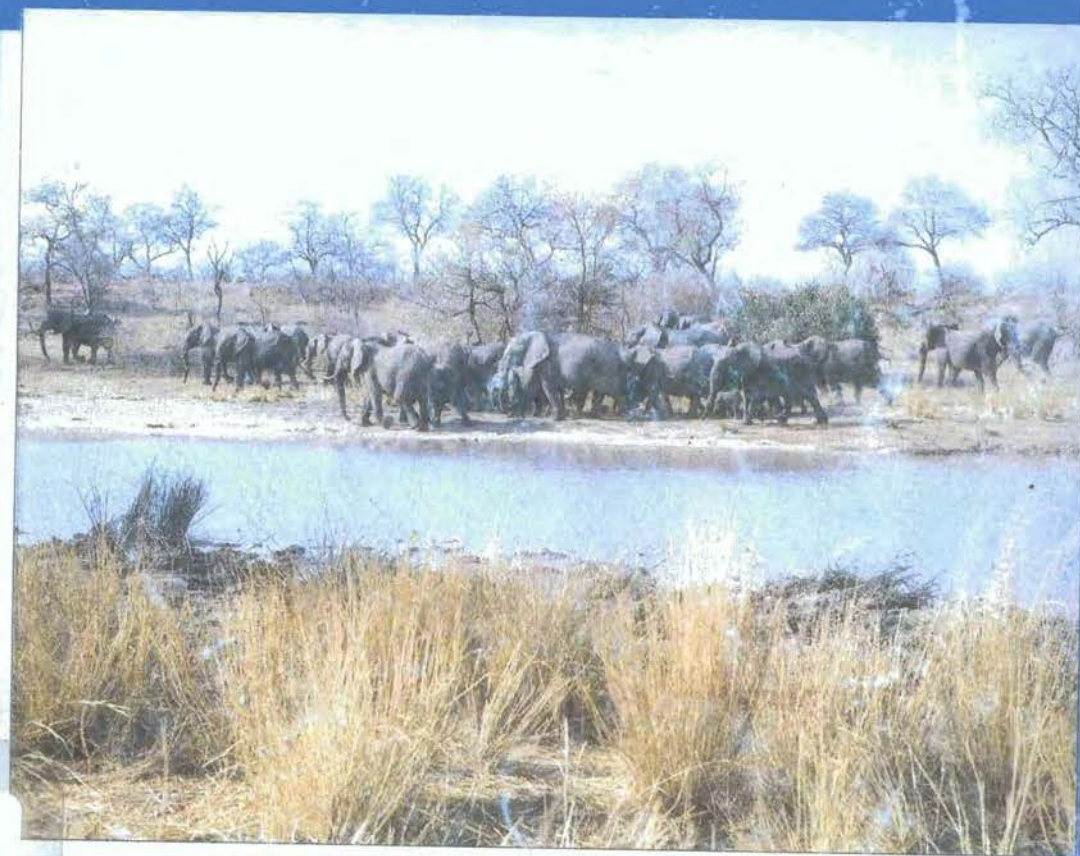


Proceedings of the IUCN Commission on National Parks and  
Protected Areas African Regional Working Session,  
Skukuza, Kruger National Park, South Africa  
11-17 October 1994

# *African Heritage 2000:* The Future of Protected Areas in Africa

Edited by  
**Robbie Robinson**



# Proceedings

IUCN Commission on National Parks and  
Protected Areas African Regional Working Session,  
Skukuza, Kruger National Park, South Africa

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IUCN – The World Conservation Union  
1995

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David Sheppard (Head: Programme on Protected Areas), Adrian Phillips (Chair: CNPPA), and David McDowell (Director-General: IUCN) are thanked for their many contributions, advice, and for their international facilitatory role. The local organising committee which I chaired, consisting of Roy Siegfried, Brian Huntley, John Hanks, Ian Macdonald, the late India Musokotwane, and Lesley Shackleton must be especially thanked for their unstinting support.

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**Robbie Robinson**



# Special Message from President Nelson Mandela

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*President*



*Republic of South Africa*

## **SPECIAL MESSAGE FROM PRESIDENT NELSON MANDELA TO THE DELEGATES OF THE IUCN AFRICA REGIONAL WORKING SESSION**

Nature is one of the many positive attributes Africa has to offer the world. The richness of our natural resources is what distinguishes us from many other parts of the world. Our challenge is to find ways to turn this to the advantage for our people and for posterity.

There are many reasons - scientific, ecological, heritage and even sentimental - which have motivated you to make many of Africa's parks famous. During this Working Session, you will definitely have to confront the challenge of finding ways to utilise and expand these assets, as one of the means of achieving socio-economic development.

I believe African countries can become world leaders in the preservation and promotion of humanity's natural heritage. Nature may be interpreted in various ways - as a basis for scientific or business endeavours; as a resource; something to look at, experience and enjoy; or as an artistic inspiration. Africa has the ingredients and the capacity to make this a niche in the world in which we are the leaders.

I wish you a constructive and fruitful meeting.

A handwritten signature in cursive script that reads "Mandela".

**N R MANDELA**

## Chapter 1

# Introduction

---

The mission of the Commission on National Parks and Protected Areas (CNPPA) Africa is "to ensure the establishment and effective management of a network of terrestrial and marine protected areas in Africa".

Members of CNPPA Africa are people who can make a useful contribution to achieving the CNPPA Africa mission. They are drawn from the following categories: senior professional managers of protected area systems; experts on fields relevant to the interests of the CNPPA; academic specialists in fields relevant to protected areas; and officials from relevant non-governmental organisations.

### **1.1 Opening Remarks and Greetings by Perez Olindo (Vice-Chair (Anglophone) for Sub-Saharan Africa, IUCN, CNPPA)**

On behalf of the President of the IUCN and the Council of the World Conservation Union; on behalf of the CNPPA Africa Region Members, the Steering Committee and all the participants to this Workshop from outside South Africa, allow me to convey our warmest greetings to the State President, His Eminence Mr Nelson Mandela, and through him to the people of this great land of South Africa.

This is a momentous occasion for us, the members of the Commission on National Parks and Protected Areas. We realise the significance of holding

this important workshop so soon after the coming into legal existence of the "new South Africa" and we wish to recognise the huge sacrifice and contribution President Nelson Mandela personally made to ensure this achievement.

We applaud the people of South Africa for having participated in the peaceful achievement of independence, a transition very few people would have believed possible.

Mr Mandela, allow me to refer to the very warm welcome which has been accorded to us since our arrival. The special message we have warmly received from President Mandela is so fitting that I find it appropriate to recognise the firm political commitment which the President expresses on behalf of his government to find ways to face the challenge to conserve the "richness of our natural resources" and turn this heritage to the advantage of our people and posterity.

To our colleagues I wish to say that we come to you with wide open arms to embrace you in complete solidarity to conserve the natural resources, not only of South Africa, but of the African continent, in solidarity with and for the betterment of the African people. Mr Minister, we come to South Africa prepared to work with you and your staff with the intention of increasing regional co-operation and, to the best of our ability, to propel Africa into a position of leadership, a niche the State President urges us to move into expeditiously.

At the political level, Mr Minister, allow me to be a little emotional because I am one of the many people in Africa who love and admire President Mandela. We applaud him and his style of leadership. We admire his patience and the humility he radiates from high office, but above all we admire the achievement of a democratic society for South Africa in circumstances where even the most optimistic among us forecast the opposite.

We are delighted to be holding the Africa Regional CNPPA meeting in the New South Africa so soon after your free and democratic elections. We waited, prayed, and hoped with you for a peaceful South Africa which you now hold as your most valuable heritage for posterity.

Allow me to share with our colleagues, the employees of the South African National Parks Board, the view that the Kruger National Park will flourish for generations to come, when you consider that the best safeguards for conservation lie in the hearts and minds of the people, especially when they identify closely with your mission and embrace this great national park as their own.

## **1.2 Opening Address by Dr Dawie de Villiers (Minister of Environmental Affairs and Tourism)**

It gives me great pleasure to welcome the members of the IUCN to South Africa and the Kruger National Park. Your visit to South Africa is an historic one — the first at this level.

This has been an eventful year for our country, a year in which we have miraculously turned from the brink of disaster towards a road of promises and new challenges. I trust that you will experience the spirit of this new nation. We are determined to make our new democracy work and to make our country walk the high road.

We have the same strong convictions when it comes to the environment. I am therefore especially delighted to welcome you and at the same time thank you and pay tribute to you for the sterling work you are engaged in to secure the future of wildlife and the natural environment for this generation and those to come. I believe that in the African context the natural environment, in particular the protected areas, has a significance which goes beyond conservation.

From the African perspective there are added dimensions to the environment. These dimensions are wider, deeper, and more meaningful in Africa than anywhere else. The natural environment is part of our intuitive spirit, not because of a deliberate deci-

sion on our part, but because it is our heritage. It has been with us since the beginning of time, and, for us, Africa is where time began.

This continent has been blessed with remarkable natural characteristics. We have an abundance of wildlife, a considerable variety of flora, magnificent land and seascapes, and diverse climatic conditions. It has been rightly remarked that we are the custodians of the crown jewels of the world's natural environmental assets.

As a result, "nature" and "Africa" have become synonymous. But for us, nature and life itself are synonymous. Our culture has crystallised from the very heart of nature itself. We have developed such a close identification with nature that it has become the flower of our spirit, the source of our resilience. All our traditions and philosophies have their roots in nature.

If we were to allow this flower to die, then our spirit would surely also wither. It is an African imperative to protect the natural environment. I do not believe we have a choice in the matter.

At the same time, there are certain facts we need to recognise. The first is that poverty is the most serious threat to our natural environment. Poverty is aggravated by the pressure of a rapidly growing population which is making increasing demands on our scarce and fragile resources. A second important fact is a lack of sustainable development: in other words, the beauty and splendour of our environment have not been sufficiently productive enough in a socio-economic sense. If our natural environment and nation are to survive, then we have to turn our national assets into more than sources of spiritual inspiration and enjoyment. They should also be transformed into forces that can raise us to new levels of sustainable development.

Nature is what Africa can offer the world. At a time when the whole world is desperately concerned about environmental degradation, the richness and variety of our natural resources distinguish us from other places and other continents. The challenge we now face is how to turn this great asset into a locomotive for socio-economic development, while at the same time retaining the beauty and splendour of nature.

Until recently, the virtues of the natural environment had been appreciated mostly by poets, artists, explorers, and a small number of scientists who were sensitive to such things. Elsewhere, attention focused on development, production, and progress. It is only fairly recently that the world has begun to rediscover its reliance on nature. Unfortunately, by the time of this rediscovery, much of our natural

heritage had already been slaughtered on the altar of material progress and enrichment.

It is against this background that Africa and its unique natural environment become very important. Tourism is an important way to utilise this valuable resource in a sustainable way which promotes both its development and its proper management and protection. I believe that our instinctive bond with nature, coupled with the expertise we have built up in managing wilderness resources, will enable us to find ways of making nature our ally while pursuing progress.

Our protected areas could, and should involve local communities, thereby creating regional economies and encouraging rural development. In agriculture we need to explore ways of conducting farming in conjunction with wildlife preservation; in mining there are many ways in which the regions could benefit more directly; and in industry we could become leaders in orienting our activities toward environmentally friendly practices.

Tourism is not only the world's largest industry, but also the fastest growing. It already generates six per cent of global GNP – no less than \$3,5 trillion.

Wedged as we are between two great ocean currents, one warm, one cold, we in Africa have a natural progression through major biomes displaying an array of life forms, not to be matched anywhere on earth for their diversity. Consider further these facts:

- This is the only place in the world where you can see the "Big Six" mammals, the sixth being something you can see in only three places in the world, namely whales viewed from the coast.
- Nowhere else is such wildlife magnificence combined with coral reefs, snow-covered peaks, bush and parkland, deserts, swamps, and wetlands.
- South Africa has a cultural and archaeological diversity which is unique in its richness and antiquity. Recently, Britons were amazed at the finding of fossil remains of Europe's oldest man, almost half a million years old. In the mountains near us – the mountains themselves being a hundred times older than the Himalayas – there roamed three to four million years ago *Homo habilis*, precursor of *Homo erectus* and *Homo sapiens*, or modern man.

Africa boasts numerous miracles of nature, such as the elephants of the desert, or the marine fish, their lagoon cut off by coastal dunes from the sea, which have evolved into freshwater fish. But I want

to focus on the people of Africa, in particular the rural poor. These people, in their folklore, culture, and history, and in their links with this continent, represent to modern industrial man living images of a world which he has lost.

Currently there is a wave of fascination with Africa and its people, and we should ride this wave so as to derive the maximum benefit for our people.

I believe that Africa can become the world leader in nature. Irrespective of whether we look at nature as something to be studied scientifically, as a resource, as something to admire, as something to experience and enjoy, as a business, or as a source of spiritual comfort and inspiration, Africa has what it takes to be the world leader in this particular niche.

In South Africa the aim of the current leadership of the National Parks Board is to move forward very rapidly within the environment of our proud new democracy, building on what is good and instituting vigorous renewal, where needed. We envisage our national parks becoming linked in the mind of the public with other national symbols such as the flag and national anthem, and gaining a status above that of parochial politics. Our national parks must be the pride and joy of all South Africans.

I would like to thank the National Parks Board for hosting this important meeting, which is the first CNPPA meeting in Africa in seven years and the first in South Africa. I wish you every success in the noble endeavour of securing the survival of our natural heritage for all time.

### **1.3 Opening of the Working Session: Address by Adrian Phillips (Chair of CNPPA)**

This is a very important event. For the first time a major IUCN meeting is taking place in South Africa. I am proud that the occasion should be a meeting of the IUCN Commission on National Parks and Protected Areas.

Allow me to say how grateful we are to the Government of South Africa for their support for this meeting, to the National Parks Board of South Africa for all the preparations, and to IUCN's regional offices in Africa and the several sources of funding (in-

cluding UNESCO and UNEP) which helped to bring us together here today.

The agenda before us is challenging. There is a lot to do and we will work hard. But the organisers have also planned for us to get a first-hand experience of African conservation. Having attended far too many conservation conferences in Hiltons and Holiday Inns, it is a pleasure to meet in these marvellous surroundings. May the stimulus of this setting exceed its distractions!

I want to say a few words regarding CNPPA and the work before us. We are, of course, one of six IUCN commissions. They represent networks of experts who give their time and expertise to IUCN in a voluntary capacity. We have some 700 members around the world: people such as heads of national parks services, directors of national parks, leading voices in the NGO movement, prominent academics, and others. In fact, like you, they are the movers and the shakers in the protected areas business.

CNPPA is organised on a regional basis. For each of our 15 regions we have a Vice Chair, but in Africa south of the Sahara we have two, one for Francophone Africa – Mankoto ma Mabaele – and one for Anglophone Africa – Perez Olindo. We also have an important marine protected areas programme led by Graeme Kelleher.

CNPPA goes about its work in four main ways:

- **By mobilising our regional networks, so as to prepare regional action plans for protected areas.** Last month we launched an impressive plan for protected areas in Europe and are now moving to the implementation phase. We are well on our way to preparing an action plan for East Asia (including China), and the preparation of one for South Asia (including India) has just begun, following a CNPPA meeting in Pakistan also last month. I hope that a similar initiative can be developed for Africa at this meeting.
- **By promoting national system plans for protected areas.** There is an urgent need for countries to plan their networks of protected areas in an organised way in response to the requirements of the Biodiversity Convention and to secure international funding. Our agenda this week deals with many of the key elements of national systems planning.
- **By advancing new concepts for protected areas, which are coming under greater pressure than ever before, especially on this continent.** We need new models which link local communities

in a mutually supportive relationship with protected areas; we need new sources of support and funding for protected areas, from industry and tourism for example; and we need focused research and monitoring and training which is relevant to the needs of the 21st century. Our agenda this week will address all these topics.

- **By strengthening CNPPA itself, so that we communicate better with each other and reinforce the influences of our unique world-wide network.** This meeting provides the opportunity to build a strong CNPPA across Africa.

You can see that each of these four themes – regional action plans, national systems plans, new approaches to protected areas, and strengthening CNPPA in Africa – is centrally relevant to our working session.

This meeting in the Kruger National Park comes at a significant moment in history, when South Africa takes its proper place in the community of nations. It also comes at a time when Africa as a whole faces human and ecological challenges on a truly awesome scale. I am sure that we share the belief that national parks and other protected areas have a vital contribution to make towards finding solutions to the continent's many problems. Let us use this meeting to agree on what each of us will do to improve the prospects of Africa's heritage in the coming century.

## 1.4 Objectives of the Working Session

It is the intention at the *African Heritage 2000 Working Session* to establish the basis for the formulation of an action plan which would contribute towards the establishment and management of a complete and comprehensive system of protected areas in Africa south of the Sahara. Issues that will be considered include:

- The integration of protected areas into larger planning frameworks.
- The expansion of support for protected areas.
- Strengthening the capacity to manage protected areas.

- Expanding international co-operation in the finance, development, and management of protected areas.

The *African Heritage 2000* Working Session will take the form of plenary sessions and workshops, interspersed with practical demonstrations and outings in the Kruger National Park and other adjacent protected areas to exemplify topics under discussion. During the Working Session position papers on aspects of concern about the future of protected areas in Africa will be compiled. Simultaneous French/English translation facilities will be available, and every effort has been made to structure the programme so as to include a balanced input from all the regions in Africa.

## 1.5 Protocol for the Development of an Action Plan

### Preamble

The Fourth World Congress on National Parks and Protected Areas, held in Caracas, Venezuela, in February 1992, produced an action plan, as a vehicle for "converting the rich, diverse and complex experience", of the Congress, "into a simple and straightforward framework for collective action by professionals involved with protected areas". The introduction for the Caracas Action Plan says that "Protected areas are needed in order to safeguard biological diversity in its own right and as an asset for the future. They provide many services to humanity, ranging from the practical to the aesthetic: from watershed protection to spiritual inspiration. Indeed, they are often the most effective form of land use, in economic as well as ecological terms. The global list of protected areas – which now includes over 8 500 sites protecting some 850 million hectares in more than 120 countries – indicates government commitment to ensuring that this generation passes on to future generations a world which is at least as diverse and productive as the one we enjoy today.

"However, these assets are under increasing threat because of a dramatic expansion in human demands upon the environment: demands which have their origins in exponential population growth, waste, and excessive consumption. As a result, the

decade of the 1990s, perhaps more than any previous period in human history, can be expected to witness intense competition for the use of natural resources and accelerating rates of change on a global scale which will affect even the most fundamental resources on which people depend: air, soil and water. If protected areas are to be a successful form of land use, they must adapt to these changes."

The Caracas Congress called for "replacing the negative image of protected areas as somehow 'set aside' from the mainstream concerns of society by a more positive recognition of protection as the process of safeguarding an area's distinctive contribution to the human community. Such a change in emphasis reflects the many values provided by wild habitats, and sees conservation as the process of maintaining essential environmental resources, benefits and services. Protected areas must become demonstrations of how an entire country should be managed."

The preceding commentary is as valid now as it was at Caracas in 1992 and particularly so in Africa where droughts and population expansion exert ever-increasing pressure on protected areas. The importance of obtaining community participation in protected areas and the development of an appreciation of the potential economic (tourism) benefits of conservation are critical for replacing the "negative image" of protected areas in Africa.

