspects more closely, for example by trying to ensure that in return for development local communities commit themselves to accept and support conservation of the core area.

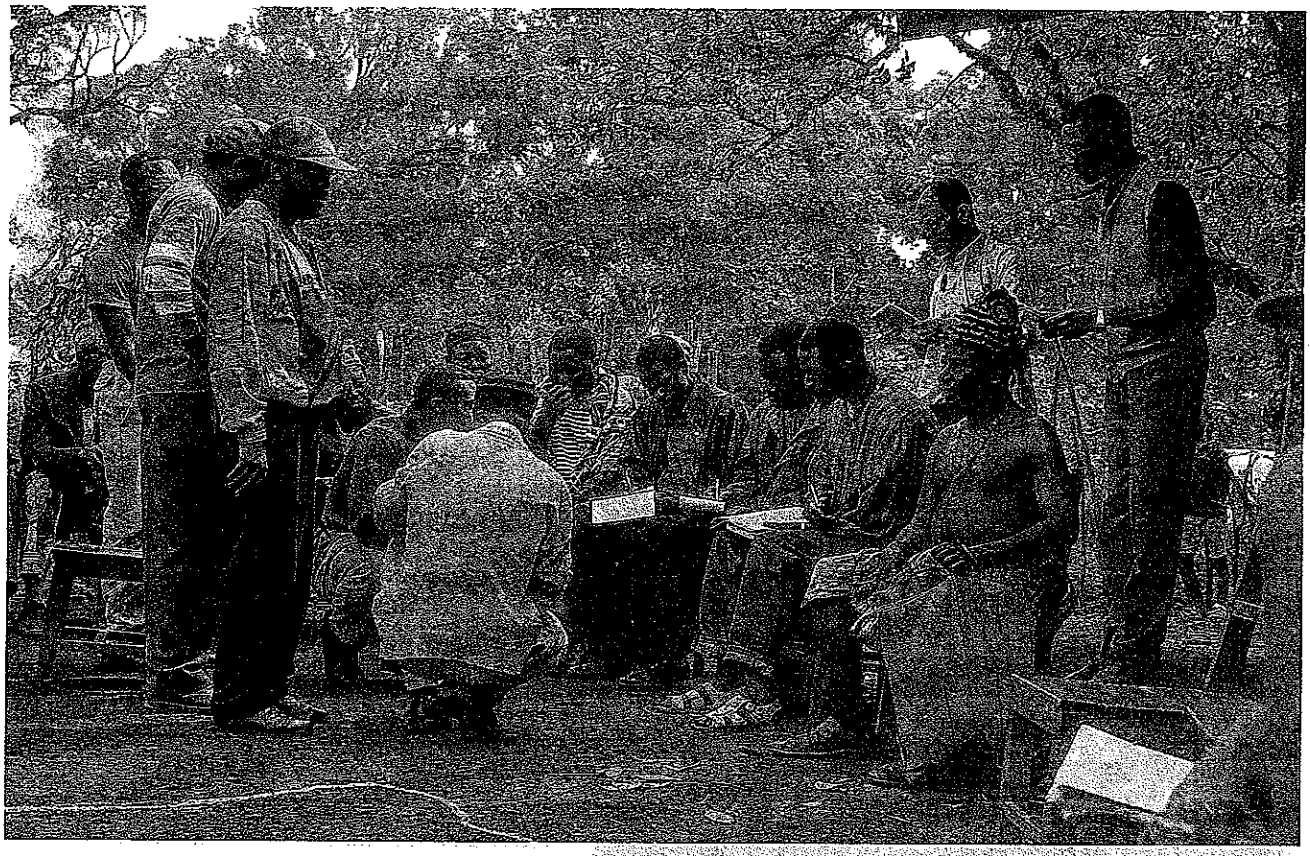
Many African protected area initiatives respond to donor suggestions rather than emerge from local leadership.

Partly due to their economic situation, African governments have often tailored their requests to the priorities of the richer world's conservation institutions, particularly NGOs and donor agencies, rather than to their national priorities. As a result, many protected area and biodiversity initiatives in Africa have originated in or depend on these organizations. In addition, donor priorities and operating mechanisms do not always match the needs of the recipient countries.

The Korup Project in Cameroon, which started in 1988 involving four major bilateral donors and costing over 11.6 million Euro, exhibits some of the problems of a project driven by donors rather than recipients. The aim is to conserve the species-rich lowland coastal forests through the development of the Korup National Park. Established with the help of international conservation NGOs to provide urgent protection for the forest, the project still has no formal local institutional framework and its links to government seem tenuous. Expatriate staff tend to work without counterparts and where counterparts have been trained, they often leave. So far the Cameroon Government has been unable to meet its financial commitments to the project and the prospects for it maintaining any of the project results into the future are low.

Project cycles may have been too short.

Democratization, decentralization, participation, new roles for protected area staff – these cannot be realistically improved in less than ten years, making a 3–5 year project cycle inadequate. Indeed, starting dialogue on these new approaches and then letting people down before they are ready may only serve to ***reverse*** the hoped-for outcome.



Partnership with local communities is at the heart of the new approach to protected areas in Africa.

Chapter 4: A New Approach – Protected Areas that Contribute to Rural Development

The problems outlined in the previous chapter are formidable: a backdrop of rural poverty, declining government funding, and protected area institutions that are ill-equipped to adapt to these challenges.

As we have seen, African governments have created an impressive network of parks and reserves that covers much of the region's rich biodiversity. But, in general, they have failed to fit these parks and reserves firmly into local economies and make them sustainable as institutions. Most of the benefits of protected areas in Africa have been national and global; most of the costs have been local. The challenge therefore is two-fold: a) to make protected areas contribute more to local needs without compromising their conservation values, and b) to enable them to cover more of their own costs.

There is a strong sense among African park professionals that the present situation cannot be sustained. New approaches are needed. The growing democratization and decentralization of government across the continent provides the opportunity to look at protected areas in new ways and reposition them firmly in the context of community development and the local economy.

Protected areas should position themselves as nodes for rural development, to contribute to development as well as conservation objectives.

The protected area should contribute to local livelihoods in all possible ways, seeing this as compensation for the benefits local people have foregone when the land came under conservation management. This can be done directly, by allowing some use of

the resources in the protected area – this is explored below. It can also be done indirectly, in particular by:

- **Improved communications**. Upgrading roads to allow tourist access will help neighbouring villages improve their links to the outside world. Telecommunications links can be vital to a community in time of crisis.
- **Training**. Parks need staff and many of these will be local people, who will need training. The skills they learn will help not just the park but their villages too.
- **Health care**. The medicinal facilities provided for park staff can be shared with local people.
- **Sharing of wealth generated from tourism**. Tourism is good at generating benefits to the local community, a subject outlined at greater length below.

Diverse riverine forest, Central Africa. It may be possible to allow local people to gather valuable products, such as medicinal plants, without jeopardising the biodiversity of the forest.

This is just the beginning: protected areas can go further by facilitating and brokering community development in the neighbourhood, and offering opportunities for local entrepreneurs. This would make a real contribution to rural Africa.

Protected areas also need to cover their own costs.

Providing local development has to go hand-in-hand with covering the basic costs of managing the protected area. Managers must stack up the uses the park can support, in each case defining what benefit the use will provide to the local community (financial, material, other, etc.) and what it will contribute to the costs of park management. If the stack of benefits covers the needs of local people and the costs of park management, fine. If it does not, and government subventions and international support cannot make up the difference, hard choices will have to be made on the size and shape of the protected area. Perhaps the conservation objectives could be met with a smaller area, which would cost less? (In fact the typical protected area in Africa has an inconvenient shape, based not on ecological boundaries but on features like roads and railways). Perhaps strict protection could be the aim in only part of the area, and sustainable uses encouraged in other parts?

This is a very real dilemma for many park managers in Africa. An 1988 IUCN mission to a national park in west Mali found a site with the richest wildlife in the country but which had not had a single tourist for several years. Cotton producers now want to take over the neighbouring area. This would put great pressure on the park. Can the park offer similar benefits to local people? No. The mission was forced to conclude that the park will only be viable in the long term if the international community can find a way of paying its costs.

A IUCN guide entitled *Economic Values of Protected Areas: Guidelines for Protected Area Managers* provides many case studies from Africa on how to combine the provision of local development with covering basic costs.

PEOPLE AND LAND

Within the protected area the key change is from single use to multiple use.

In the past, many saw protected areas as land "set aside" for conservation, but this view is no longer sustainable. Strict preservation has proved almost impossible to

enforce and may often be unnecessary, at least in every protected area. Instead, the protected area has to provide a wide range of benefits to many different stakeholders. The concept of multiple use offers the opportunity to move from an agenda of conflict and confrontation to one of partnership. Perceiving that the previous approach was not working, protected area managers and agencies are looking for new partners and new ideas. These include a broadening in the concept of protected areas, with emphasis on Category VI (sustainable use reserves – see p. 8).

The trend is now to try and accommodate sustainable use in protected areas.

Many ways in which local communities wish to use the resources of protected areas are compatible with conservation objectives. However sustainable use does require proper assessments of resources and mechanisms for effective regulation. These are absent in most protected areas in Africa. It also usually requires zoning, a concept which so far has been rarely implemented on the ground. Forms of sustainable use include:

- **Animal harvesting** – either commercially through sport and trophy hunting, or by local communities for meat, hides and other products. The best known example is CAMPFIRE in Zimbabwe (see Box 7), but similar approaches have been adopted in other countries, notably Botswana, Namibia, South Africa, Tanzania and Zambia. The value of the resulting products can be considerable. Numerous ranches in Southern Africa used to be run as marginal livestock operations but are now profitable multiple-use areas, deriving their income from tourism – either as safari-viewing or as hunting or, if the area is big enough, both.
- **Pastoralism**. Limited livestock grazing is compatible with high levels of wildlife in most of the great plains of Africa, but has to be carefully balanced to reconcile the needs of livestock and wildlife for limited grazing and water. In Africa people also use forests for grazing in the dry season, as the capacity of the forest areas to support this use is very limited, local people regulated their own access to prevent damage to the resource.
- **Gathering plant products**. Local people traditionally gathered fuelwood, food plants, poles for house-building and medicinal plants from forest areas, areas that are often now forest reserves or even national parks. As the Mt Elgon example shows (see Box 8, p. 55), limited use can be compatible with conservation.
- **Bee-keeping** is often promoted as a means of increasing local support for protected areas, but local communities will probably need help to build the processing and marketing facilities needed. In Malawi, with funding from the European Commission, national park officers encourage local communities to establish bee-keeping clubs and families to harvest caterpillars, activities that are economically better than growing maize as a subsistence crop. This work follows a decision Malawi made in 1990 to switch its policy in national parks from absolute protection to sustainable use.

In all these activities, care needs to be taken that revenue is shared with local people. The normal pattern in Africa is that park revenues go to the central government. This may need to be changed, to allow the managing agencies to keep the revenue and where appropriate to share at least some of it with local people.

Box 7

Zimbabwe's CAMPFIRE Programme Provides a Model for Sustainable Use Management.

CAMPFIRE – Communal areas management programme for indigenous resources – started in 1989 when two districts were granted appropriate authority to manage and market their wildlife resources. By 1997, 26 out of 57 districts in Zimbabwe were active participants in the Programme.

The objective of CAMPFIRE is to ensure the long-term development, management and sustainable utilization of natural resources in communal areas. Wildlife has been the central thrust of CAMPFIRE's activities, although local communities are increasingly asking for control over forestry, grazing and water resources.

CAMPFIRE is a devolved initiative implemented in rural areas through local governments and under Rural District Councils. On submission of a management plan, district councils are able to obtain appropriate authority for sport-hunting and related activities. Revenues for these activities are accrued at the local rather than national level.

CAMPFIRE has grown into an economically valuable enterprise. Trophy hunting represents 90% of the income, with the remainder coming from photographic tourism, hide and ivory sales and other activities.

In general, CAMPFIRE has been a success: it is an innovative programme that attempts to hand control of natural resources to local communities. However, the programme has been criticized because local governments, rural communities and the national parks service have captured few of the benefits. In some cases, CAMPFIRE is estimated to contribute only 2–4% of rural household income. Where it has been more successful, it failed to anticipate how to manage increased immigration of people into programme areas. There has been some criticism over the sustainability of the programme. It is estimated that $33m have been invested by US-AID and other international donors over the last ten years, but in 1994 income for all of the district councils topped only $1.64m.

Development of tourism, where possible, can help bring benefits to local people.

Although the main financial flows from tourism in African parks tend to be to capital cities and overseas investors, tourism can provide development benefits to local people without compromising conservation goals. The protected area could be a catalyst for development beyond its boundaries, using the many employment opportunities that tourism offers, such as in staff positions in game lodges and restaurants and through the sale of local handicrafts.

However, protected area managers may first have to develop community expertise. And not all protected areas are suitable for tourism: some countries lack infrastructure for all but the most adventurous tourists, some have reputations for civil unrest, and some have protected areas where there is little for the visitors to see. And, as Amboseli shows, there is always the danger that too many visitors will degrade or destroy the treasures they have come to see.

Protected areas should be integrated into broader development and land-use planning.

Conservation is in effect a form of land use and so the management of protected areas should be integrated with the work of other land users, such as ministries responsible for agriculture, fisheries, water and energy. The preparation of National BSAPs (p. 38), NEAPs (p. 36) and National Strategies for Sustainable Development provide good contexts for such integration, requiring as they do the involvement not just of conservation agencies but also many other agencies and ministries of government. Other national and local conservation strategies, such as Kenya's Arid and Semi-Arid Lands Strategy, can also help make protected areas and biodiversity conservation part of local and regional planning.

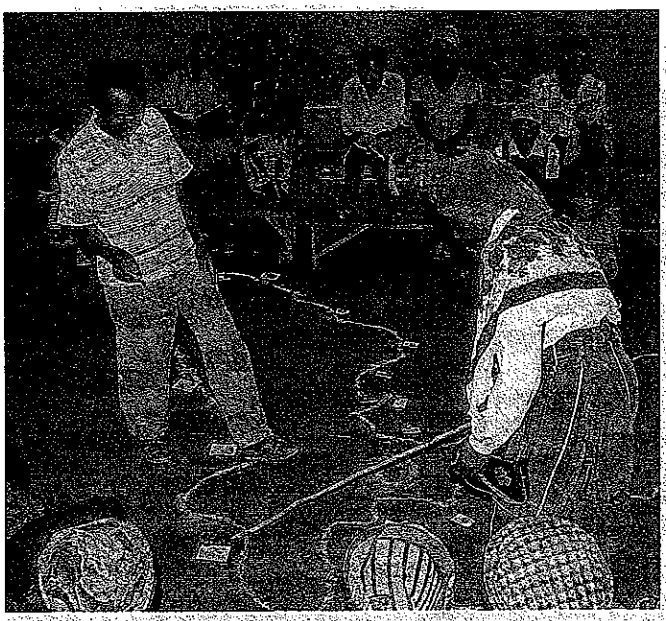
Co-management, in which local people jointly manage the site with conservation agencies, is one way forward.

A legacy of conservation in Africa has been the exclusion of local people from many protected areas, depriving them from their previous forms of livelihood. Not surprisingly, this approach has resulted in conflict and in some places forced local people to become poachers and enemies of the conservation authorities. The co-management model (see p. 14) is a better approach for many parks and forest reserves. There are some emerging examples from around the region. One model from Uganda is based on sustainable use (Box 8); another could be joint ownership of the tourist enterprise.

When it works, co-management generates a virtuous circle in which local people become volunteer guardians of the protected area, as part of arrangements in which they can continue to use the area for sustainable products, and conservation is respected. An interesting feature of the Uganda example is that both sides – conservation authorities and local communities – had no difficulty in agreeing which uses of the forest were damaging and which were not. However, co-management is difficult to do and takes a long time. It is vulnerable to corruption, pressure from vested interests, lack of local capacity and lack of democracy at local level. The benefits have to reach all the community, not just local elites.

A key step is to prepare a management plan for the protected area.

Few protected areas in Africa have management plans yet the management plan is an ideal way to catalyse the strategic thinking and change of action that is so often needed. Management planning is a good context for reaching a common understanding



Villagers in Cameroon show the locations of the resources which they use in relation to a protected area, a key step in the development of a co-management approach.

with local people and other stakeholders, who should of course be fully involved in the preparation so that when the plan is complete all have a sense of ownership of it and participate in implementing it. Above all, it is the process that is all-important, rather than the final product.

FUNDING

The essential issue is how to make protected areas generate more revenue to justify their costs.

Government expenditure on protected areas is decreasing, yet costs are rising, in particular because of the need to deliver development as well as conservation benefits. This makes finance a central issue for protected areas in Africa. In most cases, the costs of operating protected areas exceed their revenue-earning potential. Protected areas are rarely viable economic enterprises on their own.

Much work has been done recently to assess the costs of protection in relation to the size of the area concerned. Large dry areas tend to be less expensive to manage per unit area than small areas of moist forest, each usually surrounded by dense human populations. These analyses show that virtually all protected areas in Africa are woefully under-funded. The challenge is how to make each area viable financially, either self-generated or from government intervention or both.

Protected area agencies need the freedom to raise funds in as many ways as possible.

The trend is to allow protected area agencies to generate at least part of their own revenue, especially from tourism. Once the agency has raised the money, it then needs to be allowed to keep it. By retaining the funds received, the parks can reduce the cost of conservation to the central exchequer.

Box 8

CO-MANAGEMENT STARTS TO RECONCILE OLD CONFLICTS IN UGANDA

Local people have used the forests on the slopes of Mt Elgon, Uganda, for centuries – for grazing stock, hunting for meat, collecting timber and medicinal plants. Yet in 1989 the forest dwellers were evicted and in 1993 the area became a national park, with local people prohibited from using the forest.

Now, with help from IUCN and NORAD, the park authority is making arrangements with local people to give them access to some of the forest products, exchanging rights for responsibilities. The park authority has ultimate responsibility for the national park but the intention is that everyone should benefit from conservation and everyone should contribute. The hope is that after a process of confidence and capacity-building, local communities become the actual managers of the forest.

Local people can now go back into the park on a controlled basis to obtain the products the collection of which will not damage the forest. Both sides agree on what would be damaging – pit sawing, hunting, collecting poles, charcoal burning and cattle grazing, for example. Both sides believe that many other uses would not cause damage. Agreements are made with villages, not individuals, so that the community decides who can exercise right of access to the forest on their behalf.

The first set of agreements allow the villagers to collect bamboo. They smoke it on the spot and later cook it back at home as an important ceremonial dish for the rites of passage of young men. A careful study found that the bamboo is so abundant and regenerates so quickly that limited collection harms neither the resource nor the ecosystem.

The villagers, under their part of the agreement, watch movement in and out of the forest. Thus they can ensure trees and game meat, for example, are not removed, either by outsiders or by fellow villagers. Money spent on fruitless boundary patrols can now be spent on more productive work.

Source: Plant Talk No 6 (1996).

The Bwindi Impenetrable Forest in Uganda is the first protected area in Africa with an Environmental Fund. Aid donors have contributed to the setting up of the Fund and to its capital base.

Possible ways of funding protected areas include:

- **Raise revenue from outsides users** as far as the market will stand. This includes gate fees to tourists, concessions for hotels and restaurants, and leases of land and facilities.
- **Develop alternative sources of income**. Two possibilities are sale of goods, usually poorly developed in most protected areas, and bioprospecting, using the safeguards of the Biodiversity Convention to ensure revenues return to the protected areas and local communities.
- **Create Environmental Funds**. Africa has been slower than other regions to use Environmental Funds but interest is growing. The main source of funding is debt renegotiation between the State and private banks, and for this reason the funds created are usually national in scale rather than relating to a single protected area.
- **Start a Friends Organization**, to capitalize on the goodwill on the visitors. Ruaha National Park in Tanzania has such an organization, mainly of business nationals who want to help the park, but other models can be envisaged, for example of targeting overseas visitors who want to maintain links with a place they have enjoyed visiting.
- **Try to capture existence values**, for example by encouraging donations from wealthy visitors to the area.
- **Demand heavy compensation** for uses that cannot be avoided and are damaging to the park, for example from a mine in the periphery;
- **Press for ecosystem services** provided by the park to be charged. The water supply to Mombasa comes from Tsavo West National Park; a tiny proportion of the water rates paid by Mombasa residents would cover the management of the park.
- **Obtain sponsorship from business**. This is a strong tradition in South Africa and has potential elsewhere as economies develop. The national wildlife NGOs of East and Central Africa have all had sponsors from local businesses, so sponsorship does exist, but it has not been courted by protected area agencies.

Reducing costs is just as valuable as raising revenue.

Ways of doing this include:

- **Contracting out services** within the protected area to other bodies, for example roads maintenance to the local road department, or financial analysis to a local business such as a tour operator.
- **Leasing out the entire protected area**, perhaps to an NGO or to a tour operator or to a newly created Trust involving local people. For example a private trust manages the Kasanka National Park in Zambia and a quasi-autonomous foundation assists in the management of the Banc d'Arguin reserve in Mauritania.
- **Co-management**: if local people benefit from the area, they become the allies of the park management. This can dramatically reduce the cost of guarding the site with local villagers becoming unpaid volunteer wardens.

INSTITUTIONS

'Biodiversity' provides a new focus to revitalize and repackage protected area projects.

The current interest in biodiversity, shown by the numerous ratifications of the Biodiversity Convention and the plethora of Biodiversity Strategies and Action Plans being prepared, offers wildlife agencies and protected area managers the opportunity to repackage their existing long-standing work under a new focus, giving increased visibility and raising protected area issues up government agendas. These plans are also a good moment to reconsider the institutional arrangements for biodiversity conservation, for example the mandates of the various agencies and the relationships between them.

Reform of governmental institutions can lead to new partnerships.

There is a growing trend to reform government conservation agencies as parastatals, injecting business expertise into government bodies. However, in other sectors, such as food processing, many African governments are winding up parastatals. The issue is not so much the formal structure but giving staff autonomy over decision-making on the one hand and improving the quality of management on the other.

National protected area institutions may in future achieve most success by becoming a planning, coordinating and monitoring unit, and contracting out many of their functions. Greater involvement in protected area management by groups outside government, such as local communities and NGOs, may be worth considering. NGOs can play an important role, as they are usually more transparent and flexible than larger centralized institutions.

The private sector is re-emerging as a key partner for park managers in Africa. (Interestingly, many African national parks such as Nakuru in Kenya were first run by local farmers until the management was taken over by government agencies.) Some protected area management functions might be carried out by the private sector more efficiently than by public authorities, provided that there are adequate controls.

Private landowners are establishing their own protected areas, where they manage the wildlife populations on their lands for commercial benefit.

In South Africa, a 1996 study showed there to be some 4035 private sites managed for conservation, covering 80,932 sq. km – 6.85% of the country, which is more than all the officially gazetted parks and reserves. Botswana, Kenya, Namibia and

Zimbabwe also have many private reserves. However, most of these initiatives aim to manage large mammals rather than to protect all the natural and cultural resources of a region.

Where private owners, communities or local authorities are managing their land to conservation goals, government could help them and attempt to "lock in" the protection by use of tax breaks and subsidies. In return the land-owner could be obliged to notify the government several months ahead of any changes in land-use and management policy, providing a period for negotiation. Where a country plans to protect a certain proportion of its territory or of an ecosystem for wildlife, privately owned reserves could form an important part of the approach, saving money that would otherwise be needed to establish and manage State-run protected areas.

The new agenda demands a new set of skills.

In the past the typical Game Warden was in a remote area, out of communication with HQ for long periods of time and responsible over a vast area for almost everything. He had to develop skills like vehicle maintenance and animal management, as well as supervising a large team of dedicated but poorly educated game guards recruited locally. Today, the priorities are how to manage contracts, such as with the private sector on roads, vehicles and buildings, how to encourage scientific research using professional scientists, how to market the protected area to visitors, and, above all, how to collaborate effectively with local people. In most countries the isolation is much less, but in its place have come greatly increased expectations of what has to be achieved. Thus protected area agencies need to foster a major change of emphasis in the development of their personnel, emphasizing in particular management, financial and social science skills.

Meetings with villagers at Simien Mountains National Park, Ethiopia. A project funded by the European Commission helped develop a new national policy for wildlife. The Simien villagers were among those who gave their views.

Chapter 5: What External Help is Needed?

This chapter offers some guidance to donors so they can assist African nations conserve their biodiversity in protected areas. The advice given differs sharply from that for the Caribbean and Pacific nations, where the scale is small and most protected areas are in their infancy. In Africa, the scale is vast and the wildlife sector is large and long established. The typical wildlife department is responsible for a massive amount of land, much of it very inaccessible, and often has a staff that is numbered in thousands. The problem, as outlined in the preceding chapters, is that with Africa's lack of economic success the present situation is not sustainable. The priority for donors, therefore, is to help African nations stabilize the situation and make the protected areas sustainable as institutions.

Continue direct support for the management of protected area networks and systems.

With one or two possible exceptions, the revenues earned from tourism and wildlife use in Africa's protected areas will not be sufficient to cover day-to-day operating costs in the foreseeable future. So, if Africa's protected areas are to be maintained and managed effectively, the international community will have to share some of the costs.

The Convention on Biological Diversity recognizes the obligation on the rest of the world to support conservation in developing countries, since the benefits accrue to the world while the costs are borne locally and nationally. The initial support by the GEF for the many BSAPs in Africa is an encouraging trend and has sharpened the focus of many protected area agencies. But it has also heightened expectations and has not solved the essential problem of long-term funding. The international community does need to think long and hard about how to support the implementation of the BSAPs through long-term support.

Help protected area institutions diversify their funding sources as the key step to achieving financial sustainability.

The list of possible funding sources for protected areas (p. 56) could be a starting point for consideration. External assistance should be seen as just one component of the funding mix.

Ways need to be found of converting capital donations into generators of sustainable revenue. These include:

a) Environmental Funds, now the subject of increasing interest in Africa. GEF has provided $4.3 million (now invested in Europe) as an Environmental Fund for Bwindi and Mgahinga in Uganda. US-AID and The Netherlands have also contributed to this initiative.

b) Providing funds for capital items like tourist facilities that will themselves generate long-term revenue for protected area management and provide opportunities for local people.

c) Helping protected area agencies improve their performance and so increase their cost effectiveness (see next two items).

Consider supporting functions rather than places.

Donors have traditionally supported one or more individual protected areas but, as

the example from Benin shows (Box 6, page 50), when the donor leaves the benefits tend to unravel. 'Conservation and Development projects' for protected areas in Africa in the late 1980s and 1990s also have a poor record. They tend to provide a massive set of capital items – buildings, vehicles, research labs, for example – that the host country cannot afford to maintain afterwards.

In retrospect, it might have been better if donors had each selected not a place but a function, such as improving financial management, or communication skills, or private sector involvement, and provided technical assistance to develop these skills throughout a protected area agency or group of agencies. In this way, the benefits would be much more likely to endure. Site-based approaches are unlikely to be successful and cost-effective unless they are very long-term, with the donor staying the course until the area is financially sustainable, involving moderate rather than large financing over a very long time.

Box 9

Institution-building is at the heart of IUCN's work in Guinea-Bissau.

The IUCN Coastal Zone Management Programme in Guinea-Bissau has deliberately focused on institution-building rather than carrying out conservation projects itself. There is now a unit within the Forestry Department which carries out coastal zone planning, is developing a Mangrove National Park and is working with the National Research Institute in developing a biosphere reserve.

The programme has used the Guinea-Bissau National Research Institute (INEP) for consultancy and technical assistance rather than outside consultants. Though INEP's capacity to do this work was initially limited, through experience it has built up sufficient capabilities to develop training programmes for other African nations in coastal zone management.

The programme also provides core support to three local NGOs. These NGOs are still small and the assistance has been vital to their development. Some may still founder, but without support their development would have been slow or non-existent.

Providing support to local NGOs at this point in their development can pose risks to the donor. However, the potential losses are small while the potential gains are high if one or more of these NGOs develops a capability to undertake conservation projects.

One drawback to this approach is that concrete results are slow to appear. There was little to show on the ground in Guinea-Bissau after several years of operation. In compensation there are institutional successes that promise more long-lasting benefits.

Strengthen protected area institutions.

Many institutions managing protected areas in Africa have severe weaknesses which, combined with a shortage of funds, prevent them achieving their objectives. Donors should therefore put institutional strengthening at the heart of their support to protected areas. The key is to make traditional government establishments more entrepreneurial, emphasizing flexibility, innovation and partnership. A government, therefore, might be encouraged and assisted to:

a) Revise protected area and wildlife laws to enable the benefits of biodiversity to be captured by individuals and institutions;

b) Give the protected area agencies more autonomy;

c) Increase the professionalism of the staff;

d) Contract out functions to improve effectiveness.

A great flaw of many technical assistance projects is that they have encouraged protected area agencies (and other bodies) to expand their responsibilities rather than improve the quality of the services they provide. This view has been promoted in particular by international bodies, external NGOs and activities like the BSAP process, always keen for a new function to be taken on, a new park created or a new network formed. Instead, donors and other supporters should help and support protected area agencies to fulfil their core function more effectively and not be diverted from this.

In practical terms, donors should use every opportunity to build local institutional capacity as part of project implementation. As the Guinea-Bissau example (Box 9) shows, the work may take longer but that is a small price to pay for sustainability.

Involve the local community.

Providing benefits to the local community and encouraging their involvement in the protected area has to be at the heart of the management of any protected area in rural Africa. Donors can support this by encouraging planners and managers to:

a) Identify all the stakeholders right from the beginning;

b) Use approaches such as Participatory Action Research (see p. 14) to involve local people in the planning of the protected area;

c) Establish mechanisms and instruments for full local participation in protected area management, in particular considering the co-management model and making sure benefits are shared with local communities;

d) Fully integrate the conservation and development aspects, by ensuring that in return for development benefits, the local community accepts its responsibilities for conservation in the protected area.

Local participation does takes time. Therefore projects need to develop slowly, with financing not exceeding local absorptive capacity.

Involve the private sector.

Donors should encourage wildlife departments to consider the private sector as a source of partners, in particular by using the private sector to contract out functions and operate more efficiently. Donors could also:

a) Support venture capital companies and organizations like the International Finance Corporation that are trying to support businesses which manage wildlife on private land for ecotourism, so contributing to the achievement of national wildlife or protected area targets;

b) Provide micro-finance to community businesses as part of efforts to bring development benefits to communities close to protected areas.

Improve NGO access to donor funding.

Many protected area projects are best carried out on a small scale by national NGOs or local community groups. Most donors have separate mechanisms for supporting small pilot or innovative projects, or for co-financing NGO projects, but the procedures for obtaining these funds are often complex and require a level of administrative effort. Donors should therefore be more open and proactive about enabling community groups and local NGOs to approach them.

Improve conversion of economic benefits into financial benefits.

Economic benefits have often been calculated for protected areas but seldom realized by them. Enabling this to happen requires reducing barriers to investment, removing subsidies and creating incentives to conservation. For example, by demonstrating that a forest protected area provides filtration services and prevents silting up of a hydrodam downstream, the protected area agency could argue that the hydrodam authority should contribute financially to the management of the protected area.

One new income source that may be worth investigating is carbon sequestration, in which the emitters of carbon dioxide in the developed world pay for forest restoration in the tropics. On Mt Cameroon, for example, there is an enormous amount of degraded forest, the result of non-viable palm plantations; if this could be restored, it would form a valuable adjunct to the national park as well as locking up a large amount of carbon from the atmosphere.

Increase professionalism in protected area management.

Donors should encourage the human resource development needed to broaden the skill profile of the typical protected areas organization, so that it has people not only skilled in wildlife management but also people with the skills of business, financial management and participation with local people (see page 58). An important challenge is the extent to which the wildlife colleges at Mweka, Garoua and Kruger respond to these changing needs and whether they can find donor partners to help them do so.

Encourage regional initiatives and promote South-South cooperation.

Sharing experience within Africa as a region is invaluable but is often overlooked. Mechanisms for cooperation between African countries are often poor, though it is worth noting that UNDP/GEF fund a Cross-border Biodiversity Programme, based in Arusha, Tanzania, that enhances regional cooperation between protected area agencies in East Africa.

The Earthwatch African Fellowship Programme is a welcome example of what can be done. The Earthwatch Institute runs hundreds of conservation research projects around the world in which volunteers work as the researchers' field assistants. With European Commission funding, Earthwatch places conservationists, scientists and NGO workers from Africa on these projects. This improves access to developments in conservation science and builds links between conservation professionals from different African countries, both highlighted as priority needs in Africa. With a similar concept in mind, WCPA is currently creating Parkshare, a South-South exchange programme designed for protected area staff, and welcomes donor support.

Donors might also assist countries make agreements on the many transboundary parks in Africa. Elsewhere in the world, transboundary parks and their associated agreements are proving a potent way of encouraging harmony and cooperation between neighbouring countries, of raising conservation up the political agenda, and of building links between conservation professionals.

In conclusion, this report suggests that a well-planned donor intervention would:

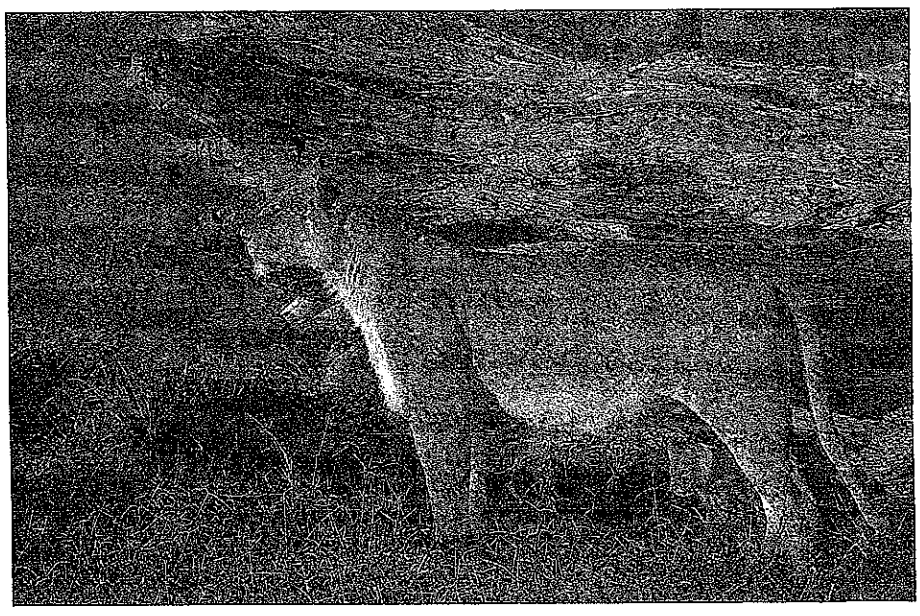
a) Be focused around the overriding twin objectives of enabling parks to coexist in harmony with local communities and to cover their own costs (Chapter 4);

b) Provide funding for items which cannot be afforded but which can be maintained afterwards;

c) Include a commitment by the donor for more than one project cycle, covering a decade or more in all;

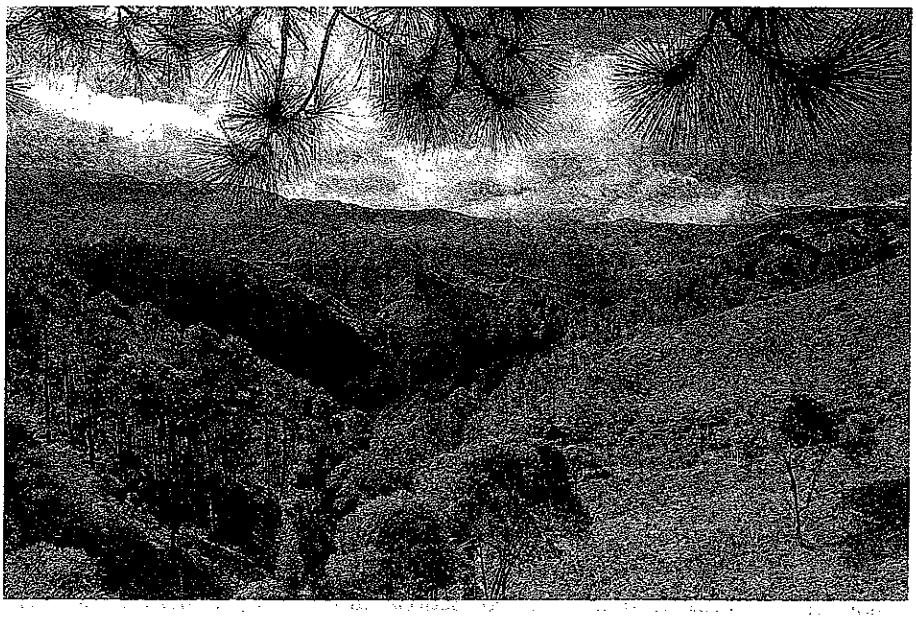
d) Focus on functions which are weakest and need most support;

e) Bring in fresh insights from a range of different perspectives.



PART III: The Caribbean

Chapter 1: A Caribbean Perspective



Mountain forests in the Dominican Republic are vital for water catchment in both that country and in neighbouring Haiti.

In the Caribbean awareness about the environment has grown immensely during the 1990s, leading to great opportunities for national parks and other protected areas as part of the path to sustainable development.

Some of the reasons:

- The Rio 'Earth Summit' in 1992 forced a change to the development agenda by including the environment and adding the concept of sustainability, as well as causing environmental fervour in the region at the time.
- Caribbean nations became very aware of the projected sea-level rise from global warming, as this could submerge entire islands.
- Donors have increased their funding for environmental projects and have become more concerned about the sustainability and environmental costs of development projects. They have encouraged governments in the region to make environmental statements and plans, such as the National Environmental Action Plans (NEAPs) required by the World Bank. This in itself has helped make policy-makers more environmentally aware: the Cabinet of Jamaica, for example, approved that country's NEAP.
- Donors and many developing countries now require that each project is subject to a scoping exercise in order to identify the necessity for an Environmental Impact Assessment (EIA). Countries have had to develop their own environmental assessment capacity.
- Civil institutions are stronger than before. The region has been going through a deep process of democratization, which has encouraged decentralization of government functions and allowed the development of NGOs.
- The influx of tourists brings a different view of the world. Although most stay in tourist areas, many travel widely, demanding high environmental standards and raising alarm flags when they see environmental damage.

Here is a region that the Rio process appears to have changed fundamentally. The Convention on Biological Diversity and the Framework Convention on Climate

Notes

In this section, the words 'region' and 'Caribbean' refer to the islands of the Caribbean, with Belize, Suriname and Guyana, which are members of the Lomé Convention. They do not extend to the other countries of Meso- and South America that have Caribbean shorelines. The ACP States from the insular Caribbean are Antigua & Barbuda, Bahamas, Barbados, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, St Kitts & Nevis, St Lucia, St Vincent & the Grenadines, and Trinidad & Tobago.

The text that follows is the result of a long process that started with a regional WCPA meeting in Santo Domingo (29 April – 3 May 1991). Using the results of the meeting, IUCN prepared a Regional Review of Protected Areas of the Caribbean for the IVth World Congress on National Parks and Protected Areas (Caracas, Venezuela, February 1992). The report originally submitted to the European Union drew heavily on the Regional Review and additional information compiled by Sixto Inchaustegui (Dominican Republic), Ivor Jackson (Antigua) and Tom van't Hof (Saba, Netherlands Antilles). This version was updated following a small meeting of WCPA members from the Caribbean in September 1996 and subsequent correspondence. These members were Lynn Holowesko (Bahamas), Omar Ramírez Tejada (Dominican Republic), Yves Renard (St Lucia) and David Smith (Jamaica).

Change have had a great impact on the politics of the region, as policy-makers grapple with the complex obligations of these two agreements and struggle to balance environment and development concerns. Also, Barbados was the host to the Conference on Sustainable Development of Small Island Developing States, which gave rise to the 1994 Barbados Plan agreed by 135 nations.

As a result, the 1990s are proving a much more optimistic decade for conservation and natural resource management than the 1980s, and political support for protected areas has increased strongly. For example, after Rio, policy-makers in the Dominican Republic became more appreciative of protected areas and increased the budget of the National Parks Department. Trinidad is planning the establishment of a National Parks authority, Barbados is planning its first National Park and in 1998 Suriname declared a massive 4 million acres of rainforest as a Wilderness Nature Reserve.

The growth in political interest has been complemented by increased aid for protected areas, leading to greater financial investment than before. However, most of the new investment has come from the countries themselves and most donor aid has gone to a few high-profile national parks around the region. Not all protected areas are receiving more support.

> "The Caribbean islands with their spectacular land- and seascapes and diverse flora and fauna have been, like many tropical islands, under European influence a little over 500 years. In that time they have been ruthlessly exploited for forest lumber, firewood, agricultural produce and minerals, mostly for the benefit of people who have never lived on them. They were stolen from the original inhabitants, fought over, bartered, bought, sold, colonized and eventually settled by people of African, Asiatic and European descent while the indigenous Amerindians were eliminated.
>
> This history is similar to those of the Indian and Pacific Oceans, which have comparable islands derived from fragmented continents, ancient or active volcanoes, or living coral. The main distinguising feature, outside the uniformity of coconut or sugar-cane plantations and contrasting with urban and resort developments, is the native flora which have evolved in each major tropical island cluster on independent lines."
>
> *C.D. Adams, in Centres of Plant Diversity, Vol. 3, 1997*

The economies of Caribbean nations tend to be small and vulnerable.

The economy of the region is changing rapidly. In the process of globalization some Caribbean nations may be losers rather than winners. A dramatic example is the ending of the preferential import of bananas from Lomé countries to Europe; banana-producing countries like Dominica are faced with enormous economic difficulties after they lost their case with the World Trade Organization, since it is hard for them compete with the mainland producers.

Most people think of tourism as the main economic activity of the Caribbean and in some countries it does dominate the economy. It is certainly increasing fast and has created new demands and new pressures on resources, particularly in coastal areas, that were not heavily utilized before. But tourism barely touches some Caribbean nations, such as Haiti and the interior of the Dominican Republic. Economies tend to be based around natural resources, mainly agriculture and fisheries. Tourism may dictate much of the politics and development policy of the region, but it is far from being the only source of livelihoods.

In recent years the economies also have been distorted by the drug trade, which is increasing and is causing violence, social disintegration and political corruption. Protected areas are not immune from its influence as they may be favoured spots for growing marijuana, such as in the Black River area of Jamaica.

Another key influence has been off-shore banking and free-zone manufacturing. Some believe these will be transient phenomena whose benefits rarely percolate down into society, while others argue that they are more permanent and create jobs at a wide range of skill levels.

The Caribbean also has a very complex institutional landscape, and the region's diverse cultures and geography make regional cooperation difficult.

The region has great cultural diversity, with five main languages – English, French, Spanish, Dutch and Creole. The countries have different legal systems, usually

inherited from the colonial powers. Traditionally, the countries have strong links with their former or present metropolitan countries, rather than with each other. This often leads to solutions from temperate continental countries being applied to conservation problems on small tropical islands. The challenge is to find ways of strengthening links and cooperation within the region without losing the strong and much-needed support from the metropolitan countries.

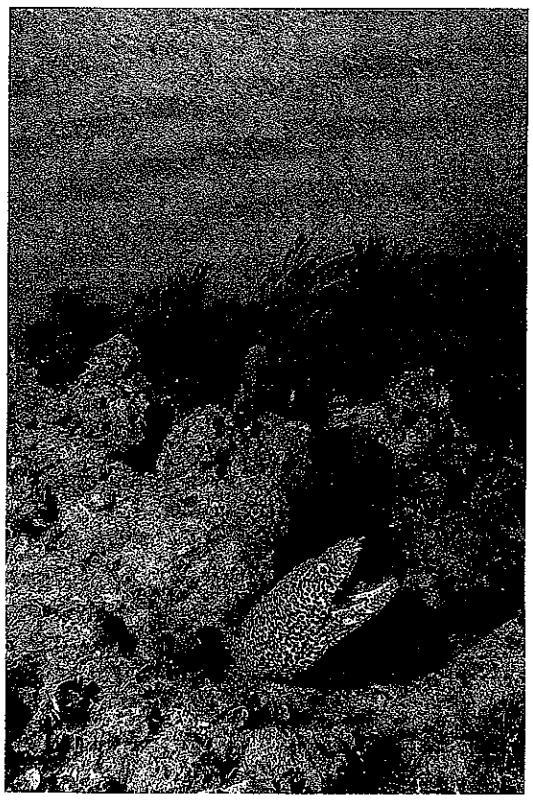
These characteristics, along with the obvious fact that the countries are all separated by water, tend to make regional cooperation difficult. At the political level, the Caribbean nations are starting to come together more closely, partly through the Association of Caribbean States.

Any conservation activity in the Caribbean quickly encounters one of the region's defining characteristics – smallness of scale.

Countries with limited resources are common but countries that are very small in size as well are less common. This is a defining characteristic of the Caribbean. It makes it much more difficult than elsewhere to establish protected areas of any kind, since there are great pressures on land, especially coastal areas, and since there are few if any large remote areas where parks can be created without economic pain. Yet conservationists in the region are adamant that small countries need national parks and other protected areas too. People need space where they can escape from crowding, congestion and noise to the peace and quiet of nature. And plants and animals need protection from loss of their habitats in the ever stronger quest for land.

Another inevitable characteristic of islands is the dominance of the sea, both on people's daily lives and on the conservation agenda.

Caribbean nations have sovereignty over large areas of the sea, often many times greater than their land area. The sea has important benefits and forms a major part of the economy, being used for fish, salt and tourism, as well as transport.



Actions inland can also influence the coast profoundly, even in the larger islands. In most countries, when pesticides are over-used and get into the rivers, they are de-activated by the time they reach the sea, but on islands this may not be the case. In Jamaica, large numbers of fish off the south coast were killed as a result of over-use of pesticides in the Blue Mountain coffee plantations in the uplands.

A spotted moray eel emerges from the coral. He and his habitat can be easily damaged by run-off of pollution and silt from deforestation inland.

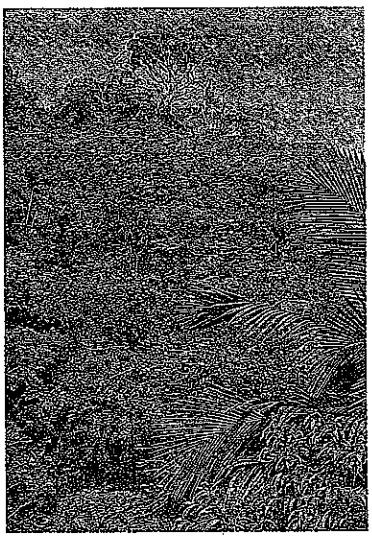
Chapter 2: How Protected Areas in the Caribbean Contribute to Development

Protected areas will only survive if they contribute to meeting people's needs and aspirations.

Caribbean islands face problems not only of limited space but of crowded populations. In most islands space is short, and the shortage is made worse by dense human populations. Use of land is intense. Protected areas will not be remote sites in little visited regions, but will be somebody's back-yard or neighbourhood. That is why the link to development and human needs is so important.

Protected areas contribute directly to the economy. They do this through provision of fresh water, maintenance of fish stocks and support to tourism, outlined below. These benefits can be estimated in dollars and cents (though all too rarely is this actually done). Other benefits are more difficult to measure in financial terms but are equally vital for people's livelihoods. Farmers may depend on protected areas for firewood and medicinal plants. Protected areas prevent erosion on farms below and stop landslides. They are an important buffer against hurricanes, one of the scourges of the Caribbean, and other global change. They safeguard rare genetic resources of plants and animals that may benefit society in the future, as well as being a source of national pride.

As a result, policy-makers are increasingly seeing protected areas as an integral part of the development process and as motors for rural development.



A forest reserve, Tobago. In the Caribbean as elsewhere in the tropics forest reserves and other forest protected areas fulfil a vital function to society by guaranteeing the supply of fresh water to towns and cities.

The strongest direct economic contribution that national parks make in the Caribbean is by providing clean water.

Many protected areas were first established to safeguard water supplies to towns and cities. Today, the tourist industry has a very high demand for fresh water, making the case for watershed protection all the more important. For example:

- In Jamaica, the Blue and John Crow National Park protects the watershed for 40% of the population of Kingston, home to half the people. The second national park, proposed for the Cockpit Country, will protect the watershed for a further 25% of the population as well as a fishery valued at about $1 million a year.
- In Dominican Republic, the 14 main rivers provide much needed electricity and water for irrigation; their watersheds of mountain pine forest are the mainstay of the protected area system.

Marine protected areas help maintain fisheries by conserving nursery areas where fish breed.

In the Caribbean, productivity of the sea is concentrated in small areas of coral reefs, sea-grass beds and mangroves around the coasts, which provide rich feeding and breeding grounds for fish. All are relatively small in comparison with the open Caribbean Sea. The corals protect the land and are themselves protected by the sea-grass beds which grow on sediments from the erosion of the reef, and which provide food for turtles, manatees, fish and invertebrates. Mangroves trap sediments and provide rich breeding areas for fish, as well as protecting the land from erosion and storm damage. The sea beyond the reefs tends to be poor in species and unproductive, hence its clear blue colour. Except in Belize, Cuba and Bahamas, the depth tends to drop precipitously within a few kilometres to 2000 metres.

Fisheries in the Caribbean are therefore very dependent on critical areas of sea close to land. In many places demand for fish now exceeds available stocks and the capacity for increasing the fish take is small. All of these habitats are deeply vulnerable. Coral reefs are easily damaged, for example by insensitive tourism, by nutrification, by erosion run-off and by turbidity caused by extraction of minerals elsewhere. Point sources of pollution from oil spills, industry and urban expansion are increasingly destructive, as is the mining of beach and coral sand for use in construction and road-building. Even a small action like building a jetty can harm a fringing reef as it may upset the way the water circulates.

Blackbar Soldierfish in the Caribbean Sea. Experience shows that marine reserves have to be closed to fishing to provide an economic benefit to fishers by exporting their offspring to fishing grounds.

To deliver conservation benefits, experience shows that a marine reserve – or at least part of it – has to be closed to fishing. In the reserves at Hol Chan (Belize), Saba and elsewhere fish stocks have increased rapidly following protection from fishing. Far from hurting the fishing industry such closures enhance catches, so providing a direct economic benefit to fishers. (Indeed, in Haiti, it is the fishers not the government who look after Les Arcadins reserve.) The larger stocks inside the reserves export their offspring to fishing grounds through the ocean currents. Juveniles and adults may also emigrate from the reserves, so boosting nearby fisheries. The dual conservation and fisheries benefits make no-take marine reserves a highly promising tool for management of marine ecosystems.

It is also essential that coastal areas alongside them are managed to reduce run-off of sediment and other pollutants. Protected areas which incorporate both land and sea may help unite terrestrial and marine governance. Planning for the Port Honduras Marine Reserve in southern Belize includes linkage with terrestrial protected areas on the watersheds inland. The Nature Conservancy (see Box 6, p. 80) is linking the management of terrestrial parks with marine protected areas in a "ridge to reef" programme.

Box 1

EXAMPLES OF THE FINANCIAL BENEFITS FROM TOURISM TO CARIBBEAN PROTECTED AREAS

- Virgin Islands National Park with 750,000 visitors per year produces 11 times more economic benefits than it costs;
- Divers at the Bonaire Marine Park (Netherlands Antilles) pay a US$ 10 fee each year, which covers all the operational expenditure of the park. One estimate is that the divers contribute about $30 million per year to the islands' economy.
- The relatively small marine protected areas in the Cayman Islands attract about 168,000 divers a year, who spend about $53 million.

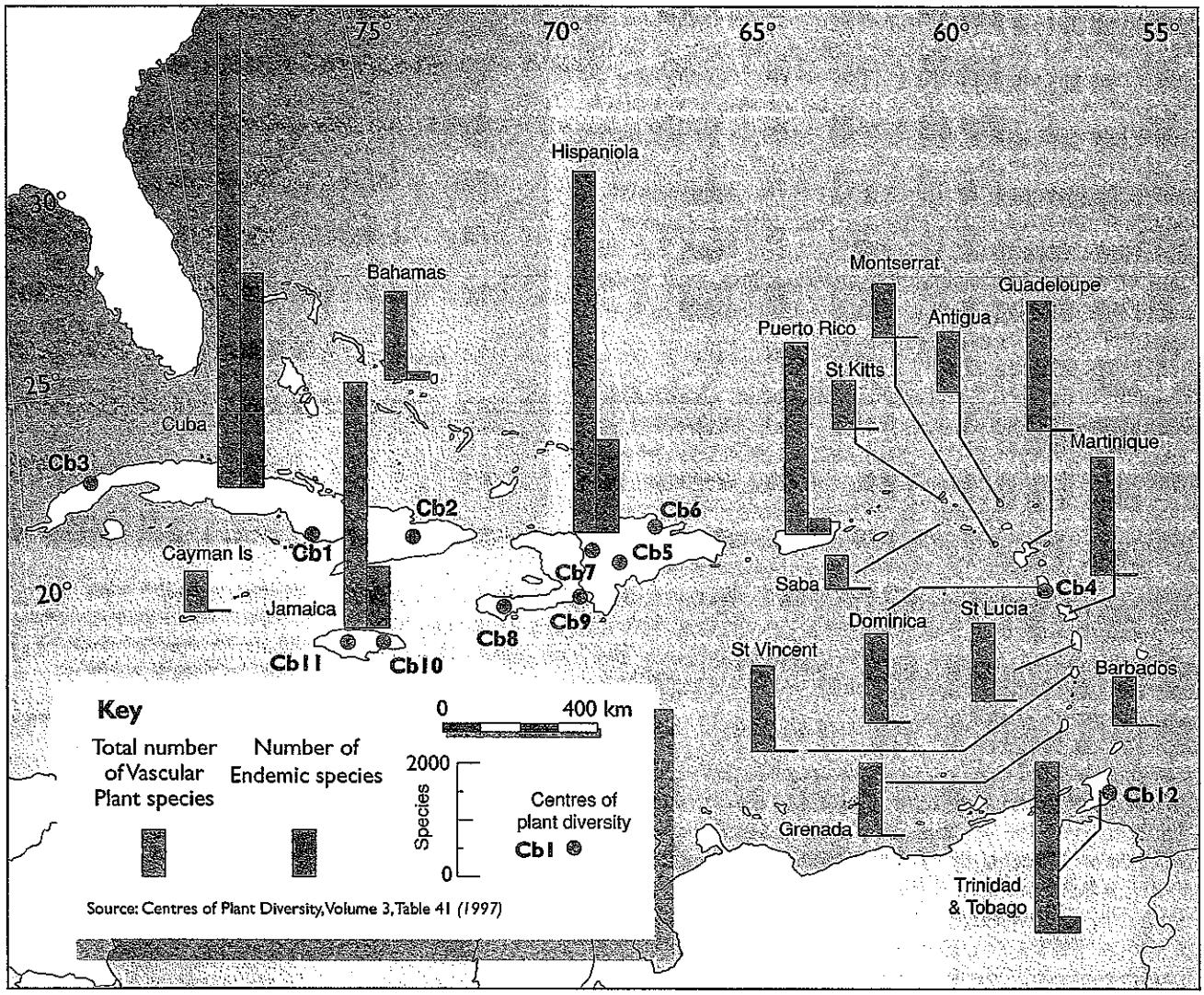
National parks, as well as other protected areas, are essential for tourism, the main growth industry.