Appropriate education and training of local people and the most effective application of development aid are also key conservation issues on this continent where infrastructure and educational facilities often fall short of ideal standards.

### Categories of Protected Areas

The IUCN recognises the following international system of categories of protected areas, based on management objectives:

- **Strict Nature Reserve/Wilderness Area**  
Protected area managed mainly for science or wilderness protection.
- **National Park**  
Protected area managed mainly for ecosystem protection and recreation.
- **Natural Monument**  
Protected area managed mainly for conservation of specific natural features.

- Habitat/Species Management Area**  
Protected area managed mainly for conservation through management intervention.
- Protected Landscape/Seascape**  
Protected area managed mainly for landscape/seascape conservation and recreation.
- Managed Resource Protected Area**  
Protected area managed mainly for the sustainable use of natural ecosystems.

## Recalling and Noting

- The *Convention on Biological Diversity* calls on the contracting parties to develop systems of protected areas (Article 8).
- Caring for the Earth* (Action 4,9) and *The Global Biodiversity Strategy* (Chapter 8) both recognise the importance of developing and maintaining protected areas.
- Agenda 21* (Chapters 10-11, 13-15, 17) specifically recognises the value of protected areas in the pursuit of sustainable development.
- The Fourth World Congress on National Parks and Protected Areas drew together over 1 800 protected area professionals from around the world, who endorsed the critical role of protected areas in today's society.

## Development of an Action Plan

The *African Heritage 2000* Working Session shall be required to develop an action plan for the establishment and management of a complete and comprehensive system of protected areas in the Afro-tropical region (Africa south of the Sahara).

## Approach

The *African Heritage 2000* Working Session has been structured to provide input to a previously prepared draft action plan outline, which will be modified and expanded on as a result of presentations and workshop discussions. The approach shall commence with an analysis of the strengths, weaknesses, opportunities and threats (SWOT analysis) of the current array of protected areas in Africa. This should provide the basis for a subsequent more in-depth

review of several principal, and interacting, factors influencing the goal, now and in the future. The SWOT analysis and each of the following principal factors shall be examined in plenary and regional working sessions, in which delegates should prepare summary statements describing (i) the current conditions and (ii) future actions affecting the realisation of the goal. The latter should be examined in relation to the four principal objectives in the Caracas Action Plan, viz:

### *Integrate protected areas into larger planning frameworks*

- Develop and implement regional protected area system plans.
- Integrate regional protected area system plans into economic development planning frameworks.
- Plan protected areas as part of the surrounding landscapes.
- Develop techniques for assessing and quantifying the benefit of protected areas.

### *Expand support for protected areas*

- Identify the key protected area interests of various groups.
- Recognise priority concerns for local communities.
- Stimulate informed advocacy.

### *Strengthen the capacity to manage protected areas*

- Expand training opportunities at all levels.
- Develop means of increasing financing and generating revenue.
- Improve the application of science to management.
- Give attention to the special requirements for managing marine protected areas.

### *Expand international co-operation in the finance, development and management of protected areas*

- Clarify the roles and functions of institutions at all levels.

- Develop international and regional action plans to support implementation of the priorities established in national protected area system plans.
- Re-invigorate existing frameworks for international co-operation.

This information shall be synthesised for presentation and critical discussion in the final plenary session of the Working Session.

### Principal Factors

- Education and Training
- Tourism
- Relationships between Protected Areas and Neighbouring Interested and Affected People
- Research and Monitoring
- Convention on Biological Diversity
- Development assistance

## 1.6 Programme for Working Session

### Tuesday 11 October 1994

- 14:00 Arrival and registration
- 16:30 Tea
- 17:00 Opening Ceremony
- 18:30 Keynote address
- 19:30 Barbecue/Braai

### Wednesday 12 October 1994

- 06:00 Optional early morning game-drive
- 07:30 Breakfast
- 09:00 Plenary session – an analysis of the strengths, weakness, opportunities and threats (SWOT) of African protected area systems. Convenor: David Sheppard, Co-ordinator, IUCN Protected Areas Programme

- 10:00 Tea
- 10:20 Mini-workshops – four parallel regionally-based sub-groups convene to hold discussions based on the important points raised in the plenary SWOT analysis
- 12:00 Plenary report-back by session convenor and mini-workshop rapporteurs on resolutions and recommendations formulated during the mini-workshops that contribute to the action plan
- 13:00 Lunch
- 14:00 Plenary session. Community participation: case studies reviewed. Convenor: Patricia Walker, Forestry Association of Botswana
- 15:00 Tea
- 15:20 Mini-workshops. Four parallel regionally based subgroups convene to hold discussions based on the important points raised in the plenary presentations on community participation.
- 17:00 Plenary report-back by session convenor and mini-workshop rapporteurs on resolutions and recommendations formulated during the mini-workshops that contribute to the action plan
- 19:00 Dinner
- 20:00 Evening plenary: World Heritage Convention. Convenor: Jim Thorsell, IUCN.

### Thursday 13 October 1994

- 07:00 Breakfast
- 08:30 Special presentation: Ecotourism Manifesto. Engen
- 09:10 Plenary session: Ecotourism overview and case studies. Convenor: Noël de Villiers. The Open Africa Initiative
- 10:00 Tea
- 10:20 Mini-workshops: Four parallel regionally-based sub-groups convene to hold discussions based on the important points raised in the plenary presentations on ecotourism
- 12:00 Plenary report-back by session convenor and mini-workshop rapporteurs on recommendations formulated during the mini-workshops that contribute to the action plan
- 13:00 Lunch
- 14:00 Demonstrations. Six options will be available for delegates to select from. All six options will be available on all of the



three afternoons set aside for demonstrations. Delegates will therefore be able to sign up for a maximum of three of the demonstrations. The six demonstration topics are:

- Practical aspects of nature conservation
- Visitor services
- Technical services
- Finance and administration
- Human resources, community liaison
- Privately owned protected areas

- 18:00 Evening plenary: Marine Protected Areas (MPAs). Convenor: Graeme Kelleher, Great Barrier Reef Marine Park Authority, Australia
- 19:00 Dinner

#### *Friday 14 October 1994*

- 06:00 Optional early morning game drive
- 07:00 Breakfast
- 09:00 Plenary session: Impact of the Convention on Biological Diversity (CBD). Convenor: Jeff McNeely, Chief Conservation Officer, IUCN, CNPPA
- 10:00 Tea
- 10:20 Mini-workshops: Four parallel, regionally based subgroups convene to hold discussions based on the important points raised in the plenary presentations on the CBD
- 12:00 Plenary report-back by session convenor and mini-workshop rapporteurs on resolutions and recommendations formulated during the mini-workshops that contribute to the action plan
- 13:00 Lunch
- 14:00 Demonstrations (see Thursday afternoon above)
- 18:00 Evening plenary: The role of development assistance. Convenor: Leif Christoffersen, Consultant for World Bank
- 19:00 Traditional Theme Dinner – delegates are encouraged to wear traditional dress

#### *Saturday 15 October 1994*

- 06:00 Optional early morning game drive
- 07:30 Breakfast
- 09:00 Plenary session – Research and monitoring challenges overview – Adrian Phillips, CNPPA Chair

- 10:00 Tea
- 10:20 Mini-workshops: Four parallel, regionally based subgroups convene to hold discussions based on the important points raised in the plenary presentations on research challenges
- 12:00 Plenary report-back by session convenor and mini-workshop rapporteurs on resolutions and recommendations formulated during the mini-workshops that contribute to the action plan
- 13:00 Lunch
- 14:00 Demonstrations (see Thursday afternoon above)
- 18:00 Evening plenary: CNPPA business matters (if needed)
- 20:00 Conference dinner

#### *Sunday 16 October 1994*

- 06:00 Optional early morning drive
- 07:30 Breakfast
- 09:00 Plenary session: Educational and training requirements. Convenor: Iba Kone, African Academy of Sciences
- 10:00 Tea
- 10:20 Mini-workshops: Four parallel, regionally based subgroups convene to hold discussions based on the important points raised in the plenary presentations on education and training requirements
- 12:00 Plenary report-back by session convenor and mini-workshop rapporteurs on resolutions and recommendations formulated during the mini-workshops that contribute to the action plan
- 13:00 Lunch
- 14:00 Presentation and discussion of resolutions and recommendations – Roy Siegfried, Conservation Biology Programme, University of Cape Town
- 15:30 Tea
- 15:50 Continuation of discussion
- 17:00 Closing Ceremony
- 18:00 Night drive and braai

#### *Monday 17 October 1994*

- 07:30 Breakfast
- 09:00 Departure

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## Chapter 2

# Keynote Address

### 2.1 African Heritage 2000 Noël de Villiers

Thank you for giving me the privilege of delivering the keynote address on this important occasion.

The many French speakers here may find it strange that somebody with the surname De Villiers should be addressing you in English. The reason is that my ancestors arrived in South Africa over 300 years ago, and I am afraid that we have long since forgotten how to speak French.

I mention this both by way of explanation and in order that you may understand that I am speaking to you tonight as an African, which is what I proudly consider myself to be. My address is also concerned mainly with Africa.

"Protected areas are needed in order to safeguard biological diversity in its own right and as an asset for the future. They provide many services to humanity, ranging from the practical to the aesthetic: from watershed protection to spiritual inspiration. Indeed, they are often the most effective form of land use, in economic as well as ecological terms." That is a quotation from the protocol governing your deliberations over the next few days.

It comes from the introduction to the Action Plan developed by the Fourth World Congress of the IUCN held in Caracas in 1992. The Action Plan goes on to say that "protected areas must become demonstrations of how an entire country should be managed."

I would like to qualify this statement to the effect that, "In the African context, protected areas are set to become the biggest industry of the 21st century."

I fervently believe that this statement, holding as it does the tantalising promise of turning around the fortunes of Africa, can be translated into reality. I

equally fervently believe that those who can set the stage to make this happen are you, the people gathered here tonight.

Africa's greatest imperative is the requirement for massive socio-economic development. The same requirement applies to conservation, for we all acknowledge the futility of expecting people who are starving to regard the environment as a priority.

We have to face the fact that, to humans who are struggling to survive, it appears as an affront to their condition, a token of disregard for their plight, to be caring about saving plants and animals. To them, understandably, economics comes first.

Now, according to the norms of the modern world, the only route to achieving socio-economic development is through saving, investment, industrialisation, manufacture, and export. Outsiders constantly bewail the fact that Africa seems incapable of travelling along this route.

The opening lines of a recent *Time Magazine* essay on this subject of Africa's apparent retardation, quotes PJ O'Rourke's statement that man developed in Africa, but has not continued to do so there. They add that this sums up today's jaundiced view of Africa.

Indeed, measured by the ethos and paradigms of the Western world, Africa is not in good shape. However, I want to make an important distinction here, which is to claim that it is nonsense to measure us by Western standards.

Africa is not the West, nor is it Japan or any other place. This is Africa, and Africa is special. Africa is different. It always has been. It is this difference which today offers us the most outstanding opportunity for development imaginable in the 21st century.

In commerce, which is what drives socio-economic development, the three essential ingredients for success are the product; the people who

have control over the product, that is, who design, manufacture, package, service, and sell it; and finally the customer.

Africa has all three these ingredients in a niche where it has the potential to achieve world dominance. I want to examine each element in turn, starting with customers.

There are some 400 million tourists moving around the globe annually at the present time. They are the beneficiaries of the progress achieved to the north, west, and east of Africa, particularly over the past century.

It is good that so many economies are progressing so well, but this progress has had and will continue to have considerable implications for pollution and general environmental degradation around the globe. If 280 million industrialised Americans cause the greatest amount of pollution on Earth, one shudders to think what 2 billion industrialised Chinese will do.

The impact of this progress on human beings is going to be equally staggering.

Thirty years ago, in 1964, the great philosopher Carl Jung wrote:

*"As scientific understanding has grown, so our world has become dehumanised. Man feels himself isolated in the cosmos, because he is no longer involved in nature and has lost his 'unconscious identity' with natural phenomena. These have slowly lost their symbolic implications. Thunder is no longer the voice of an angry God, nor is lightning his avenging missile. No river contains a spirit, no tree is the life principle of man, no snake the embodiment of wisdom, no mountain cave the home of a great demon. No voices now speak to man from stones, plants, and animals – nor does he speak to them, believing they can hear. His contact with nature has gone, and with it has gone the profound emotional energy that this symbolic connection supplied."*

Coincidentally, it was around 1964 that another phenomenon started to occur, one which I doubt that Jung, then close to the end of his life, even considered. Mass tourism movements became a reality, spurred on a few years later by the introduction of wide-bodied jets; but perhaps it is more accurate to say that mass tourism resulted in the development and introduction of wide-bodied jets.

At any rate, in the thirty years since that time, tourism has grown into the biggest industry in the world. Today it creates employment for 180 million people, accounts for 10.9% of all consumer expenditure, and generates \$3.4 trillion in gross output.

Much has been written about tourism, but it is seldom asked why tourism occurs. It is simply assumed that people travel to take a break, or as a

form of escape, or to have fun, or to be with family or friends, or for similar reasons. These are all contributing factors, but they do not answer the question of what lies at the root of the tourism phenomenon.

Many of the same people who are rapidly becoming wealthier in material terms in the developed countries are finding that spiritually, on what seems to be a mirror image inverted scale, they are growing poorer. This imbalance, the occurrence of which is not so difficult to understand, constantly needs to be redressed. Consequently, and coinciding with the heartfelt call that is being heard on behalf of the environment everywhere, the fastest growing proportion of the 400 million tourists trotting around the globe annually consists of people seeking nature-based experiences.

This trend is so strong that it has already been identified as a bandwagon to be climbed on by tour operators and others, often under the banner of what is being called ecotourism. It is as though the world has suddenly woken up to what the people of Africa have always known, which is that nature, more than any other source, offers us solace, renewal, and upliftment.

But I think that the root cause of tourism lies even deeper still. I believe that the fundamental reason why people travel is to get back in touch with their own humanity.

The "progress" of the 20th century has dehumanised people. Jung was right. The 20th century has turned us into slaves of our own success. The eight-to-five syndrome, the humdrum routine, and the conformities of modern life may have put roofs over many heads and TV sets in many lounges, but it has isolated people from nature, and when people are isolated from nature, they are isolated from life.

Here, if ever, is a business that could have been designed with Africa in mind. In fact, we should now ensure that tourism is "made for Africa".

The African version of the world's biggest industry, the most rapidly expanding sector of which is ecotourism, could be a great deal more special than the forms of tourism to which people have become accustomed. It could change the face and the fate of our continent, which brings me to the second ingredient we have: the product.

The product is Africa: the continent as a whole. Commerce is about marketing, and marketing is about images and perceptions that trigger associations in people's minds. Since the beginning of recorded history, Africa has fascinated people everywhere, often for reasons which they could never adequately describe. The early Latins referred

to its mystique as *mal d'Africa*, a sort of captivating embrace which, once experienced, could never be forgotten. Discoverers were attracted to the continent, as were scientists, philosophers, and other leading personalities. They were enraptured by it, intrigued, puzzled, bemused, and stimulated. Yet, through all time, including the colonialist era, Africa has consistently and imperturbably held to its own course.

This continent boasts outstanding natural resources. Our wildlife, our magnificent scenery, and our extraordinary varieties of flora are awesome in their beauty and splendour. Our national parks and reserves are acknowledged internationally as being some of the finest in the world. There are also rich and untapped human resources. In Africa, the birthplace of humankind, the roots of global society run to the limits of their depth, exhibiting a tremendous diversity and richness of cultural heritage. The raw material, both human and natural, is here.

We could spend tonight talking about how colonisation and politics impacted on Africa. We could devote an entire day to strange African anomalies, such as the fact that Africa gave the world pop music, but itself made very little out of it; that it mined most of the world's minerals, and then passed them largely unworked to Italian jewellers and others to make money; and that it contains the largest variety of the world's plant species, from which the Dutch and Bulgarians make more than ever Africa has. Africa: remote and detached from the world of materialism.

We could also spend time reviving quotations by famous people regarding Africa: Columbus, Drake, Livingstone, Darwin, Schweitzer, Jung, Roosevelt, Churchill, and many others. Without exception, all of them grope at capturing and explaining that special quality about Africa that continues to defy description. All of this would, however, only bring us back to the present situation. And what is that situation?

- First, let us note that honesty, authenticity, and integrity of nature, as also awesome power, remain the dominant forces in Africa.
- Second, the fact that we did not industrialise and technologise has attached a rarity value to our environment, giving it the potential of becoming unique in the world.
- Third, tokens, symbols, traditions, and customs, together with myths and folklore, still form a living link with our connectedness with nature.

- Finally, collectively we have the most astonishing wildlife, floral, wilderness, marine, desert, bird, geographic, scenic, and climatic natural environmental assets on earth.

A dynamic imbalance has occurred between the pace of the modern world and the placidity of Africa. This imbalance is widely regarded as an enormous problem and the answer is often proclaimed to be that Africa must be brought up to speed. Yet there is no evidence that Africa can compete with the rest of the world in the traditional sectors of the global economy. This, far from being a problem, I believe to represent an opportunity of momentous proportions.

Authoritative predictions indicate that the number of global tourists will double by the year 2000. Imagine for a moment what the size of this market might be by the year 2050. Imagine what price people will be prepared to pay by then for the privilege of experiencing wide open spaces, sunshine, clear skies, wild animals, and places of solitude and silence. In time to come, all these natural splendours will become rare commodities, but Africa has them in abundance.

The wheel has turned full circle. This continent's underdeveloped earthiness, the very handicap that has held it back, has attached a rarity value to its natural resources, rendering them unique in the world.

Suddenly the things we have, precisely because we did not westernise, are what the West is coming to realise it has forsaken in its helter skelter pursuit of wealth. Perhaps it was ordained this way, that the birthplace of humankind should be preserved for posterity in its near natural state.

However, the challenge now, if Africa, its environmental assets, and its people are to survive and prosper, is the challenge of finding ways of turning this situation to our advantage: the challenge of taking our future into our own hands.

For too long, Africa has hung onto the coat-tails of others; for too long has it allowed itself to be subjected to imperialism; for too long has it subjugated its pride to feelings of inferiority.

Others are not going to do it for us, indeed are incapable of doing it for us: the time has come for Africa to make its own way. The future is what counts. So let me turn to the third and final ingredient for success in commerce, namely the people who control the product, that is, those who design, manufacture, package, service, and sell it. Obviously, I am talking about the people of Africa, about ourselves.

As I have asserted, we have a product with tremendous potential. We also have a market, the biggest market in the world, consisting of people who are seeking opportunities to interact with nature and the basic values of life. And we have the right people to control the product, who can manage, market and sell it – people who are charming, friendly, hospitable, warm, and whose numbers also include highly skilled academics, scientists, managers, and technological experts.

We have everything, including infrastructure. (By the way: in the tourism industry we talk about an airport as infrastructure – the rest comes naturally.) What we do not have is the correct conception among ourselves, our people, governments, businessmen and leaders, of this opportunity and our own strengths. We lack confidence, and we neither appreciate nor fully understand our own potential. We, the people of Africa, are sitting on what could become the biggest industry of the 21st century, yet many of us have failed to realise this.

Not only are we oblivious to the socio-economic value of this resource, but we are in danger of allowing it to be destroyed by default. Rather than being proud of our heritage and our traditions, we stand in awe of the values of others.