Caribbean nations are coming to recognize that their present tourism is largely dependent on environmental quality and that future growth will depend on the uniqueness of the product. National parks and reserves are one of the few unique assets Caribbean nations have in competing with other tourist regions. Marine areas are of especial importance, in particular for the burgeoning dive industry (see Box 1). The benefits and problems of tourism are discussed in more detail in Chapter 4.

Protected areas conserve vital biodiversity.

The Caribbean has large numbers of endemic plants and animals, that is species not found anywhere else. The biodiversity per unit area is particularly high. This means that a greater proportion of the land needs to be protected than elsewhere to safeguard this biodiversity.

On land, the Caribbean is perhaps best known to naturalists for its endemic plants and birds, though these plants also harbour a rich invertebrate life. Overall, the Caribbean has c. 13,000 species of vascular plants, of which just over half, 6550 species, are found on one island, Cuba. As Map 1 shows, the richest islands for



Map 1. Plant Diversity in the insular Caribbean.

Key to the centres of plant diversity (above)

- Cb1 Cuba: Coast from Juragoa to Casilda Peninsula; Trinidad Mountains; Sierra del Escambray
- Cb2 Cuba: Oriente
- Cb3 Pinar del Río
- Cb4 Dominica: Morne Trois Pitons National Park
- Cb5 Dominican Republic: Cordillera Central
- Cb6 Dominican Republic: Los Haitises
- Cb7: Dominican Republic: Sierra de Neiba
- Cb8: Haiti: Pic Macaya
- Cb9: Haiti: Morne La Visite
- Cb10: Jamaica: Blue and John Crow Mountains
- Cb11: Jamaica: Cockpit Country
- Cb12: Trinidad & Tobago: Aripo Savannas Scientific Reserve

endemic plants are Cuba (with 3193 endemic species of flowering plants), Hispaniola (1400) and Jamaica (852). Many of these plants are under threat, due to the rapid loss of vegetation: in Cuba, for example, 960 plants have been classed as rare or threatened, and in Trinidad and Tobago, 863.

The islands have important genetic resources of trees, including the famous lignum vitae (*Guaiacum officinale*) and West Indian mahogany (*Swietenia mahogani*), which is endemic to the region. There are some but not many indigenous food plants, such as cashew (*Anacardium occidentale*). Perhaps the closest link between biodiversity and development comes from medicinal plants, which are widely used in the Caribbean. A recent account lists 43 species, most of them are wide-ranging.

The most important birds are the seabirds and the endemic land birds. The seabirds include shearwater, tropic birds, pelicans, boobies, terns, egrets and flamingos, among others. The islands are famous for their endemic land birds, especially the Amazona parrots of the Lesser Antilles, some with very small populations and most threatened to some extent. The region is a centre for marine turtles, with most of the species found there though populations have declined due to exploitation.

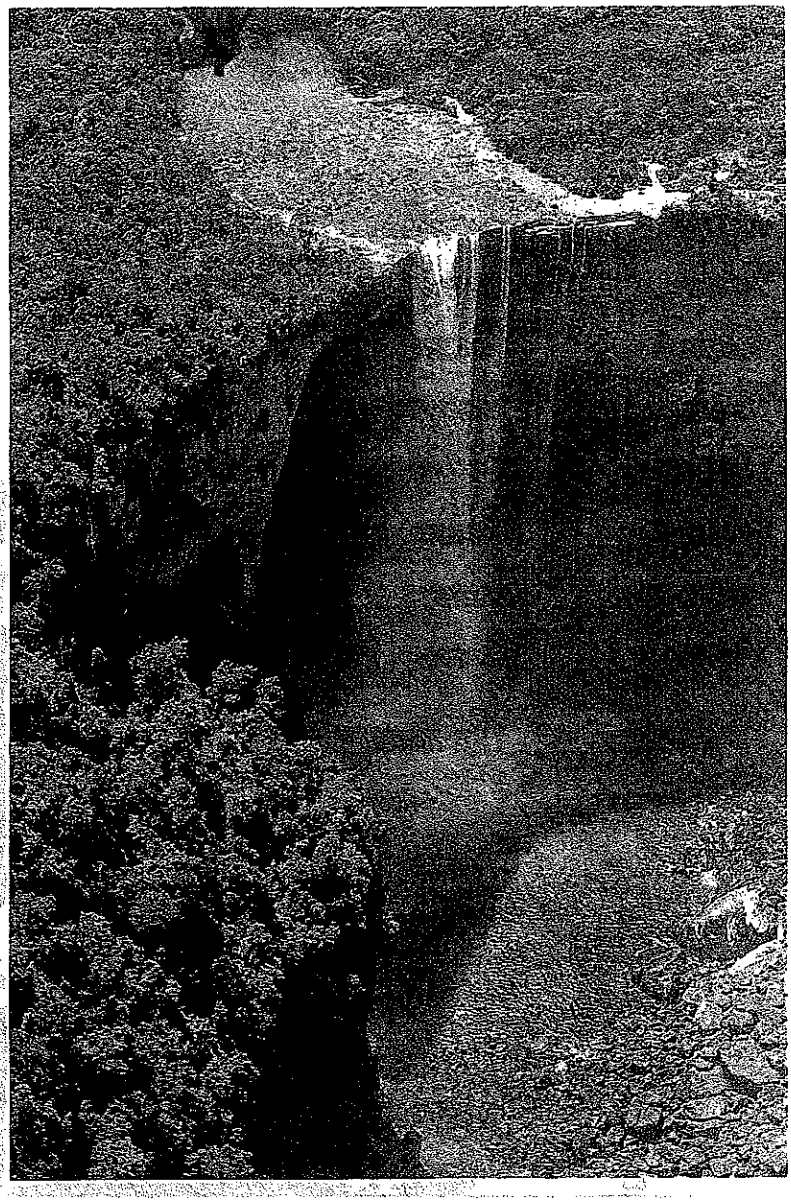
The Caribbean has about 8% of the world's coral reefs, which are common around the islands, especially on the side facing the prevailing wind. The largest in the region is the barrier reef system off Belize, some 220 km long. Another important habitat for biodiversity is the coastal lagoons, which help to protect the reefs by trapping

sediments, and which are important habitats for fish and wetland birds.

National parks and other protected areas are a symbol of nationhood and national pride.

Wild areas of land and sea are very important for people in the Caribbean. They are a source of recreation and in the Bahamas, for example, were an important stimulus for development of the park system. They also have a strong social and cultural value: in many Caribbean nations most of the productive land was in the form of plantations, and so people valued wild land as a common property resource. For some it was their only free resource. Understandably, wild lands became associated with freedom and independence. The national park designation is not just an effective way of protecting that land, it is also a powerful symbol of nationhood.

National parks also help protect traditional practices that are part of the culture of the region and that people in the region are keen not to lose. Through activities like traditional fishing and use of medicinal plants, parks help to conserve cultural life. They also preserve sites of cultural significance – according to a recent study in Cuba, about 70% of Caribbean protected areas contain important archaeological and historical sites.



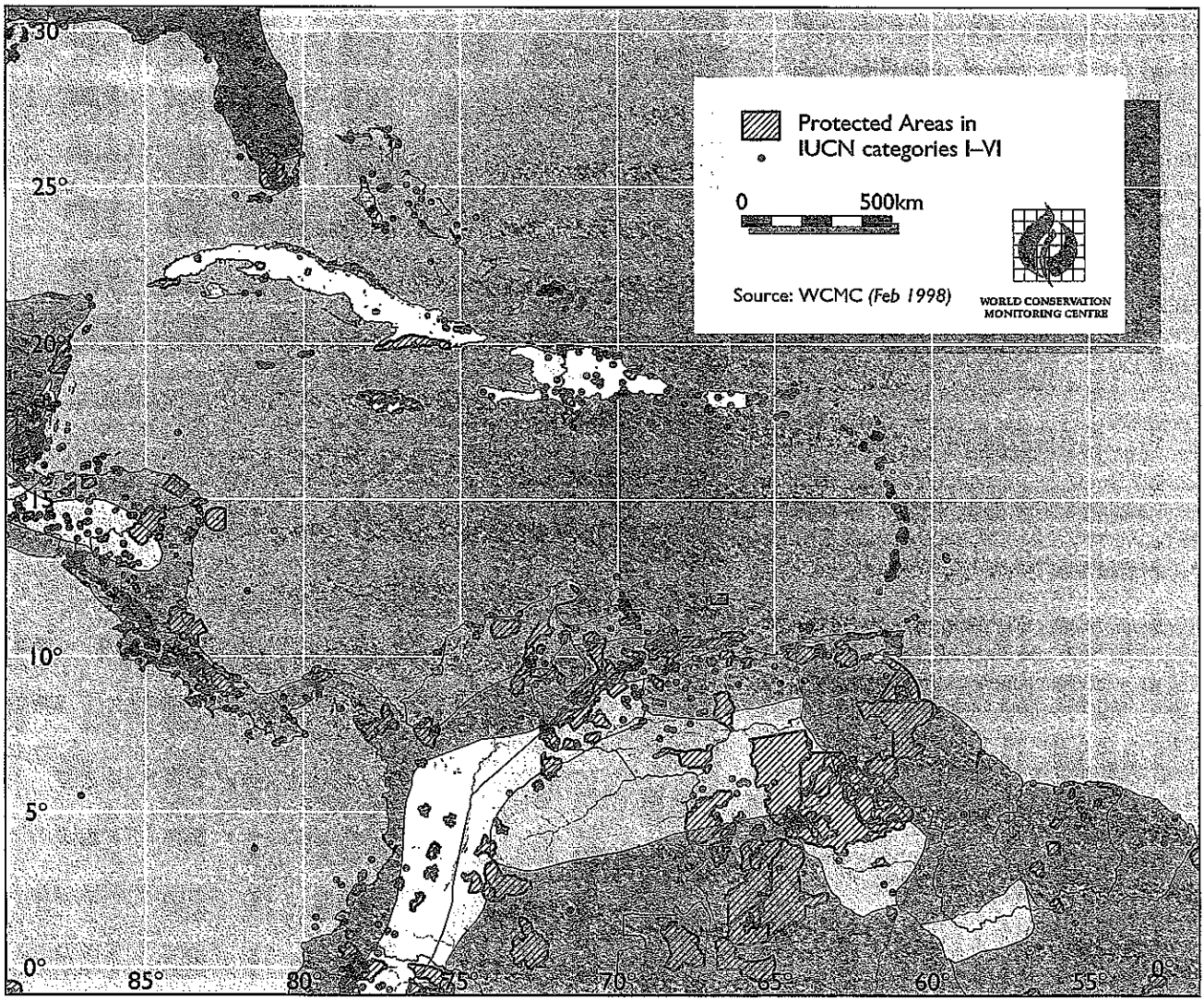
Kaiteur Falls, Guyana's first national park, a symbol of national pride.

Protected areas in one country have many benefits for other countries.

This is particularly true in the Caribbean, where ocean currents quickly move the offspring of fish and other sea creatures from one shoreline to another. The region has very dynamic current systems which connect islands and nations in a complex web of ecological interactions. Because of this, there is a high level of interdependence of resources among countries. Most countries will benefit from import of fish from upstream nations, although the magnitude of benefit varies by more than ten-fold depending on location. Marine protected areas closed to fishing act as hotspots of reproduction, helping to replenish both local and more distant fisheries. In such a way, reserves in St Lucia might benefit reefs in Martinique, while reserves in Barbados could benefit St Lucia.

For development in the region to succeed, closer regional links, indeed regional integration, is a major imperative. For this region, anything where regional cooperation works is valued. Environmental issues are good regional and transboundary issues, and ones in which it is relatively easy to justify cooperation between nations.

Map 2
Protected Areas of the Caribbean by Biogeographic Zone



Biogeographical Zones

- Tropical humid forests
- Tropical dry forests / Woodland
- Temperate broad-leaf forests
- Tropical grasslands / Savanna
- Mixed mountain systems
- Mixed island systems
- Water bodies

Chapter 3: Where do we stand? The Status of Protected Areas in the Caribbean

Protected areas in the Caribbean were established as long as 200 years ago, and so are among the first officially established protected areas.

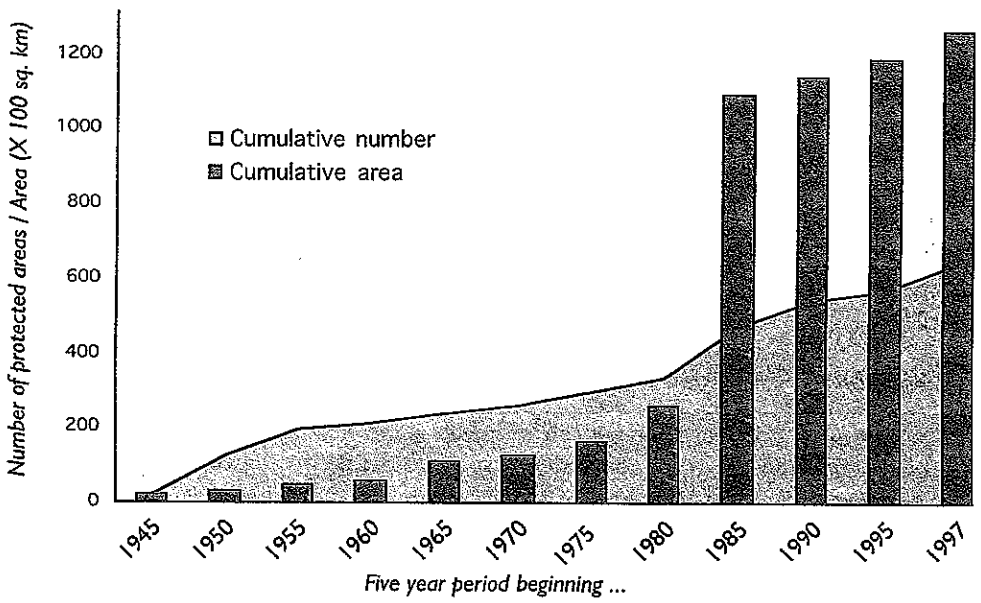
In 1765, the Main Ridge Reserve of Tobago was established as "woods for protection of the rain", and in 1791 the Kings Hill Reserve established on St Vincent for "the purpose of attracting the clouds and rain ... for the benefit and advantage of the owners and possessors of lands in the neighbourhood thereof". Both remain today.

In the early 1900s more protected areas were created. In 1907 Jamaica established the first marine protected areas in the region, at the Pedro Bank and Cay and Morant Bank. In 1909 Puerto Rico created a National Wildlife Refuge on Culebra, and in 1910 Grenada created the Grand Etang Forest Reserve. It was Cuba that created the first national park – the Sierra de Cristál – in 1930.

The reasons for establishing protected areas in the Caribbean have evolved over time just as they have elsewhere. The first protected areas were established to protect watersheds. The focus then shifted to wildlife protection. During the past decade, the concept has broadened to the protection of biodiversity as a whole – the variety of all the ecosystems, species and genes that make up nature, not just the prominent large species on which wildlife conservation has tended to focus in the past.

So far there are about 640 protected areas in the Caribbean, with rapid growth in recent years with a total area of 126,378 km^2 (Table 1).

States in the region have made very substantial efforts to set up protected areas, with most progress in the larger countries: Belize, Cuba, Dominican Republic, Jamaica, Puerto Rico and Suriname now have substantial networks of protected areas. Only Guyana and Haiti are still at the early stages, with only 0.27% and 0.35% respectively of their land area protected. Of the smaller islands and island groups, there are well-developed protected areas on Bahamas, Bermuda, Dominica, Guadeloupe, Martinique, Netherlands Antilles, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Turks and Caicos Islands, and the Virgin Islands.



Growth of Protected Areas in the Caribbean

Source: WCMC

Table 1

Protected areas of the Caribbean by country or territory and management category

Country	Country Area	I/Ia/Ib Area	I/Ia/Ib %	II Area	II %	III Area	III %	IV Area	IV %	V Area	V %	VI Area	VI %	TOTAL Area	TOTAL %
Antigua & Barbuda	442			66	15.00									166	15.00
Aruba (Netherlands)	193							0	0.10					0	0.10
Bahamas	13,865	18	0.13	1,421	10.20			18	0.14					1,457	10.50
Barbados	430			2	0.53			0	0.09					2	0.63
Belize	22,965	609	2.66	1,286	5.60	80	0.35	2,818	12.27			4,337	18.89	9,132	39.77
Bermuda (UK)	54							125	232.98					125	232.98
British Virgin Islands (UK)	153			1	0.70	3	2.39	16	10.59					20	13.68
Cayman Islands (UK)	259	19	7.68	16	6.31			53	20.75					88	34.74
Cuba	114,525	399	0.35	1,169	1.02			4,248	3.71	13,273	11.59			19,091	16.67
Dominica	751			75	9.99			0	0.11			95	12.71	170	22.81
Dominican Republic	48,440	632	1.31	8,857	18.29	15	0.03	73,426	151.58	799	1.65	314	0.65	84,045	173.50
Grenada	345											6	1.79	6	1.79
Guadeloupe (France)	1,780			173	9.72			37	2.10	162	9.10			372	20.92
Guyana	214,970			585	0.27									585	0.27
Haiti	27,750			75	0.27					22	0.08			97	0.35
Jamaica	11,425			15	0.13							967	8.47	982	8.60
Martinique (France)	1,079							11	1.11	701	65.01			713	66.12
Montserrat (UK)	104	0	0.29	8	7.83	0	0.13	0	0.06	0	0.01	2	1.94	10	10.26
Netherlands Antilles	800	0	0.07	77	9.70									78	9.77
Puerto Rico (USA)	8,960							183	2.05			112	1.26	296	3.31
Saint Kitts & Nevis	261			26	10.06									26	10.06
Saint Lucia	619	0	0.02			0	0.03	23	3.77			74	12.11	98	15.93
St Vincent & Grenadines	389							82	21.30					82	21.30
Suriname	163,820			84	0.05			7,275	4.44			683	0.42	8,042	4.91
Trinidad & Tobago	5,130	26	0.52					149	2.91			35	0.68	210	4.11
Turks & Caicos (UK)	430			64	14.93	7	1.65	617	143.49	28	6.70			717	166.77
Virgin Islands (USA)	345			53	15.39	3	1.03	1	0.48					58	16.89
TOTALS	640,284	1,707	0.27	13,852	2.16	110	0.02	89,092	13.91	14,987	2.34	6,628	1.04	26,582	19.77

Areas in square kilometres; excludes protected areas not assigned to a management category.
Very high values in the final column (e.g. Bermuda) should be disregarded; the country area is of land only but the protected areas include sea areas.
Prepared by the World Conservation Monitoring Centre, updated late 1997.

Recent growth has been rapid, as shown by the chart on p. 71. For example, Dominican Republic has increased its protected areas from 19 five years ago to 90 today. And there is a flurry of current initiatives to establish protected areas.

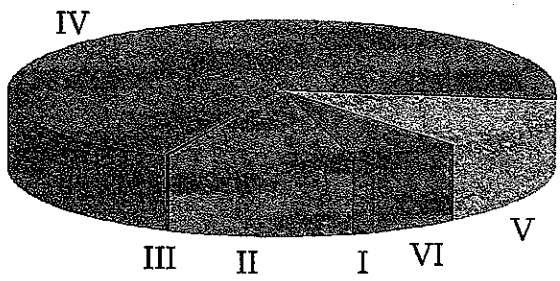
In the Caribbean, most protected areas are called National Parks, but they are managed very differently in one country to another. Many are zoned, and so contain a range of IUCN categories within one site. However, there are also protected watershed areas, Scenic Areas (IUCN categories IV and V) and marine protected areas. Most Caribbean protected areas (70% by area and 41% by number) are in category IV (Nature Conservation Reserve/Managed Nature Reserve/Wildlife Sanctuary).

The protected areas network is far from complete.

A rough assessment of coverage can be made using the Udvardy system of biogeographical provinces, of which there are seven in the region. Three cover both the continental area and the Caribbean:

- The **Campechean** is relatively well covered by the protected areas in Belize that cover over 30% of that country.

- Coverage in the **Guyanan** province is uneven: Guyana has only the small Kaieteur National Park, though plans to expand the park system dramatically. In contrast, Suriname has 14 protected areas, covering nearly 5% of the country, and in addition, in June 1998, announced the creation of the massive Central Suriname Wilderness Nature Reserve, covering an additional 10% of the country. Trinidad and Tobago has some small protected areas, but their management – and wildlife conservation on general – is submerged in a larger resource-management agency and the small, legally protected areas are not yet integrated into the larger protection forests.



Caribbean protected areas (area protected) by IUCN management category

- The **Venezuelan Dry Forest** includes the islands of Aruba, Bonaire and Curaçao, whose vegetation consists mainly of mangrove, shore vegetation, cactus scrub and dry forest. Each is covered by protected areas.

The remaining Udvardy provinces for the region cover just islands:

- The **Bahamas-Bermudan** province covers Bahamas, Bermuda, and the Turks and Caicos – all low-lying islands with low, dense and thorny vegetation. Samples of the different life zones are relatively well protected, especially in Bahamas which has a planned network of some 37 protected areas.

- **Cuba**, which has the most species of plants and animals of any Caribbean island, merits an Udvardy province of its own. The country has over 70 areas in its National System of Protected Areas, covering 17% of the country and containing representative samples of 98% of habitat types; this makes it much the largest protected area system in the region. At its heyday in the late 1980s, the system had a staff of almost 2000, but very few sites have been created in the last ten years and managers are now struggling to keep the system alive on a minimal budget. The parks are being over-run by people in search of wood and land, and the revival of tourism is a further threat to their integrity.

Parque Nacional del Este in the Dominican Republic, a country where protected areas cover all the main ecosystems and many new protected areas have been created recently.

- The **Greater Antillean** province consists of the islands of Jamaica, Hispañola and Puerto Rico, which also have high levels of species diversity and endemism. Jamaica has many Forest Reserves and is now developing a series of National Parks. Haiti and Dominican Republic, which together form Hispañola, both have protected area systems but both of which suffer from shortage of personnel and funding. A 1990 review of the protected areas of the Dominican Republic showed that all of the major ecosystems of the country were included; many more protected areas have been created since then. Puerto Rico has a system of protected areas that cover all the life zones present; some are managed by the Federal and Commonwealth governments, and some by the Puerto Rico Conservation Trust.

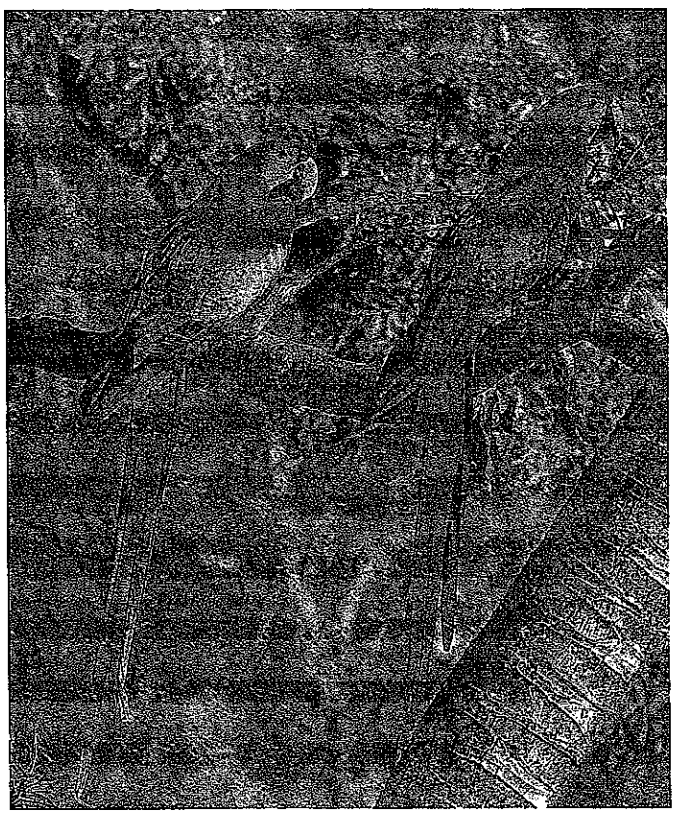
- Coverage of the **Lesser Antillean** province was analysed in the 1982 *Survey of Conservation Priorities in the Lesser Antilles*, which defined seven terrestrial life zones (mangroves, littoral woodland, cactus scrub, dry woodland, moist forest, rain forest, and cloud forest). At that time there were two fully managed terrestrial protected areas in the region (Virgin Islands and Guadeloupe National Parks), between them protecting examples of each of these terrestrial life zones.

Although coverage has increased since then, it is still far from covering representatives of every species and ecosystem.

The Caribbean has over 100 marine protected areas.

Establishment of marine protected areas still lags far behind terrestrial parks, with a few exceptions, but not to such as a degree as in the Pacific region (see Part IV). According to the 1995 IUCN/ World Bank study, coverage is weakest in the Guianas, where only Suriname has established protected areas in the coastal zone and none of these areas include a substantial subtidal marine component.

Work by WCPA in the early 1990s for all the insular Caribbean except Cuba showed that protected areas rated as fully managed covered all the major marine and coastal ecosystems, although incorporating only a small area of each. In Cuba, the protected areas extend to marine areas; today fishing pressure is intense and only a few can be considered well-managed. However, marine reserves should not only be seen in terms of ecosystem coverage. They are increasingly perceived less as living aquaria but more as tools to allow the recovery of degraded areas, typically from over-fishing but also from excessive recreational use – Saba Marine Park, for example, was established to keep the dive industry within sustainable limits. Marine protected areas can also be good ways of resolving user conflicts.



The spectacular Scarlet Macaw. Identification of Important Bird Areas helps Caribbean nations prioritize where protected areas are most needed to conserve their rich diversity of birds.

Biological assessments are now giving a more detailed picture of the protected areas needed to conserve the full range of biodiversity in the region:

- *Centres of Plant Diversity*, completed 1997 by IUCN and WWF with support from the European Commission, is an attempt to define the 250 or so places in the world which, if protected, would "catch" the greatest proportion of plant diversity. 12 centres have been identified in the Caribbean (Map 1, p. 68).
- BirdLife International has identified Endemic Bird Areas in the Caribbean, large areas at island or country level of special importance for bird conservation, and is now seeking to identify Important Bird Areas, those particular sites which are needed for the survival not just of endemic but also of widespread birds. Jamaica has the most endemic birds, which on most islands tend to be forest-dwellers.
- Van Halewyn and Norton (1984) have identified the key sites for the 22 seabird species that nest in the Caribbean and adjacent Atlantic. Although some of the birds do breed in upland forests, most nest on coastal cliff, small islands and keys where they are vulnerable to disturbance, egg-collection and predation.
- The World Conservation Monitoring Centre has identified for the World Bank some critical habitats for selected countries and territories of the Caribbean.

Perhaps most significant, The Nature Conservancy, with help from USAID, has developed a biogeographic classification of Latin America and the Caribbean region, and is using it to identify gaps in protected area coverage. Earlier, in 1978 to 1981, the Eastern Caribbean Natural Area Management Program (ENCAMP) produced conservation data atlases for 25 islands in the Lesser Antilles, with recommendations on establishing a system of protected areas on each to cover all the major ecosystems.

For marine and coastal conservation, the 1995 IUCN/World Bank study identified 42 existing MPAs that need management support and 12 further marine protected areas that should be created; these include the island of Barbuda, some sites on the Belize Barrier Reef, the Archipelago de los Canarreos (Cuba) and the Monzanillo-Monte Cristi area (Dominican Republic). However, these reflect only the need to establish a representative network; many more MPAs are also needed to restore fish stocks and protect other economic resources.

The Caribbean has long and varied experience in protected area management, but in most countries the present capacity to establish and manage protected areas is not always sufficient for the task.

Each of the 25 countries and territories of the region has approached protected area management in slightly different ways, starting with approaches from Europe and North America, and adapting them to local needs and experience. Present capacity is considered below in terms of institutions, finance, international agreements and external support.

Institutions responsible for national parks vary greatly across the region.

Many protected areas started as a process in other sectors, such as fisheries, and as a result most countries develop parks using agencies far removed from a traditional National Parks Department. Today protected areas are managed by many different types of institutions. For example:

- Cuba and Dominican Republic have National Parks directorates as part of central government;
- Jamaica has a Natural Resources Conservation Authority, which is a statutory management agency whose responsibilities include National Parks;
- In Bahamas and British Virgin Islands, the protected areas systems are managed by National Trusts – see Box 2;
- Haiti has just set up a Ministry of Environment, which is responsible for National Parks but so far has virtually no staff.

Government agencies are tied to the general legislative and policy development process, and can draw on the wider resources of government. In the Caribbean, government departments usually have two advantages: they administer large areas of government-owned land, and they can offer long-term careers to employees through the Civil Service.

Independent statutory bodies such as in the Bahamas – see Box 2 – are modeled on the National Trusts of the British, the National Park Administration of the French, and the Park Foundation of the Dutch. These are quasi-governmental organizations, which are usually run by a voluntary Board of Directors appointed by a Minister and made up of representatives of governments, environmental groups and industry. Their budgets and administration are independent of government. They combine the advantages of governmental agencies with those of non-governmental bodies – the ability to raise funds from the private sector and relative freedom from government bureaucracy.

The situation is often complex, with several institutions involved in managing a protected area. Increasingly, co-management and co-financing are the rule rather

Box 2

The Bahamas National Trust

The Bahamas National Trust was established by Act of Parliament in 1959 as a statutory, non-profit, non-governmental organization for the conservation and management of the country's natural and historic resources. Its board is partly elected by its membership and partly appointed by a range of governmental and other organizations listed in the 1959 Act.

The Government has entrusted it with the creation and management of the nation's entire protected areas network. The first national park was the 176-sq mile Exuma Cays Land and Sea Park, established in 1959. Today, the Trust manages 12 national parks and protected areas, and is working to add over 50 more sites to the network. Its headquarters are in a garden of rare palms and native Bahamian woodland in the heart of the capital Nassau.

As an NGO, the Bahamas National Trust has over 3000 members. Much of the park management is carried out by volunteers. It is active in environmental education and takes a strong line in pressing the case for the environment to the government. Its funding is 55% Heritage Fund Endowment, 22% membership subscriptions, 16% donations, 5% sales and fees, and only 2% government grant.

Source: Bahamas National Trust web site, 1998

than the exception. A survey in the early 1990s showed that quasi-governmental organizations (statutory bodies) were the most frequently used form of protected area management, with government agencies close behind.

Non-governmental organizations (NGOs), whether international, regional or island-based, all help manage protected areas in the Caribbean.

International NGOs tend to concentrate on funding, on providing technical assistance and on supporting regional and local NGOs. Regional NGOs tend to concentrate on networking, regional cooperation and technical and financial support. Local NGOs are more diverse but generally work on advocacy, public awareness, financing and the management of specific areas under contract from government. The advantages of NGOs in the Caribbean are independence from government and politics, motivation, contact with local people, ability to mobilize public opinion, flexibility and lack of bureaucracy.

Box 3

Ways used to fund protected areas in the Caribbean

- Government budgets
- Grants (e.g. from aid agencies, international conservation organizations and foundations)
- User fees (e.g. entrance fees, dockage fees, mooring fees, diving fees)
- Concessions (e.g. rents, leases, rights to provide services, rights to erect communications towers or transmission lines)
- Commercial bank loans
- Local non-governmental support groups
- Sales (e.g. of souvenirs, guide books, interpretive materials, food and drink)
- Services from other government departments (e.g. law enforcement, public works, tourism)
- Volunteer services
- Trust funds and endowments (capitalized by donations, aid agencies, blocked funds, debt-for-nature swaps, other debt-reduction programmes, surplus commodities, etc.)
- Individual donations
- International and regional development banks
- Universities and research centres (through in-kind support and cost-sharing).

Until now, the private sector has played only a small role in financing and managing protected areas in the Caribbean. Individuals from the private sector have usually been involved through conservation organizations, not through their own businesses. There is, however, great scope for expanding the contribution of the private sector. It has the advantages of flexibility, efficient management and high motivation.

The wide variety of management mechanisms has also spawned many different ways of paying for parks, used singly or more often in combination.

Box 3 shows the many approaches used. A survey in the early 1990s showed that grants, government budgets and volunteer services are the most frequently used source of funds. In-kind services from universities and research centres are also prominent. The diversity of funding sources is itself a valuable resource for sharing experience and learning. And diversity of funding gives a degree of stability.

Individual approaches vary greatly from one country to another. For example:

- **The Bahamas** has a Trust Fund for its whole protected area system, in **Jamaica** the Foundation for National Parks is an endowment fund for the park system, and **Guyana** is considering the use of an endowment fund.
- **Dominican Republic** has an endowment fund for three of its protected areas and has also drawn on debt for nature swaps. The authority responsible for national parks is working to make most of the protected areas self-financing.
- **Trinidad and Tobago**, with World Bank support, is planning to create a National Parks authority to generate, retain and recycle income from protected areas, to be backed up by specific National Parks legislation.

Forms of funding are changing. There is a growing trend to encourage donations. Grant-giving too has shifted. Aid agencies are now willing to give money to agencies in the region, whether NGO or governmental, rather than only to large international conservation NGOs.

There is keen interest too in generating revenue from parks for parks. Here NGO management can help give creativity and flexibility. In Saba, the revenue from diving goes back into park management, but the NGO managing the Soufrière Marine

Management Area, St Lucia, pays the government a fee for being allowed to manage the park, and pays for this and management costs by entrance fees, mooring fees for yachts and other charges. Although it is good for the park to keep all its revenue, it is also good tactics for some of the revenue to go directly to government, showing policy-makers that protected areas can contribute to government revenue. In Turks and Caicos, however, there is frustration at government opposition to proposals for fund-raising efforts by the park administration, as the government sees income from protected areas solely as government funds.

Park managers and those with a commercial interest in parks are often cautious about bringing in charges; for example in Bonaire, initially the tour operators were sceptical about introducing a $10 diving fee for the park, feeling the divers might go elsewhere, but in reality the opposite has happened: the fee is marketed as showing the island's commitment to conservation and a survey in 1991 showed the divers would be prepared to pay admission fees of up to $25.

Management effectiveness is hard to evaluate.

In 1988, The Organisation of American States (OAS) published a survey of management effectiveness for coastal and marine protected areas in the region. Although it covered less than half the protected areas, it was believed to be representative of the situation at that time. The study defined management effectiveness as the degree to which an area is actually protected. The study showed that 33% of the protected areas were fully managed, 43% partially managed, and 24% managed in name only.

There are however dangers here. The OAS study is over ten years old, and much has changed since then. Also, it uses a harder test – degree of protection – than would IUCN. Where a resource is not greatly threatened, minimal management may be enough, at least in the short term. Some have criticized the notion of 'paper parks', meaning parks declared on paper but not yet implemented on the ground, but in the Caribbean, paper parks have not necessarily been a bad thing, at least in countries where law is respected: they establish a legal framework, which may prevent gross modification to the area, and they allow government to deflect other land uses. Paper parks also send a signal to conservation groups that here is an area needing support and a local presence. Indeed, some would argue that a country cannot have a real national park without a paper park first.

A more sophisticated approach to assessing management effectiveness is needed, that takes account of the differences in the need of parks for day-to-day management depending on the threats to their integrity and resources.

Box 4

Regional Agreements relevant to protected areas

Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, 1940

The Western Hemisphere Convention, in place since 1940, is a pact for coordination and cooperation in the conservation of habitats and species to prevent extinction of flora and fauna. It has been the framework for some North-South technical assistance between protected area agencies in North America and those in the Caribbean, especially involving the US National Park Service and the US Fish and Wildlife Service.

The Cartagena Convention, 1983

This is the legal instrument for the adoption of the Caribbean Action Plan, developed as one of the UNEP Regional Seas Conventions and focussing on marine resources. It is one of the few agreements that cuts across the barriers of language and politics in the region.

A Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region, 1990

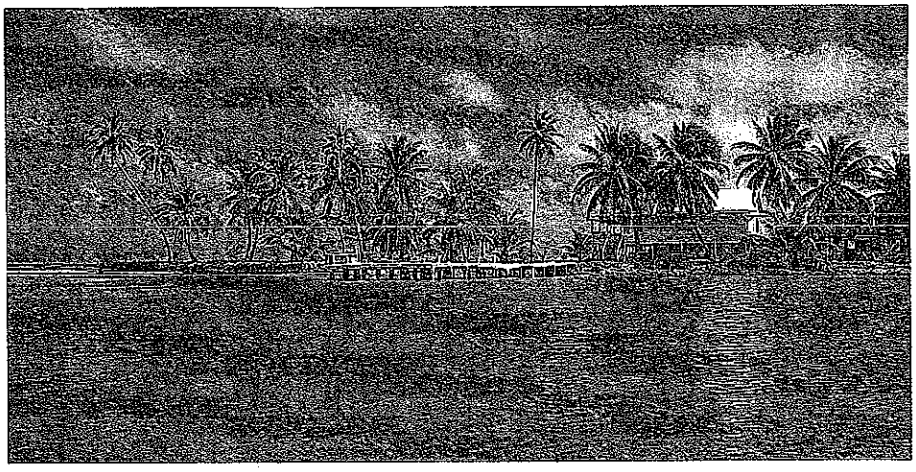
One of 3 protocols under the Cartagena Convention (see above), this covers marine conservation measures to protect, preserve and manage sensitive areas and their special value and threatened or endangered species. A meeting at Kingston, Jamaica, in June 1991, adopted a budget and schedule to start building the Wider Caribbean Parks and Protected Areas Network.

Caribbean nations have been enthusiastic supporters of recent global agreements on conservation, especially the Convention of Biological Diversity.

Table 2 shows participation in the major treaties relevant to protected areas. To a small nation the cost of ratifying an international agreement can be high: the cost of attending international meetings and preparing the necessary reports and actions plans has to be borne from a much smaller public purse than in larger countries.

The Convention on Biological Diversity has struck a responsive chord, partly because its holistic approach to conservation reflects the needs of small island States, which were among the first to ratify. Although it was only opened for signature in 1992, all island Caribbean States nations have now ratified it.

There has been less interest in the Conventions and programmes under which



The Belize Barrier Reef, the largest reef system in the Western hemisphere, is one of two natural Caribbean sites inscribed on the World Heritage List. The Smithsonian marine station on Carrie Bow Caye, Belize (right) studies the biology and conservation of the coral reef ecosystem.

Table 2

Participation of the Caribbean region in international conservation treaties

Country	World Heritage Convention		Ramsar Convention		CITES	Bonn Conv.	Biodiversity Conv.	Western Hemisphere Convention	Caribbean Conv.
	Date	Sites	Date	Sites	Date	Date	Date	Date	Date
Anguilla (UK)	1984		1976	7	1976	1985	1994		1986
Antigua & Barbuda	1983				1997		1993		1986
Aruba (Netherlands)	1992		1980	1	1984	1983	1994		1986
Bahamas			1997	1	1979		1993		
Barbados					1992		1993		1986
Belize	1990	1	1998	2	1986		1993		
Bermuda (UK)	1984		1976		1976	1985	1994		1986
British Virgin Is (UK)	1984		1976		1976	1985	1994		1986
Cayman Islands (UK)	1984		1976		1976	1985	1994		1986
Cuba	1981				1990		1994		1988
Dominica	1995	1			1995		1994		1990
Dominican Republic	1985				1986		1996	1942	
Grenada	1998						1994		1987
Guadeloupe (France)	1975		1986		1978		1994		1986
Guyana	1977				1977		1994		
Haiti	1980						1996	1942	
Jamaica	1983		1998	1	1997		1995		1987
Martinique (France)	1975		1986		1978		1994		1986
Montserrat (UK)	1984		1976		1976	1985	1994		1986
Netherlands Antilles	1992		1980	5	1984	1983	1994		1986
Puerto Rico (USA)	1973		1987		1974			1942	1986
Saint Kitts & Nevis	1986				1994		1993		
Saint Lucia	1991				1982		1993		1986
St Vincent & Grenadines					1988		1996		1990
Suriname	1997		1985	1	1980		1996	1985	
Trinidad & Tobago			1993	1	1984		1996	1969	1986
Turks & Caicos (UK)	1984		1976	1	1976	1985	1994		1986
Virgin Islands (USA)	1973		1987		1974			1942	1986

Dates indicate the year when the country acceded to or ratified a Convention.
For the World Heritage Convention, only natural and mixed sites are listed.
Prepared by the World Conservation Monitoring Centre. Updated August 1998.

individual sites are designated for protection. Only Cuba has biosphere reserves. A few countries have designated Ramsar (wetland) sites, but in general wetland conservation is weak in the region. So far, two natural sites from the Caribbean have been inscribed on the World Heritage list, which is attracting increasing attention:

- **Belize Barrier-Reef System** (1996). The largest barrier reef system in the northern hemisphere, with offshore atolls, sand cays, mangrove forests, coastal lagoons and estuaries. The listing consists of 7 separate sites in a serial listing. It has spectacular underwater scenery and is an important habitat for threatened species.
- **Morne Trois Pitons National Park, Dominica** (1997) – nearly 7000 ha of luxuriant natural tropical rainforest including a volcanic peak of 1342 m forming the centre of the island. It is the richest site for biodiversity in the Lesser Antilles and is the only park (out of 8) in those islands that has full forest cover.

Box 5

Regional organizations in the Caribbean with protected area programmes

- **The Caribbean Environment Programme (CEP)** was established by the governments and territories of the wider Caribbean region to support the Cartagena Convention. One of its 5 sub-programmes promotes implementation of the Convention's SPAW Protocol (see Box 4). The Secretariat of the Programme, the Caribbean Regional Co-ordinating Unit (CAR/RCU), is based in Kingston, Jamaica. Although administered as a sub-programme of UNEP, CEP is under the control of the governments of the region, who meet every two years to review progress and agree the work programme. The framework for action is in place and appendices to the Protocol have been agreed on species and habitats that need protection but so far the main value of the Programme has been as a forum for meetings.
- **The Caribbean Conservation Association (CCA)**, supported by Canada's CIDA and based in Barbados, is a grouping of 20 governments, 87 Caribbean-based NGOs, 17 non-Caribbean institutions and 350 individual members in a governmental-non-governmental (GONGO) structure analogous to that of IUCN, with whom it works closely in promoting conservation in the Caribbean. Among its many activities, it has prepared environmental profiles for the Lesser Antilles and completed a survey of the marine resource management in the Eastern Caribbean, with maps giving the information needed for marine parks.
- **The Caribbean Natural Resources Institute (CANARI)**, based in St Lucia and St Croix, Virgin Islands, is a regional non-governmental organization focused on participatory and collaborative approaches to natural resource management. It conducts research, training, capacity-building and advocacy programmes aimed at testing, documenting and disseminating approaches to natural resource management which are suited to the needs of the insular Caribbean. It is helping develop collaborative management arrangements for various protected areas and protected area systems in the region.

A range of external organizations provide support.

The French, Spanish, UK and US aid agencies are active in their associated territories and in the States that were former colonies. For example British aid (DFID) is helping Guyana and Belize in various management issues. USAID has an extensive programme, including bilateral support to parks in Jamaica, St Lucia and Dominica. Swiss and Spanish environmental aid in the region mostly focuses on the Dominican Republic. Canada is active in the island Caribbean.

The European Commission has tended to focus more on Guyana, Suriname and Belize than the insular Caribbean. Projects supported include:

- In **Guyana**, the Iwokrama International Rainforest Programme (see Box 7, p. 84).
- In **Belize**, the NGO Programme for Belize, which has bought land to establish protected areas over 228,000 ha of tropical forest rich in mahogany (*Swietenia*) with strong support from the public in Britain and United States; many of the individual donors travel to see the sites they helped buy, helping to make ecotourism Belize's biggest earner.
- In **Jamaica**, the Negril marine park and protected area. Negril is one of Jamaica's three main tourist resorts. The marine park was created in conjunction with the Negril wastewater project (on reducing sewage pollution), funded by the European Development Fund.
- Ecotourism in Morne Trois Pitons National Park, **Dominica**.
- Levera National Park, **Grenada**.

In Suriname, European Commission support focuses more on encouraging sustainable management of forestry than on protected areas. The European Commission is also working to develop a regional programme for ACP States in the Caribbean; this is now being agreed through Cariforum, which is an intergovernmental body based in Guyana and was created to facilitate regional cooperation under the Lomé Convention. The programme would cover environmental legislation, forest and marine conservation, and would include support to protected areas.

Box 6

The Work of The Nature Conservancy in the Caribbean

The Nature Conservancy (TNC), a non-governmental organization based in the United States, has established the largest system of privately held nature reserves in the world through land purchase, conservation easements and management agreements. In 1983 it began to advise and support the work of like-minded NGOs in Latin American and the Caribbean. TNC is helping partners in the region to improve the information base for protected area design and management, enhance local institutional capacity and increase the flow of funds for conservation.

Its "Parks in Peril" initiative on parks in Latin America and the Caribbean, initially with USAID support, is aimed at improving the protection of terrestrial sites that are the most threatened and the most important biologically in the hemisphere. It has assisted on-site management of proposed or declared protected areas in a range of countries and is helping to establish trust funds for conservation in some of them.

More recently, a plan has been prepared for the conservation of what TNC call the Central Caribbean Ecosystem, based on information from the Caribbean Marine Conservation Science Center, a joint operation of TNC and the University of Miami. TNC is working with partners to develop new marine protected areas in the Port Antonio area of Jamaica linked to the Blue Mountain/John Crow national park, and the Sapodilla Cays in Belize linked to the Maya Mountains reserve. In the Dominican Republic, conservation of Madre de los Aguas and Parque del Este national parks is being planned. Other project sites include the US Virgin Islands where a new marine park will be created, the Exhuma Cays Land and Sea Park in the Bahamas, the Gulf of Honduras shared by Honduras, Guatemala and Belize, and Morne Trois Pitons in Dominica.

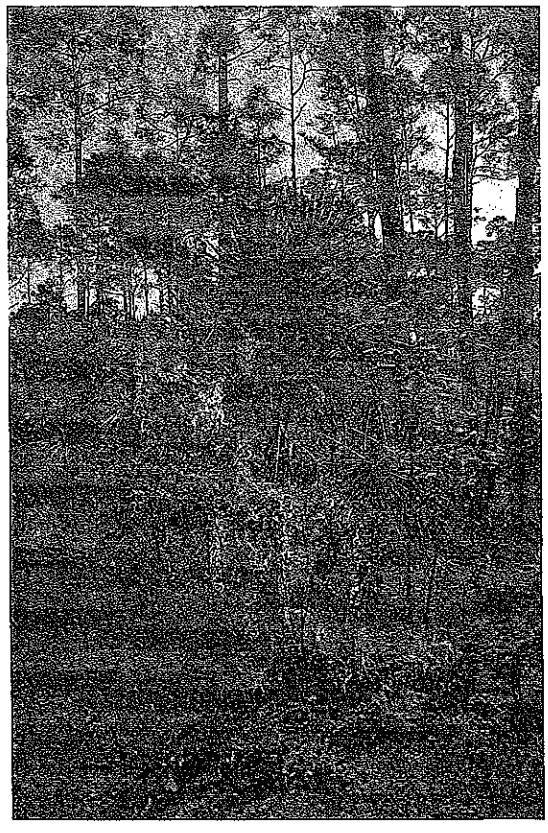
Source: Alan Randall, The Nature Conservancy.

Multilateral organizations such as FAO have also contributed to the development of protected areas. The Organisation of American States (OAS) has provided technical assistance, in particular on protected area system and management planning and training, to a range of Caribbean island States. The Inter-American Development Bank is involved in protected area projects in the region

The Global Environment Facility (GEF) has four site-based projects in the region:

- In **Belize**, a $3 million technical assistance project on the sustainable development and management of coastal resources, with the aim of extending the participatory management methods of the Hol Chan Marine Reserve to a greater area of the Belize Barrier Reef;
- In **Cuba**, a $2 million project on the conservation of biodiversity and sustainable development in the Sabaña-Camaguey Archipelago;
- In the **Dominican Republic**, a $3 million project on biodiversity conservation and management in the coastal zone, aiming to integrate the protection of the Samaná Bay and Estuarine System with the surrounding terrestrial systems;
- In **Guyana**, a $3 million project on sustainable forestry in the Iwokrama Rain Forest (see Box 7, p. 84).

A number of international non-governmental organizations are active in the Caribbean. They include Conservation International (CI), Programme for Belize, The Nature Conservancy (TNC – see Box 6), the Wildlife Conservation Society (WCS) and the World Wildlife Fund (WWF-US).



Fire among Caribbean pine and palmetto palms in the Bahamas. Fire in dry ecosystems is one of the challenges for protected area managers.

Chapter 4: What are the Main Issues ?

The emphasis has to be on protected areas that fulfil multiple functions and that can support a range of sustainable uses.

Putting up a fence around an area and closing it off to people does not work in the Caribbean. Indeed, many people in the region see parks as instruments to prevent use of resources, resulting in anger and alienation. The popular notion of a marine national parks is a place where fishers are moved out and recreational divers move in. It is vital to remove this one-sided view of conservation.

Local communities often depend on nearby or surrounding protected areas, and so have the greatest vested interest in them. Local people often know all about the areas, especially their history and culture, and how they have been used in the past. They are also on hand to monitor activities and threats. Multiple use is therefore the name of the game. This means a modern national park might be designed to allow limited collection of medicinal plants by local people and removal of occasional trees for wood-carving and other local crafts. On the coast, local artisanal fishing would be balanced with recreational diving and other forms of tourist access. Of course there are exceptions to this – small reserves to protect individual plants and animals, as in Cuba, may have to be single-purpose and fenced if they are to work – but in general sustainable use rather than strict protection is the way forward.

Castries city and harbour, St Lucia. Tourism brings prosperity but can also bring damage in its wake.

Tourism is a double-edged sword, bringing many opportunities but also great dangers.

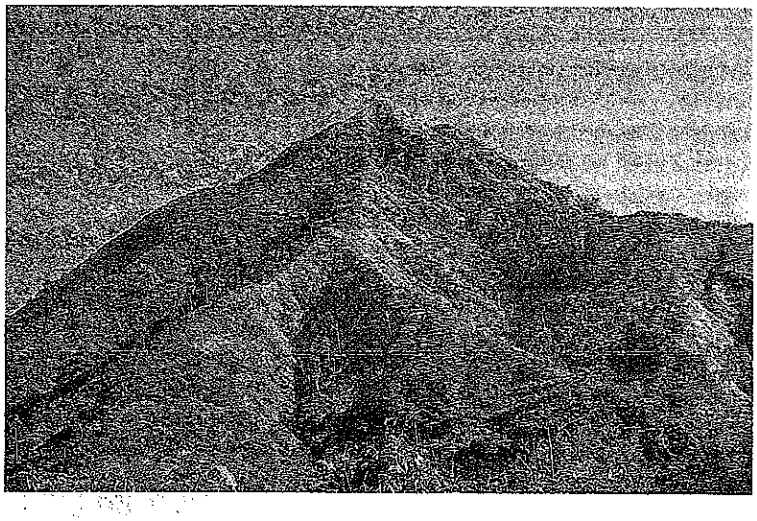
Tourism brings pressure to protect natural and cultural resources, as well as providing a source of revenue to protected areas. Also, tourism development experts today know all too well what happens when countries expand tourism too fast, especially if they cater for the lower end of the market. Inevitably the facilities are over-expanded, the natural and other values are irretrievably damaged and the tourist numbers crash. It is then virtually impossible to recreate the pristine environment that may have attracted tourists in the first place, even if it could be afforded, and exceptionally difficult to rebuild an image that will attract tourists. This is a powerful incentive to maintain the quality of the touristic experience.

But, on the other side, tourism invariably corrupts indigenous cultures and brings alienation in its wake. The infrastructure it demands can be devastating on the environment. It is arguable that few if any marine protected areas have learnt how to handle recreational diving without suffering damage. In the Caymans, for example, where 70% of the economy comes from tourism, coral reefs have been damaged by cruise ships dropping anchor. All too often, inexperienced divers and swimmers break off parts of the reef, some take curios from the reef or buy them later, and others pursue sport-fishing. Divers need places to sleep, eat and recreate, so dive tourism inevitably leads to coastal development and consequent habitat loss. All these effects cause damage, and reduce the value of the experience for those that follow.

Forests are perhaps better suited to handle tourists, since visitors keep to marked trails and cannot roam over the whole area. And the forest does disguise the numbers, giving each visitor a chance to feel alone in the forest. The harvesting of wood is a special and increasing problem because of demand from the growing number of tourists for wooden flamingos, parrots and other souvenirs of the region. It is not just the flamingo and parrot that may be threatened species, their wooden equivalents may be endangered too.

The Caribbean approach to protected areas demands a high level of public participation and support.

As elsewhere in the world, effective conservation depends on participation, especially by local people. As a result there is a trend away from conventional management by forestry or fisheries agencies towards co-management, where management decisions are negotiated between those assigned responsibility by the government for the protected area and other stakeholders. The philosophy is sustainable development, integrating protected area management with other sectors. As a result, the main role of managers is not to manage nature, but to manage human activity. The science of resource management is a social science, needing social skills such as listening, negotiating and persuading, rather than the more analytical skills of natural science.



The Blue Mountains in Jamaica, site for one of the country's new national parks. In a radical departure from traditional practice, the Government has decided that NGOs will run Jamaica's national parks.

The Soufrière Marine Management Area (SMMA) in St Lucia shows the benefits of community involvement in management. During the 1980s, a system of marine reserves was established, but these failed due to lack of consultation with users. In the early 1990s the Department of Fisheries began a dialogue with NGOs, community groups and representatives of users of marine resources, to forge an agreement which led to the establishment of a zoned, multiple use marine management area. The process was driven by three objectives: the need to reduce conflicts among users, such as those between tourist operators and fishers; the need to restore fish stocks; and the need to conserve the spectacular diversity of some of St Lucia finest coral reefs. A series of no-take marine reserves lies at the heart of the SMMA.

Culture and entertainment can be part of the approach. IUCN's book *Beyond Fences* (details on p. 14) retells the story of how on St Vincent, a progressive community organization mobilized the community to resolve issues affecting their daily lives in relation to use of a nearby forest reserve. The group used first local cultural forms such as calypsos, folk songs, drumming, role play and dances to communicate the conservation message. The result has been self-help development projects, adult education programmes and watchdog committees to monitor resource use in the forest. In effect the village are helping protect and manage the forest.

Most Caribbean governments do not have many staff available for conservation tasks, so they are turning to other bodies to manage the protected areas for them.

Countries are becoming increasingly creative in developing complex, individually crafted mechanisms to manage protected areas and serve community needs. The main trend is to delegate management to NGOs. As already noted, in the Bahamas and British Virgin Islands, NGOs run whole protected area systems. NGOs in Barbados, Cayman Islands and St Lucia have legal powers assigned to them.

The Government of Jamaica has decided that NGOs will run its national parks system. They may not always receive government funds to do this, but will be allowed to collect fees. The delegation of the management of the largest national park is conditional on the NGO forming a Co-Management Company in the first year, which would include government, other NGOs and local people, and would take over the running of the park in the second year. This is a highly innovative approach developed locally. Similar delegation is happening in the Dominican Republic. It is all part of a growing trend towards delegation of government functions.

External donors should therefore beware of formulaic approaches to protected areas. Conservationists in the region say that most of the new mechanisms for park management have been developed from within the countries, with little support from outside. They argue that this is because external park planners have tended to promote a single formula which may have worked well elsewhere. But in the Caribbean there is no single formula, no one approach to follow.

The new approach is also leading to integration of management functions with other sectors but there is still a long way to go.

One advantage of a small public sector is that it is easier than in larger countries to integrate government functions from one department to another. This is already proving beneficial to protected areas – environment is after all a cross-sectoral issue and national parks are in the business of benefiting many sectors – but it is still far from universal.