It has been said that Africa requires an economic miracle in order to survive. In our own hands lies the possibility of bringing about such a miracle. But first we need to change our mindset. We need to appreciate the extent and value of our resources, to focus on our strengths, and to adapt our expertise to become pro-active in developing a new order, a new way of doing things, not only in the environment, but in agriculture, manufacturing, mining, and all the traditional economic sectors.

As far as our parks and protected areas are concerned, we should throw our Western paradigms out of the window and start thinking indigenously. The challenge is to translate the splendour of Af-

rica's environment, the uniqueness of its spirit, and its rich cultural diversity, in a way that will capture the imagination of the entire continent, and thereafter of the entire world.

If we manage to do this, we shall also instil confidence and pride; bring together our natural wealth and national needs together in a synergistic relationship; and forge an unbroken chain of socio-environmental resources from one end of the continent to the other, for the eternal benefit of humanity, conservation, and posterity.

In effect, we shall be creating a whole range of new industries, in which all things characteristic of the African environment – its music, arts, colours, fabrics, curios, literature, plants, animals, wilderness areas, and parks – will become contextualised under an African banner of recognition.

Here is our chance to build bridges of understanding, to create jobs, earn foreign exchange, uplift society, rekindle pride, connect ourselves with the world, and fulfil expectations. Entrepreneurship will flourish, rural areas will be revived, massive injections of foreign exchange will be earned, and we shall be showing the world how development can be harmonised with nature.

I believe that Africa's time has come. Protected areas are the key. The question is: who will proclaim the vision, and who will take on the challenge of translating that vision into the industry which it could become? It has to be YOU. You have the chance to answer this and other related questions over the next few days.

By regarding national parks and protected areas not in isolation, not as areas set aside for conservation purposes, but as potentially the most valuable product on earth, you have a chance to change the course and the fate of Africa. For my part, and on behalf of Africa's people, their children and their children's children, I wish you a very successful conference.

## Chapter 3

# An Analysis of the Strengths, Weaknesses, Opportunities, and Threats (SWOT) of African Protected Area Systems

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### 3.1 Introduction and Global Context

David Sheppard

I believe that we were all inspired by the address by our keynote speaker, Noël de Villiers. This address left me with three messages:

- The need to take pride in Africa and African ways of doing things, coupled with the realisation that things that may be perceived as negatives could in fact be positive.
- The pivotal role of protected areas in ensuring a dynamic future for Africa.

The need for a driving force, if this role is to be fulfilled – a force to develop and energise a vision for protected areas into the next century. Mr De Villiers has laid down the challenge to this group to provide the driving force, and I am sure you will all rise to the challenge.

This session is the SWOT analysis – an analysis of the strengths, weaknesses, opportunities and threats of protected areas in Africa. The three objectives of the session are:

- To introduce key issues relevant to protected areas and biodiversity in Africa.
- To set the scene for subsequent sessions: this SWOT analysis should provide a broad context for the more detailed analysis of particular issues.
- To encourage effective and lively debate.

Given the collected experience in this room, I am sure we are going to have a really productive working session. Having such a wide representation from throughout Africa, both Francophone and Anglophone, is a tremendous opportunity. I urge everyone to make the most of this opportunity by getting involved and participating fully.

Before handing over to our two main speakers, I would like to briefly revisit the Caracas Congress of 1992. This congress defined a broad global agenda for protected areas. There were four key messages:

#### **We need to broaden the forms of protected areas**

The Caracas Conference laid it on the line – we who are involved in protected areas often have a very narrow focus. We tend to look at protected areas in isolation from the broader issues in society.

Having been involved in protected areas for a long time myself – like everyone else here – it is easy to see the reason: we are often just too busy to take the time to look at the big picture.

Mr De Villiers pointed out that we need to shift protected areas to centre stage. We need to restore them to their rightful place as the cornerstone of national efforts to conserve biodiversity. They also represent a major “engine room” for ecologically sustainable development through encouragement of appropriate activities such as ecotourism.

#### **We need to expand support for protected areas**

Too often protected areas are viewed as separate from the needs and aspirations of local communities.

Any vision for protected areas in the 21st century must factor in the needs of local people. There are some very positive signs that protected area agencies worldwide are starting to grapple with this issue, and none too early.

It is pleasing to note that some of the most effective and innovative programmes for community involvement are in Africa. I have seen many programmes in many parts of the world and it is my view that activities such as Campfire in Zimbabwe and Admade in Zambia are leading the way.

### **We need to strengthen the capacity to manage**

If protected areas are to be the force that they should be in the next century, then effective institutions are essential. Existing institutions need to be strengthened in a sustainable way. Financial assistance from donors and others must aim to build strong vibrant institutions which have a life beyond the specific intervention.

We need to encourage African leadership and innovation in protected areas. We also need to look at other ways of managing protected areas, such as the involvement of the private sector and NGOs in protected area management.

Africa has led by example, with innovative projects such as the Kosanka Trust, a private trust managing protected areas in Zambia and also the Banc d'Arvin park in Maniitavia, which is partly privately owned.

We need to be innovative, to learn from the examples of others and then develop responses tailored to the needs of specific African countries.

### **We need to improve regional and international co-operation**

This meeting is a positive demonstration of regional and continent-wide co-operation. It is also a clear indication of the potential of networks such as the IUCN's Commission on National Parks and Protected Areas. We need to strengthen these links and use them to improve our planning and management of protected areas.

We also need to forge partnerships at the international level and involve donors in a pro-active way in relation to protected areas. The role of donors is becoming increasingly important in protected areas as we move closer to the next century. It is important to establish an effective dialogue to ensure that

resources are allocated in the most effective and efficient way.

A final point in relation to regional co-operation is the importance of focus. It is vital to identify clear targets and responsibilities. The development of regional action plans can play an important role. There is potential here and a need to build on an existing action plan for Africa.

It is significant that we have a strong presence here from Francophone Africa. Many of the challenges there are minor to those in the rest of Africa, but there are precious few opportunities to share and learn from this experience, and I hope that this meeting is a first step towards rectifying this. Mr Pascal Oude, one of the main speakers, will speak on behalf of Francophone Africa. Mr Oude is from the Game and Wildlife Department in Benin.

The next speaker, Mr Lota Melamari, is Director-General of Tanapa (the Tanzania National Parks Service). I had the good fortune to attend the meeting in Serengeti last year which laid the groundwork for this meeting. Mr Melamari was the host of that meeting, and he plays a leading role in protected areas in Africa.

## **3.2 Key Issues Facing Protected Areas in Eastern and Southern Africa**

Lota Melamari

The Eastern African countries of Kenya, Uganda, and Tanzania represent a very important part of the African continent, with their unique bio-ecological zones that support a rich biodiversity. This region has some of the largest and oldest national parks, game reserves, forest reserves, and other protected areas to be found anywhere on the continent.

Among the most outstanding national parks and protected areas (NPPAs), in terms of size, are:

- The Selous Game Reserve** (Tanzania)  
Established in 1921  
4 500 km<sup>2</sup> (4 500 00 hectares)
- The Tsavo National Park** (Kenya)  
Established in 1948  
20 800 km<sup>2</sup> (2 081 200 hectares)

- The Queen Elizabeth National Park (Uganda)**  
Established in 1952  
1 476 km<sup>2</sup> (1 476 300 hectares)
- The Serengeti National Park (Tanzania)**  
Established in 1951  
14 763 km<sup>2</sup> (1 476 300 hectares)

The East African Protected Area Network represents some of the most important bio-geographical zones in the world:

- Both the lowland and highland forests systems are represented by:
  - Udzungwa Mountains in Tanzania
  - Mt. Kenya and Aberdares in Kenya
  - Rwenzori Mountains in Uganda
- The *Brachystegia* woodlands are represented by:
  - Selous Game Reserve in Tanzania
  - Katavi National Park in Tanzania
- The dry Savannah system is represented by:
  - The Tsavo National Park in Kenya
  - The Mkomazi Game Reserve in Tanzania
- The typical Savannah systems have a very large representation in all three countries:
  - Serengeti National Park in Tanzania
  - Queen Elizabeth National Park in Uganda
  - Amboseli National Park in Kenya

The national parks and protected areas (NPPAs) of East Africa are rich in fauna and flora, both in variety and in numbers. Endemism is very high in some of the areas, which further increases their importance as biological systems. In addition to their large size and rich biological resources, the NPPAs of East Africa have considerable potential to exploit the flourishing tourism industry in the region.

Some of the major weaknesses in the management of these protected area networks are:

- Lack of centralised planning.
- Inadequate manpower resources (quantitatively and qualitatively).
- The general lack of local participation in conservation.
- A lack of tangible benefits accruing from the conservation programmes to local people.

- Inadequate budgetary allocations, which do not permit putting in place comprehensive management programmes for the protection of the protected areas' exceptional resources.

Although adequate measures have been taken to establish a network of national parks and protected areas in the region, the future of these areas is threatened by the rapid increase in the human population (annual growth averages about 3,8%), and the concomitant increase in agricultural settlements.

This increase in settlements is occurring mainly in marginal areas which have traditionally been used for wildlife and livestock grazing and which are not suitable for agricultural activities.

The increase in agricultural settlements has not only claimed land that was traditionally used by wildlife, but has also blocked important movement and migratory routes into dispersal areas for most wildlife. This blockage of important routes is a serious threat to the long-term survival of natural resources and protected areas.

Poaching is a further serious threat which could lead to the near extinction of some of the most important of the large mammals. Any relaxation of international rules governing the commercialisation of certain wildlife products (particularly in respect of elephant), coupled with the uncontrolled trade in live animals, could mean that we may witness the demise from this planet of some of its most magnificent creatures.

The rapid growth of tourism in our region is both a blessing and a threat to the well-being of the national parks and protected areas network. Although we believe that we should encourage tourist investments and utilise the benefits derived from them for our economies, we should avoid the temptation of sacrificing our natural resources for the sake of profits.

The responsibility for ensuring that this does not happen to our protected areas falls to us who are gathered here and to our resource managers in our respective countries.

As stewards of protected areas, we have the task of finding the appropriate balance between resource preservation and use. We must ensure that this global heritage entrusted to us by mankind is perpetuated for the benefit of future generations. We boast of having some of the largest protected natural areas in the world, and we must do everything in our power to ensure that what we enjoy today is preserved for our children to cherish: we are living on resources borrowed from them.



## Background Information

Ingenuity and foresight helped create a commendable series of national parks and protected areas in Kenya, Tanzania, and Uganda between the years 1920 to 1970. Although some additions were made during the past 20 years or so, the most important areas were gazetted around the middle of the 20th century.

East Africa, comprising the three countries of Kenya, Tanzania, and Uganda, is a repository of a rich biodiversity. The diverse physical environments, ranging from the deepest lake in Africa (Lake Tanganyika) to the highest point on the continent (Mount Kilimanjaro) straddle the Equator and boast an unparalleled set of ecosystems, realms, and habitats suitable for numerous and abundant biological life forms.

The governments of the three countries have taken commendable steps to set aside large portions of their land areas for conservation purposes.

The core protected area network (i.e. national parks, game reserves, forest reserves, nature reserves, and marine reserves) covers the following total land area in each of the three countries of the region:

- Kenya: 8%
- Tanzania: 20%
- Uganda: 15%

Details of each of the three countries' most important NPPAs are supplied at the end of this chapter.

## Brief SWOT Analysis for the Region

### Strengths

The situation in **Tanzania** differs from that in many other countries on the African continent, because the division of responsibilities in the management of protected areas ranges from area specific to function specific. This has been highly successful, leading to a sharp increase in the number of game reserves, from four to twenty three, and national parks, from two to twelve, over the past four decades.

The division of responsibilities has worked very well and has enabled the country to apply its limited resources where it would achieve the maximum results.

The ability to plough back all revenue earnings in order to meet the recurrent and development budget for parastatal organisations managing protected areas has been the single most important reason for the success of national parks and conservation area authorities in the country.

Protected areas falling under government departments do not share this advantage. All the revenues generated by activities in the areas under their authority are deposited with the central government.

In **Kenya**, the wildlife sector has fallen under a single umbrella – the Kenya Wildlife Services (KWS) – since 1991. This organisation administers 24 national parks and 22 game reserves, covering a total area of 44 000 km<sup>2</sup>, representing 8% of Kenya's total land area.

With the exception of Tsavo (East and West), Kora, and Sibilio national parks and the Masai Mara, Marsabit and South Turkana national reserves (each of which covers an area of more than 1 000 km<sup>2</sup>), all the other parks and reserves are relatively small and average only a few hundred square kilometres each.

The biggest strength of KWS lies in its Field Force Unit which has achieved outstanding results over the past few years. Poaching has come to a standstill in Kenya, and the populations of once endangered species such as rhinoceros and elephant are now on the increase.

Another strength of Kenyan NPPAs is donor funding. This has helped KWS build good infrastructure, including roads and staff housing, in all its national parks and national reserves. Transport and communication are both very good, and this has greatly boosted personnel morale.

As in Tanzania, **Uganda's** protected area management is divided between parastatal organisations and government departments and therefore enjoys the same positive attributes.

Uganda's protected area network is supported by one of the oldest research institutions in the continent, the Uganda Institute of Ecology (formally the Nuffield Unit of Tropical Ecology).

Uganda has a Community Conservation and Extension programme that assists in creating a sense of ownership and responsibility in the local communities, thereby fostering support of conservation efforts.

### Weaknesses

The major weakness shared by all three countries is the lack of centralised planning to produce compre-

hensive general management plans for each national park and protected area.

General management plans have an important role to play in setting overall direction and providing guidance with regard to the management of protected areas. So far, only a handful of these areas have management plans, with most of them being developed during the past five years.

Another serious weakness is the legal framework under which these areas are being administered. Almost without exception, the enabling legislation for the protected areas in the region is outdated and fails adequately to address important issues such as land-use rights, local community benefits, rural development, and even the development of tourism infrastructure. These laws are in urgent need of review.

Similarly, the three countries in the region do not have national environmental and conservation policies to guide the proper management of protected areas. The land tenure systems in the region do not serve the interests of protected area management well, especially given the current move towards privatisation and subdivision through provision of leaseholds.

There is a shortage of funds to manage these areas adequately. Another general weakness is inadequate manpower quality and quantity to cover all the technical fields currently being handled by the organisations entrusted with the management of these areas.

Research which is currently being done in these areas does not adequately address management issues and is planned in the absence of comprehensive research plans for all the protected areas in the region.

### *Threats*

Tourism is a major threat to the region's national parks and protected areas. For example, in Kenya the industry has experienced unprecedented growth, and Kenya is one of the major tourist and

resort destinations on the African continent. Last year a total of 850 000 tourists visited Kenya.

Another serious threat is the rise in human population figures, which results in increased demands for arable agricultural land. These pressures lead to encroachment on national parks and protected areas and culminate in conflict between protected area managers and rural communities, because agricultural activities are incompatible with protected area management.

Agricultural activities such as the cultivation of crops block access to important dispersal areas and migratory routes and corridors for wildlife. There exists a real danger that the list of endangered and threatened species may grow longer as a result of habitat fragmentation and environmental pollution.

### *Opportunities*

Kenya enjoys good investments from the private sector and very good donor participation in its endeavours to manage its protected area network. It has many revenue-generating activities which have made this positive economic situation possible.

With careful planning, there are good opportunities for the region to turn what are currently seen as threats and conflicts into harmonious coexistence, provided local community participation and involvement in conservation are actively pursued through a well-tailored community conservation service.

Because of the goodwill and support of the local political elites, there are likewise good opportunities to strengthen ongoing general public education in order to promote protected area management in the region.

## **References**

- IUCN. 1994. 1993 United Nations List of National Parks and Protected Areas. Prepared by WCMC and CNPPA. IUCN, Gland, Switzerland and Cambridge, UK.

## Chapter 4

# Community Participation

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### 4.1 Fantasy and Reality of Community Participation

Pat Walker

I would like to thank the organisers for giving me the honour of convening and chairing this session.

I was asked to take cognisance of the World Heritage Convention. This was an automatic action in view of my subject and, therefore, as the papers will indicate, we have addressed in sequence the traditions and cultures of Africa and their role in conserving our wildlife heritage along with the land and other resources.

#### The Dilemma of Protecting Species and Culture: The Fantasy of Community Participation

Many conferences and meetings have belaboured the issue of parks and protected areas and the difficulties of ensuring their safety.

Other conferences have been concerned with those affected by the creation of parks and protected areas, and they propagated the rights of local communities, and, even more fanatically, the rights of "indigenous peoples".

What has received very little acknowledgement has been the role of democracy and the cultural practices of the people, and the issue of how the monetisation of wildlife and natural resources has affected the natural, cultural instincts of the people to conserve.

Modern democracy, whether independently initiated, or, as in most cases, superimposed by western pressures, has damaged the conservation of subsistence Africa. When the issue of community participation does arise, it is treated in isolation from its history.

I have chosen the speakers at this session in order to focus on what I consider to be the important and necessary confrontation between Africa's traditional management and its modern approaches. I could have chosen an easier route, but then I believe I would have failed the five cultures that raised me and neglected to seek views that might assist field workers in dealing with the day-to-day realities of modern democracy and international controversies regarding conservation. In particular, as a rural girl I would have failed to draw attention to issues that affect the people of Africa.

I believe that, as conservationists and environmentalists who influence the decisions that affect local people, we should address ourselves more specifically to issues concerning local participation.

It is not possible to consider a wide range of cases, so I have chosen to pick the two contrasted examples of Botswana and Zimbabwe.

#### Objectives

The objective of this session is to come up with measurable targets aimed at safeguarding natural resources within protected areas, without disadvantaging the neighbouring communities to such parks and reserves.

Central to achieving this objective is the encouragement and facilitation of public participation in activities that will ensure resource availability in future, both inside and outside such parks.

## 4.2 Case Study: Botswana National Parks and Wildlife Management Areas

Pat Walker

It would seem that those concerned with conservation have recently come to recognise that there is a need to involve in some way the inhabitants of the various ecosystems in their management to ensure their perpetuity.

What that form of involvement should be is, perhaps, what the Community Participation Session is all about.

It is particularly important to understand and define what we mean, what we intend to do, and whether the approaches that we come up with will merely add to the burden of the conservationists. However, it is also important to realise that the worst we can do is to leave rural communities more confused and even more desperate than before, by promising what is not achievable.

Peoples' involvement is particularly important in Africa, where resources have been very close to hand. This close relationship has always been affected by development pressures both at home and, especially, in the external world. The need to conserve the world's resources and its cultural heritage is of as much interest to the local people as it is to the international community. In the author's view it is important to review the history of resource management among local people and how it has been subjected to modern or colonially based democracies, before looking at the options available to us.

It is convenient to exemplify these traditional management practices with the case of Botswana whose conservative and cautious approaches to change offer greater options now than most African countries.

In tree resource studies, however, it is possible to quote similarities in management in Somalia (Shepherd, 1988) and Mali (Skinner, 1988). Shepherd (1992) outlines over 100 instances in traditional management of tree resources in 20 African countries and explains why they should have been taken into account before nationalisation of resource management was imposed.

Africa has for long been subjected to criticism on the basis of, for example, tribalism, ritual practices, and tribal factions. The negative aspects of tribalism have overshadowed the achievements of tribal administration of land and the management of re-

sources. In this paper, Botswana has been selected as a case study to exemplify the confrontation between traditional democracy and resource management practices, on the one hand, and current approaches, on the other hand.