Countries have tried to integrate protected areas into the larger context of resource management. In Guyana, for example, the heads of the environment and land-use agencies all meet regularly under the aegis of the President's office.

Since everywhere is part of the coastal zone, Caribbean nations practice Integrated Coastal Management (ICM, also sometimes called ICZM). 'Marine' is not really a separate sector – again it is cross-sectoral as ICM implies – and it is vital to combine marine/coastal conservation with policies and land-uses inland.

An underlying problem is the narrowness of the economies of Caribbean nations, leading them to adopt short-term solutions that can be damaging to the environment.

All Caribbean nations, without exception, have economies based on very few products and services. This leaves them few options for development. For example, a national park in Dominica is threatened by an Australian application to mine for copper; because the island's economy is dominated by bananas, a crop in danger from changes in trade rules, the Government of Dominica is forced to take a short-term view and so is having to consider the mining application. In another example, after many years of under-development, Guyana is selling its timber at very low prices, simply to catch up on development.

The Asa Wright Nature Centre in Trinidad – helping to build a better appreciation of the value of nature in general and protected areas in particular.

Moreover, decisions which affect protected areas are often taken outside the normal systems of decision-making. This is a vital problem for protected areas, as the structures and systems of decision-making are not always respected. In some countries, private investors may get approval for developments outside the normal planning process and with minimal or non-existant Environmental Impact Assessments. This is especially true for developments such as hotels or mining. In Jamaica, for example, mining laws have precedence over national parks law.

Popular awareness of conservation has grown a great deal recently, but has not yet extended to the contribution that national parks can make to development.

Parks are not appreciated for their economic values. Conservation awareness in the

Box 7

The Iwokrama International Rainforest Programme, Guyana

Guyana has dedicated 360,000 ha of virgin rainforest to be used as a natural laboratory for research into the development of methods and techniques for the sustainable utilization of the rainforest and the conservation of biological diversity. The idea was proposed by the former leader of Guyana, Desmond Hoyte, at a Commonwealth Heads of Government Meeting in Malaysia in 1989, and was officially launched in 1990 under the auspices of the Commonwealth. It has a total budget of 8 million Euro and has received support from the European Commission (for the Iwokrama Mountains Forest Reserve), GEF and the UK's DFID.

The area has been established as a 'Rain forest wilderness preserve' under a special law in Guyana. Research programmes are planned on a) sustainable economic utilization of tropical rainforest resources, b) 'biodiversity and biofuture', and c) ethnobiology and human biology. The Programme will act as a pool of expertise, providing education, training and information, including to national park managers. The Programme will also enhance the research ability of the University of Guyana.

As one of the countries with the highest proportion of intact tropical rainforest in the world – the interior which covers 85% of the country has only 30,000 inhabitants – Guyana is in a good position to provide this international centre and programme for the benefit of the global community.

Caribbean is mostly about ozone depletion and global warming, not dangers that Caribbean nations have done much to create. It is much less about doorstep issues such as threats to water supply from deforestation, loss of unique plants and animals, and damage to fish stocks from land-based pollution or over-exploitation. Interestingly, the transport of plutonium through the Caribbean on ships raised far more local concern than any indigenous issue. Partly as a result, national parks are not high on the governments' agendas.

The underlying knowledge base is weak.

Knowledge on plants and animals is still inadequate for conservation planning. Perhaps most critical, conservationists have not adequately quantified the values of national parks and other protected areas to the economy – through their contributions to water resources, tourism and fisheries, for example. This reflects the lack of information in a form that decision-makers can use. Knowledge of ecological processes in the ocean and of the status of the reef fish stocks so vital to fisheries is particularly thin.

A big constraint is the availability of the data that do exist. Much information, such as base-line inventories, research reports, plant and animal specimens, and associated location data, is in institutions outside the region, especially in the United States. More effort is needed to enable people from the region to have easier access to material and data taken abroad.

Even if the external data can be 'repatriated', some base-line data are still lacking. Most countries do not have up-to-date accounts of their plants and animals, and are not able to monitor their rare and endangered species on a regular basis. Virtually all lack Field Guides so citizens can identify their flora and fauna. In Europe and North America, such books are taken for granted. Field guides to common plants and animals, written in local languages and well illustrated, are essential if people in the region are to appreciate their wildlife.

Transboundary parks are rare in the Caribbean but have potential, especially in marine areas.

So far there is only one transboundary park in the Caribbean, between Haiti and Dominican Republic. This reflects the fact that with the exception of these two countries, no Caribbean countries have a land frontier with other nations: each is an island or group of islands. There is scope for further transboundary protected areas between these two countries since Dominican Republic has three parks on its land boundary, and Haiti has two. Moreover, Dominican Republic is creating a new park where the main river of Haiti arises, and so is in effect protecting Haiti's water supply; this is a good opportunity for transboundary cooperation.

It is in the marine environment that transboundary protected areas have the greatest potential. The case for them is compelling. Marine ecosystems are interconnected at large scales as currents shift the offspring of marine organisms to and fro. Those same currents also transport pollutants such as sediment, fertilizers, pesticides and plastics around the region. Transboundary protected areas which span the ecological scales of marine processes are likely to be much more effective than small and isolated reserves. Current understanding of no-take marine reserves suggests that large-scale closures of 20% or more of the seas would bring the greatest benefit to

Destruction of rainforest in Guyana – An apocalyptic view of the country's future that the Iwokrama International Rainforest Programme (see box, left) is working hard to prevent from becoming the reality.

fisheries. Transboundary reserves are an effective way of encompassing such areas. As yet there are no such reserves although discussions are underway to create one between the British and U.S. Virgin Islands.

There has been too many strategies, most of which have not borne fruit.

System plans (plans for an entire national protected area system) have been developed for seven countries – Antigua and Barbuda (1979), Dominica (1979), Trinidad and Tobago (1980), the British Virgin Islands (1986), Anguilla (marine only) (1987), Grenada (1988) and Dominican Republic (1990). Jamaica is in the course of preparing a system plan, which has been accepted by the Natural Resources Conservation Authority, and is now being developed into a Green Paper, but it is not legally binding. St Lucia has a system plan in the later stages of development and Guyana, with World Bank support, is launching its National Protected Areas System.

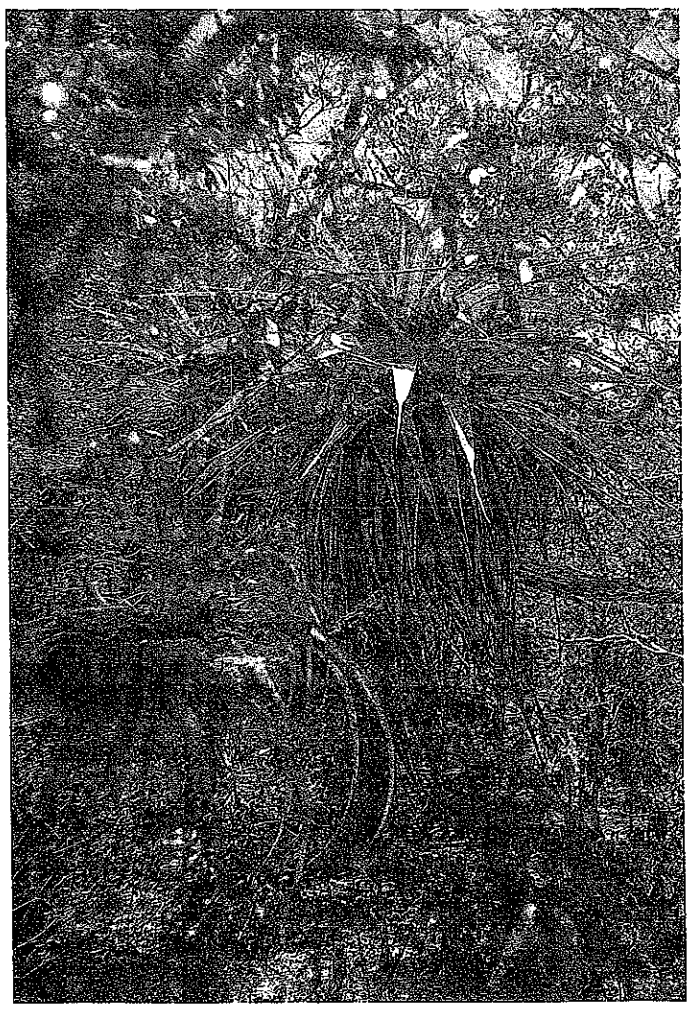
However only one of these many system plans – that for the British Virgin Islands – has been endorsed by government. The others are only proposals. And the only plan that has been developed with the active involvement of stakeholders is the one for St Lucia. Politicians do not like system plans because if they accept them their decision-making is then dependent on a single decision. They understandably prefer to develop protected areas in a step-by-step approach, each step being made politically acceptable at the time.

In retrospect, it would have been better to try and influence the physical planning and land-use systems. To stand a chance of success, park plans should be an integral component of land-use planning, not a bolted-on extra or treated separately. They must be done at the request of government, not driven by donors or outside bodies. Most of the system plans were not part of the mainstream planning systems of the countries concerned. Consultants led the process, often with little or no community participation.

There has also been a plethora of **regional** strategies, most done by outside bodies:

- **The IUCN Marine Conservation Strategy** (1979), based on an analysis of superimposed maps of living resources and their support systems, and economic activities. It produced a Data Atlas and other outputs, but no field projects followed.
- **The USAID Training Strategy** (1979–1980), prepared by WWF-US with help from many institutions and individuals in the region, documented the status and trends of natural resources, outlined current and planned training programmes, and identified target groups and gaps in training.
- **The Strategy for Protected Areas of the Neotropical Realm** (1986), prepared by WCPA, provided a regional overview of what was needed to plan and manage protected areas of the New World tropics. It listed 125 activities, but Caribbean participation was small and the Strategy appears little used in the region.
- **The Survey of Conservation Priorities in the Lesser Antilles** (1978–1981) was prepared by the Eastern Caribbean Natural Area Management Programme (ECNAMP), the forerunner of the Caribbean Natural Resources Institute (CANARI). The Survey produced Data Atlases for 25 islands or island groups and recommendations for potential protected areas to cover the major ecosystems.

Sadly, few of the agencies concerned have put these plans into action and there are few if any parks in place today as a direct result. These plans were perhaps a product of the very optimistic view of conservation taken in the 1970's and 1980's. They also represented a "top-down" view that placed too much emphasis on the view of the expert, usually the biologist, and too little on the views of local people and the need for their participation in the planning. They were rarely linked to funding for implementation. The message from the more realistic, post-Rio 1990's is "No more planning, let's do something real, on the ground, however small, and build from there".



Coastal forest in the Caribbean, showing a rich diversity of bromeliads and other plants. Strategies have successfully identified the key areas for conservation, but have been less successful in achieving action on the ground.

Chapter 5: What External Help is Needed?

Directly support the establishment and management of protected areas.

At present, money to pay for jobs is the main factor limiting the development of protected areas in the Caribbean. This is where external support can help most. Conservationists in the region would like to see development assistance inject cash into projects to establish and manage national parks – principally to pay staff rather than buy technology or infrastructure. They do not seek massive sums, but they do need a long-term approach.

In the Lesser Antilles, donors should be very conscious of the needs of small islands, where resource management institutions will never be larger than a handful of individuals. The smaller the island, the more acute the problem. What may work in institutions with hundreds or thousands of staff may be inappropriate for bodies with ten staff or less.

Large international NGOs continue to have a valuable role in supporting park projects in the region, but must not compete with local NGOs for funds. Some effective projects in the region have been designed and funded by international NGOs, but their way of working may reflect a time when there was little or no indigenous capacity for conservation. Their projects should be partnerships with local NGOs and institutions.

Box 8

How much more funding is needed?

A study by the World Conservation Monitoring Centre, 1993–1996, attempted to assess government investment in protected areas by region and estimate how much more funding was needed. Although, as the authors readily admit, a desk study of this kind is difficult and liable to error and distortion, the results do give very useful guidance to decision-makers.

Interestingly, the study found that protected areas in the Caribbean are among the most expensive to manage per unit area in the world. This is presumably due to their relatively small size and the pressures on them. Present budgets are estimated on average at $1012 per sq. km per annum, compared with $57 for South America and $928 for Europe.

When WCMC asked protected area agencies in the insular Caribbean about their remaining financial needs, the answer was that on average they needed an additional $1179 per sq. km per annum. This gives a total shortfall of almost $ 27 million per annum for the region. This is likely to be predominantly staff and other operational costs, rather than capital investment. And it also omits the financial needs for new protected areas needed but not yet established.

Source: James, A.N., Green, M.J.B. and Paine, J.R. (1996). Governmental Investment in the Conservation of Biological Diversity: A Global Survey of Parks and Protected Areas Agencies. World Conservation Monitoring Centre. Draft.

Encourage ways of generating sustainable revenue for parks and continue to provide support till local revenue generation can take over.

Although parks are generating more revenue themselves than before, this trend needs to be speeded up. Parks managers in the Caribbean realize that short-term aid projects and government allocations on their own will not provide the funding needed for effective conservation and management. Nor is it feasible to rely on international NGOs, who themselves now depend on official development assistance for their project funds.

Technical assistance projects should therefore encourage parks to charge for goods and services, and to generate revenue in particular from:

- Fees, such as for concessions and entrance fees;
- Commercial sponsorship by business, perhaps in exchange for use of the name;
- Voluntary contributions by visitors;
- Sale of memorabilia, such as stamps, books, guides, etc.

All these methods require an approach closer to that of the private sector than of government, and so aid projects should encourage park management teams to include commercial business-people with skills to develop such revenue.

Financial security is closely tied to strengthening independence. Developing the ability of protected area institutions to generate revenue will help to build up their autonomy and their position in government. Conversely a degree of independence granted by government increases the park authority's ability to cover its costs. This approach

may require changes in legislation, since at present the laws in many Caribbean nations require that revenue from parks goes to the central government budget rather than is recycled for the benefit of the parks.

Whatever happens, no single source of income is likely to be sufficient for a national park in the Caribbean. The watchword is flexibility and formulaic approaches should be avoided.

Give consideration to the use of Trust Funds.

Protected area managers in the region have repeatedly identified Trust Funds as an important component of the funding package. As a result, IUCN's USA office, in consultation with key members, is developing a proposal for a Caribbean Protected Areas Trust Fund. It is presently seeking a small grant from GEF to develop a $25 million financial instrument. The aim of the fund, once capitalized, would be to:

- Catalyze partnerships between protected areas, surrounding communities, the private sector and NGOs, so as to generate ecologically sustainable benefits;
- Improve the capacity of protected area management agencies and surrounding communities by enhancing managerial skills;
- Attract and hold support from the tourism industry on the grounds of protecting the Caribbean's appeal as a destination.

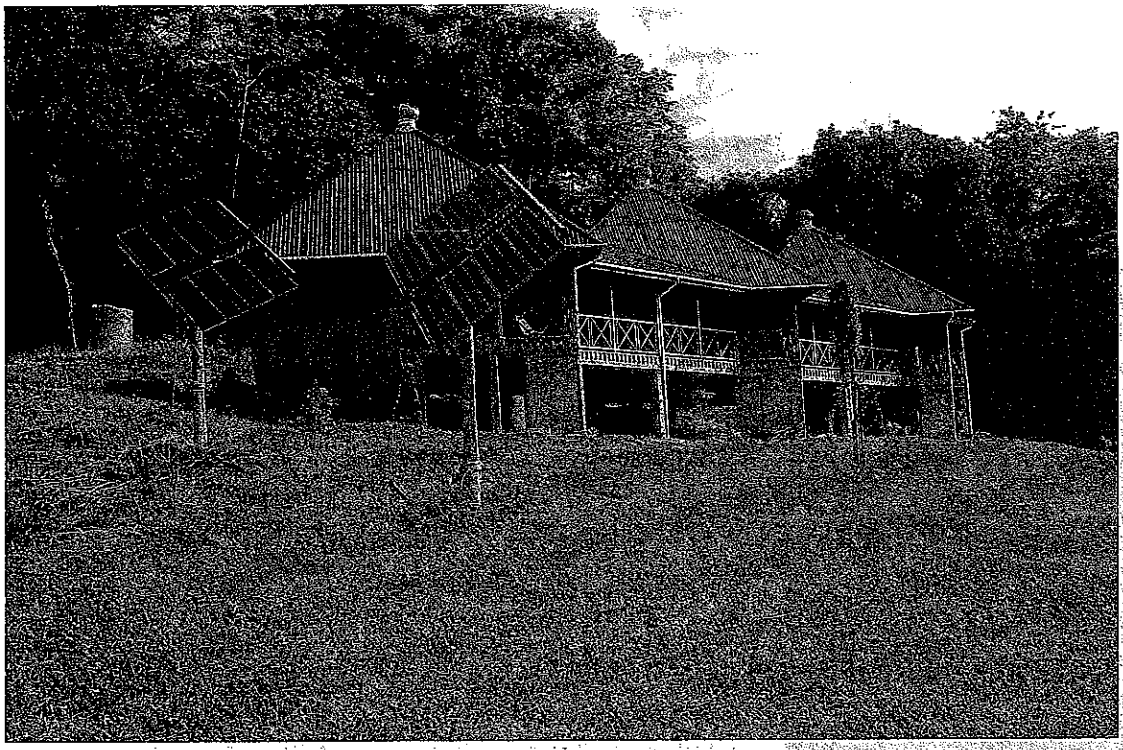
It is worth noting that the 4-million acre Central Suriname Wilderness Nature Reserve referred to earlier has a $1 million trust fund for management costs established from the beginning. The fund was secured by the NGO Conservation International from a philanthropist and trust fund in the United States. Its income will be complemented by revenue planned from bio-prospecting, sustainable use of non-timber products such as liana cane and ecotourism. This is an interesting model for donors, with financial sustainability built in from the start.

Encourage community participation in making the decisions that affect them and design protected areas that contribute directly to economic, social and cultural development at the community level.

Parks will only work if they involve local people and provide benefits to people. Projects of support to national parks should therefore give strong emphasis to community involvement, but should recognize the difficulties involved and so be prepared to take a long-term view. The community has to organize itself into a form in which it can participate in decision-making. It may also need to organize itself into some form of economic unit, so as to take advantage of the new opportunities the park may offer. But to do this, the community has to be at the point where it can think about long-term sustainability, rather than be concerned about the next meal. This is a big problem in many rural parts of the Caribbean.

Include institution-building as a key part of technical assistance projects.

Where there are trained experts and money to pay them, the limiting factor may be the institutions that would employ them. Caribbean institutions, governmental and NGO, are evolving and developing fast, but are doing so from a low base and in times of financial stringency. Projects should therefore help to build up the key institutions in national park management, helping to provide underlying skills of leadership, accountability and administration, as well as practical skills of park management. Encouraging simple steps, like preparation of a Mission Statement, lacking in at least one National Parks Service in the region, could greatly help. In some cases, the need may be more fundamental: some bodies have a weak or ill-defined mandate, and a condition of support could be a renewed mandate from the parent government.



The La Milpa Green Dormitory – tourist accomodation with solar panels and composting toilets – was developed by Programme for Belize as a model for ecologically sustainable, low-impact living.

The capacity of institutions to absorb money differs, as they are at different evolutionary stages. Some have clear objectives, trained and competent staff and a track record in conservation, but others have great human resource problems. A common problem is lack of clear objectives, sometimes combined with a narrowly sectoral understanding of the issues. Support that treats conservation and development as inseparable may help protected area institutions to see conservation as part of the development path and not in narrowly protectionist terms.

Partnerships are the way forward.

None of the major actors in protected areas management – government management agencies, international organizations, non-governmental conservation groups, local communities, or the business sector – can provide all the resources needed to manage protected areas. Government budgets in the region are declining, not increasing. Managers will have to create a low-friction institutional climate where a variety of contributions can come together and form an overall protected area programme. And institution-building (see above) should not be restricted to government departments and agencies but should cover all relevant organizations of civil society, especially those that are non-governmental and community-based.

For this reason a capacity for strategic planning is vital. To be effective, strategic planning has to be deeply embedded in protected area organizations and led from the top, not imposed from outside and led by external experts. It may have to be a slow and gradual process, without a date for completion, so that it brings along all the 'actors' involved. A step-by-step approach will work better in the Caribbean than a 'grand design'.

Protected area institutions may need help with personnel management.

Protected area institutions may need help in selecting personnel, whether for protected area boards or for staff positions. They may need to broaden the skills of existing staff – this is particularly important in small islands where one individual

may have to undertake a wide range of duties and where there might not be much choice of candidates for a post. In such situations, building the capacity of the personnel already in post becomes of paramount importance. Small conservation groups in the voluntary sector are especially prone to division and splintering, and everything possible should be done to prevent this. On a small island, all the conservation experts have to find a way of working together.

Training for protected area managers is a key need in the region. Here managers learn about forest management at a Research Station in the Guianas.

Focus training on courses within the region.

There is now a fair amount of experience in the region and lack of training is no longer the main limiting factor to protected areas. Most countries can now draw together the interdisciplinary teams needed to establish and manage national parks to modern standards. Nevertheless, training should not be neglected in technical assistance projects.

Students from the Caribbean have tended to go to the United States for training in natural resource management, but the courses on offer there have not always been relevant to their needs. It may be that training is not demand-led but largely driven by donors. It is important therefore to strengthen training within the region. Training should focus on building generalists with creative vision, rather than in turning out specialists, whom it is unlikely Caribbean nations will be able to afford. Training too should have a regional aspect, so as to build links and contacts between Caribbean nations.

The University of the West Indies and several other universities now offer degrees and postgraduate courses in environmental studies. Interestingly, the Government of Dominican Republic has given its Dirección Nacional de Parques facilities that could be used as a training school on managing protected areas for the whole Caribbean region. The proposed training school would be bilingual (Spanish and English) and would have a wide variety of protected areas in the country, of all the different habitats, which could be used for study.

Encourage regional cooperation.

Regional links between Caribbean nations have traditionally been weak, but ecological links, through ocean and wind currents, are profound. More work is needed to encourage closer forms of cooperation across the region or more simply between neighbouring States. Regional cooperation is vital to:

- Share expertise and experience from one country to another;
- Ensure policies are compatible from one country to another;
- Develop collective management of shared resources, like marine fisheries;
- Develop common positions on important issues like climate change and transport of nuclear waste.

So far, it has been particularly hard to obtain funding for regional projects, yet these can be a useful stimulus and support to national work, and can build collaboration and sharing of experience across the region. They can also help to fill gaps in the protected area coverage. For these reasons, more regional projects are needed.

Networking is perhaps the best way of building regional cooperation and in particular of sharing experience and expertise. The Caribbean has good opportunities for

networking, especially through the Caribbean Conservation Association (CCA) meetings. However, a critical limiting factor is the low number of trained personnel in post. Time spent attending meetings in other countries is time spent not achieving results at home. Networking activities should be time-effective, focused and not excessive. A limiting factor, too, is the ever-present language barrier. Exploratory work has been done on developing databases and communications networks linked by computers, but the most effective mechanism for information exchange remains meetings of park professionals.

Improve the information base, but firmly directed towards a) establishing the conservation case and b) the practical needs of management.

Caribbean experts often lack the information they need to make a strong case for effective resource management. A Caribbean NGO might want to press for a ban on shooting birds, but it lacks field data on bird populations. The Bahamas National Trust believes that the country is exporting too much conch, endangering stocks and reducing livelihoods, but it lacks hard evidence.

Indeed, most bodies responsible for national parks have little information on the contributions that their parks make to the economy. Generating this information is vital. Projects that help to build the capacity to measure effects such as watershed protection could be exceptionally productive and have a very high catalytic effect, giving decision-makers and conservationists vital facts and figures with which to press the case for effective natural resource management.

Information of this kind from projects should be sent to other institutions in the region; facts and figures on the economic benefits of potential parks in say, Jamaica, would assist park planners in Haiti, Dominican Republic and Cuba. Access to information may also need to be improved. Freedom of information in the government sector is the exception rather than the rule in the Caribbean. It may be important therefore to ensure that the information acquired in a project is formally published.

Scientific institutions from outside the region can help, especially in developing the base-line inventories. For example, the *Flora of the Lesser Antilles* is being written by Harvard University and that of Trinidad and Tobago by the Royal Botanic Gardens, Kew. Institutions like these can make a great contribution to building the underlying science base for natural resource management, but must work in partnership with local scientists and local institutions and ideally should include a component for training. Above all, experts in the region must have access not just to the conclusions of the work but also to the specimens collected and other research results.

Integrate protected areas into the context of sustainable development.

As shown in the preceding pages, protected areas are a vital part of the sustainable development path sought by Caribbean nations. Yet despite their vital contributions in areas like tourism, fisheries and watershed protection, protected areas are still far from the centre of policy-making in the region. More work is needed to highlight their benefits to people and their contributions to sustainable resource management.

Tourism is the main growth industry in the Caribbean, but it cannot expand uncontrolled. As an industry built and marketed on natural and cultural resources, tourism has a vital interest in preserving the very features which define the product. At the same time, uncontrolled tourism could mean the destruction of protected areas. Links, therefore, have to be made:

- Tourist agencies should work directly with park managers, ensuring the tourism is used to help safeguard rather than harm the resource;

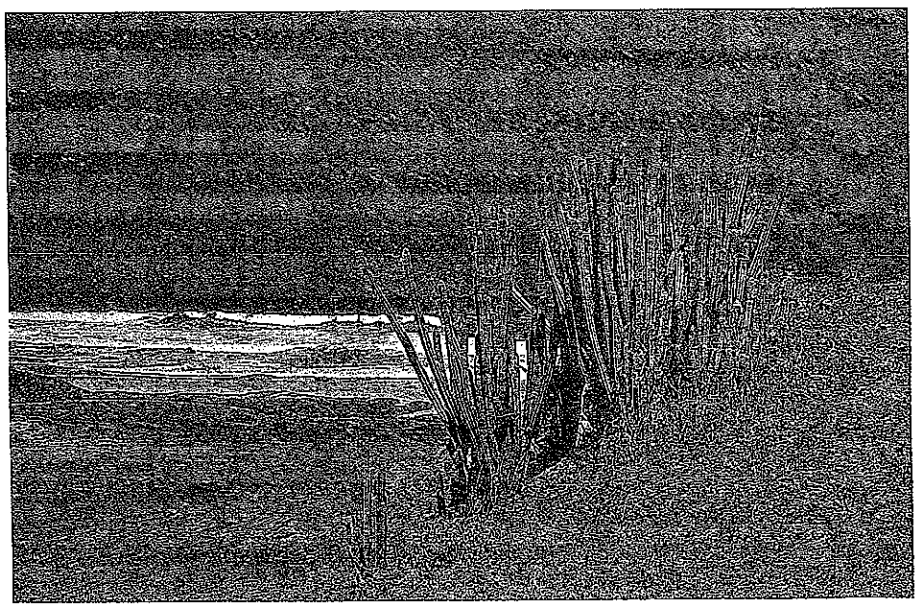
- Policy on tourism and policy on nature conservation should go together hand in hand, reinforcing each other.

There is an especially strong case for marine protected areas as they provide direct benefits to both the fishery and tourism sectors. Such areas can potentially safeguard the marine resources upon which tourism depends, while improving the economic well-being of fishers. Without them, the potential for conflict between tourism-driven development and traditional livelihoods is great.

Lastly, anything that widens the economies of Caribbean nations is likely to be good for conservation and natural resource management, by enabling their governments to take a long-term view and shielding them from downturns in their economies.