The intention is to focus on management systems, with a view to formulating the best options in making resolutions.

### Botswana's Historical Management and Administration

#### *Traditional Management*

Traditionally, Botswana has been managed through tribal land divisions. It is a country that has had very little friction between tribes. In part this can be ascribed to a sparse population in a relatively large country and a smaller number of tribes than in most other African countries.

This outline presents an over-simplification of the tribal structure of Botswana. The so-called major tribes of Botswana actually constitute aggregations of different tribes living harmoniously together.

One key aspect of Botswana has been the acceptance of the unique nature of the cultures of the different peoples/tribes. The acceptance of the uniqueness of the tribes is portrayed in the village arrangement of many tribal administration centres. This paper uses Serowe Village, the Bangwato Reserve Headquarters, as an example. The structure of Serowe as a Bamangwato tribal administration centre is shown in **Figure 1**.

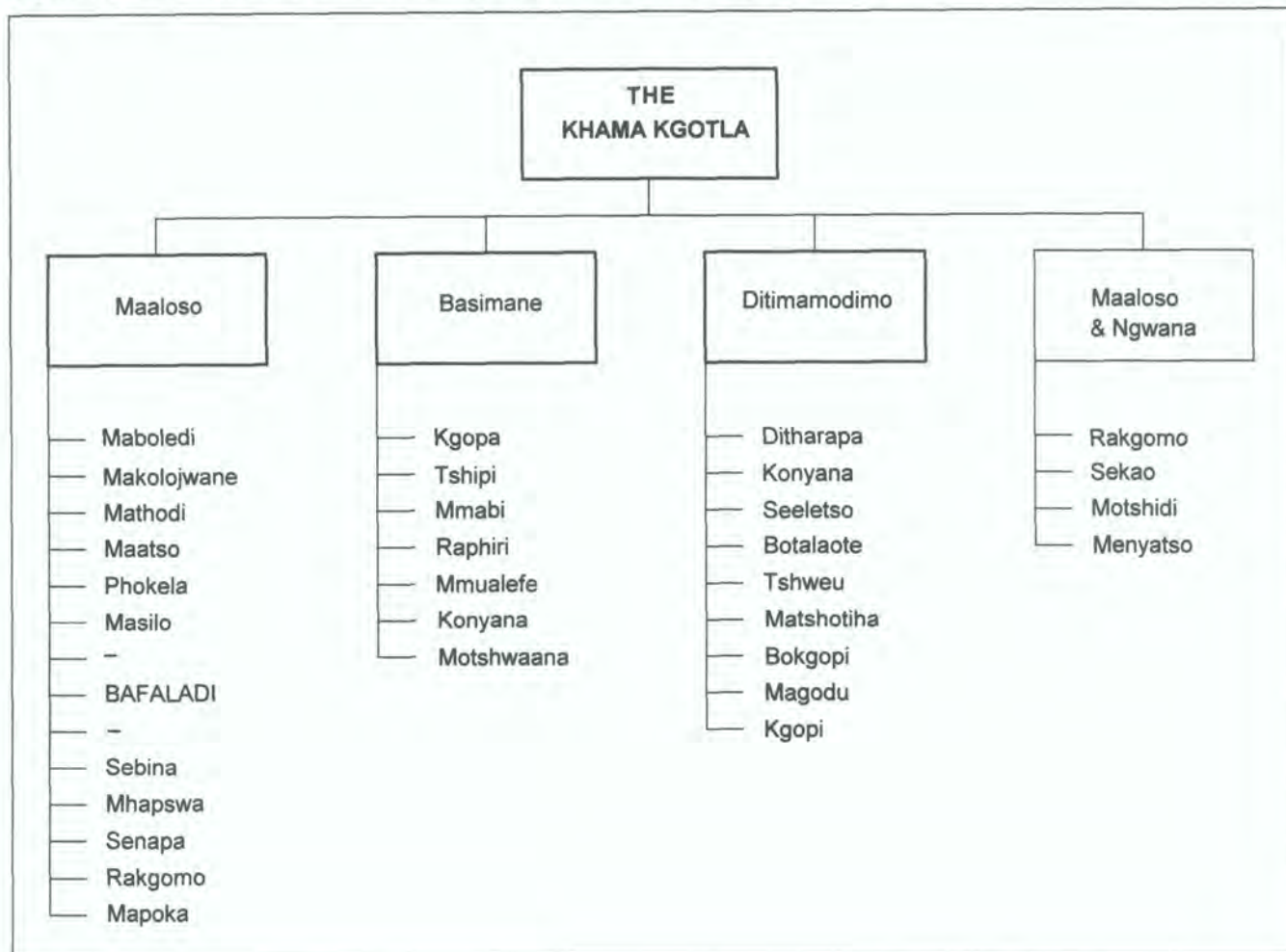
Schapera (1955) suggests that this sectioning of Dikgotla into subdivisions developed from an earlier, more centralised system.

He also suggests that the chief sons were hierarchically placed within a Kgotla. Radiphohu Sekgoma (92 years old), explains that the sons of chiefs were never placed in one Kgotla, in order to avoid family disputes over rank.

He says that the importance of developing dikgotla was in recognition of the three-site system whereby some people would spend much of their time at the cattle post or the lands and would not be strongly attached to the village which was responsible for their administration.

Belonging to a Kgotla means that everybody belongs to his village and is never a visitor at the administrative headquarters. They would also have a clearly defined role as resource overseer in their different cattle posts or lands within the tribal areas as a whole.

**Figure 1:** The structure of Serowe Village as a Bamangwato tribal administration centre.



### *Management of Natural Resources*

The tribal land is the unit on which all natural resources have a base for production and utilisation. Traditionally in Botswana the chief was the custodian of natural resources (land and its resources). Thus the resource manager oversaw tribal assets in complete terms, whether they are the grazing or the wildlife resources.

Spinage (1991) suggested that it is difficult to say to whom the wildlife or any other natural resources belong under this system. They belong to the chief by virtue of his *de facto* responsibility for tribal resources, for the purpose of administering their utilisation and conservation for the future generation to whom they will revert.

Spinage (1991) maintains that the chief could allocate himself the best land. Indeed he also got free labour and other benefits from his tribe for crop production ("Tshimo ya lesota"). This has often been

misconstrued to mean that the chiefs served their own interests and oppressed the masses. However, the chief was expected to meet certain obligations to the tribe, especially new arrivals ("bafaladi"), and the disadvantaged. During droughts it was the chief's storage ("sesigo sa Kgosi") which fed hungry people. It was for these reasons that he was afforded priority of access to better resources and, unless his requests were outrageous, they were approved and accepted by the people ("Morafe").

### *Community Management of Resources*

Traditionally, each settlement had a resources overseer (Hitchcock 1980, Devitt 1982), his role being to observe the status of the grazing and report to the chief if there was concern over availability.

A big Kgotla "Kgotla e tona" meeting would then be called, where the public discussed the prob-

lem. At the meeting the decision could be made that a number of people had to move to reduce the pressure on resources. The movement might be, and often was, by a group or clan of people. Examples of these are movements of the cattle posts to sandveldt "Ko metlhabeng ko bo Kolokwane" to reduce grazing pressure on Bamangwato cattle posts.

### *The Tree Resources*

In many parts of Botswana the strategies for the management of tree resources have been well-documented and highlight the taboos which traditionally existed as a form of resource protection.

In addition, specific tree species have been protected through "melao ya kgosi" ("chief's decrees") and the promotion of proper utilisation methods. For example, among the Batswapong in the Tswapong Hills, within the Bamangwato Tribal Land, pollarding of *Spirosytachies africans* was traditionally practised.

This ensured multiple regeneration of droppers and poles from one stem while saving the regenerating sprouts from goats' browsing. A stand was set aside in Pilikwe and no harvesting was allowed by the chief.

A chief's representative was designated to ensure compliance with these restrictions and he, in turn, delegated some of the responsibility to a regiment "mophato" – a procedure which was accepted and supported by the villagers.

With the transfer for resource to the cash economy, in 1976 (ARB 1981) a company (Messrs Bornman, Pelser and Gird of the Timber Concession (Pty) Ltd) applied to the Land Board for a licence to exploit this stand and other hard woods in this area and along Motloutse river. The Ngwato Land Board refused to grant this licence, on the grounds that this resource belonged to the villagers and that its utilisation could only be explored in consultation with the villagers.

An application for a similar request was given to Mr Jansen under the Forest Act, Section 15. This licence was referred back to the Forestry Unit by the Ngwato Land Board and was subsequently withdrawn by the Forestry Unit (ARB, 1981). It would seem that none of the applicants followed up the Land Board's response.

Similar setting aside of woodlands was reported in the Barolong farms. Logagane/Hebron farm, currently headed by Chief Phetlhu, is still an area whose harvesting is controlled by molao wa Kgosi (Walker, 1992).

Schapera (1943) documents management of trees among the Barolong Boora Tshidi in Barolong Farms. In view of the limited land, the Barolong anticipated the potential depletion of trees and therefore Wessels, the son of Montshioa, regulated the cutting of brushwood through permits. The resource overseer "Moagisi" was consulted when such brushwood was required. He would first recommend that the individual should cut from his own cropland; if the person did not have cropland, Moagisi would agree with him/her on an appropriate, better-wooded site for cutting.

On the other hand, it was forbidden to cut *Acacia erioloba* in the village, because of its limited availability and its durability. It was the view of Barolong (Walker, 1992) that government should reinforce such efforts of the chiefs to conserve the tree resource.

It has been argued that people of semi-arid Africa have not demonstrated responsibility towards good management in communal areas. Based on a two-year study of Barolong farms, Walker (1992) has argued that the rural communities have not been given the opportunity to develop optional strategies but have been subjected to colonially based solutions which took matters out of their hands.

### *The Management of Wildlife Resources*

There are five game reserves and three national parks in Botswana. According to the Director of Wildlife and National Parks (Hunter, 1994 pers comm.) game reserves are used/managed the same way as national parks in Botswana. This paper will therefore use the term "game reserves" to mean both game reserves and national parks.

Although all game reserves were gazetted or promulgated after independence, between 1966 and 1979, it is true that the conservation of wildlife in Botswana goes back a long way beyond the protectorate days.

As suggested by Spinage (1991), what may be subject to debate among lay people is whether the current game laws of Botswana were imposed on Botswana, as suggested by Schapera (1984), or whether they reinforce the traditional regulations of wildlife utilisation.

Whatever the individual interpretation of current laws and their origin, it is clear that the present wide range of wildlife cannot simply be ascribed to the good management of modern democracy without acknowledging that the foundation was build by the chiefs of Botswana and the elders in ancient history.

Nor can it be ascribed to British protection after 1885.

The verbose nature of Botswana game laws arises, on the one hand, from the common interest of the chiefs and the British administration to conserve and, on the other hand, from the traditions of the chiefs which entailed guarding the interests of the local communities, especially those whose lives were intricately tied to the natural resources.

### *Totemic Laws*

By far the best documented and appreciated of the practices of Botswana are totemic laws, in terms of which certain tribes do not eat a particular animal (Schapera 43, 1955, 1984, Spinage 1991, Bromfield n.d.). Nearly all western papers in this field discuss the totemic laws at length. For example, the Bangwato do not eat the duiker, Bakwena the crocodile, Bakgatla the vervet monkey, and so on.

To emphasise totemic laws in conservation is to marginalise the traditional management of wildlife use. Very few Bangwato would not eat the duiker, and they would have few hesitations about killing it and passing it on to those who did eat it.

Some Bakwena do not eat the crocodile, but since their tribal area is remote from any habitats where crocodile have ever existed in significant numbers, this has been of questionable benefit to the crocodile population. A good number of people in Shoshong are Baphaleng, which means that their totem is the impala. They do observe its breeding closely within the area, they do not touch or eat its hooves ("ditolwana"), however, they do eat the rest of the carcass.

The fact that totemic laws are well-documented is perhaps related to the fact that they exert a fascination for the Western writer. They are taken for granted by the African observer. Totemic laws dominate the literature, because they are peculiar and are consistent with other odd practices of Africans, along with their tribes, their factions and so on. In actual fact, however, totemic laws play an insignificant role in conservation in Botswana. What, then, is central to resource conservation in Botswana?

### *Population and its Subsistence Nature*

It would be giving too much credit to tradition to assume that the sparse population of the country has not played a part in the current population of wildlife.

Traditionally, a Motswana could hunt within his tribal area for the meat he needed (this applied to

meat for the pot and not for sale, barter, or any exchange purposes). This applied mainly to small to medium game, but included bigger animals such as impala and, to a certain extent, kudu.

Among the birds the guinea fowl and the ostrich could be hunted, but the kgori bustard was certainly sacrosanct. Large animals were protected by "molao wa kgori" ("chief's decree") and animals such as the eland, the buffalo, the giraffe, gemsbok, and the zebra could not be killed without the chief's permission.

The kgori bustard bird was only killed for moshomo to the Chief, not because the meat was tasty and the chief was a selfish and greedy person who wanted the best for himself, but because the kgori bred poorly and it was deemed necessary to avoid hunting it to extinction. The system further discouraged the killing of the bird because of the added responsibility of travelling long distances to hand it over to the chief.

### *Hunting Practices and Meat Preservation*

The methods of killing used were of such a nature that massive slaughter of animals was not possible; equally the lack of refrigeration and inadequate means of preserving meat set limits to what could be killed by each family at a time (Bromfield n.d.).

As noted, large animals were killed only with the chief's permission. They were killed in winter and the meat was dried. The biltong was saved for se-shabo during the rest of the year. Sunday lunch with pounded meat was something to look forward to in many a young person's childhood (my childhood experience, I am told, was similar to that of many other children).

### *Observation of Breeding Season*

The breeding season for all species was closely observed in many tribal wildlife management systems, this period being "Phalane-Marua a lwala to letlhahula".

Spinage (1991) describes this period as lasting from September to February (some six months). This allowed sustainable use of the resource. However, "owners of the earth" (beng ba lehatshe), the Basarwa and those tribes whose lives were intricately tied to this resource, hunted meat throughout the year.

In part this was also because their methods of hunting did not threaten wildlife populations and hunting was their source of livelihood.

### *Moshomo/Tribute*

While on this topic, let us visit the idea of moshomo: for any wildlife killed, certain parts of the animal went to the oldest person in the area (banna bagolo kgotsa basadi bagolo). These were the kidneys and the eyes. It did not matter whether the elder was a Basarwa or from any other tribe.

This moshomo provided two services and opportunities in Botswana's culture. The first is that the old and disabled were provided for. Secondly, in view of their responsibility to advise the young, it gave elders the opportunity to monitor the amount of wildlife killed and to provide advice or caution accordingly. Incidentally, the giving of parts to elders applied to livestock killings as well.

Harvesting kgengwe, leruswa and other tubers of the wild brings back memories of caution in the management of these watery plants. After taking the tuber of root you were advised to cover the plant to enable it to regrow from the shoot underground.

### *Melao: The Chief's Decree*

As already recounted, traditionally wildlife utilisation was regulated by chiefs. The major species such as eland, giraffe, kudu and gemsbok were traditionally not killed without the permission of the chief.

The elephant was a highly respected animal; indeed the story of the elephant saving and carrying the chief's daughter home was widely told in Botswana. It is said that the chief out of gratitude told the elephant that it would grow big and be the king of the wild. It grew so large that no traditional weapons are capable of killing it. Rre Radiphohu does say that they went on the Letsholo to be taught how to kill an elephant with ordinary guns (Radiphohu pers. comm. 1994).

The management of wildlife has varied greatly from tribe to tribe, and the size of animal whose utilisation was prohibited by the chief varied according to availability. As far back as the 19th century the springbok was a safeguarded species in Ngwaketse. Spinage (1991) records that Bathoen "hated any white or black man who killed" this beautiful animal, hence its being called "the chief's goat". For years the rock rabbit roamed Serowe mall because the chief forbade its killing; for the hill was close to the village and made this small animal vulnerable. Today it is hardly if ever seen in Serowe.

### *Animal Population Recovery Areas*

Spinage (1991) refers to an area south of Nata which Khama's decree established as a non-hunting area in

order to allow a depleted ostrich population to recover. I was not able to bring this to the memory of Bangwato to confirm this with respect to ostrich species management. However, among many in Boteti and Serowe there is reference to the brisket of the wilderness, "naga ya sehuba", where the chief neither allowed hunting nor the cutting of trees.

North of Boteti River (Nxai National Park and Makgadikgadi Game Reserve fall within this area), if one was found with an axe or hunting implement one would be fined for trespassing. The burden of proof lay with the accused, and a cow or goat was the penalty (Natural Woodland Management Planning Workshop participatory planning workshop 1994 Forestry Association of Botswana, Boteti). This saved the riparian forest and wildlife in the area.

The area Serokolwane, now partly occupied by Khama Rhino Sanctuary, was used by Khama to raise and tame eland and zebra (Mr B Letsididi, Radiphohu Sekgoma, Valentine pers comm. 1994). It is necessary to add that, as Spinage documents, traditionally female and young ostriches were not killed and collecting ostrich eggs was not taken lightly.

### *Letsholo/Regiment*

The "Letsholo" was not so much a conservation practice but rather a management issue. If there was a lion or other predator in the area harassing livestock, the chief sent out letsholo to hunt it. This might be one regiment or a group from different regiments.

There would be a recognised leader of the group and any animal killed during this expedition would be presented to him including the particular predator (it was not presented to the leader as his own but as part of the monitoring system and it was subject to collective eating or sharing). The importance of Letsholo was that it reduced individual responsibility for killing the predator animal and hence the individual's need to prove that he had been threatened by the predator or that it had endangered his livestock.

## **Systematic Substitution of Traditional Management with Laws**

### *General*

It was inevitable that Botswana would be unable to live in isolation from external laws, even apart from the zeal of the British colonial administrators wish-



ing to implement the decisions reached at each conference and the conservation practices observed on each tour of other African states.

The substitution of melao with written law is traced by Spinage to before the protectorate days: 1815 Ngwaketse, 1856 Kwena, 1877 and 1878 Ngwato tribe.

What prompted these laws was the slaughter of animals, especially elephant for ivory, by foreign hunters. However, it does indicate that chiefs would eventually have sought to curb poaching by the elite, both foreign and local. Chiefs effectively controlled their subjects through melao, and it was not necessary to introduce laws.

In dealing with their subjects, melao were more effective than modern law has been. They protected the rights of people by means of the threat of confiscation of the most valued item of the individual – his cattle.

Spinage (1991) notes that in 1919 the Bangwaketse chief charged an individual an ox for killing a hartebeest and in 1937 six people were fined two cattle each for killing an eland. Radiphohu Sekgoma (Pers comm. 1994) states that if one was caught having killed any of the large animals, five to eight cattle were at stake. The charge was unrelated to the value of the animal killed. This, he says, was to ensure that the rights of society were considered seriously by any individual contemplating stealing from society. The individual in any case had access to such wildlife by making a request to the chief.

### *The Elephant Control Unit/Department of Wildlife*

According to Bromfield (n.d.), the first head of this unit, the idea of the elephant control unit was first mooted in 1954, and it was established in 1956 (Spinage 1991) with responsibility for dealing with elephants, predator animals, and other species which were causing damage to crops and live-stock.