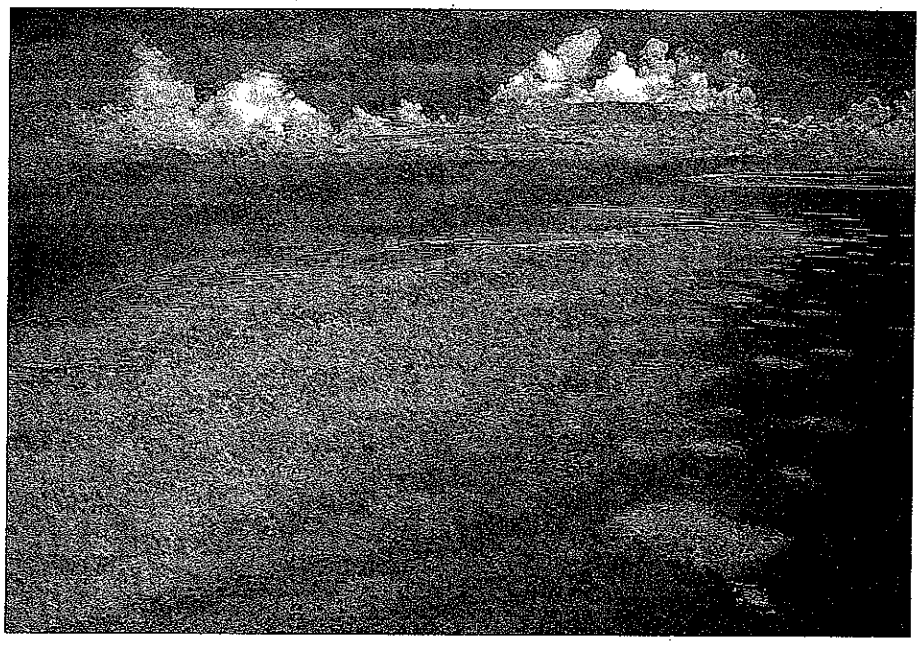
In conclusion, protected area projects in the region should:

- Be individually crafted, flexible and adaptive to the complex administrative arrangements common on islands, in a context that is rapidly changing;
- Be built on partnerships, accepting that in most cases many institutions will have a stake in park management and that a very wide range of skills will be needed;
- Give strong emphasis to community participation, both in decision-making and through the provision of tangible benefits to local people;
- Provide for as wide a range of uses as are compatible with effective natural resource management and conservation;
- Right from the beginning, aim to be financially self-sustaining eventually.



PART IV: The Pacific

Chapter 1: A Pacific Perspective



Fringing coral reef in the Palau Islands. The Pacific is a region of small land masses scattered over the world's largest ocean.

Pacific peoples depend to a great extent – economically and culturally – on the natural environment.

For thousands of years, Pacific peoples have lived a relatively sustainable way of life. But this has been at a rather low level of material wealth by modern standards. Now, understandably, they want a higher standard of living. Not surprisingly, this is putting under threat the natural resources on which people in the Pacific have depended in the past and still do depend today. Yet, as their governments wrote in their report to the Rio 'Earth Summit' in 1992, "We are strongly committed to maintaining the harmony which has characterized Pacific island peoples' relationship with their environment." This promise was reinforced by the events of the 'Earth Summit' itself, and its follow-up through the commitments of Pacific governments to Agenda 21 and the Biodiversity Convention. Rio greatly increased the awareness and understanding of conservation and development issues in the region, especially among governments, government agencies and conservation groups.

The Pacific is a scattered community and a region of great contrasts.

The Pacific is a region of small land masses scattered over the world's largest ocean – a third of the Earth's surface. At one extreme is Papua New Guinea (PNG), the largest island in the Pacific and the closest to continental Asia. It supports the greatest extent of tropical moist rainforest in the Asia/Pacific region and is one of the few tropical forest countries in which deforestation and habitat loss remain at low levels. Its Government predicts that PNG will contain one of only four major areas of tropical moist forest likely to remain more or less intact in the 21st Century.

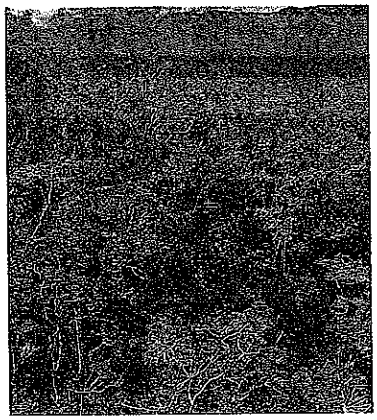
The Melanesian islands of Fiji, New Caledonia, Solomon Islands and Vanuatu, including PNG, are extensions or parts of undersea mountain ranges. They are mostly large, rugged and volcanic islands. Where it survives natural vegetation is predominantly forest, rich in flora and fauna. Marine resources are equally rich.

Notes

There are eight Lomé countries in the Pacific region – Fiji, Kiribati, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. In addition there are Overseas Countries and Territories of two EU Member States – New Caledonia, French Polynesia, and Wallis and Futuna Islands (France); and Pitcairn (UK). The region also contains other territories, mainly of the United States.

Individuals from many projects and initiatives have contributed to this section. The approach was first developed at a WCPA meeting in Apia, Samoa (April 1993). Paul Dingwall and other consultants then prepared drafts of the report, supervised by a small working group and taking advantage of the Fifth South Pacific Conference on Nature Conservation and Protected Areas (Nuku'alofa, Tonga, October 1993). The material was revised and updated after the Sixth such Conference (Palikir, Pohnpei, Federated States of Micronesia (FSM), September 1997).

The region covered here is that often known as the South Pacific. However, a Resolution of the above conference in Palikir recommended refering to the region as the Pacific Islands Region rather than the South Pacific as some of the participating States were outside the geographic area historically known as the South Pacific. This usage is followed here.



Papua New Guinea supports the greatest extent of natural forest in the Pacific. Deforestation here is much less than elsewhere in the region.

Moving east to Micronesia and Polynesia, the islands become smaller, geologically younger and more isolated from one another and from the species-rich western archipelagos of Malaysia, Indonesia and Papua New Guinea. Many, such as Kiribati, Marshall Islands, Tokelau and Tuvalu, consist of small isolated atolls with poor soils and few natural resources other than the sea. As well as being biologically and culturally simpler, these smaller islands are suffering rapid habitat loss, particularly since the arrival of western economic influence in the 20th Century.

The economies of Pacific nations tend to be fragile.

Pacific island economies are very small in relation to the world economy and are also especially vulnerable, in part from devastating natural events such as cyclones. Pacific countries depend to a large extent on funds from abroad, mainly from overseas residents. Export earnings come from agricultural produce (mainly copra), artefacts, and fees for fishing rights, with agriculture the main economic activity. In many Pacific countries, the subsistence economy still predominates over the monetary economy, but as the monetary economy grows it is putting at risk natural resources like forests and fisheries that have sustained the subsistence economy for millennia. Islanders are tending to move away from the traditional subsistence lifestyle towards a cash-based economy.

There are profound differences across the region. Melanesia has large natural resources and in parts abundant mineral wealth to be tapped. On the other hand, the smaller atoll islands are poor in resources and largely have to depend on the sea for their economic development. Tourism may be one possibility, but is made difficult by the high cost of getting to the islands in the first place because they are so far away from major population centres.

Box 1

Some extraordinary facts about the Pacific Ocean

- The distance from Palau to Pitcairn is the same as from Tromso in Norway to Cape Town in South Africa or from Washington DC to the Antarctic Peninsula.
- The combined land area of all Pacific islands is about 565,000 sq. km, but 476,500 of this is made up by Papua New Guinea. Together, the remaining islands have a land area only about three times the size of Belgium.
- Pacific nations have a combined Exclusive Economic Zone of 30 million sq. km, an area three times larger than the United States.
- The smallest nation, Tokelau, is only 10 sq. km in size. Its highest point is 5 metres above sea level.
- The land area of the Republic of Kiribati is only 684 sq. km but is spread over some 5 million sq. km of ocean.

Pacific countries have some of the fastest growing populations in the world.

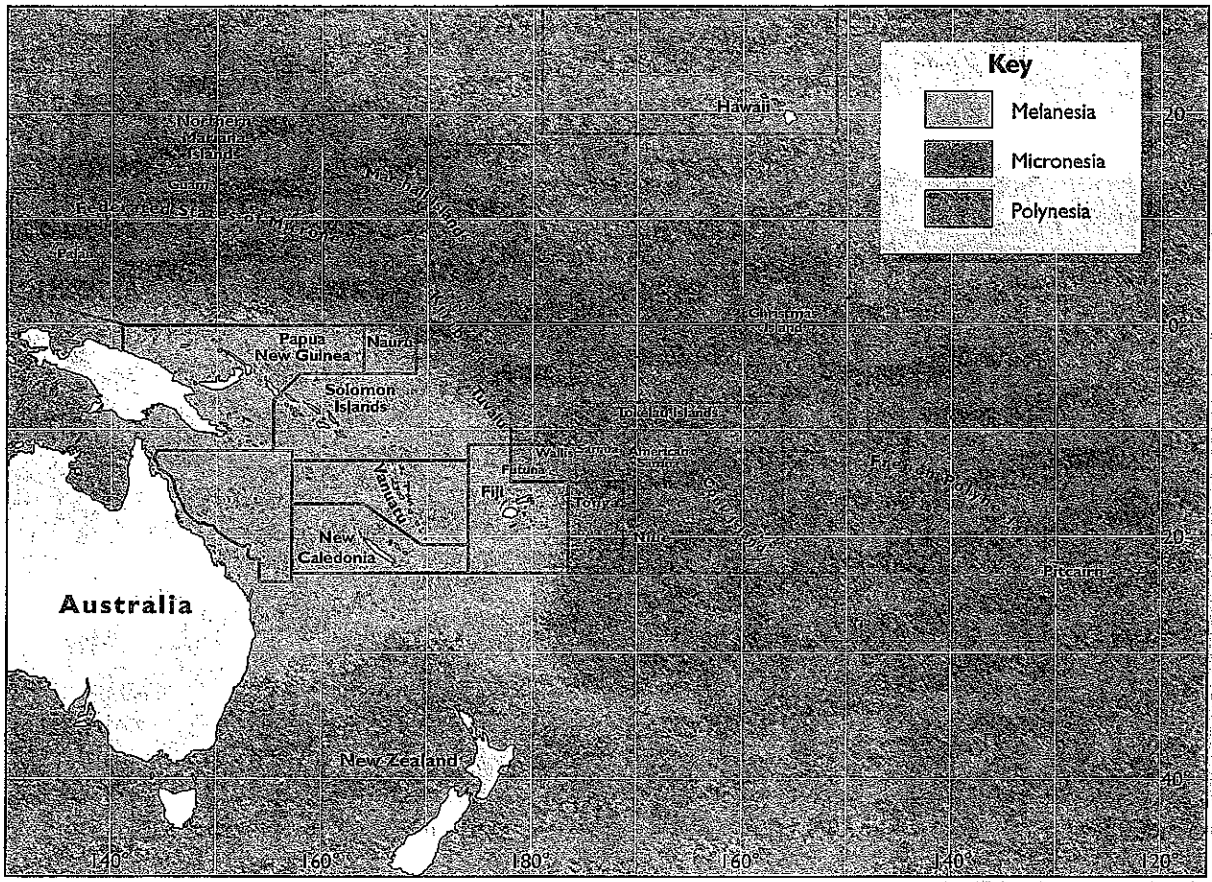
The overall rate of population increase is over 2%, reaching 3% in some countries and 5% in Wallis and Futuna. Population is predicted to double in 20 years. Birth control is not always an option at present; in many countries having a large family was a point of prestige, and still is in some places. Yet, for the atoll countries, curbing population growth will be essential to achieving sustainable development.

Populations also are shifting too fast for governments to keep pace. People are moving from the mountains to the coast, from the outer islands to the provincial or national seats of government, and from country to town.

Because of their small size, Pacific islands are especially vulnerable, in particular to unwise development encouraged from outside.

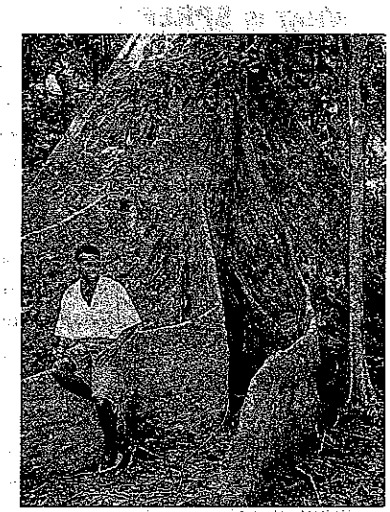
The impact of the conventional battles of the 2nd World War still remains in some parts of the Pacific and history shows that whole islands can be made uninhabitable by the testing of nuclear weapons. Today, large-scale exploitation of fish by commercial enterprises from outside the region threatens the livelihoods of many artisanal fishers. Forests too may be sold for a great deal of cash, but afterwards the community is bereft of the main resource upon which it has depended in the past.

Pacific countries are particularly vulnerable to the sea-level rise that is predicted to



Map 1. The regions of the Pacific

result from climate change, because of their hundreds of low-lying islands and atolls. The effects will be worst during cyclones, storm surges, king tides and the El Niño fluctuations. The coastline will be more prone to erosion, putting coastal infrastructure at risk. Mangroves will disappear and farmland will be inundated with salt water. A UNEP study has estimated that sea-level rise could cause the Marshall Islands, Kiribati, Tuvalu and Tokelau to cease to exist as nations. In both 1990 and 1991, the largest tides of the year almost inundated the urban area of Majuro in the Marshall Islands. Here is an environmental threat that is putting the survival of whole nations at risk.



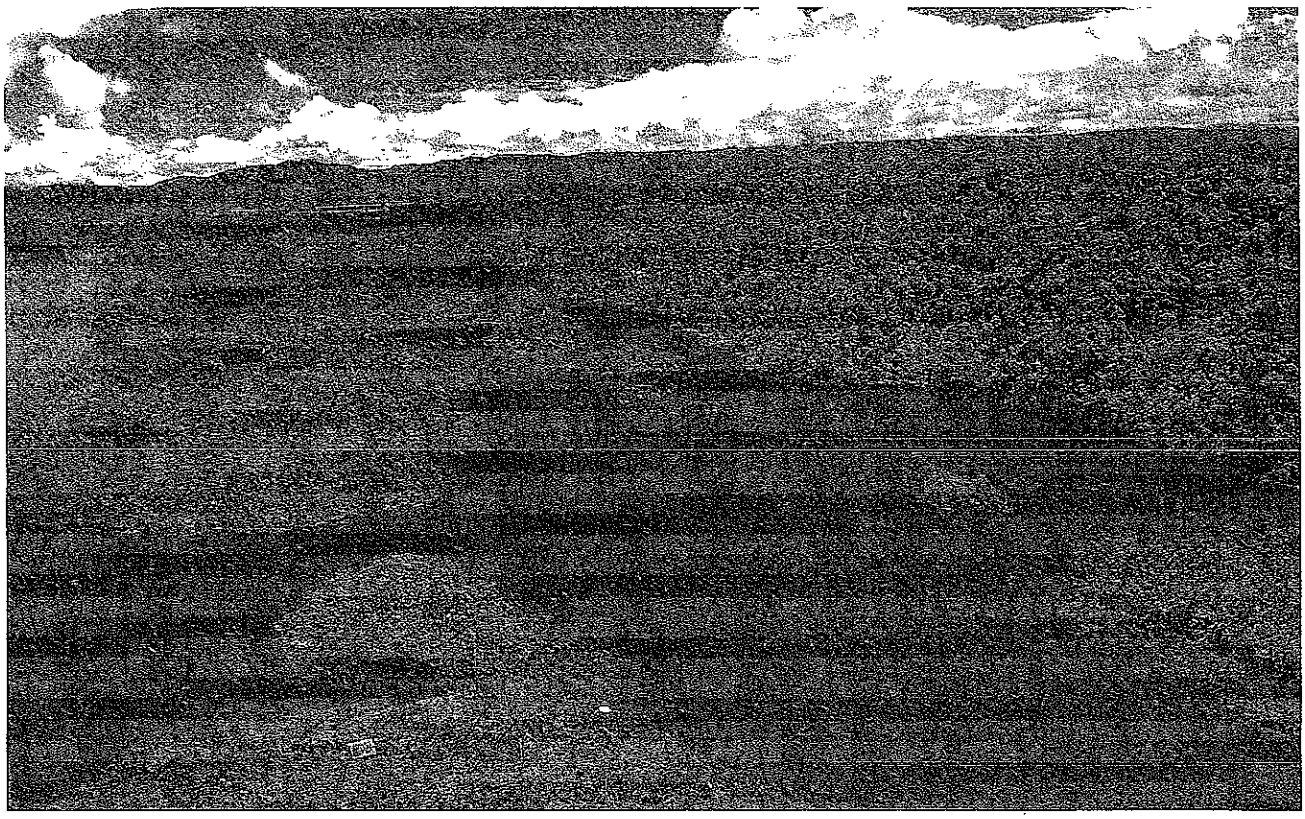
Pacific peoples have a close connection with the land, reinforced by the traditional systems of land tenure where most land is owned by local communities rather than by individuals.

The region has a great diversity of languages, cultures, traditional practices and customs. These are at the heart of the close and special relationship Pacific peoples have with their environment.

There are three distinct ethnic groupings in the South Pacific – Melanesia, Micronesia and Polynesia (see map above). Approaches to authority differ: in Melanesia, important positions are taken by the dominant members of the society, in Polynesia chiefs are determined by patrilineal descent, whereas in Micronesia the system of chiefs is usually matrilineal.

English and French are the languages of trade and commerce, but are not the first languages of the people, who have an astonishing range of languages. In Papua New Guinea, 700 different languages are still spoken today, and over 100 each in Solomon Islands and Vanuatu. Concern is being raised that English is displacing some of these native languages through the growing influence of television and video.

In all countries except Tonga, land is held in customary systems of land tenure. In essence, land is owned not by individuals but by communities under long-standing



In the Pacific, land and sea are intimately connected. Conserving coastal forest reduces run-off and so helps maintain fish stocks.

Box 2

What is SPREP ?

The South Pacific Regional Environment Programme (SPREP) is an inter-governmental body constituted by 22 nations and territories of the Pacific, plus Australia, France, New Zealand and United States, who have close links with Pacific island nations. It is based at Apia, Samoa.

SPREP provides a forum for technical programmes, action plans, position statements and ministerial declarations on the environment. It works cooperatively with government agencies, with NGOs, both indigenous and international, and with international bodies.

Its programmes cover biodiversity conservation, environmental management (including Environmental Impact Assessment, waste management and climate change), and environmental education. It also administers regional environmental conventions (see p. 105).

Every four years, SPREP organizes a regional conference on nature conservation and protected areas. These have proved seminal events, where experience is shared, new insights gained and new ideas and programmes developed.

traditional arrangements that are at the heart of their lifestyle. The community has a large measure of control over the use of the land and the use of natural resources. To varying degrees, this is also true of coastal marine areas.

Institutions tend to be small – in 1992 there were only 5.8 million people in the whole region – but there are close links between the countries and territories involved.

Pacific governments tend to work together cooperatively, applying the home-grown approaches of cooperation and consensus that are the only way people can live together on small islands. Recent threats to Pacific islands, especially of inundation, have drawn the countries even closer together politically. On environmental issues, Pacific countries cooperate closely through SPREP, the South Pacific Regional Environment Programme (see Box 2), which is at the centre of most environmental initiatives in the region.

The Pacific is a very important region for biodiversity, with a very high degree of endemism and a great diversity of ecosystems and species both terrestrial and marine.

The Pacific ocean is the largest geographical feature on the planet and is highly diverse. It has extensive coastal communities, some of the world's most varied and productive coral reefs and deep ocean trenches. The Pacific includes some very unusual ecosystems known nowhere else in the world, including the unique raised

limestone island of 'Eua in Tonga, Bokak Atoll in the Marshall Islands, *Pandanus* crater swamps in Fiji and Samoa, and an extraordinary network of saline lagoons on Christmas Island.

On land, the ecosystems tend to be small and distinctive, simply because most Pacific islands are themselves small and isolated. Together, the thousands of islands in the Pacific have a diversity of ecosystems per unit land area unparalleled elsewhere in the world. Isolation has also led to the evolution of numerous endemic species (species unique to one island), in some cases amounting to 80% or more of the flora (Table 1).

At one extreme is Papua New Guinea, the largest island in the Pacific, which only covers 0.14% of the earth's land area, but supports an estimated 5% of the planet's terrestrial biodiversity. One source gives the country 11,000 vascular plant species, of which 90% may be endemic, whereas others suggest there may be more than 20,000 plant species, with an estimated 60% endemism. Of Papua New Guinea's 644 bird species, 76 are endemic, as are 56 mammals and 365 freshwater fish, amphibians and reptiles.

The statistics are similar for other Pacific countries. New Caledonia, which is a fraction the size of its temperate neighbour, New Zealand, has 40% more native plant species than that country, some 76% of them endemic. Although species diversity decreases dramatically from the larger islands of the western Pacific to the oceanic islands of the east, endemism still remains high. For example, Henderson Island, the first Pacific island designated as a World Heritage Natural Site, only has 63 different higher plants but 10 of them are endemic. In no other region of the world is biodiversity more concentrated and island biodiversity better displayed.

The Clown Anemone Fish, one of the numerous fish species in the Pacific ocean.

Table

Examples of the vascular plant richness of Pacific islands

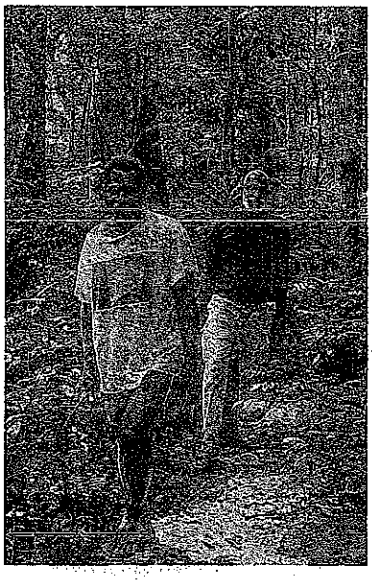
	Total	Indigenous	Endemic	% Endemism	Introduced
Papua New Guinea	<20,000	<20,000	c.12,000	60%	?
New Caledonia	3,750	3,250	2,747	89%	500
Solomon Is.	3,372	3,172	30	1%	200
Fiji	2,628	1,628	812	50%	1,000
French Polynesia	1,519	959	560	58%	560
Vanuatu	1,000	870	150	17%	130
Samoa	850	693	117	17%	157
Tonga	837	463	25	5%	374
Wallis & Futuna	625	475	7	1%	150
Kiribati	102	22	2	9%	80
Tuvalu	86	44	0	0%	42

Source: D.R. Given

The need for conservation is urgent as much Pacific biodiversity is severely threatened.

The continued existence of many Pacific ecosystems has become extremely precarious. Human impacts have far more rapid impacts and are more often irreversible on small islands than on large continents. The plant and animal species are vulnerable to extinction simply because of their small natural ranges and population sizes. This is discussed in detail in Chapter 3.

Chapter 2: Where do we stand? A New Approach to Conservation that Contributes to Development



Chief Moses and Chief Solomon, whose village is one of two jointly responsible for the community-based Vatthe Conservation Area (see p. 99), the new form of protected area that is winning local support and achieving conservation in the Pacific region.

Formal protected areas are relatively new in the Pacific.

Pacific islanders have lived in harmony with their environment for thousands of years. They protected important resources and applied restrictions on the use of certain resources. Some areas were 'tapu', where the community decided that plants and animals would not be taken, combining religious beliefs with practical conservation. Similarly, when a clan member died, a section of reef was 'tapu' for a number of years, and so given a respite from fishing. Protected areas are not a new concept in the Pacific.

In the 1970s and 1980s conservationists struggled to develop western-style national parks in the Pacific, but mostly without success. At the time of the Rio 'Earth Summit', there were virtually no effective protected areas in the Pacific outside territories like Hawai'i, which had a developed-world land ownership pattern. The only independent State with a conventional protected area system was Samoa (formerly called Western Samoa), which had the nucleus of a system similar to that in New Zealand.

The conventional models of national parks promoted at that time allowed visitation but not resource use. They failed because in Pacific countries very little land is owned by government, most being communally owned. Decisions on the conservation of nature have to involve local communities and, in the absence of other sources of income, have to balance conservation and use.

The Pacific has pioneered a new approach to nature conservation.

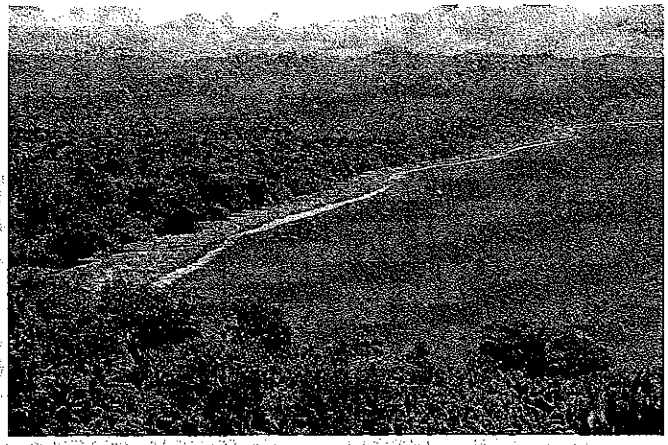
Responding to this situation, in the early 1990s the countries of the region developed the South Pacific Biodiversity Conservation Programme (SPBCP) through SPREP. Its aim was to replace the conventional model of a national park with what they called 'community-based conservation areas' (CBCAs). Since 1993, this has been funded with US$ 10 million of GEF money. It is promising to be a great success and is widely seen as the best way forward for protected areas in the region.

In a community-based conservation area, the aim is both to conserve biodiversity and to allow sustainable use of natural resources. Each area is established only after extensive dialogue with the community involved, who set many of the rules. The areas correspond to the IUCN protected area category V or VI, by allowing traditional patterns of resource use to continue but balancing this against the needs of conservation.

The countries make proposals for the sites to SPREP, who manage the Programme. Once accepted, the community appoints a management committee and are assisted by a Conservation Area Support Officer (CASO), who lives in the community, and by a project manager provided by the government agency, usually based in the capital. Both are nationals of the country concerned.

To qualify, each site must:

- Contain nationally or regionally significant examples of one or more ecosystems of global conservation concern (e.g. rainforest, mangrove, coral reef);
- Must be large enough to maintain the viability of those ecosystems;



The pristine coast and intact native forests of Big Bay, Vanuatu. The community-based Vatthe Conservation Area (see box) covers most of the alluvial forest in the picture.

- Must have a high degree of commitment by landowners, resource-owners and other potential partners;
- Must be large enough to encompass a wide range of interactions among people and natural resources in that country; and
- Must either contain high levels of biodiversity or ecological complexity, or be important for survival of endemic or threatened species, or be threatened by destruction, degradation or conversion.

By the end of 1997, 12 countries had established or were establishing 17 community-based conservation areas.

About half of the sites are marine or have strong marine components. The countries reviewed their experience at the Sixth South Pacific Conference on Nature Conservation and Protected Areas (Micronesia, 1997), and agreed that this model is the best one for the Pacific. IUCN and international NGOs such as The Nature Conservancy are helping to establish such areas.

Present GEF funding is expected to run out in the next three years, so options are now being considered on how to continue and accelerate the encouraging progress so far. SPREP is concerned that new areas could be vulnerable from loss of funding after the initial establishment phase. It is considering the creation of a regional trust fund, the investment income from which would continue the c. $1 million a year of funding needed.

Box 3

The Community-based Vatthe Conservation Area, Big Bay, Vanuatu

Big Bay on the island of Espiritu Santo contains the country's best area of tropical forest that has not yet been logged. It is shared by two villages separated by some distance and by their allegiance to different Christian denominations. According to Bahai'i volunteers in one village, there was a dispute between the villages over the boundaries of the forest. They spoke of a terrifying night when men from one village came down and raided the other, damaging property and frightening everyone.