Thus there were marked similarities between this department's role and the traditional system of Letsholo in the management of wildlife. It was foreseeable that ultimately this unit would take over consolidation of laws in order to keep up with international conservation and to establish a uniform system of game laws throughout the country. Indeed, in 1960 even the Moremi Game Reserve, which was established and designated through the initiatives of the tribe and its leading Regent, was handed over to the Game Department which had grown out of this Unit.

### *Monetisation of Natural Resources*

It must be clearly stated that monetisation of wildlife and natural resources represents the greatest danger to species and to the ecosystem as a whole.

It is the individual pursuit of wealth which led to changes in weapons and provided the motivation for large-scale slaughter. It is also individual pursuit of wealth that endangers the wildlife and the resource it is dependent upon.

That sustainable balance which was possible under the tribal management has been lost with the sectorialising of resource management. It is important, therefore, to be aware that killing species for economic gain is not the only threat to biological diversity, but that calculated international pressure in favour of certain species likewise poses a threat.

The threat to the species of Africa is rarely caused by the offtake of those close to the resource, but is much more often associated with pressure engineered by international consumption or non-consumptive use. Botswana has continued to use herbs for the purposes for which the rhino horn is used in the East, and which threaten the species. As we may come to appreciate, it is much easier to provide options to reduce neighbours' encroachment in game reserves than it is to address the pressures stemming from external demand.

### *Africans' Embarrassment with their Tribalism*

Africans have seemingly come to be embarrassed at belonging to a particular tribe, encouraged by their international peers and the promise of political gain.

What they have overlooked is that where tribes do not operate regional polarities exist. In addition, many developed countries have yet to create a classless society.

Politicians have scored points against each other by using tribal interpretations to deal with injustice. Effective management of natural resources has been refined in various tribes, and exchanges of such invaluable management techniques would have achieved better results (Walker, 1993). For example, among the Bakalanga and Babirwa extensive knowledge exists of the "niceness" (direct translation) of soil under the Nkosho tree, *Fadherbia albida*, while in Basarwa childhood one is taught to harvest a tuber and cover the runner to ensure vegetative growth; such is the education imparted in the harvesting of leruswa, mokgotshe and other wild tubers.

### *Nationalisation of Resources*

As already indicated, the Game Department was created in 1959 out of the Elephant Control Unit of 1956. Its role was largely similar to that of letsholo, but with a bias towards wildlife conservation. After the Arusha conference, the conservation aspect was firmly embodied in the role of the Department.

In 1968, the Fauna Conservation Proclamation was amended and the tribal territories hunting regulations were instituted. With the promulgation of the Tribal Land Act and the creation of Land Boards, also in 1968, the chiefs lost control of land allocation to the Land Boards, and essentially the DWNP took over responsibility for wildlife. The Game Department subsequently developed into the current Department of Wildlife and National Parks.

The Fauna Conservation Proclamation was declared in 1976 and stipulated the following:

- The designation of national parks, game reserves and controlled hunting areas (CHAs).
- The President was empowered to issue further legislation and to identify other areas deserving protection.
- The identification of threatened species.

"The Department of Wildlife, National Parks and Tourism is the central body charged with the administration and development of all wildlife based activities and industries. Legal support for this role is provided for by the Fauna Conservation Proclamation, the National Parks Act and an array of subsidiary legislation" (National Development Plan IV, 1977, p. 207, paragraph 11.2).

### **Department of Wildlife and National Parks**

This paper has already alluded to the origin of this Department. Fairly or unfairly, the Department has been subject to criticism on the basis that it has a bias towards wildlife, at the expense of the public, in its attitude towards compensation for damage to crops and livestock, especially where human life has been lost.

Also cited as weaknesses of the department have been lack of transparency, indecisiveness with respect to species management (e.g. the elephant issue), excessive willingness to comply with international demands and expatriate dominion.

It is an added burden that the history of management by tribal groups was successfully developed before the Department was founded. Much of its current policy seems to be going in the same direction as the Campfire Programme. This paper, must, however, consider its efforts and achievements.

### *Current Practice*

For the most part, Botswana has hunting laws developed from its cautious traditions. Its current management involves the sale of wildlife licences both to citizen hunters and, on a larger scale, to safari companies.

### *Wildlife Management Areas*

In the early 1980s Wildlife Management Areas (WMA) were designated around each game reserve. The primary purpose of these were to initiate wildlife-based activities.

Plans for most individual areas have been produced during the past couple of years. The Chobe Management Plan is in its final stage. The plan for Moremi is in draft form and should shortly be ready for discussion with the Land Board. Other WMA plans are at different stages of formulation, including those for the Nxai and Makgadikgadi pans and Gemsbok National Park, which will be drawn up in conjunction with the South African National Parks Board (Hunter pers. comm. 1994).

As indicated above, the broad principles follow the directions of Campfire Programme. They are outlined in the publication *Joint Ventures: A Guide to Developing Natural Resource Based Business Ventures in Community Areas* (DWNP, 1993). The Department of Wildlife and National Parks guide recognises the status of knowledge and the management capacity of rural communities in these areas.

Most people in the agricultural and forestry sectors who have worked with community projects can identify the future areas of concern. However, it is much easier to look at experience in the wildlife sector than elsewhere.

### *Community Participation Approaches: Kedia Game Harvesting Project, Botswana*

The Kedia Game Harvesting Project was implemented under the Communal First Development Area Strategy. The principal area of contention in the implementation of WMAs was that the local communities lacked proper organisation in terms of

management and technical skills and also lacked material inputs to start projects (ESB, 1986).

The solution at that time included donor assistance and the standard research paper approach. Most of the inputs were channelled into activities which did not benefit the local communities and which were not sustainable. What is interesting about Kedia is that the quotas which were set were not sustainable. Hunting relied on a vehicle and shooting expertise on the part of the project leader.

Evaluation showed that Kedia was not economically viable and its ecological sustainability was doubtful. Distribution of benefits was along the lines of 10% to participants, 20% to the project manager, 5% to mixed expenses and 65% to project operation and vehicle recurrent costs (ESB, 1986).

Parry (1989) studied in detail the attitudes of the different professional and rural people towards the WMAs. His findings were as follows:

- The public regards them as extensions of game reserves that take away even more grazing areas. People see and believe that wildlife belongs to Government.
- Government affords the highest priority to wildlife.
- Communities believe wildlife staff are everywhere.

Spinage (1991) argues that the final documents suggest that in fact these perceptions are justified, as the WMA activities have increasingly come to emphasise wildlife exclusively. Indeed, *Joint Venture* (DWNP, 1993) refers to no activities other than boating, hunting, and tourism.

#### *Achievements of Centralised Wildlife Management*

It is difficult to dispute Mr B Letsididi's analysis that the Wildlife Department has greatly reduced poaching by foreigners and "fly-in-and-shoot" poaching, to the extent that it is now negligible.

This achievement would have been costly and difficult to implement on a tribal land basis. Similarly, the scientists and biologists needed in this sector would have been expensive to recruit at a tribal level.

Aerial enumeration of animals to monitor their numbers is possible. For the future, however, the centralising of wildlife management has created four scenarios that we need to define and address in order to come up with workable recommendations.

1. The issue of neighbours, or neighbouring communities within which protected areas have been created, and the dominant external pressures which dictate national programmes.
2. Peer programme pressure from neighbouring countries.
3. International conventions are very important in setting the direction and providing a consolidated approach to conservation. However, they have been allowed to engineer projects and programme development. The effect of this is that local people will continue to recede into the background as the international decision makers take responsibility to ensure the implementation of projects which are related to conventions and conservation issues.
4. The consequent poor targeting of solutions.

Given that those who have consolidated their roles in the current situation cannot readily agree to relinquish their power, it will be difficult to recommend going back to the traditional sector for answers.

It would therefore seem preferable to look at these four areas and examine how they can utilise traditional sector wisdom. In doing this we must first admit that, technically, we can produce intelligent solution packages, but that we lack the experience of human behaviour when managing wildlife to address the role of neighbouring communities in sustainable wildlife management.

## **Conclusions and Policy Options**

### *General*

There is a general tendency to ignore two main points:

- Nationalism centralises land and the resources which it contains.
- Rural communities do not necessarily want to remain backward in rural areas and wedded to a largely subsistence livelihood.

Both these points need further elaboration:

- The decision to set aside 17% of Botswana's land as game reserves means that all Botswana have

renounced this land for individual use and accede to its utilisation for the conservation of flora and fauna as well as for the maintenance of biological diversity. A further 8% of the country has been put to wildlife management, and the associated activities will create infrastructure and employment opportunities for the immediate residents. There is no reason why this alienation of land should be viewed any differently from that involved in the establishment of mines, urban centres, and modern airports.

- Most rural people, if given the opportunity, and provided they can surmount their fear of new things, would like to improve their lot. They do this either by moving out of the rural setting or, if given the opportunity, by taking advantage of opportunities provided on site. They will do this not by giving up completely what they already have, but by exploiting the new to complement that with which they are familiar.

Rural people do not want to continue eating *Grewia flava*, *Sclerocarya birria* or other indigenous plants, even if they are just as nutritious as oranges. They will eat these foods to complement what they can afford and sell the veld products to acquire modern foods and goods. This is not often appreciated in the guilt-driven intervention of modern development, which wants an immediate response at all levels.

## Conclusions

- Centralisation of wildlife and natural resources in the modern economy poses numerous problems. Fortunately it does not only pose problems for Botswana. Other countries have even more interesting situations, where wildlife conservation has been more centralised, leading to even more serious problems.
- Looking at the efforts of wildlife departments, particularly efforts involving "community participation", it is important to bear in mind that community participation has not worked in the agricultural sector, in dam programmes, the forestry sector, and in particular in the Kedia project. Many reports that have claimed success in this area have been found to have been "massaged" for presentation.
- It is particularly important to appreciate that wildlife cannot be conserved without some peo-

ple being denied access to this resource. The acceptance of this concept explains why the traditional sector in Botswana has successfully implemented conservation of wildlife and natural resources.

- It is important to appreciate the role of the public in conservation, but not to extend community participation to all conservation of species.
- The issue of neighbours needs to be incorporated, but it must be defined in terms of immediate and distant neighbours to resources, especially within the country, and, to a much lesser extent, in consideration of the external members of the larger world family. This is our responsibility as Africans, having signed conventions.
- We must further ask ourselves whether we really will maintain biological diversity by converting natural resources to the cash economy.

## Optional Approaches

It is important to appreciate that, by agreeing to conserve for future generations, we have affected access to resources for those who live close to parks. It is therefore our common responsibility to ensure that they have access to substitute resources.

Technical support is required to ensure availability of tree resources and veld products in communal areas. Emphasis on tree planting and the availability of veld products should be addressed and monitored co-operatively.

The control of animal predators should continue to be centrally managed and will provide employment to the communities involved. It is important that these developments should be based on public participation and thus the recognition of individualism.

Our goals should therefore be:

- Projects that will divert the attention of local people away from the game reserves, but that will at the same time address household needs so that wildlife activities are complementary and not central or optional to their way of living.
- Inputs in the control of predators, which will be for the benefit of the wildlife itself, which will provide employment, and which will not lead to wildlife degradation.

- The reduction of international interference on a species basis, which threatens locally important species and national initiatives.
- The facilitation of co-operative research on trees, shrubs and herbs with the potential to mitigate pressures on particular animal species.

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## References

- ARB. 1981. Agricultural Resources Board Annual Report. Republic of Botswana
- Bromfield, P. n.d. A short history of the Game Department of Bechuanaland Protectorate, to be published in *Botswana Notes and Records 1994*. Gaborone. Botswana Society
- Chambers, R. 1983. Rural development: putting the last first. Longman Group Limited, New York
- Devitt, P. 1982. The Management of communal grazing in Botswana Agricultural Administration Unit. London. Overseas Development Institute
- DWNP, 1993. Joint Venture: A guide to developing natural resources based business ventures in community areas. Gaborone, Botswana. Department of Wildlife and National Parks, Ministry of Commerce and Industry
- Environmental Services Botswana, 1986. An evaluation of Kedia Game Harvesting Project, Mopipi Communal First Development Area. Gaborone, Botswana. MLGL
- Harvey, C and CR Lewis. 1991. Policy Choices and Development Performances in Botswana: Economic choices before the developing countries. General ed. Keith Griffin. Basingstoke and London. Macmillan Press Ltd
- Hitchcock, R. 1980. Traditional, social justice, and land reform in central Botswana, in Richard P Werbner 1980 (ed.), Traditional Ideology, and Public Policy in Botswana. *Journal of African Law* (special issue)
- IUCN and DWNP, 1994. Makgadikgadi-Nxai pan management Unit, Protected Area Management Plan. (Inception Report). Gaborone, Botswana. IUCNParry, DC. 1989. The Wildlife Management Areas of Botswana. Gaborone. KCS
- Schapera, I. 1943. The system of land tenure of the Barolong Farms, Bechuanaland Protectorate. Report and recommendations submitted to the Bechuanaland Protectorate by I Schapera, June 1943. National Archives Gaborone, Botswana
- Schapera, I. 1955. A handbook of Tswana law and custom. London. Frank Cass and Company Ltd
- Schapera, I. 1984. The Tswana. London. Routledge and Kegan Paul
- Shepherd, G. 1988. The reality of the commons: answering Harding from Somalia. Social Forestry Network Paper 6d. London. Overseas Development Institute
- Shepherd, G. 1992. Managing Africa's tropical dry forests: a review of indigenous methods. London. Overseas Development Administration
- Siddle D and Swindell, K. 1990. Rural change in tropical Africa: from colonies to nation states. Oxford. Basil Blackwell Ltd
- Skinner, J. 1988. Towards a better woodland management in Sahelian Mali. Social Forestry Network Paper 6a. London. Overseas Development Institute
- Spinage, C. 1991. History and evolution of fauna conservation laws of Botswana. Gaborone. The Botswana Society
- Walker, KP. 1992. The role and potential of tree growing on farms in Barolong District – Botswana. MSc Thesis. University of Aberdeen. Scotland. UK
- Walker, KP. 1993. Effect of modern democracy on traditional management of natural resources. Paper presented at the 14th Agricultural Resource Board Annual Seminar, to be included in ARB report 1994. GOB printer Gaborone, Botswana

### 4.3 Campfire: A Case Study of Community Participation in Natural Resource Management in Zimbabwe

Taparendavan Maveneke

The theme "The Future of Protected Areas in Africa: Africa Heritage 2000" is timely because Africa as a developing continent must seek ways to protect its biodiversity while at the same time looking after the survival needs of its people through local efforts.

Michael (1992) of Ethiopia noted the critical role of locals: "It is obvious that neither any law or amount of manpower development can of its own accord protect and conserve wildlife. What is needed is the co-operation of people generally. To secure this, Ethiopian conservation must pay sufficient attention to development needs."

Campfire is the acronym for Communal Areas Management Programme for Indigenous Resources. It is a home-made and home-grown programme that has given Zimbabwe hope for genuine sustainable development despite the serious environmental conservation and rural development problems that the country has faced over many years (Martin 1986).

Campfire was conceived in 1975 and implemented in the early 1980s, shortly after Zimbabwe's independence, by staff in the Department of National Parks and Wildlife Management. Its primary aim was to redress the escalating problems of poaching and reduction of wildlife in communal lands, while at the same time, rewarding the local communities with new development opportunities.

The project document targeted very poor and remote districts that could benefit from using their natural resources, especially wildlife, as well as their vegetation and water resources, provided they accepted the need to manage and conserve these resources in accordance with the principle of local participation. The document proposals were consistent with the national objectives of the then Transitional National Development Plan of 1982/83 to 1984/85. More specifically, the proposals relate to the section in the Development Plan on rural and agricultural development, community development, and self reliance. The proposals focus on aspects which pointed to rural renewal, based on communal issues and co-operative traditions in the manage-

ment of common properties and the provision of common facilities and services.

The programme further fitted in closely with the 1984 provincial decentralisation system and could therefore use the popularly elected structures of development committees at the village, ward, district, and provincial levels to co-ordinate all activities. In addition, the implementation of the programme would complement the major land-use planning exercise to be undertaken by the Agricultural Technical and Extension Services (Agritex) in all communal lands. In order to understand Campfire more clearly, it is necessary to consider the principles on which it is based, the spread of the project in the country, its successes, problems and constraints, and future perspectives.

#### Key Principles

- The right of access to natural resources and the responsibility for managing them must be restored to people at the community level, i.e. wards and villages.
- Resource problems must be tackled as a whole – it is no good looking at any one in isolation. Wildlife cannot be successfully conserved unless natural vegetation and water supplies can be conserved.
- The land tenure system should give group ownership of defined tracts of land to resident communities
- Institutional structures must be established to facilitate ownership and management and to transfer the benefits of resource exploitation directly to the community.
- The programme must have the flexibility to accommodate different situations in different areas and maximise the benefits according to locational factors in each target area.
- Government and rural development non-government organisations must provide technical support at grassroots level to communities which co-operate in joining the programme. Each community area requires small-scale spatial planning and technical assistance in management.
- It is important that the programme should allow considerable variation in the way that individual

communities participate, while at the same time the overall thrust must be consistent with both provincial and national development plans.

Campfire was initially confined to twenty-five rural district councils, but is now gradually spreading into resettlement areas as well. Communal areas comprise 56% of Zimbabwe's total national parks and reserves, which in turn constitute 13% of the country's land area.

Campfire contributes 10% of Zimbabwe's land areas to wildlife habitat, so that today approximately a third of the country's land area is devoted to some form of wildlife conservation and management: this includes the 13% parks and reserves, 19% commercial farmland, and 10% Campfire land.

In 1988, the first two of 57 districts applied for and were granted "Appropriate Authority" (AA) status by the government, thereby becoming legitimate and legal custodians and owners of their wildlife resources. Ten more districts have been granted Appropriate Authority, and a further 13 district applications are being processed. This means that 25 out of 57 districts have been granted authority, and Campfire is becoming a true national programme.

There are a number of agencies supporting the Campfire programme at the national level as well as at district level, depending on the resourcefulness of the district council concerned.

At the national level Campfire is supported by a group of non-governmental organisations and some government departments. This group is known as the Campfire Collaborative Group (CCG) and it consists of representatives from the Department of National Parks and Wildlife Management, World Wide Fund for Nature (WWF) Multispecies Animal Production Systems Resource Project, the Centre for Applied Social Sciences at the University of Zimbabwe (CASS), and the Zimbabwe Trust.

The group is chaired by the Campfire Association, Chief Executive Officer. Later the Ministry of Local Government Rural and Urban Development was invited to join the group.

## Functions

Members of the group were assigned the following functions:

### *Department of National Parks and Wildlife Management (DNPWLM)*

This Department is the statutory authority responsible for wildlife management. The policy of

DNPWLM recognises that landowners or landlords are better placed to manage wildlife on their land than the Department, provided certain conditions are met. It grants Appropriate Authority to Campfire districts, trains game guards, assists with the control of problem animals, and approves quotas for safari hunting.

### *Campfire Association (CA)*

The Campfire Association is the organisation elected by the rural communities through their district councils to promote and serve their interests at the national level, to co-ordinate, advise, and support them. The Association helps link the Campfire Collaborative Group (CCG) activities with those of its community members. At the Campfire Strategy Workshop in October 1992, the CCG decided that the Association should be the programme's lead agency.

### *Zimbabwe Trust (Zimtrust)*

Zimbabwe Trust has the responsibility of assisting local communities and district councils to develop or strengthen their management skills and the institutions needed to manage their wildlife and other resources. The process involves dialogue, problem-solving, decision-making, leadership, and other forms of participatory action. This implies the provision of technical advice, training, financial, and material support.