The villages took their dispute to the Courts but failed to get it resolved. Then along came a volunteer from the New Zealand Forest and Bird Society, who said, "Why bother about boundaries? There is a better way to share the forest by not worrying about boundaries but by managing it in a sustainable way, taking produce from it, making forest trails, and inviting small groups of tourists to pay for the privilege of visiting the community and its forest." This is exactly what is now happening, under the SPBCP. The work is coordinated by a CASO from a nearby island and managed by a joint committee from both villages.

In May 1995, the two village Chiefs told a visiting advisory group that they had committed themselves to working together as stewards for the area, so that their children and grandchildren could share in the benefits from the forest and the sea. They had sent away loggers who came with a suitcase full of dollars – more money than the people had ever seen – as now their joint committee chaired by Joseph, the pastor from the smaller village, was working with the conservation officer to find the best way of managing the forest they share. The way in which the conservation area is managed for and by the community is at the heart of the concept of the community-based conservation area.

Since then, ecotourism accommodation has been developed, but a problem has arisen. An expatriate member of one of the villages wants to opt out and manage part of the land on his own. This has led the joint committee to seek appropriate legislative mechanisms to reinforce the status of the conservation area. They tried to use the Vanuatu national park law, but this did not work since it is designed for State-owned land. The new approach of community-based conservation areas may need legislative back-up to succeed.

Source: P.H.C. Lucas, 1997.

Community-based conservation areas make a direct contribution to development.

- They limit cutting on steep slopes, so preventing erosion. This is particularly important on volcanic islands, which tend to have steep slopes vulnerable to erosion. In Koromindi, Solomon Islands, a community-based conservation area has been negotiated directly as part of a hydroelectric scheme, to prevent siltation behind the dam.

Table 2

Protected areas of the Pacific by country or territory and management category

Country	Country Area	I/Ia/Ib		II		III		IV		V		VI		TOTAL	
		Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
American Samoa (USA)	197	6	3.31	37	18.94			0	0.32					44	22.55
Cook Islands	233								0.69			1	0.67		1.15
Fiji	18,330	196	1.07	0	0.00			4	0.03					201	1.10
Fr. Polynesia (France)	3,940			7	0.19			191	4.85					198	5.01
Guam (USA)	450							6	1.36	7	1.73	73	16.37	86	19.35
Kiribati	684	0	0.01			267	39.08							267	39.08
Marshall Islands	181														
Micronesia, Fed. States	702														
Nauru	21														
New Caledonia (France)	19,105	225	1.18	102	0.54	2	0.01	786	4.12	39	0.21			1,154	6.06
Niue (New Zealand)	259											54	20.85	54	20.85
Northern Marianas	479	15	3.10					2	0.40					18	3.80
Palau	492					12	2.40					28	5.70	40	8.10
Papua New Guinea	462,840			73	0.02							10,268	2.22	10,342	2.24
Pitcairn (UK)	23														
Samoa	2,840			28	1.01			73	2.57			14	0.49	115	4.07
Solomon Islands	29,790											82	0.28	82	0.28
Tokelau (New Zealand)	12														
Tonga	699			4	0.64			4	0.61			28	4.06	37	5.30
Tuvalu	25											38	152.00	38	152.00
USA – Hawaii	16,770	1,608	9.60	1,069	6.40	4	0.00	591	3.50	141	0.80			3,413	20.40
US Minor Outlying Is.	658	411	62.61											411	62.61
Vanuatu	14,765											34	0.24	34	0.24
Wallis & Futuna (France)	255														
TOTALS	573,770	2,461	0.43	1,320	0.23	285	0.05	1,658	0.29	187	0.03	10,615	1.85	16,538	2.88

Areas are in square kilometres; excludes protected areas not assigned to a management category.
Includes 7 of the 17 community-based conservation areas – see text.
Very high values in the final column (e.g. for Tuvalu) should be disregarded; the country area is of land only but the protected areas include sea areas.
Prepared by the World Conservation Monitoring Centre, January 1998.

- They maintain water supplies. The community-based conservation area in Pohnpei, Federated States of Micronesia, protects the vegetation around a remnant volcano surrounded by fringing coral reefs. Erosion would not only pollute fresh-water supplies but also kill off the reef.
- They conserve fish stocks, such as Arnarvon in Solomon Islands and Ha'apai in Tonga. Fish are vital to the economic survival of most Pacific islands, yet during the lifetimes of people in the region, fish stocks have declined massively, causing a substantial drop in income and livelihoods.
- They provide sustainable harvests of a wide range of products, such as nuts from Vatthe, Vanuatu (see Box 3). This is at the core of the concept of a community-based conservation area. Products include fish (see previous item), nuts (which can be eaten locally, sold in markets or sold to tourists), and wood from dead trees for carving and construction.
- They are key sites for ecotourism, providing alternative sources of income such as from lodges and walking trails. The community-based conservation area at Ha'apai, Tonga, is being developed as part of the tourism master plan for the country, and is a potential World Heritage site. Aqualung diving is the main economic use for many coral reefs, with the Solomon Islands as one of the best places in the world for diving; this is regulated through licensing tour operators.

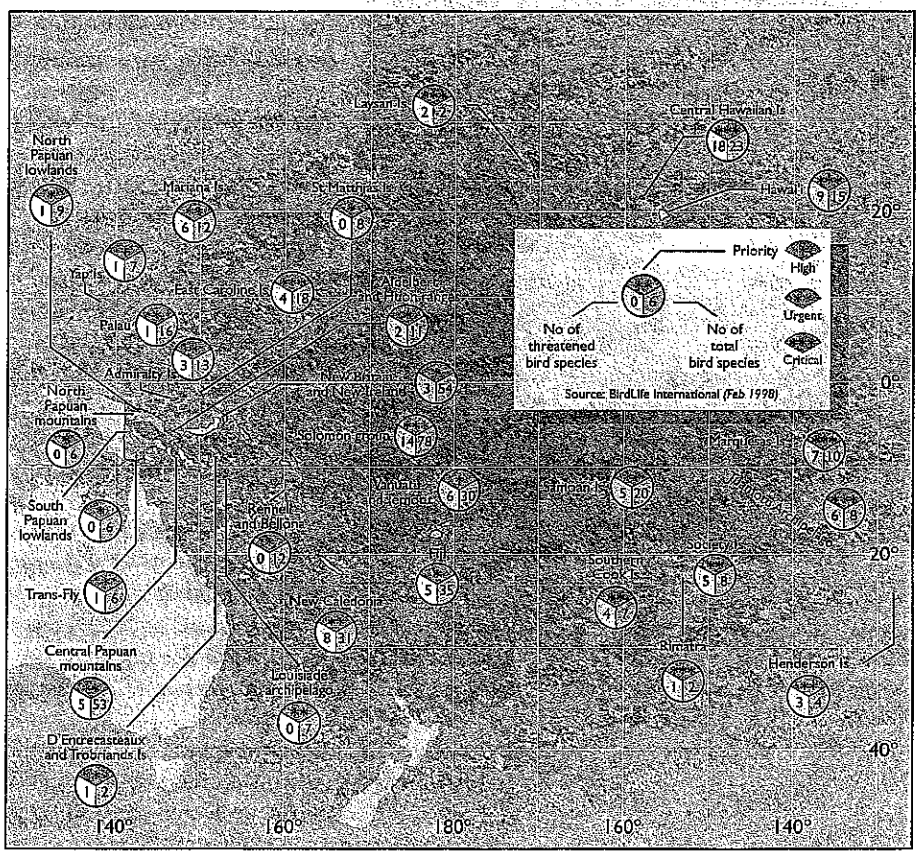
Over-use of coral reefs from tourists is less of a problem in the Pacific than elsewhere because of the remoteness and inaccessibility of most of the islands.

Combining community-based conservation areas and other protected areas, there are now some 225 protected areas in the Pacific, totalling over 16,000 sq. km, but few of them are in the smaller island States (Table 2).

On paper, Papua New Guinea has the most extensive reserve network, with over 10,000 sq. km protected in several small national parks, some very small special purpose reserves and sanctuaries, and a large system of Wildlife Management Areas, almost all in IUCN Category VI. This represents about 2.23% of the land area but most reserves have too few financial and management resources for their maintenance. Wildlife Management Areas are in effect community-based conservation areas and pioneered this concept in the 1970s.

Only Hawaii and New Caledonia can be considered to have adequate protected area systems. New Caledonia contains different categories of protected areas, including strict nature reserves, provincial parks, special reserves and marine reserves. Terrestrial reserves comprise only 6% of the land area, are restricted to the main island of New Caledonia and may not be safe from mining.

Countries or territories recorded as having no protected areas at all include Nauru, Tokelau (New Zealand) and Wallis and Futuna (France).



Map 2

Endemic bird areas of the Pacific

The number and extent of protected areas in the Pacific is still so small that in no way does the network cover the ecosystems and species of the region.

A recent study by BirdLife, *Endemic Bird Areas of the World* (1998), identifies some 218 Endemic Bird Areas, that is areas where birds of restricted ranges (defined as less than 50,000 sq. km) may be found. Map 2 (above), derived from the study, shows the Endemic Bird Areas identified in the Pacific region.

A study by IUCN and WWF supported by the European Commission, *Centres of Plant Diversity* (1995), identifies the most important areas for plants in the Pacific as Papua New Guinea, New Caledonia, Fiji, Samoa and American Samoa, the Marquesas Islands (French Polynesia) and the Hawaiian Islands, as well as the Galápagos Islands and the Juan Fernández Islands, which are generally considered as part of South America.

For the Lomé countries, it identifies:

- **Papua New Guinea**: 27 Centres of Plant Diversity from around the country, mainly representing the different forest types.
- **Fiji**: Proposals to increase the protected coverage from 0.36% of the land area by adding 5 National Parks for the best remaining sections of unmodified forests and a range of other protected areas, including small plant reserves.
- **Samoa**: Ten ecosystem types on Samoa and American Samoa, including the lava flows of Savai'i and the montane and cloud forests of Savai'i and 'Upolu.

Marine ecosystems are even more poorly conserved in the Pacific than in other marine regions. A study by IUCN and the World Bank has identified priorities for marine protected areas.

Information is scarce on marine protected areas in the Pacific, but it is clear that the present coverage of marine ecosystems is very inadequate.

The IUCN/World Bank landmark report on marine protected areas (MPAs) worldwide lists some 66 marine protected areas in the region, 25 of them in Hawai'i and most in IUCN Category IV (Managed Nature Reserve). The study concludes that the only countries and territories with adequate numbers of MPAs are Hawaii, Tonga, New Caledonia, Guam, American Samoa and the U.S. Unincorporated Territory islands. None of the MPAs are World Heritage sites or Ramsar sites, although one – Atoll de Tiaro in French Polynesia – is a biosphere reserve. The study also notes that there are many fisheries management areas designated to protect certain species through seasonal or permanant bans on harvesting or other measures. These meet the criteria of an MPA.

Clearly, the existing MPAs in the Pacific do not represent adequately the diverse marine and coastal ecosystems. Only two types of habitats are reasonably well protected – low islands without mangrove and seagrass, and arid/phosphate low islands – but these are well outside the centre of diversity of the region in the south-west Pacific, and are relatively species-poor compared to other marine ecosystems.

A government survey in Papua New Guinea has identified 30 areas as priorities for marine biodiversity conservation. The IUCN/World Bank study makes recommendations for new marine protected areas throughout the region but because of lack of information is unable to give a fully regional assessment of what is needed. IUCN is following up the report with development of a GEF proposal to establish marine protected areas in Samoa, in consultation with all relevant stakeholders, particularly local communities. This is designed to provide a useful model for other Pacific countries. It is intended that these will be comparatively large, multiple use MPAs, which will build upon and perhaps incorporate existing fisheries reserves, of which there are some 30 in Samoa.

In addition, 13 Pacific Island States, working with SPREP and with the support of GEF and other donors, are developing a Strategic Action Programme (SAP) for the International Waters of the Pacific Islands Region. This is a pioneering effort to combine national and regional sustainable development priorities with shared global concerns for protecting international waters. Marine protected areas are one of its four priorities – the others are improved waste management, better water quality and sustainable fisheries.

Undoubtedly the seas of the Pacific are a major gap in conservation coverage worldwide. The protection of marine areas has lagged behind protection on land in virtually all countries; in the Pacific, with its great diversity of marine ecosystems and

dominated as it is by the ever-present sea, the difference is particularly acute between what sea areas should be protected and what are protected.

Most Pacific Island countries have environment and/or conservation agencies, but in general they are small and understaffed.

Typically national agencies have only one or two professional or administrative staff and few support staff. There are, though, some encouraging developments. SPBCP has funded Conservation Area Support Officers (CASOs) to increase the capacity of government agencies and local communities to manage protected areas. Many countries have established Conservation Area Coordinating Committees to help communities plan and manage such areas.

Non-governmental organizations (NGOs) are playing an increasing part in conservation in the region.

The most developed NGOs in the region include:

- The Palau Conservation Society, which is involved in management of protected areas and works closely with Government agencies;
- The Solomon Islands Development Trust, which works with communities to developed community-based conservation areas;
- The O le Siosiomaga Society, Samoa, which is building conservation awareness in the country at community level.

Throughout many Pacific countries and territories, church organizations play an influential role in conservation, as shown by the many church leaders on management committees for community-based conservation areas.

Active NGOs from outside the region include the World Wide Fund for Nature (WWF), Conservation International (CI), The Nature Conservancy (TNC), the Royal Forest and Bird Society of New Zealand and the Maruia Society. While cooperation is improving between international NGOs on the one hand and government agencies and local communities on the other, there have been problems with some large external NGOs trying to "go it alone" outside the collaborative envelope of SPREP and its partners. More needs to be done to develop complementary approaches between SPREP and external NGOs.

In the Pacific region, National Environment Management Strategies (NEMS) are the main strategies for conservation and sustainable development at the country level.

NEMS are a statement of national environmental principles and goals, and are the Pacific equivalent of the National Conservation Strategies that other countries have developed. They identify the priority activities to be undertaken, expressed as a series of Programme Profiles. They put strong emphasis on the involvement of local communities. They also stress the importance of generating sufficient resources to achieve the agreed goals.

So far, 15 Pacific countries, including all Lomé States, have been involved in developing NEMS or their equivalent, with help from SPREP. These countries are Cook Is., Federated States of Micronesia, Fiji, Kiribati, Marshall Is., Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Is., Tokelau, Tonga, Tuvalu and Vanuatu. Assistance came from various sources, including the Asian Development Bank, UNDP and the World Bank.

Table 3

Participation of the Pacific region in international conservation treaties

Country	World Heritage Convention		Ramsar Convention		CITES	Bonn Conv.	Biodiversity Conv.	Apia Conv.	SPREP Conv.
	Date	Sites	Date	Sites	Date	Date	Date	Date	Date
American Samoa (USA)	1973		1987		1974				199
Cook Islands							1993	1990	1990
Fiji	1990				1997		1993	1990	1990
French Polynesia (France)	1975		1986		1978		1994	1989	1990
Guam (USA)	1973		1987		1974				199
Kiribati							1994		
Marshall Islands							1992		1990
Micronesia, Fed. States							1994		1990
Nauru							1993		
New Caledonia (France)	1975		1986		1978		1994	1989	
Niue (New Zealand)	1984		1976				1993		
Northern Marianas									
Palau									
Papua New Guinea	1997		1993	1	1975		1993		1990
Pitcairn (UK)	1984	1	1976			1985	1994		
Samoa							1994	1990	1990
Solomon Islands	1992	1					1995		1990
Tokelau (New Zealand)	1984		1976		1989		1993		1990
Tonga							1998		
Tuvalu									
USA – Hawaii	1973	1	1987		1974				199
US Minor Outlying Is.	1973		1987		1974				1991
Vanuatu					1989		1993		
Wallis & Futuna (France)	1975		1986		1978		1994	1989	1990

Dates indicate the year when the country acceded to or ratified a Convention.
For the World Heritage Convention, only natural and mixed sites are listed.
Prepared by the World Conservation Monitoring Centre. Updated August 1998.

NEMS have been vital in clarifying priorities for environmental management. The process has also been important in fostering collaboration among governments, NGOs and local communities. The NEMS process is also leading to the preparation of Biodiversity Strategic Action Plans, as required under the Biodiversity Convention.

At the regional level, countries have adopted a four-year Action Strategy for Nature Conservation in the South Pacific.

Pacific countries developed the first version of the Strategy in 1985. The third version, covering the period 1994–1998, was formally adopted by a SPREP inter-governmental meeting and so carries government endorsement. Progress in its implementation was reviewed at the Micronesia conference in September 1997, and the original mission and six objectives, one of which is biodiversity protection, were reaffirmed.

A revised version is being prepared for the period 1999–2002, covering the whole of the insular Pacific. This will continue the emphasis on community-based conservation, highlighting and building on the successes of the last four years. It will focus on the most critically needed actions, rather than be a shopping list of everything that needs to be done. It will put the work to develop community-based conservation areas into a broader programmatic perspective.

Pacific nations have moved rapidly to implement the Biodiversity Convention and also have two parallel regional conventions of their own (Table 3).

Nearly all Pacific Island States have ratified the Convention on Biological Diversity and all who were represented at the Rio Earth Summit endorsed Agenda 21.

The World Heritage Convention is attracting increasing attention in the region. One possible approach is the serial site, where no single unit is large enough on its own to qualify but a group of sites would do so. However, apart from the territories of France, UK and USA, which are active members of the Convention, the only independent island States that have ratified it are Fiji, Papua New Guinea and Solomon Islands. Of these, Solomon Islands was the first to propose a World Heritage site, nominating the east part of Rennell Island for its natural values in 1997. In addition to East Rennell, the natural sites inscribed so far on the World Heritage list are Henderson Island (a UK dependency in the Pitcairn Group), Hawaii Volcanoes National Park and three sites off the coast of South America – Galápagos Islands (Ecuador), Easter Island (Chile) and Cocos Island (Costa Rica), all with strong marine components.

The Breadfruit (Artocarpus altilis) is an important staple food in Polynesia, its region of origin and where it has been cultivated since ancient times. Captain Bligh was commissioned to take it to the West Indies, and succeeded at the second attempt – the first was interrupted by the well known Mutiny on the Bounty.

The Biodiversity Convention declares that States have sovereign rights over their biodiversity and can therefore determine access to it, negotiating mutually acceptable terms with those who want to use the resources concerned. The Convention also requires that benefits from the use of biodiversity are shared equitably. Had the Convention been in place in 1789, history might have been very different!

The two regional conventions are the Convention on the Conservation of Nature in the South Pacific (Apia Convention) and the Convention for the Protection of Natural Resources and the Environment of the South Pacific (SPREP Convention). Both entered into force in 1990 and are administered by SPREP. They provide a complementary legal framework for commitments on the environment, with provisions on the conservation of biodiversity.

External support to conservation in the region from government donors has been relatively small.

Bilateral aid to the independent nations of the Pacific on conservation is small, the main donors being Australia and New Zealand. European countries have tended to support conservation in the region through multilateral vehicles like GEF and SPREP. The vital South Pacific Biodiversity Conservation Programme is funded jointly by GEF and AusAid. In 1997, New Zealand announced a NZ$ 1 million (and $2 million in each year thereafter) contestable fund for the Pacific under four GEF categories, administered by NZODA, one aim being to use small sums to lever much greater contributions. This is a good example of creative donor support that matches the needs of the region.

European Commission support to the region is modest, focusing on sustainable management of natural resources, in particular tropical forests and fisheries, with no projects specifically on protected areas. Forestry studies are supported, for example in Solomon Islands, and in Papua New Guinea there is a 5 million Euro project on community-based forestry exploitation, the aim being to work with local people rather than external logging companies on forest use.

Chapter 3: What are the Main Issues?

Underlying all approaches to protected areas in the Pacific region is the fact that governments own virtually no land. Conservation can only be done in cooperation with local communities. This is the greatest difference between effective conservation in the Pacific region and elsewhere. It is therefore the main issue explored below, followed by a summary of the main threats to natural resources and other relevant issues.

Conservation of forests, most of which are owned and managed by local communities in traditional systems, is a top priority in the Pacific region.

In the Pacific, land, water and resources are owned in traditional systems that are quite different from the practice in most other countries.

Under their customary systems of land and resource ownership, families and clans hold traditional title, which is passed on from generation to generation. In Vanuatu and the Solomon Islands, for example, such systems extend over most of the land and cover virtually all the forests important for biological diversity. As in many other Pacific nations, Vanuatu's customary land and resource tenure systems are explicitly recognized and legally protected by the Constitution.

Traditional titles greatly limit the ability of governments to control land use and protect the coast. A government may not be able to ban logging in a certain key forest. But these traditional systems do reflect the genuine cultural respect that Pacific islanders have for nature and biological diversity. This is not surprising, as throughout history people in the Pacific have relied on natural resources, especially in the small islands of the eastern Pacific. Human settlement may have led to some species rapidly becoming extinct, but effective systems of ecological sustainability soon evolved. If they had not, these small islands could not have been inhabited for thousands of years without help from the outside world.

Traditional knowledge is strong, especially on the uses of plants and animals, and is one of the most powerful arguments for conservation of biodiversity. This knowledge is under pressure throughout the region as countries develop their economies. As well as the great variety of land animals, fish, molluscs and turtles that dominate traditional local diets in a country like Papua New Guinea, over 1000 different plant species are known to be used in that country for various purposes.

As outlined in Chapter 2, the western models for terrestrial protected areas are inappropriate in the Pacific.

Land- and resource-owning communities resist the idea of a protected area in which use of resources within the area is prohibited. They fear their land becoming alienated from them and do not accept being denied access to their own land and resources. Even if land- and resource-owners agree to the sale or lease of their land for protection purposes, there is always the possibility that sooner or later, economic and social pressure will force the owners to encroach on them. This is the reason for the new approach of community-based conservation areas.

The customary system of land ownership in the Pacific should not be seen as a constraint to conservation, but as a unique opportunity. Customary owners who have a direct knowledge of natural resources and depend on them have a vital interest in

land management. They therefore have a great incentive to maintain conservation regimes that will succeed in conserving biodiversity over the long term.

Interestingly, in the marine environment, the model proposed, of IUCN Category VI (Managed Resource Protected Area), is very similar to that used elsewhere, as are the very successful fisheries reserves in Samoa, which are in IUCN Category I.

Socio-economic pressures are a major constraint on conservation of biodiversity, even with the new methods of conservation already outlined.

Most Pacific islanders make their living from farming and fishing. As populations grow and want higher living standards, people in rural areas are forced to farm marginal lands, overfish, encroach on natural areas rich in biodiversity, and do other things that give short-term relief but undermine long-term productivity. In most countries, agricultural land has become very scarce, tends to be overused and is no longer managed under the traditional rules which sustained its productivity for centuries. The same applies to marine life close to the shore.

Meeting the needs of daily life is a struggle for many Pacific islanders. Conservation will not succeed unless it contributes to local livelihoods.

The new approaches for establishing protected areas with income-generating initiatives seem to be succeeding, but inevitably come up against the reality of socio-economic pressures. The answer is to find a mixture of small-scale development options for an area. The meeting at Pohnpei discussed the idea of incentives to do this under the heading Enterprise Development. However, it is hard to find enough economic uses from a community-based conservation areas that will provide what villagers need for a reasonable livelihood. The revenues from these uses will rarely if ever match the short-term gain from non-sustainable exploitation. More, therefore, needs to be done to provide and boost the incentives for local people from the use of community-based conservation areas.

There are several examples, some of them controversial, where compensation is paid to the land- and resource-owners in return for them agreeing to forego the full commercial use of their natural resources. On Savai'i, Samoa, individual and business interests have negotiated Conservation Agreements with Falealupo village, and the Swedish Society for the Conservation of Nature with Tafua village. Proposals for protected areas are putting more emphasis on alternative income activities so as to reduce the pressure to sell off or harvest natural products at an unsustainable level.

While many local communities are determined to have economic growth, others are equally determined that it must take place on terms acceptable to them and in ways that sustain their natural resources. Local activism is opening up a wealth of opportunities.

Time is not on our side, as natural resources are being exploited too fast, due to population growth, changing economies and increasing material expectations.

Ecosystems and habitats are coming under increasing pressure and habitats are being lost at unprecedented rates, far greater than under traditional resource use. Despite the traditional regard for natural resources, most customary owners face increasing pressure to convert them into cash and become part of the cash economy.

Much of the Pacific native forest has been commercially logged in the last 20 years or so, as here on Espiritu Santo Island, Vanuatu. Little survives the loggers' onslaught.

Commercially valuable marine species such as beche-de-mer, Trochus, pearl oysters and giant clams are being severely over-harvested. The present rate of deforestation in some Pacific countries is as high as anywhere in the world.

In the Solomon Islands, scientists estimate that at current rates all accessible lowland forest will disappear within 15 years. In Samoa, if logging continues unchecked, it is estimated that all the unprotected forest will be gone by the year 2000. Even in Papua New Guinea, where low population densities and rugged topography mean that levels of forest loss are relatively low, there is alarm at the growing rate of deforestation. Uncontrolled logging and agricultural expansion are estimated to be destroying over 80,000 ha of tropical moist forest a year.

Those productive ecosystems which have traditionally attracted human settlement are under especial threat; for example, mangrove forests on the margins of lagoons are being lost as nearby villages grow and expand. Land is reclaimed, causeways are built and waste is dumped in the mangroves.

All too often, there are damaging side effects in addition to the loss of the resource itself. Excessive logging of forests for agriculture can cause pollution and silting up of community water supplies. It can damage coastal ecosystems downstream, notably mangroves and coral. Loss of mangroves usually leads to a reduction in fish stocks. Combined with beach mining, lagoon pollution and over-exploitation of coastal marine resources, this destruction is seriously degrading many Pacific coastal ecosystems and accelerating the loss of biological diversity.

There are still good opportunities for conservation on some islands, but less on others.

The larger islands of the Pacific offer some of the world's best opportunities for conserving biological diversity. Papua New Guinea, the Solomons and New Caledonia have long been recognized as global priorities for biodiversity conservation. In Papua New Guinea, and to a lesser extent the Solomon Islands, large areas of land and coastal seabed are still mainly in their natural state.

In most of the region, however, conservation has to be done in very small areas. Pacific island ecosystems are vulnerable to change due to a combination of three natural factors – they are geographically isolated, they are prone to natural events of great magnitude, such as cyclones and volcanic eruptions, and they are small in size. Truly natural ecosystems now survive only in remote sites.

In some countries, natural forests are so small that one operation can remove a unique set of species found nowhere else in the world. Recently, in Samoa, a hydro-electric power station completely removed a swamp forest that had been identified as globally unique by an ecological reconnaissance but before its biological diversity could be properly assessed. The same could happen elsewhere.

The opportunities for conserving biodiversity in the Pacific are vanishing as fast as

the region's unique ecosystems. In many instances, the rate of loss is such that, to be effective, significant conservation action is needed now.

The highly plumed Raggiana bird of paradise in Varirata National Park, Papua New Guinea. Birds of paradise are among the rarest and most spectacular birds of the region.

Introduced species are major threats.

Island species, which have evolved in isolation, are particularly vulnerable to being displaced by invasive species introduced from continental or foreign sea environments. When these compete for space or food and prey on indigenous species, they can have dramatic impacts. Alien invasive species are very easily established but difficult or even impossible to eradicate.

Some of these invasions have serious consequences. In Fiji, the introduction of the mongoose has made seven species of ground bird extinct. In Guam, the introduced brown tree snake has exterminated most of the island's birds. Introduced weeds such as guava and lantana have had dramatic impacts on indigenous biodiversity and have reduced the productivity of limited land.

Improved transport and the increasing flow of people and cargo through the region greatly increase the risk of potentially devastating introductions. They also make Pacific countries more vulnerable to the introduction of disease, such as the virus currently affecting the taro crop in Samoa, the staple diet of that country.

To counter this threat, the South Pacific Conference on Nature Conservation and Protected Areas (September 1997) held a session on invasive species. A Resolution of the meeting asked SPREP and other relevant agencies to establish a mechanism for sharing information and to produce a regional invasive species strategy. A programme is currently being developed.