### *Centre For Applied Social Sciences (CASS)*

CASS is responsible for socio-economic research on Campfire, as well as institutional and policy analysis and post-graduate training. For several districts CASS has provided base-line studies and ongoing monitoring through in-depth and comparative case studies. CASS has overall responsibility for research, monitoring, and evaluation of the institutional aspects of Campfire.

### *World Wide Fund For Nature Multispecies Project (WWF)*

The WWF Multispecies Project is operational in a number of communal and commercial farming areas. The project entails applied research to analyse, compare, and contrast the economic and ecological consequences of cattle and wildlife production under various tenurial systems. It also gives advice and assistance to producers on ecologi-

cal, wildlife management, economic and financial aspects.

### *Other Agencies*

The **Department of Agricultural, Technical and Extension Services** (Agritex) has the largest extension service of all the rural development agencies in governmental and non-governmental organisations. It is part of the Ministry of Agriculture, with a livestock policy that recognises the need for common property range lands management and multispecies land use planning in communal lands. It has not yet effectively integrated natural resources management into its service package, and therefore the appropriate land use plans for Campfire districts, wards, and villages have not yet been properly drawn up.

Natural resources, as opposed to range lands management, is the responsibility of three departments of the Ministry of Environment and Tourism: the **Forestry Commission**, which oversees commercial exploitation of forests, the **Department of Natural Resources**, which is mainly concerned with soil and riverine protection, and the Department of National Parks and Wildlife Management. These agencies are responsible for conservation strategy, but have to link up with departments in other ministries such as the Veterinary, Water and Agritex departments.

The Ministry of Environment and Tourism leads in the co-ordination of the National Conservation Strategy in natural resources. It has accepted Campfire as the guiding policy for communal lands. The Forestry Commission's social forestry component has not yet been integrated with Campfire, but lately they are showing great interest.

### **Implementation**

Since the introduction of Campfire, every effort has been made to integrate it into national and provincial development plans. Reference has already been made to the 1982/83 Transitional National Development Plan, hence Campfire has been incorporated into all national development plans, including the Second Five Year National Development Plan, 1991-95.

Over the past six years, Zimbabwe has experienced various forms and intensities of Campfire implementation. The most intensive programme was the so-called Natural Resource Management Programme (NRMP) in Matabeleland, on the border with Botswana and Zambia in Bulilima mangwe,

Tsholotsho, Hwange, and Binga districts. This programme was part of an SADCC Regional National Resources Policy and Development Strategy which identified wildlife as an important integral component of the region's natural resources.

The project has four main components:

1. Wildlife management.
2. Institutional and capacity building among communities.
3. Community development, particularly the involvement of women.
4. The education and training of sustainable development in schools.

The specific outputs of investments in wildlife management were expected to be:

- The establishment of a self-sustaining wildlife resource management programme.
- Infrastructure to support wildlife and its use, such as fences, water points, and other facilities.
- Comprehensive land-use plans for each district.
- Trained community game monitors employed by district councils for wildlife management production.

The specific outputs of investments in training for institutional and capacity building were expected to be:

- The introduction of planning, and the creation of the ability on the part of people to administer their own sustainable wildlife management programme.
- Increased household incomes, due to expanded employment opportunities and revenues from wildlife resources and income generating activities.

The specific outputs from investments in training and technical support for women were expected to be:

- To see women involved and participating in Campfire meetings and being office-bearers in committees.



- To see women running their own income generating activities on a viable basis.
- To see women benefiting from Campfire activities that affect their children's nutrition, reduce their burden of fetching water, and raise their status to that of respected members of their communities, equal to the men.

The initial response of the local communities was to reject Campfire, since they suspected that it represented the latest attempt by the elite, government, and councils to deprive them of what little ownership of the land resources they had, and to turn these into game parks for tourists whose financial benefits would be taken away by district councils and central government.

Members of the Collaborative Group, however, conducted thorough grassroots awareness campaigns. They addressed village meetings and organised workshops involving local traditional leaders and ward councillors.

In this way, the message got through, and Campfire is now enthusiastically accepted, adopted, and implemented in all wildlife wards in all four districts. Those outside are demanding that Campfire be introduced through the utilisation of other resources available there.

There are active and effective ward and village committees which are implementing the following conservation measures:

- Random tree-cutting has ceased or has been drastically reduced in many cases: a resident only cuts trees for a very good reason, after consultation with the village conservation committee.
- Veldfires no longer occur, or occur rarely, in contrast to before, when they were virtually an annual event. When a bush-fire is noticed, the whole village rushes to extinguish it.
- Earth dams are being dug by communities in many wards, to conserve run-off rain water for livestock and wildlife.
- The use of sledges for local transportation is banned by the village conservation committee, through gazetted village and ward by-laws.
- Game scouts have been appointed to monitor wildlife population, poaching, and the activities of safari hunters.

- Land-use planning has begun, with the installation of cattle and electric fences.
- There is strict adherence to safari hunting quotas approved by the Department of National Parks. Communities and local technical support officials confirm that the quotas are being enforced by village committees and traditional authorities, without any local resistance. Now, there are wards where animal populations are actually increasing, indicating clear trends of sustainable development.

Although the committees are effective in wildlife management after two to three years of training, most of them feel that they still need more technical support, especially in training and project management. Institutional development is clearly a slow and lengthy process.

The success of the Natural Resources Management Programme thus far is also related to the solid outside infrastructural support from USAID and Zimbabwe Trust. The purchase and installation of 24 km of electric fences and 70 km of cattle fences, the installation of boreholes with diesel engines, the repair of dams, and the resettlement of villagers to new sites serviced with water, schools, and feeder roads are very expensive projects which justify outright financial support.

Institutional support through greater participation of women was another crucial success factor. At first, the women were left out, were shy, and left everything to the men. A Zimtrust special programme designed to build their confidence helped to change the attitude and outlook of both men and women, to such an extent that in some districts women are now serving on numerous village committees and a good number of ward and inter-ward committees where they hold key positions. In Tsholotsho, one of the most progressive wards is led by a dynamic woman leader.

Although good progress has been made with involving women in Campfire activities, there has been no progress at all with their micro-projects relating to income generation and social welfare activities. A needs assessment exercise which was enthusiastically welcomed by women everywhere was not followed up, even though there was a special fund in the range of \$100 000 per district for this purpose.

All attention focused on the basic issues of Campfire. The attempts to introduce a better organised programme of environmental education and Campfire into schools are meeting with great accep-

tance and proving to be a sound long-term environmental strategy. A special agency known as Action Magazine has introduced an exciting approach to environmental education – the holistic approach, or interdisciplinary integration, in contrast to the subject approach which entails learning about the environment in separate subjects such as geography, agriculture, or biology.

Through workshops, Action Magazine has brought together heads of primary and secondary schools, teachers, and education officers to discuss policy and approaches to environmental education aimed at changing attitudes and approaches to conservation education.

Some teachers in some districts are being co-opted into Ward and Village Committees, thereby contributing badly needed skills for modern development. Schoolchildren are planting trees at schools and around their villages, with the guidance and support of their school teachers. In addition, Action Magazine is working with the Zimbabwe Ministry of Education to reappraise and reformulate environmental syllabuses for primary and secondary schools. There are also known linkages, among similar services, with some SADC countries, especially Namibia.

It is not only in the NRMP districts where Campfire activities are proving to be successful. Districts such as Hurungwe, Beitbridge, and Chipinge are doing quite well, very often with the minimum outside financial and technical support.

Hurungwe, for example, started Campfire without any financial support for infrastructural or training activities. The council simply invited inputs from all relevant government departments and today it has a viable Campfire programme which earns over half a million dollars per annum. With some training support from Zimtrust and Silveira House, there is a growing training programme which is needed badly to fight some of the problems that continue to undermine the programme.

Lack of adequate awareness and training is regarded as the principal reason for widespread poaching, goldpanning, grass burning, and other anti-conservation activities in some wards in Hurungwe. In addition, the lack of funds for fencing and borehole drilling for wildlife drinking water is undermining wildlife management, resulting in animals moving to other districts.

There are several districts, such as Beitbridge, Mudse, Nyanga, and to some extent Chiredzi, with an abundance of game and good district leaders, but they lack training and adequate infrastructure for sound management.

It would appear that the extent of Campfire's success depends on:

- The particular district's natural resources.
- The council's resourcefulness in organising funds for training and infrastructure.
- The council's entrepreneurial skills relating to organising concessions to best advantage and even its ability to move into new areas such as ecotourism.
- The council's capacity to cost-effectively plan a full rural development programme for the district.

### Future Strategy

Looking to the future, Zimbabwe would like to build on the experience it has gained, which requires that there be a strategy and clearly defined plans for assisting districts committed to the Campfire programme.

The following are essential elements of such a strategy:

- Viability and sustainability: Campfire can only be efficient and effective if it is sustainable and viable in ecological, social, economic, and institutional terms.
- Decentralisation in terms of deconcentration, delegation, devolution, and privatisation of duties and roles.
- Development management, that is, joint efforts by the public sector, local authorities, communities, and non-governmental organisations and the private sector to plan and implement projects together.
- The adoption of rural development systems that have clear policies, aims, and bottom-up and top-down communication systems.
- The participation of all sectors of the community, including men women, youths and traditional leaders.

Having learnt about the general problems relating to monoculture, and realising that safari hunting could be affected by CITES, communities would like

to diversify their sources of income. They wish to explore possibilities for earning income from micro-projects, timber, river sand, and ecotourism.

Ecotourism, as we all know, is an industry which is highly compatible with Campfire activities. It is a form of tourism which benefits local communities, but which can also benefit the region and nation and contributes to local culture, economy, and ecology. Ecotourism is based on certain broad principles:

- Its projects are linked to ongoing conservation initiatives in order to create synergy and increase the overall benefit.
- Ecotourism integrates its projects into the economic and social life of the communities by creating ownership through the community. The project should involve as many community members as possible.

There are many districts with plans for ecotourism. The Maitengwe Dam offers a wide variety of game and birds that flock there to drink, the Zambezi Valley offers fishing, game, camp sites and the unique culture of the Tonga, the Sanyati River in Hurungwe boasts a great deal of game and holds potential for walking safaris, and the Manjinji Ox-bow Lake in Chiredzi is ideal for photographic safaris.

There are also plans to strengthen the effectiveness of capacity and institution building, so that there can be full participation at village level. In order to reach the ever increasing number of Campfire participants, emphasis will be placed on training the trainers. In addition, more village-level research will be conducted in order to understand in greater depth the training needs or problems of participants, and then to produce a training curriculum tailored for the communities.

At district and ward level, councillors, district officials, and project managers will undergo various forms of intensive management skills training. This will cover motivational training, team-building, project planning and management, annual plans, communications, accounting, and marketing, as well as rural strategies, planning, implementation and evaluation.

Finally, Zimbabwe would like to strengthen its networking systems internally, regionally, and internationally. Zimbabwe wishes to interact with its political, economic, social, and cultural leadership and the general public within the country, through mass media, publications, and face-to-face meetings.

In the region we wish to know more about what work is going on in Mozambique, South Africa, Botswana, Zambia, Malawi and other countries. Similarly, we wish to let them know what we are doing, through seminars, fax communications, and articles in regional magazines. Internally, we wish to be in touch with CITES, GATT, IUCN, World Bank, UNEP, and UNCTAD.

Finally, Campfire Association believes that the community approach to the protection of natural resources is desirable in rural areas where poor people live. Protected areas such as national parks must co-ordinate with local communities bordering on them, in order to protect the parks.

## References

- Bond, I. 1994. The Importance of Sport-Hunted Africa Elephants to Campfire in Zimbabwe. *Traffic Bulletin* Vol. 14 No. 3 Washington, USA
- Child, B and JH Peterson Jr. 1991. Campfire In Rural Development: The Beitbridge Experience. Department of National Parks and Wildlife Management/Centre for Applied Social Science, HARARE
- Chambers, R. 1992. Rural Appraisal: Rapid Relaxed and Participatory. Institute of Development Studies Discussion Paper 3, Sussex, UK
- Government of Zimbabwe. 1983. Transitional National Development Plan Vol. 1 No 2 1982/83-1984/85. Government Printers, HARARE
- Government of Zimbabwe. 1984. Provincial Councils and Administration In Zimbabwe. A statement of Policy and a Directive by the Honourable Robert Mugabe, MP, Prime Minister, Government Printers, Harare
- Martin, RM. 1986. Communal Areas Management Programme For Indigenous Resources: (Campfire) Working Document 1/86. HARARE
- Maveneke, TN. 1994. Shifting The Goal Post. *Herald*, 25 September, Harare, Zimbabwe
- Michael, TG. 1992. The Effects of War On World Heritage Sites. Jim Thorpe, in *World Heritage Twenty Years Later*, IUCN Caracas, Venezuela
- Murphree, MW. 1993. Communities as Resource Management Institutions. *Gatekeeper Series*. No 36. II Ed. London
- Zimbabwe Trust. Wildlife Relic of Past, Resource of the Future.

## Chapter 5

# World Heritage Sites in Africa

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### 5.1 Endangered Places and Missing Links

Jim Thorsell

Since the last Afrotropical CNPPA Workshop was held in Niger in 1987, there has been measurable progress in implementing the World Heritage Convention in the region.

The Action Plan prepared at that session (IUCN/CNPPA, 1987) called for a range of activities, many of which have been undertaken. The number of State Parties, for instance, has increased from 27 to 30. The number of natural sites on the World Heritage List has risen from 16 in 1987 to 24 today.

There are still, however, some major countries which have not signed the Convention and which thus are the "missing links" in the chain. They are Chad in the north, and the southern cluster of Botswana, Namibia, and South Africa. Since the latter three countries have strong natural candidates for the prestigious World Heritage list, their signing of the Convention is to be encouraged.

A second component of the 1987 Action Plan was to suggest a series of actions to strengthen the management of protected areas, including World Heritage sites in the region. Unfortunately, World Heritage sites have not been spared the effects of civil disturbance, human population growth, and economic malaise seen in most countries in Africa.

Some examples:

□ **The Simen National Park in Ethiopia**

Affected by almost a decade of war and abandonment by management staff.

□ **Aïr et Ténéré Nature Reserve in Niger**

Caught up in disturbances related to the Tuareg rebellion. All project activities suspended, and two senior park staff deceased while kidnapped.

□ **Mana Pools complex in Zimbabwe**

Lost all 500 black rhino it had when inscribed in 1984.

□ **Selous Wildlife Reserve in Tanzania**

Suffered a loss of 50% of its elephants and almost all its rhinos in five years of intensive poaching.

□ **Virunga National Park in Zaire**

Has lost a major part of its integrity owing to the impact of the Rwanda refugee influx in and around the park and regional land use pressures.

□ **Mount Nimba Strict Nature Reserve in Guinea and Côte d'Ivoire**

Is under threat from a major iron-mining operation and from an influx of refugees from neighbouring Liberia.

□ **Ngorongoro Conservation Area in Tanzania**

Is coming under increasing demographic pressure and suffers from extensive illegal cultivation.

There is, however, good news as well. Water supply to the Djoudj Bird Sanctuary has been improved, and the population of the northern white rhino in Zaire's Garamba National Park has almost doubled, to 32 individuals. Africa has also received substantial support from the World Heritage Fund for various activities, including the provision of equipment and support for training. Indeed the proceedings of one of the most effective training courses which was held at the College of African Wildlife Management

is a highly recommended document for every African protected area reference library (see Lusigi, 1992).

In conclusion, a good foundation has been laid, and there has been measurable progress from the review on World Heritage done at the previous CNPPA working session. There are still some gaps on the map, however, and threats to World Heritage sites on the continent are becoming more and more intense.

A much greater effort is called for in future if the best of Africa's unmatched natural heritage is to be saved through the efforts of the World Heritage Convention.

A list of Natural World Heritage Sites in the Afrotropical realm appears in **Table 1**.

## References

IUCN, 1987. *Conserving Africa's Natural Heritage*. CNPPA Working Session Proceedings. 131 pp. and annex. (Also available in French.)

Lusigi, W. Ed. 1992. *Managing Protected Areas in Africa*. UNESCO World Heritage Fund. 200 pp.

**Table 1:** Natural World Heritage Sites in the Afrotropical realm (as of December 1994).

Country	Site	Year inscribed
	Tanzania	1979
Ngorongoro Conservation Area		
Virunga National Park	Zaire	1979
Garamba National Park	Zaire	1980
Kahuzi-Biega National Park	Zaire	1980
Djoudj National Park	Senegal	1981
Mount Nimoa Strict Nature Reserve	Guinea/Côte d'Ivoire	1981
Niokolo-Koba National Park	Senegal	1981
Serengeti National Park	Tanzania	1981
Selous Game Reserve	Tanzania	1982
Tai National Park	Côte d'Ivoire	1982
Aldaba Atoll	Seychelles	1982
Vallée de Mai Nature Reserve	Seychelles	1983
Comoe National Park	Côte d'Ivoire	1983
Lake Malawi National Park	Malawi	1984
Mana Pools Complex	Zimbabwe	1984
Salonga National Park	Zaire	1984
Dja Faunal Reserve	Cameroon	1987
Kilimanjaro National Park	Tanzania	1987
Manova-Gounda St Floris National Park	Central African Republic	1988
Victoria Falls/Mosi-oa-Tanya	Zambia/Zimbabwe	1989
Banc D'Aguin National Park	Mauritania	1989
Tsingy de Bemaraha Strict Nature Reserve	Madagascar	1990
Réserve de l'Air et Ténééré	Niger	1991
Bwindi Impenetrable Forest	Uganda	1994
Rwenzori Mountains National Park	Uganda	1994

## Chapter 6

# Ecotourism

### 6.1 Setting the Scene Noël de Villiers

In my keynote address I set a lofty goal for ecotourism by suggesting that it was the means by which the protected areas and what they embrace in the broadest possible sense could, in time, become the most valuable product on earth.

I sketched a vision to which all can subscribe, with the only question being whether all will subscribe.

I would like to tell you about a method which we are using through Open Africa to put across the vision. Possibly you too will find it useful.

We say that Open Africa is a vision, and visions are important. They provide a focus. We all need things we can hope for, causes we can believe in.

It is extraordinary what we can accomplish, what hurdles we can overcome, if we have hopes and dreams. Having something to reach for, to aspire to, is what stimulates accomplishment.

The modern world considers the only route to success to be through saving, industrialising, manufacturing, and export – not things that we in Africa have shown ourselves to be particularly good at. We do have some small niches in which we have achieved success, but not nearly to an extent sufficient to employ the millions of people we need to employ.

Meanwhile, progress in the developed world is impacting not only on the environment, but also on humans. As I have stated, people are becoming materially wealthier but spiritually poorer, because they are being separated from nature and from their roots.

This has given rise to a new and massive business called tourism, which is in fact the biggest in-

dustry in the world today. The fastest growing segment of the tourism industry entails a return to nature, which brings us to the interesting situation in Africa.

Many people regard the African landscape as barren, and as holding little promise for allowing us Africans to help ourselves. But this landscape is by no means barren, and it in fact offers the vision of a new kind of tourism: an African brand of tourism, characteristic of this continent and its people, a form of tourism which will be especially attractive to people yearning for the integrity, honesty, and authenticity of nature.