Box 4

Some alarming facts on threatened and endangered species in the Pacific

- Over 90% of bird extinctions during historic times have occurred on islands. Most of these (some 30 species in all) have been in the Pacific region.
- There are some 140 threatened bird species in the Pacific, 14% of the total avifauna (compared to 11% for the world overall).
- Hawaii has the most recorded threatened plants of any island in the world. Latest figures are that 621 taxa are threatened; of these 132 are already extinct, 17 are either Extinct or Endangered and 155 are Endangered.
- Easter Island demonstrates a remarkable cautionary tale of devastation of an island flora. Polynesian colonists destroyed the native forests of an endemic tree, *Sophora toromiro*, and were then unable to leave the island because they had not enough wood for ship-building. Over-population led to starvation, civil war and collapse of their civilization.

Sources: BirdLife, Plant Talk

The numbers of endangered and threatened species are increasing rapidly and linkages between ecosystems are being lost.

Island ecosystems and their species are inherently vulnerable to extinction, partly due to their small natural ranges. An increasing number of plants and animals are in danger because of loss of their habitats and over-exploitation of commercially valuable species.

The once-continuous pattern of ecosystems is being broken up into smaller and more isolated pieces, eventually leaving only unsustainable remnants. Fragmentation makes it more likely that vital ecological processes, such as the dispersal of forest seeds by fruit-eating birds and flying foxes, will be lost, along with the natural linkages between different parts of the landscape on which many of the same fruit-eating species depend.

This trend is now widespread in many Pacific island countries, with the result that many ecosystems and species that were common in the 1960s are now exceedingly rare. Inevitably, this ecological collapse will have a detrimental effect on the livelihood and survival of Pacific island people and cultures.

Knowledge of the biodiversity of the Pacific islands is increasing rapidly but is uneven and rarely includes time-related data. Some islands have been well studied, but others are poorly known.

Invertebrates are an important but sometimes neglected part of Pacific biodiversity. Specially attractive to the visitor are the brightly coloured butterflies, like the 'Blue Tiger' above.

Information on species and ecosystems has greatly increased in the last decade. Comprehensive forest inventories have been made in some countries, and inventories made of coral reefs, lagoons and mangrove ecosystems. For example, in 1993 the International Waterfowl and Wetlands Research Bureau, working with many local and regional agencies, published a *Directory of Wetlands in Oceania*.

A major advance has been the new National Conservation and Resource Management Programme in Papua New Guinea, which has a strong focus on biodiversity conservation. Its aim is to find conservation methods best suited to the country and to use them to extend the existing conservation area system. The Programme has been greatly helped by PNG's recent Conservation Needs Assessment, which was funded by US-AID and implemented by the Biodiversity Support Program.

The recent expansion of ecological survey and inventory is providing a broad picture of what exists in the region, but the changes that human impact is bringing to marine and terrestrial ecosystems are rarely measured and monitored. The Pacific, therefore, needs an ecological monitoring programme. Protected areas and other unmodified ecosystems would be a vital benchmark against which to measure change elsewhere. It is significant that the Action Strategy for Nature Conservation in the South Pacific Region 1994–1998 stresses the need to develop standard, repeatable survey methods for monitoring terrestrial and marine resources of high ecological value.

Legislation is inadequate and the capacity to undertake conservation weak.

In many Pacific countries, there is no clear or effective protected area legislation. Where it exists, it is often similar to the protected area legislation of colonial administrations. This is not satisfactory: legislation is needed to provide the framework under which communities can manage their own resources in the interest of the community as a whole, rather than be derailed by one or a few individuals, as the Vatthe example shows (Box 3, p. 99).

Most Pacific States are very small – Tuvalu, for example, has only 7000 people – and so their governments have a correspondingly small tax base. Government departments are often tiny, and the environment has not traditionally been a government priority. As a result, the government capacity to work on conservation projects is understandably weak.

Trained personnel are few. In 1992, for example, there were only an estimated 20–25 trained or partially trained park rangers in the entire SPREP region, and this has not increased greatly since then. The problem is even more acute in the case of marine protected areas: at that time only two of the 15 independent countries in the region had marine conservation officers.

In the last few years, the establishment of community-based conservation areas is

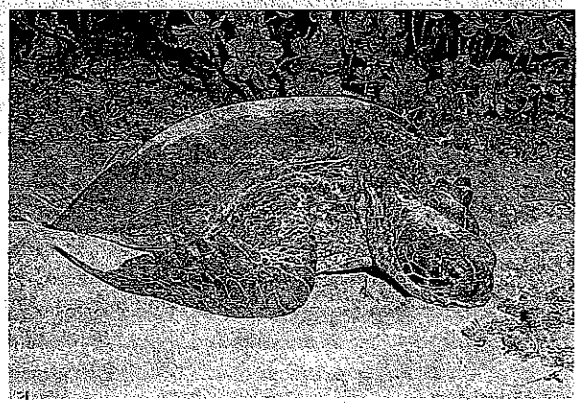
starting to create job opportunities, encouraging good people to get university training abroad and then return. However, the danger is that they may not return after achieving their qualifications.

In 1997, SPREP signed an agreement with the International Centre for Protected Landscapes (ICPL), under which ICPL will provide advice and leadership to develop training programmes, which would extend beyond technical and scientific issues to include management skills, which SPREP considers is the main limiting factor at present.

NGOs and local communities want to take on conservation work, but the capacity to support them is often lacking.

The success of the initial batch of community-based conservation areas is leading many communities to say, "We want one too!". The number of such initiatives is growing but the budget of the parent SPBCP programme is drawing to a close. As a result the ability of SPREP and its member governments to provide the necessary support to the communities through the CASO system is declining. It was always intended that the funding would only last until the communities could manage the conservation areas on their own, but the funding for SPBCP is running out far too early, before the communities can take on full responsibility.

It is vital, too, that the process is not short-cut: community-based conservation areas work because they are designed and led from the local community, who learn by doing. Local leaders are enabled to do this not by reading training manuals or by short-term expert advisers, but by the help of support personnel living in the community. Training courses can also be useful: in Papua New Guinea, The Nature Conservancy offers courses to empower local communities to manage their land more sustainably.



A successful environmental education programme across the Pacific was Year of the Sea Turtle, an initiative developed by SPREP. It flooded the region with stickers and produced a series of videos.

At last the conservation message is being spread more widely, but still not enough.

In Pacific countries, awareness of the need for conservation has greatly improved recently, partly due to several national and regional awareness programmes. The use of videos is growing, especially with commentaries in 'pidgin' to ensure a wide audience.

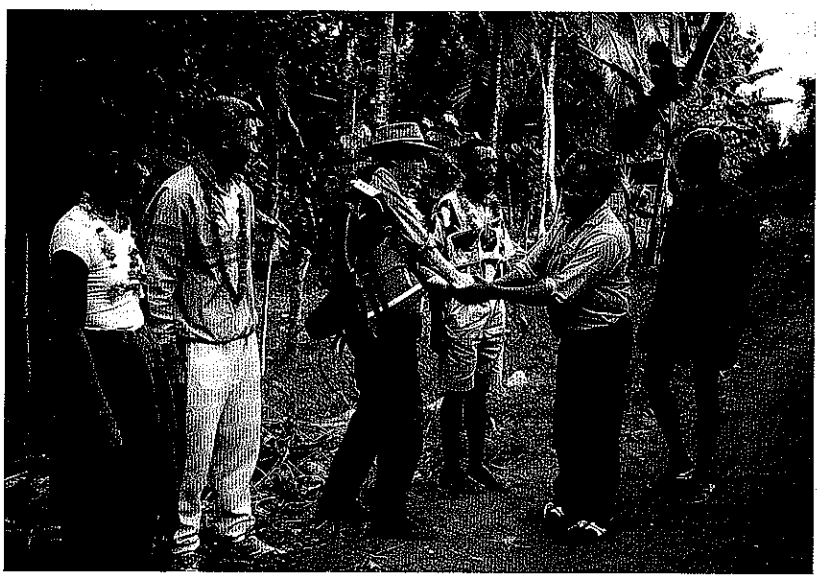
Examples of successful environmental awareness programmes include:

- The Pacific Year of the Coral Reefs (1997), the second regional campaign initiated by SPREP, this time as a contribution to the International Coral Reef Initiative;
- The Solomon Islands Development Trust, which prepares comic books in 'pidgin';
- Cook Island radio, now being displaced by television, was very effective in reaching virtually every citizen;
- In Vanuatu, dance groups present musicals on the threats to life on the reef and on many other environmental, health and cultural topics.

The region is not short of talent or innovation: what it does need is the means to multiply and replicate the existing initiatives. And, as other regions have found, building environmental awareness on its own is not enough; there have to be the mechanisms to convert the awareness into positive action for the environment, otherwise the effort is largely wasted.

Chapter 4: What External Help is Needed?

Today the interest in creating and managing protected areas is much greater than it was, but it needs external support and encouragement to succeed. Resources for conservation in the region are increasing, but are not sufficient.



A warm welcome! Village chiefs receive a group from SPREP to discuss the setting up of a community-based conservation area on land owned by their villages.

Directly support the establishment and management of community-based conservation areas.

As outlined above, Pacific Island countries believe that a Trust Fund is the best way of ensuring continuation and expansion of the South Pacific Biodiversity Conservation Programme (SPBCP), which is the main motor for setting up the community-based conservation areas. The Fund would be used to maintain the progress with the existing areas and answer the demand from communities for many more.

A Trust Fund would enable SPREP to maintain the approach that has succeeded so far, based on hallmarks of:

- Flexibility, so as to fit the needs of communities, who are in the driving seat;
- Being demand-led, with the ability to assist communities requesting help;
- Providing a relatively small amount of funding for each area, spread over a long period of time, mainly for support officers living in the community – the typical support for a community-based conservation areas is $40,000 – 60,000 per year for the first five years, perhaps declining to $25,000 – 40,000 per year thereafter;
- Taking a long-term approach to training and capacity-building;
- Minimizing the use of experts from outside the region.

Another advantage of a Trust Fund is that it could attract a wide range of donors, from both the government and NGO sectors. Earmarking may also be possible, whereby an NGO could pledge a certain amount for one area to be administered by the Fund, so removing the need to create lots of small separate Funds.

SPREP has prepared three reports on the funding issue, one of which is a detailed design for a Trust Fund.

The success of the work so far to establish community-based conservation areas shows that SPREP does have the capacity to influence events at the country level, and can be an efficient transmission agent converting the assistance of donors into local and national action on the ground. It was admittedly a very small organization in the past, but has grown recently to become much stronger and more effective. It does have inter-governmental status – a key advantage – and it is the only regional such body on environment – there are of course similar bodies on other issues like fisheries.

Put emphasis on income-generating activities.

Sustainability has to be the ultimate aim of most protected areas in the Pacific region, but it is hard to achieve. Even if some profit is being made, through ecotourism, mariculture or handicraft activities, for example, it may not be enough to satisfy the aspirations of the resource-owners, which continue to rise. Land-owners may compare the meagre income from ecotourism, for example, to a windfall of cash from cutting down a forest. The prospects vary from area to area, but in most cases some other form of income support may be required, at least until the land- and resource-owners themselves are fully convinced of the wisdom to conserve and the other benefits build up.

Projects should therefore include some practical assistance, with seed money and business training, to develop new and more sustainable methods of using natural products and to set up successful businesses. Some sites will become self-financing sooner than others, and it is understandably difficult for SPREP or anyone else to predict how long it will take in each case – another good reason for the Trust Fund concept. What could be damaging, therefore, is large short-term aid that could not be sustained.

At the macro-economic level, it is difficult to find the socio-economic data needed to justify the establishment of protected areas. Attempts to quantify the benefits of conservation in economic terms are often frustrated by lack of information and by the biases in the present systems of economic accounting, where economic costs and benefits have to be allocated to different resource-uses. For example, when resources or benefits from them are exchanged for goods other than cash, no economic value is usually assigned to them. As well, benefits such as supply of clean fresh water are ignored in most quantitative economic analyses. Activities to find ways of economic accounting that reflect better the real situation, including the non-monetary parts of the economy, would be worthwhile.

Box 5

TO COMPENSATE OR NOT TO COMPENSATE?

One idea is to compensate land-owners if they forego commercial exploitation of an area, such as from logging, fishing or cutting mangroves. Some have argued that compensation would act as an incentive for land-owners to find other forms of livelihood and so remove the need for logging or harvesting.

It is uncertain whether this will succeed. If pressure to exploit a species or habitat is not overwhelming, such as in Yadua Taba in Fiji where a modest amount of $1500 is paid each year for the villagers to protect the iguana habitat, the compensation is incentive enough. But where a high value resource is involved, the compensation could be prohibitively expensive.

Paying land-owners compensation could also be hard to justify in the long term. If the land-owning groups want more than the government or an NGO is willing and able to pay, compensation may hinder negotiations to establish a conservation area. Also, once talk of compensation is involved, it is difficult to shift the focus away from it. Conservation becomes a secondary rather than primary reason for establishing the protected area.

Indeed, a willingness to pay compensation in establishing a protected area could increase the threats in the long term, even where limited subsistence use is allowed, as it could make local people more dependent on cash. Increasing people's material aspirations could also complicate the management of the area. Paying compensation can also give a wrong signal to the resource-owning groups – that they can depend on benefactors to assist them. Another danger of the compensation approach, especially one involving large sums of money, is the signal it gives to other resource-owning groups, whose resources may not be under the same threat. For this reason, it is vital that the land-owners are convinced that it is in their own interest to protect certain key habitats and species and to conserve resources, and not because someone is willing to pay them money for doing it.

Involve the community in all projects.

Conservation will only succeed in the Pacific if it can satisfy the needs of local communities. This was the main conclusion of the latest South Pacific Conference on Nature Conservation and Protected Areas, whose theme was 'Tools for Conservation'.

Agencies involved in conserving biodiversity in the Pacific have to negotiate directly with the customary owners of the lands and waters where that biodiversity occurs. NGOs and local community groups can be good at this, but it is not usually an appropriate role for external donors, who therefore need to work through other groups.

As outlined above, one of the principal difficulties in establishing protected areas in the Pacific region is to make the benefits of protection offer enough in comparison with the large cash injection from selling off a resource. One approach might be to enable community leaders from areas where this is difficult to achieve to visit areas where conservation is succeeding economically, perhaps chosen from among the 17 community-based conservation areas. This would help to shore up support for conservation from where it matters most – at the community level – and help to extend the principles of the SPBCP beyond SPREP and its governmental partners.

A local guide describes to visitors from the New Zealand Forest and Bird Society the wildlife of the community-based Vatthe Conservation Area (p.99), Vanuatu. Building infrastructure and skills for ecotourism can help to ensure local people benefit from conservation.

Strengthen institutions, making national institution-building an objective of external support.

The work to develop community-based conservation areas, and in particular the use of nationals of the region as support officers living in the community, shows the inherent strength and capacity of the people and the region to undertake conservation.

The greatest need in capacity is at central government level, to:

- Provide the legislation needed to support community-based protected areas, in particular to solve the type of problem outlined in Box 3 (p. 99);
- Undertake Environmental Impact Assessments, especially for development projects promoted from outside the region;
- Support communities in managing their own resources in a sustainable way, by direct help, economic incentives, etc.

Give NGOs the opportunity to increase their management capacity and influence.

More opportunities are needed for staff of local NGOs to gain the skills, experience and knowledge they need to be effective agents of environmental protection and to play a key role in establishing and managing protected areas. Pacific NGOs are very different from NGOs in the West; in the Pacific, even a village could be called an NGO and it is at this level where opportunities and training are vital. Many NGOs, even the more established ones, are greatly under-staffed, under-funded and lack the skills to work effectively with local communities. Their role in conservation so far has been limited to public awareness and consultation.

Increase training opportunities by funding infrastructure development and human capacity-building.

There is a need for ongoing training to capitalize on the progress made with the community-based conservation areas. The aim should be to equip people better in communities and in conservation organizations, governmental and private, to handle the various issues involved – technical, social, political and economic. Funding is presently limited to achieve this, the ICPL/SPREP course (see page 111) being a welcome start. At present, there are no scholarships to assist key individuals to receive training, although NZODA have indicated limited support for this type of training in future.

Training outside the region may be necessary and desirable for a few key individuals, but for both participants in conservation projects training should be in-country. Practical, hands-on help is required, using extension trainers who ideally should be from the region. The notion of training the trainers has obvious advantages.

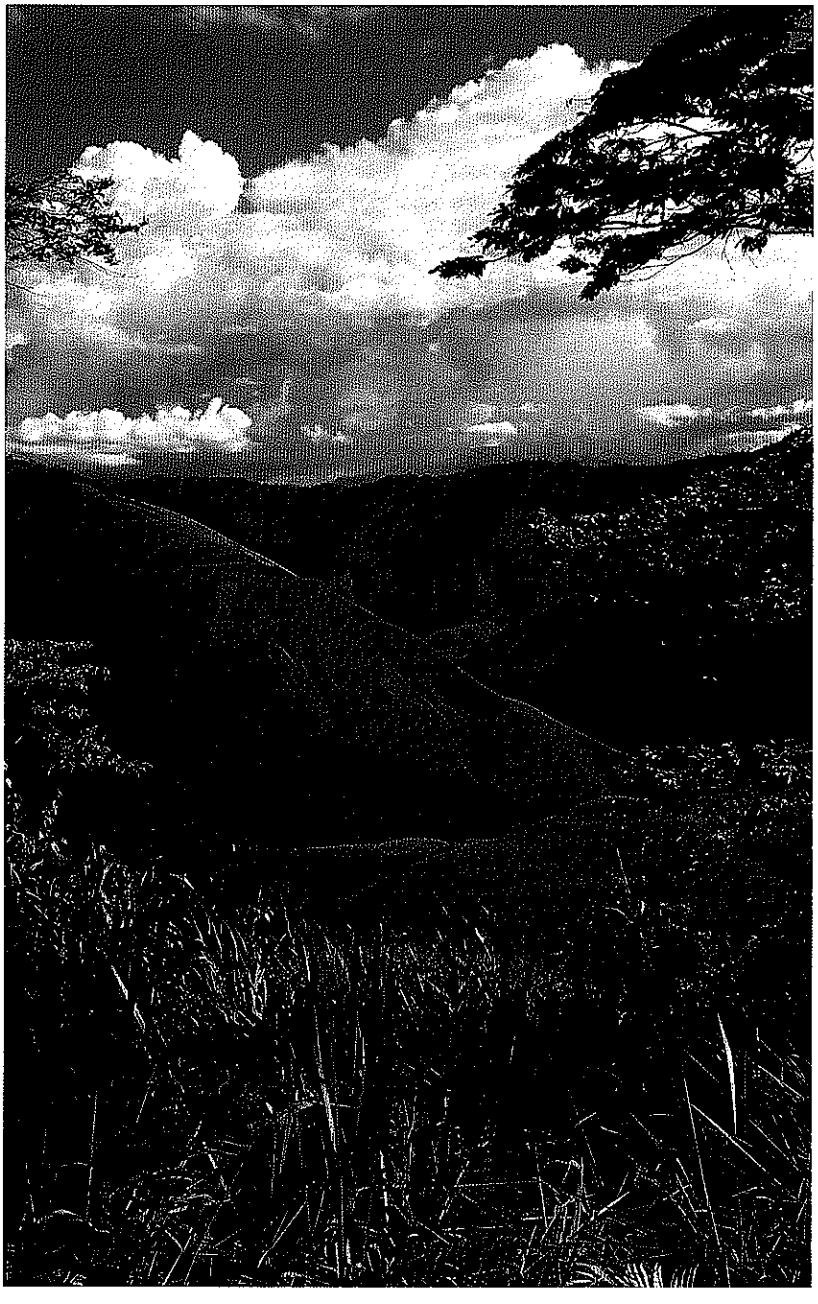
Improve the information base by strengthening efforts to gather the baseline data for establishing, managing and monitoring protected areas.

There is already enough information to justify firm conservation action on biological

and ecological grounds, and to select the most important areas for conservation of biodiversity. Nevertheless, there is still much to be done:

- Undertaking well-planned research to fill the gaps in knowledge and to help stimulate conservation action;
- Coordinating research work across the region better, including exchange of information and experience;
- Making the results of research more accessible, especially so that officials, land-managers and land-owning communities can use it;
- Giving greater relevance to conservation planning and management when planning research;
- Developing indicators and monitoring programmes to measure human-caused and other changes to marine and terrestrial ecosystems, and assess the resulting loss of biodiversity, using protected areas and other unmodified ecosystems as benchmarks.

The effective management of protected areas requires more site-specific baseline data than are currently available for many potential sites. For example, information on rate of loss per type of ecosystem, traditional and current resource-use practice, sustainable yield, etc., are not available for many of the proposed conservation sites. Combined with the overall monitoring programme proposed above, help is needed to enable managers to gather regular baseline information about their sites and other sites proposed for protection.



The Schrader range in the highlands of Papua New Guinea. To plan effective protected area systems, more information is needed about the biodiversity, ecology and local economy of areas such as these.

In particular, help is needed to collect socio-economic data that would show the full range of values and justify the establishment of protected areas on economic grounds. This would include the needs of the communities, current resource use, the full cost of resource exploitation to the resource-owners, economic, social and cultural benefits from conservation and sustainable resource use, and other options for income-generation. Such information is vital not only for the development of a compelling case for protected areas, but also for the preparation and effective implementation of management plans.

Those managing conservation areas in the Pacific are often isolated from each other by large distances, yet they all have experience that is relevant to their colleagues in other parts of the region. At the same time, a considerable body of information that can support managers in their work already exists. Ways need to be found to increase the ability of protected area managers to access information and the experience of others, both through the establishment of networks and of resource centres.

External support is needed for all of these, in particular for the efforts of SPBCP to coordinate gathering and compiling of information, and for translating research results into languages easily understood by communities and policy-makers.

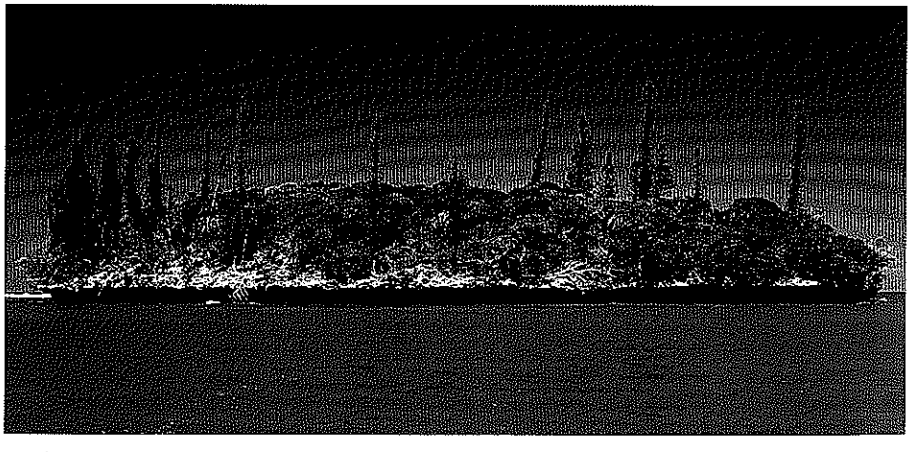
Create better public awareness, by supporting targeted awareness programmes, for example by:

- Including components on environmental awareness in existing development and conservation programmes;
- Translating key documents, such as the NEMS reports, into vernacular languages;
- As television develops in the region, putting conservation awareness material into a format that is effective on TV.

Foster the values of conservation and sustainable development.

Donors, governments, NGOs and communities are giving biodiversity conservation a much higher profile than before, but this will only succeed in the long term if the relevant parties, especially governments and land- and resource-owning groups, can internalize the values of conservation and sustainable development.

So far, the internalization process required for long-term success in conserving biodiversity through protected areas is at an embryonic stage. It will require careful nurturing. First, a powerful and compelling case for biodiversity conservation has to be built; this will require resources, imagination and a fundamental change to the way resources are priced and national accounts compiled. Then, even more difficult, genuinely self-reliant and sustainable ways have to be found whereby people in the region can improve their material well-being without destroying the environment that is so much part of their culture. It's a tall order, but in the long term the only solution as Pacific island countries themselves recognize.



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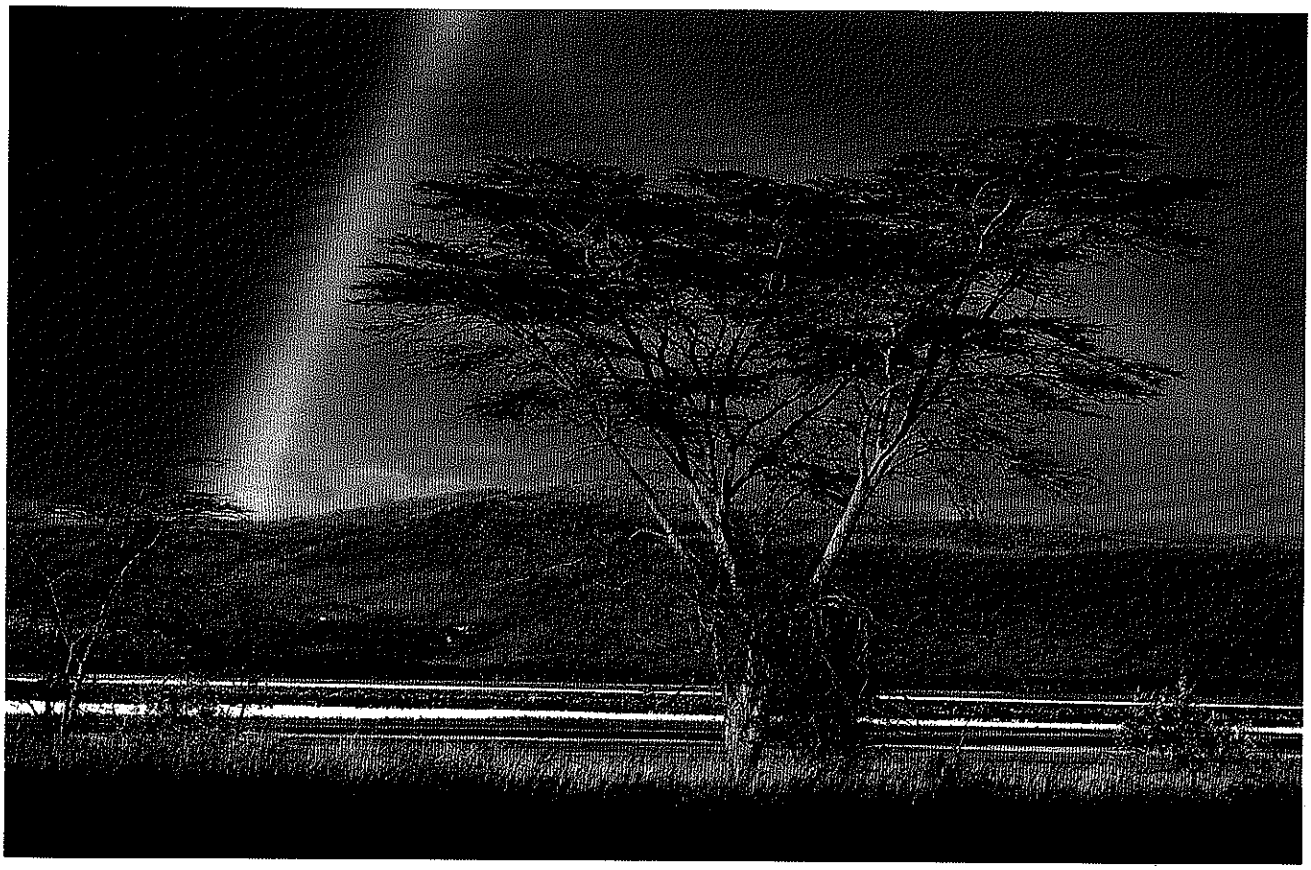

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