I trust that the seed of this special brand of African tourism is being planted at this very moment through what I am telling you. I envisage all of Africa joining hands, through the networking of strengths and resources.

We as individuals, together with other individuals engaged in tourism and environmental agencies, universities, governments, airlines, game parks, accommodation providers, taxis, car rentals, trains, coaches, roads, trails, sanctuaries, museums, and other amenities, all represent the roots of a tree.

Provided we all subscribe to one, single-minded, holistic vision of what can be achieved, this myriad of otherwise unconnected, diverse, and different suppliers, facilities, operators, and service providers, will become co-ordinated and start to operate as a united force in pursuit of the vision.

A massive tree – needless to say, an African tree – will grow if we join hands. The environment in which this tree will grow embraces much more than just fauna and flora. Of course, it includes Africa's magnificent wildlife and vast variety of indigenous plants, but it also encompasses the entire spectrum of environmental components, our vast kaleidoscope of people, cultures, traditions, and heritages. As the birthplace, the cradle of humankind, there is

a mystique associated with this continent, a depth of fascination which is matched only by its unlimited skies and distant horizons.

To extend the analogy of the tree further: if the branding is represented by the bark, then the fibre of the trunk, the wood, is composed of the ethos, the ethics, values, and principles associated with developing a sustainable system of living in harmony with nature. Africa has all that is needed to develop such a system.

The branches of the tree entail the spreading of the vision. At community level, people are encouraged to get together, to form committees, and to participate in extending the vision, to debate its opportunities and set objectives in accordance with local circumstances. In this way, a networking process will be facilitated.

As our tree grows, it will take on a shape which is wholly characteristic of Africa, a branding that reflects the magic of Africa and that fixes our position in the global community. It is in this nature niche where Africa can aim for global supremacy. (For that reason the word *ecotourism* has got to go).

In effect, therefore, the intertwined roots of the tree will be like-minded people, joining together and taking action to develop a Dream of Africa, a dream that will be translated into generic market branding and a marketing philosophy that will stimulate a special kind of tourism in and to this continent.

We should apply hindsight and learn from the lessons based on mistakes made elsewhere. Also, the cultural connectedness of Africa's people with nature, coupled with the considerable expertise we have built up in environmental management, makes for a powerful combination. We can lead the world in providing a fitting counter-balance to the major thrusts of industry and technology, which have marked human progress thus far.

When we have reached this point, the minds, expertise, and participation of numerous people shall have become connected right across the continent. The tree will have a canopy of leaves, and the fruit it bears will be the crowning glory. The fruit of our symbolic tree will serve for the socio-economic upliftment and spiritual well-being of all of our people.

Our mission should be aimed at utilising the environment as a resource, nurturing that resource for posterity and turning its benefits over to people. This is the job for the entrepreneurs, artists, performers, gardeners, guides, builders, roadmakers, waiters, farmers, and others who provide services, facilities, and products in exchange for the cash of visitors. All these people have to be an intrinsic part

of the system, integrated in and interacting with the process and its participants.

They will not be the only ones to benefit. Car and coach manufacturers, fuel suppliers, food producers, the clothing, jewellery, beverage, and liquor industries, printers and packagers, and many others: virtually every sector is involved. And not just economic sectors, but also traditions, folklore, myths, cultures, and society as a whole can benefit: Everyone and everything can be brought into this net.

Is this vision just a pipe dream? I think not. Let us try to think ahead to what the situation might be in 50 years' time.

We know that the world turns on the axle of commerce, which is fuelled but by a single law: supply and demand. Money moves to whomever can supply what customers want.

But, at the same time, the wilderness is shrinking. Birds, bees, animals, and wide open spaces are becoming a rarity. If they were items traded as stocks on any of the world's exchanges, I predict that there would already have been a mad rush for shares. By the year 2044, by which time several billion more people will have become industrialised, wilderness scrip may well be unobtainable.

Africa controls the greatest amount of wilderness scrip in the world. It is in our mountains, deserts, oceans, animals, birds, reptiles, flowers, plants, and trees. It is all around us, in who we are and what we are: It is the heritage of Africa. We can turn the vision into reality. It is up to us.

The purpose of this session is to stimulate thought on developing an action plan for protected areas. This action plan is aimed at, among other things:

- Bringing protected areas into the mainstream of the concerns of society.
- Demonstrating the value of wild habitats.
- Obtaining community participation in protected areas.
- The establishment and management of a complete and comprehensive system of protected areas in the Afrotropical region.

Specific objectives of the action plan would be:

- Integrating protected areas into the larger planning frameworks.

- ❑ Expanding support for protected areas.
- ❑ Strengthening the capacity to manage protected areas.
- ❑ Expanding international co-operation relating to the finance, development, and management of protected areas.

I submit that tourism will allow us to achieve all these things and more. The question is how to implement tourism. What are the constraints, and how do we overcome them?

Here are some other issues which I believe merit consideration:

- ❑ **The need for a vision.** We need to ask ourselves: Is it a good idea? Will it work? How can it be applied across the continent? And how do we bring about the change of mindset required among ourselves, the public, leaders, governments, institutions and corporations?
- ❑ **Lessons drawn from case studies and success stories.** What innovations, schemes, plans, and issues involving local communities are of such significance that they should be considered in the action plan?
- ❑ **The question: What are our tourism attractions?** Here in South Africa the term "the Big Five" (i.e., lion, rhino, elephant, leopard, and buffalo) is often used to denote what people want to see, and I have often heard smaller parks claim that they cannot attract visitors, because they do not have the Big Five. But why should we not have a Big Five of everything? What are the Big Five attractions of this continent, of each city, town, park, lake, river, mountain? Which are the Big Five birds to see in a particular area, the Big Five archaeological features, cultural highlights, and so on?
- ❑ **The term "ecotourism".** No marketer worth his salt would brand his exclusive product with an alien name. How does one describe the characteristics of Africa and its Rainbow people in a single word that will capture the imagination of the world?
- ❑ **Infrastructure.** I have stated that, as far as the tourism industry goes, if you have an airport, you have infrastructure, since the rest comes naturally. Of course, this is an oversimplification,

but how much of an oversimplification? Here, in the magnificently fitted out Kruger Park, some tented accommodation was erected recently in order to provide lower cost facilities for those who cannot afford bungalows. I have noticed mostly Mercedes Benzes parked outside these tents, and, I am guessing, but I think rich people are using this accommodation, not to save money, but because they want the experience, the interaction with nature, which they get from living in a tent.

I have deliberately stuck out my neck and made a number of contentious statements. I wanted to set the example, to encourage you to let your thoughts run free, to be uninhibited. We need answers – specifically an answer to the question, how do we turn Africa's environmental assets into the most valuable product on earth?

## 6.2 KwaZulu Case Study Graeme Pollock

There are many internationally recognised definitions of ecotourism. They all seem to focus, however, on three core principles, as outlined in the following definition:

*Ecotourism is the responsible travel to a destination that has an environmental ethic and a sensitivity to the culture of the host community.*

The Department of Nature Conservation in the Province of KwaZulu/Natal, South Africa, recognised that sustainable conservation would largely depend on local communities' acceptance of, and accountability for, the integrity of the environment. We further recognised the link between rural poverty and the degrading environment.

It became obvious that a farsighted ecotourism strategy could, by definition, be pivotal in maintaining fragile habitats which are under intense development pressure, while at the same time supporting a sustainable economic development effort.

Our management policies have always involved local community participation in the traditional sense, in that our neighbour relations programme allowed communities to harvest natural resources inside protected areas.

We are aware that for every job supplied to a community, there are possibly eight to ten depend-



ants subsisting on that household income. These practices play a vital role in the generation of tangible benefits from protected areas.

The Department of Nature Conservation decided, however, to extend its policies beyond the conventional and to create a model that would strengthen the conservation effort through an innovative ecotourism development initiative.

## **The African Model of Ecotourism Development**

The African model of ecotourism combines travelers, host communities, and the environment, with an objective of conserving the environment.

We have brought together, in a partnership, the three major components of nature-based travel, with the purpose of developing ecotourism destinations.

This case study covers three initiatives which are linked and which are located in the region of Northern KwaZulu – often referred to as Maputaland. This region includes some of the Department's well-known reserves such as Ndumo Game Reserve, Tembe Elephant Park, Kosi Bay Nature Reserve, and the Coastal Forest Reserve Complex.

The case study areas include:

- Rocktail Bay: a 20-bed lodge within the Coastal Forest Reserve which adjoins the Maputaland Marine Reserve.
- Banzi Pan: a 16-bed Safari Lodge situated on the Ndumo Game Reserve floodplain system.
- An overnight facility being established by the host community at the entrance to the Ndumo Game Reserve.

To develop the Rocktail Bay and Banzi Pan Lodges, the Department of Nature Conservation facilitated the formation of both a development and operating company, in partnership with the host community and the private sector.

The Department of Nature Conservation is represented by our Section 21 company Isivuno ("To Harvest"), which was formed by the Department to administer tourism matters.

## **The Development Company**

The capital required to develop Banzi Pan and Rocktail Bay Lodges amounted to R2,5 million.

The Department of Nature Conservation provided R1 050 700 equity, and the balance in a shareholders' loan to make up a total of 58% equity holding in the Development Company.

To provide a cash flow and make the projects viable, the KwaZulu Finance and Investment Corporation was invited to participate in the project and invest R773 500 in the development company, representing 42% of the remaining shares.

We further invited the Mathenjwa Tribal Authority to take up 25% of the Department of Nature Conservation's shares in the Development Company. The Department of Nature Conservation is holding these shares in trust until the Mathenjwa Tribal Authority empowers the already constituted Mathenjwa Tourism and Development Association to act on its behalf.

## **The Operating Company**

The Development Company (Banzi (Pty) Ltd) has on-leased these facilities to an operating company.

The operating company has been structured to involve a private tour company, Wilderness Safaris. Wilderness Safaris have invested so as to acquire 50% of the operating company.

The remaining 50% is owned by the Department of Nature Conservation (37,5%) and the local community (12,5%).

The return on investment, by the development company, is projected at 11% in the first year and an internal rate of return of 21% is projected over a 20-year period.

The expected net trading loss of the operating company in the first year is R98 000, and a net profit of R55 000 for the second year and R167 000 in the third year is projected.

## **Overnight Facility**

Linked to the Banzi Pan project is a community-based ecotourism initiative situated at the entrance to the Ndumo Game Reserve.

The Department of Nature Conservation invited the local community to participate in providing an overnight facility for tourists, aimed at the camping and caravanning market. This would supplement and complement the existing facilities and provide the Ndumo Game Reserve with a greater spectrum of tariffs and recreation facilities.

The local community responded very positively and decided to add 500 ha to the project. This land

had, for a long time, been identified by our management as an area which is important to conserve.

It was further agreed that the community project would also provide a laundry service to both the Banzi Pan Lodge and the Ndumo restcamp. Visitors to the Banzi Pan Lodge would also park their vehicles at the gate facility and would be ferried to the lodge. A fee is paid to the community for this parking and security service. These initiatives which I have briefly discussed are the result of a four-year intensive investigation, and it may be worthwhile reviewing some of the key issues in the process, touching on some of the benefits and possible problems associated with this model.

There were many possible scenarios for developing tourism facilities. These included:

- The Department of Nature Conservation could develop facilities – this would require obtaining funds from the environmental budget.
- The private sector could finance developments – this would mean private ownership of assets on State land.
- The Department of Nature Conservation could develop facilities, using loan finance – this was found to be undesirable, because our viability studies indicated that we required either high density, coupled with low tariffs, or low density, coupled with high tariffs.

We came to the conclusion that a combination of these scenarios held the key to sustainable development.

We decided to involve the private sector and the local community, and to form a partnership in which the private sector may not hold a majority stakeholding.

Furthermore, any development would be subject to a legally binding code of conduct that would ensure that both the development company and the operating company would conduct business within pre-determined and acceptable environmental parameters.

### **Benefits of Involving the Private Sector**

These include:

- The harnessing of the business and hospitality skills of the private sector.

- Reduced dependency on the environmental budget.
- Investment into marginal and rural areas.
- Strengthened private sector support for the conservation effort.
- Improved access to loan finance.

### **Anticipated Problem Areas**

- Insidious incrementalism.
- A “bottom line” approach to business.
- Exposure to market and political trends.
- “The tail attempting to wag the dog.”

### **Benefits of Involving the Local Community**

These include:

- Fostering a sense of ownership and accountability for the environment among the communities.
- Involvement beyond resource harvesting and job creation.
- Improved communication between reserve managers and local communities.
- Stimulation of secondary entrepreneurial opportunities.
- Capacity-building and empowerment of people through the ability to participate in local decision-making processes.

### **Possible Implications**

- Delayed implementation due to extended communication processes.
- Issues outside the scope of ecotourism being drawn into communications.
- Lack of past experience in the ecotourism industry.

- Lack of formal organisations to act on behalf of the community.

## Vision for the Future

The long-term vision of the Department of Nature Conservation is to transfer all our existing ecotourism facilities into joint venture partnerships with the local community and the private sector, where feasible and where possible.

We further envisage that all secondary service facilities associated with the hospitality industry should be placed in the hands of the local community. This would include field guiding, safari operations, laundry service, airport shuttle services, and garden services. The provision of guiding services would alleviate the expense and problems associated with obtrusive signage in protected areas and would also create jobs and make many smaller forest and nature reserves more accessible and interesting for tourists to visit.

The Department of Nature Conservation has initiated a local Field Guide Training Course at our Ntinini Field Training Centre at Babanango, with the objective of identifying and training people from the local community to the standard required by the new Tourism Act of April 1994. This will empower communities to set up a field guiding service for tourists in all our protected areas.

## Conclusion

The Department of Nature Conservation has developed an ecotourism model based on the needs of host communities living in association with protected areas and has provided a platform for the private sector to invest in marginal and rural areas.

This model for sustainable development and conservation:

- Harnesses the marketing and business acumen of the private sector.
- Reduces the leakage of revenues from regions where protected areas contribute to socio-economic upliftment.
- Stimulates private sector involvement in rural areas.
- Creates jobs, shareholding, and entrepreneurial opportunities associated with protected areas.

- Creates among local communities a sense of ownership of, and accountability for, the environment.

We believe that this African model may provide the key to unlocking the potential that Africa holds, and, further, that it provides the African solution to sustainable conservation and ecotourism development.

## Philosophy and Policy Framework for Ecotourism Development

- Ecotourism development should be based on a sound environmental and cultural ethic.

This is achieved by:

- Involving local communities in all aspects of nature-based tourism.
- Ensuring that ecotourism development is always compatible with the primary objective of a protected conservation area.

- Ecotourism should enhance the economic sustainability of a protected area by becoming independent of the environmental budget.

This is achieved by:

- Harnessing the businesses expertise and acumen of the private sector.
- Ensuring that all ecotourism development is both financially feasible and viable.

- Ecotourism development should ensure that its facilities are available to all sectors of society.

This is achieved by:

- Zoning protected areas to offer a spectrum of nature recreation opportunities and a tariff structure dependent on levels of recreation intensity.

## Isivuno ("to harvest")

### *The Role of Isivuno*

- To manage the process of ensuring that ecotourism development in protected areas is financially viable.

- To generate income for redistribution to either tourism development or conservation projects under the auspices of the KwaZulu Conservation Trust.
- To create a mechanism for the establishment of joint projects with local communities and the private sector.

Isivuno is a Section 21 company incorporated not for gain. Board members are KwaZulu conservation trustees and senior KDNC officers.

### Mission Statement

The mission of the Department of Nature Conservation is to promote the integrity of the natural environment of KwaZulu:

*The Department of Nature Conservation recognises the fundamental interaction of people, resources and the environment. The Department is particularly aware and concerned about the threats to the environment contained in the increasing pressures being placed on it due to rural poverty, unsustainable population growth and insufficient individual responsibility and accountability for the integrity of the environment.*

*In order to try to reduce this pressure the Department strives to make environmental integrity directly beneficial to the widest possible range of people. This is done through a management programme which, based on sound ecological principles, allows for the wise and sustainable use of the resources of that environment.*

*Furthermore, recognising the link between rural poverty and environmental degradation the Department will support and encourage environmentally appropriate socio-economic development.*

## 6.3 Privately-owned Protected Areas

### Howard Geach

#### Mission Statement

*The Conservation Corporation is committed to wildlife conservation in Africa by applying a balanced approach to tourism, conservation and local community involvement which promotes ecological sustainability, whilst providing guests with a quality wildlife experience and investors with viable returns.*

### Background

It was against the background of the rising international demand for wilderness and ecotourism and in the belief that business could reap viable financial returns through long-term investment in commercial conservation that The Conservation Corporation came into being.

In 1990 two entrepreneurs, Alan Bernstein and Dave Varty, combined their respective financial and ecotourism skills to form a company that would represent the first substantial investment by the business community in wildlife conservation. Their aim was to use ecotourism as a vehicle to attract investment capital and tourism revenue to remote parts of the subcontinent.

Alan Bernstein was then MD of a company which focused on attracting international investment for development projects in sub-Saharan Africa. Dave Varty was co-owner of Londolozi – one of South Africa's most commercially successful private game reserves.

In early 1991, The Conservation Corporation was consolidated, galvanised by the Phinda project in Maputaland which presented a unique commercial opportunity for investment in the tourism and wildlife industry.

Opened in late 1991, the 17 000 hectare Phinda reserve represents an important ecological link between the Mkuzi Game Reserve and the Lake St Lucia region – an area long zoned for inclusion in the planned "Greater St Lucia Wetland Reserve".

Following a worldwide investment-raising campaign, the Phinda Project attracted R63 million of international investment funds for its consolidation. In 1992 The Conservation Corporation (Cons. Corp.) also incorporated Londolozi under its umbrella – taking over the financial, administrative, and marketing management of the reserve.

In January 1992, Cons. Corp. began negotiations with the South African National Parks trust over Ngala Game Reserve, leading to the first ecotourism contract agreement between the Kruger National Park and private enterprise.

Signed in April 1992, the agreement gives Cons. Corp. exclusive operating rights over 14 000 hectares of land on the western boundary of the Kruger Park. The agreement includes a ten-year lease over the adjoining 42-bed Ngala Game Lodge. The Ngala property – donated to the SA National Parks Trust by landowner Hans Hoheisen – has been constitutionally incorporated into the Kruger National Park.

In late 1992 the Conservation Corporation established the Rural Investment Fund (RIF) to facilitate

the development of self-generating economies around the core industry of ecotourism in the areas of skills training, regional infrastructure, social services and small business development.

Over the past two years the RIF has actively sought the involvement of surrounding communities, and entrepreneurship and upskilling have been encouraged.

Resource utilisation such as wood, thatch, and medicinal plant harvesting is encouraged, and clinics, primary schools, community and entertainment centres, and small businesses in brick-making, charcoal manufacturing, carpentry, sewing, and transport have been developed.

These operations were designed to provide a significant spin-off for surrounding depressed rural economies in both the Eastern Transvaal Lowveld and Maputaland, with Cons. Corp. acting as a development agent for regional infrastructure, services, and human development.

In November 1993 Cons. Corp. completed its second lodge at the Phinda Resource Reserve. The R7 million Forest Lodge – 16 suites raised on stilts and encased in glass – was constructed with the use of a 200-strong community construction team comprised of local Zulu people.

In early 1994 The Conservation Corporation embarked on a major expansion programme into East Africa and entered into agreements to acquire two wildlife tourism businesses in Kenya and Tanzania, and a 50% joint venture share in a hotel and game lodge management business based in Kenya.

This R66 million expansion deal, which was concluded in May 1994 – was funded by means of a rights issue with existing shareholders and through the issue of new ordinary shares in Cons. Corp's local and international companies – Cons. Corp. SA and Cons. Corp. International. In terms of this expansion deal, Cons. Corp. has acquired:

- Kichwa Tembo:** a 102-bed tented camp adjacent to the Masai Mara, Kenya.
- Ngorongoro Crater Lodge:** a 116-bed lodge on the lip of the Ngorongoro Crater, Tanzania
- A 50% interest in the Windsor Hotel Group:** a hotel and lodge management group based in Nairobi with management contracts over Kichwa Tembo and Ngorongoro Crater Lodge and several other lodges and hotels in East Africa.

Cons. Corp's expansion into East Africa will ensure the group's development as the first pan-

African, multi-national ecotourism company, with some 12 properties spanning the ecotourism high spots of Africa within its portfolio.

## Corporate Aims and Objectives

The Conservation Corporation ecotourism model aims to:

- Attract international investment finance to undervalued or degraded natural wildlife resources.
- Attract increasing foreign revenues to Africa.
- Promote the maintenance of biodiversity and wise land-use management, ensuring that South and East Africa maintains its unique natural attractions as a tourism destination.
- Provide guests with an exceptional and educational wildlife experience.
- Demonstrate the financial viability of ecotourism, and hence justify the maintenance of wilderness on economic grounds.
- Create economic opportunities for communities living adjacent to its reserves, demonstrating that ecotourism produces rural wealth creation through small business spin-offs, employment and training, infrastructure, and social services.
- Promote ecotourism as a viable option for sustainable development, based on wildlife as a renewable resource, thereby offering an alternative to heavily subsidised and less economically viable agriculture and forestry industries.
- Establish state/private enterprise partnerships as a viable model for conservation area management and ecotourism development.

## Londolozi Game Reserve

### Background

Londolozi Game Reserve has become world renowned since brothers Dave and John Varty took over their family farm in 1978 and turned to ecotourism to generate revenue for their financial projects.

Londolozi provides luxury accommodation for 48 guests in three camps, Tree Camp, Bush Camp and Main Camp, all situated on the banks of the Sand River on the edge of the Kruger National Park. Each camp is small and intimate and designed to blend with the natural environment.

Londolozi is known for its care of guests, and over the years the Varty brothers have striven to provide a wildlife experience which is both exciting and educational. Occupancy levels have averaged in excess of 80% over the past five years.

In recent years Londolozi has also become known for its farsighted methods, logical rehabilitation, and community involvement programmes. This led to international recognition in February 1993, when Londolozi was awarded the worldwide Tourism for Tomorrow Award for its commitment to conservation and local communities. In recent years Londolozi has also striven to be ecologically sustainable in every aspect of its operation – from tourism activities to land and wildlife management and community development projects.

The Londolozi model, demonstrating the sustainable multi-use of wildlife, has become the blueprint on which the principles of The Conservation Corporation have been founded.

### *Ecological Rehabilitation*

Londolozi is known for its farsighted methods of managing the intense erosion and bush encroachment that were evident on the farm in the early 1970s. In the late 1970s Londolozi instituted an intensive bush clearing programme along natural seep-lines, aimed at restoring the historic open grasslands and encouraging the return of plains game that had largely disappeared. Gradually, as the water table was raised, there was improved composition of grass species, grazer species moved onto the clearings, and the predators moved in after the prey.

In the 1980s, this reclamation programme transformed the landscape at Londolozi from monotonous woodland back to the historic mosaic of mixed woodland and open grassland. Londolozi has an ongoing programme of wildlife management, which entails selective bush clearing, checking populations, introducing new species, and restocking.

### *Community Involvement*

In developing Londolozi, the Varty brothers recognised that the long-term survival of the reserve de-

pendent on involving communities adjacent to the reserve in sharing the benefits of Londolozi.

Over the years, community development opportunities offered by Londolozi have included joint business partnerships, training in permaculture, sewing classes, the establishment of local fresh produce markets, the provision of education, and clinics to meet primary health requirements.

Londolozi currently employs 135 local people in tourism-related jobs at the lodge camps. As each employed person supports at least five dependants, Londolozi indirectly supports more than 650 people in Gazankulu. More than R700 000 worth of annual revenue is ploughed into the local economy as a result.

Londolozi has established many mutually beneficial partnerships with local entrepreneurs. These partnerships cover resource management, taxi transport, vegetable and fish production, and sewing and handicraft activities.

Bush clearing operations have made wood available to people in Gazankulu, many of whom have developed successful small businesses in firewood, building poles, wood carvings and furniture manufacture. Cheap protein from cropping schemes and fish from dams have also led to the formation of some small businesses.

## **Phinda Resource Reserve**

### *Background*

The Phinda Resource Reserve – situated in the centre of the vast, ecologically rich area of Maputaland – perfectly fitted The Conservation Corporation's objectives of:

- Consolidating degraded and undervalued land assets.
- Rehabilitating and restocking this land.
- Creating rural wealth.
- Generating financial returns through ecotourism.

The project initially involved the consolidation of 7 500 hectares of key farmland between the Mkuzi Game Reserve and Sodwana State Forest Reserve, just north of Lake St Lucia. This land had long been coveted by conservation bodies for incorporation within the planned Greater St Lucia Wetland Park, one of the most diverse wilderness areas in Africa.

In 1991 a further 6 000 hectares was purchased by The Conservation Corporation for incorporation within Phinda. In October 1991 the 44-bed Phinda Nyala Lodge was completed at a cost of R5,6 million, accompanied by one of the biggest game restocking exercises seen on private land in South Africa.

In 1992 an additional 4 000 hectares was added to the Phinda Reserve in terms of a lease agreement with neighbouring land owners, effectively consolidating 17 000 hectares of contiguous game land within a single reserve.

In November 1993 Cons. Corp. completed its second lodge at the Phinda Resource Reserve. The R7 million Forest Lodge – 16 suites raised on stilts and encased in glass – was constructed with the use of a 200-strong community construction team comprised of local Zulu people.

Phinda's unique ecological diversity enables tourists to participate in a wide variety of activities and underpins the belief that Phinda has the potential to become a major international ecotourism destination.

Its proximity to Maputaland's unspoilt coastline offers a tourist phenomenon unique in Africa, enabling guests to combine big game viewing with snorkelling and scuba diving among some of the world's most remarkable coral reefs.

### *Achievements*

#### *Protection of Strategic Conservation Land*

The prospect of incorporating the Phinda area within a Greater St Lucia Reserve, linking the Umfolozi, Hluhluwe, Mkuzi and St Lucia reserves, was first formally proposed in 1937 in a report to the administrator of Natal, but this plan was never implemented.

In 1990 The Conservation Corporation negotiated the purchase of five farms between Mkuzi Game Reserve and Lake St Lucia and launched a R63 million project/campaign to finance the acquisition. In mid-1991, the purchase of 13 000 hectares of private farmland was finalised, and in 1992 an additional 4 000 hectares was secured under lease, committing 17 000 hectares of contiguous private farmland in this area to wildlife for the first time.

#### *Protection of Ecological and Biological Diversity*

Phinda's seven ecological types comprise ilala palm savannah, montane grasslands, riverine forest, aca-

cia thornveld, sand forest, open grassland, and natural pan systems. This ecological diversity, which is a result of Phinda's location at a point of transition between tropical and sub-tropical zones, enables an enormous range of animal, bird and plant life to be found within a compact area.

#### *Ecological Restoration*

Much of the land consolidated within Phinda had been scarred by decades of inappropriate farming. Decaying farm infrastructure, internal fences and power lines had to be removed and an ecological rehabilitation programme implemented to repair the damage. This process includes reversing the habitat degradation by creating mosaic grasslands, increasing land productivity and removing invading woody species to assist vegetation recovery.

Rehabilitating the land's ecological diversity and productivity in this way also simultaneously creates employment and business opportunities for members of Phinda's neighbouring communities, for example in the production of charcoal (see Phinda Community Charcoal).

#### *Game Restocking*

Since March 1991 the biggest game restocking programme yet seen on private land in South Africa has been undertaken at Phinda. To date, over 1 000 head of game, including white rhino, elephant, cheetah, lion, giraffe, zebra, wildebeest and numerous antelope species have been introduced to the reserve to supplement the existing wildlife. The reserve has the largest privately owned population of nyala in the world and was the site of the first adult elephant translocation from Zimbabwe's Gonarezhou Game Reserve.

In early 1994, a breeding herd of elephants was successfully translocated to Phinda from the Kruger National Park in the Eastern Transvaal. This reintroduction has stabilised the younger elephants and drawn the herd together. The entire herd is now spotted regularly by guests to Phinda.

The cat population has also increased significantly. The cheetah population in particular has more than doubled since its reintroduction three years ago.

#### *Expansion of Conservation Land*

In February 1993 an association of land-owners, including Phinda, combined forces to create a greater

conservation area, the Mun-ya-Wana Game Reserve, under a common constitution.

It is expected that the Mun-ya-Wana Game Reserve will continue to grow, with Phinda as its core, to a potential size of 30 000 hectares. In a regional context, The Conservation Corporation aims to join the northern wetland system of the Mkuze River to the southern wetland system of the Mzinene River, and further south to False Bay Park.

The Conservation Corporation has also joined forces with the Natal Parks Board to form a biosphere reserve in the region, and ultimately hopes to become an integral part of the Greater St Lucia Wetland Reserve.

### *Financing*

In 1992 The Conservation Corporation completed a R63 million equity placement campaign to finance development at Phinda. This international campaign constituted the biggest private investment in conservation ever in South Africa and attracted investment from around the globe.

International investors who took up the investment offer included Hambros Bank Limited, a private US-based family trust, and Martin Currie Investment Management. In South Africa, AECI Pension Fund, Metropolitan Life, Fedlife Assurance, Southern Life, Anglo American and De Beers are the major shareholders.

### **Ngala Game Reserve**

From its inception The Conservation Corporation has believed that the strengths of the private and public sectors should be harnessed in co-operation.

Such a partnership came into being in April 1992 with the signing of a joint agreement between The Conservation Corporation and the SA National Parks Trust, in respect of Ngala Game Reserve. This area of 14 000 hectares of land on the border of the Timbavati Game Reserve has now constitutionally been incorporated into the Kruger National Park.

The partnership agreement gives The Conservation Corporation exclusive tourism operating rights over this land, plus a ten-year lease over Ngala Game Lodge – both of which are owned by the National Parks Trust. The 42-bed Ngala Lodge opened in October 1992 after a R4 million renovation programme to upgrade it to international standards.

The success of the Ngala partnership lies therein that the SA National Parks Trust has retained ownership of its land assets in the Kruger Park, and The

Conservation Corporation has contracted to rent the land and buildings and take responsibility for conducting profitable tourism operations.

A percentage of the profits will flow into National Parks Trust coffers to further the conservation projects of the Parks Board, such as the expansion of existing game reserves and the acquisition of new land for conservation.

## **Rural Investment Fund**

### *Introduction*

In October 1992 The Conservation Corporation established a Rural Investment Fund (RIF) Division to promote regional community development and economic benefits through its ecotourism projects in the Eastern Transvaal and Maputaland.

Activities of the RIF include attracting finance and expertise to projects, and co-ordinating the planning and implementation of projects. Fund-raising and joint ventures are targeted at development agencies, finance agencies, foundations and trusts.

### *Aims of the Rural Investment Fund*

- To provide a channel for the international investment and donation of capital in sustainable rural development projects.
- To demonstrate the socio-economic viability and financial feasibility of rural development in southern Africa, based on an ecotourism industry.

### *Activities*

The activities of the RIF include have a practical focus on the regions of Cons. Corp's operations (southern Maputaland and the Eastern Transvaal) and include:

- Engaging in dialogue with local communities on conservation and development issues.
- Building partnerships with like-minded development and funding organisations to facilitate projects
- Assisting in project implementation, community capacity-building, and training, as necessary.



- Promoting regional co-operation and sound environmental planning with regional governments and NGOs.

Assisted by the administrative and operational infrastructure of Cons. Corp., RIF also administers two trusts, the Rural Investment Fund Trust (RIFT) and the Phinda Community Development Trust Fund (PCDFT).

### *Categories of projects*

RIF facilitates the following:

- Liaison between local communities and conservation areas.
- Community capacity-building and training.
- Social services and regional infrastructure.
- Small business development and financing.
- Community equity in land development and ecotourism projects.
- Co-ordination and communication of the above.

### *Achievements*

In the first year and a half of its programme, RIF has facilitated a variety of projects which are in progress or in the proposal stage. Outside support from local and foreign organisations providing funding and expertise has been most encouraging for the relatively new field of community-integrated conservation development. Most of the projects could not be set up without RIF's support in terms of facilitation, co-ordination, and administration.

The Conservation Corporation has created the foundation of this work by covering RIF's operating costs for head office co-ordination and administration and the lodge-based project teams. This has proved a worthwhile investment in respect of the funding raised – close to R4 million allocated to October 1995 – and in respect of the beneficial processes, interactions, and relationships initiated. Current project proposals amount to a further R2 million.

The success of RIF projects is evaluated not only on the basis of the amount of funds raised, but also on the progress made in terms of community participation, individual enterprises, and the communication and understanding of the vision.

### *Community Development Committees*

RIF's first step was to organise "one voice" for the fragmented communities in each region, not only for the benefit of RIF projects but for future developments initiated by the communities, regional government, or non-governmental organisations.

In the Eastern Transvaal, the Jongilanga and Mnisi development forums, spanning several villages, were facilitated through numerous workshops involving all sectors of the community.

In the Phinda Region, community development committees were facilitated to manage the inflow of funds for infrastructure in the region. The Mngobokazi, Mduku, and Nibela development committees now handle most of the new development projects in their respective communities and meet from time to time to plan the broader development of their common region.

### *Phinda Community Development Trust Fund*

In September 1992 The Rural Investment Fund received R650 000 from an overseas donor for Phinda community development projects. These funds, established as the Phinda Community Development Trust Fund (PCDTF) under the auspices of independent legal and financial trustees, were earmarked for a clinic, classroom facilities, training centres, an environmental centre, and pre-primary school facilities. The interest accumulated on the fund is being used to finance local entrepreneurs.

The residential clinic building at Mduku, in the Makhasa Tribal Area, in respect of which PCDTF provided R150 000 and the Independent Development Trust R500 000, is now complete. Department of Health staff will move in August 1995. This Department will fully service the clinic.

### *School Classrooms*

The classroom building project gave six schools in the area access to R22 500 each to construct two classrooms at their school (total R135 000).

The Department of Education has supplied the schools with additional teachers, classroom furniture, and textbooks. The new classrooms will enable an additional 1 000 children a year to attend school under decent conditions.

### *Community Training Centres*

The local community development committees and PCDTF have identified Rutec's concept of Commu-

nity Training and Production Centres (CTPC) as a powerful and cost-effective way of helping an entire community to learn small business skills and create small businesses.

The CTPC will address the unemployment situation in the region. It will provide local people with training in micro-enterprises, training in ways of cutting the cost of living, and support services to those wishing to start their own micro-enterprise. The centre sustains itself by charging fees for training and a 15% royalty on raw materials supplied.

The design documents indicate that additional funding will have to be raised before the project can go ahead. A centre for each of the three communities is planned, costed at R35 000 on average. PCDTF's contribution, which amounts to R50 000 per centre, and Phinda's facilitation role are once again considered a bonus in the applications.

### *Pre-primary School Project*

For the pre-primary school or "Educare" project, PCDTF has approached another organisation based in KwaZulu/Natal, namely TREE (Training and Resources in Early Education) to undertake the training of the teachers. The planning component will now be undertaken by Phinda, equipped with a PCDTF budget of R68 000 and spearheaded by community projects officer Isaac Tembe, who spent a year in charge of African Child Care Project's (ACCP's) centre at Mbazwane and Ngoma in Northern Zululand.

### *Sondela Small Business Loans*

PCDTF extended a one-year R27 000 interest-free loan to the Sondela Centre for Phinda staff. From April 1993 to March 1994, the "Sondela Bank" issued 131 loans, on average R478 per loan, to a total of R62 096.

Sondela Bank accumulated close to R10 000 in interest during that period, which amount served from time to time as a loan account for the Sondela community-owned shop for stock purchases. This income also served to acquire certain entertainment assets and furniture for the Sondela Community Centre.

The interest accumulated by April 1995 will establish Sondela's own capital to continue financing small business and personal loans and funding community assets.

### *Environmental Education Centre at Makhasa Tribal Reserve*

In November 1993 the PCDTF trustees decided to apply some of the funds to fund an Environmental Education Centre for the three local communities, costed at R50 000. The centre is part of a broader project, that of the re-establishment of a tribal conservation area, the Makhasa Nature Reserve.

The Makhasa Reserve land had historically been part of the Makhasa tribe's domain, but was excluded by the colonial government in 1908. The Natal Parks Board and Phinda are working with the Makhasa Tribal Authority to establish the reserve, including fencing, restocking, rehabilitation, and managing the nature area.

The Green Trust, associated with the Southern African Nature Foundation, the regional arm of the World Wide Fund for Nature (WWF), has committed R350 000 to the reserve and the centre's operating costs over three years. In addition, an environmental awareness officer will be employed from the local community and trained by the Natal Parks Board, the Wildlife Society, and the Valley Trust. All these organisations will be co-opted to develop an appropriate environmental awareness programme.

### *Nibela Water Project*

In 1993 the Nibela community used its Community Development Committee to plan a project around the dire need for water reticulation. With the technical assistance of Phinda, the Nibela committee submitted a proposal for a well digging and pipe reticulation scheme and was awarded R30 000 by the KwaZulu/Natal Joint Services Board (JSB).

A community officer, Isaac Tembe, was recruited by Phinda in June 1994 to implement the balance of the PCDTF projects. Experienced and trained in community projects management, Isaac will complement Walter Zulu's liaison work and take on a more active role in project facilitation.

### *Phinda Community Charcoal*

In 1993 the IDT Drought Relief programme funded a bush-clearing project at Phinda, a high-output employment project producing timber and charcoal. The project's purpose is to harvest, process, and recycle excess timber from the reserve for the mutual benefit of both the local communities and Phinda.

An application for R70 000 was approved in September 1992, and funding started in January 1993.

Currently, bush-clearing and charcoal manufacturing continues, but on a limited and sporadic basis. It is handled by two local contractors, Kambula and Jabulani, who head teams of, on average, six people. Phinda farm manager John Raw, responsible for initiating and designing the project, has begun setting up some distribution outlets. "Phinda Charcoal" currently produces 20 tons a month on average.

Toward mid-1994 RIF received R87 300 from Engen to expand Phinda Charcoal to a sustainable level with an output goal of 50 tons or 10 000 bags a month, creating employment and business opportunities for over 50 local people, including five charcoal contractors, one transport contractor, and a storeman.

### *Recent Fundraising*

In October 1994 the RIF Trust received its first major donation of R500 000 from the same overseas donor who contributed the funds for the founding of the PCDTF. At this stage, the bulk of the funds is earmarked for education infrastructure in Phinda's neighbouring communities, and for a Bursary Fund for communities in both the Phinda and eastern Transvaal regions.

### *Regional Development*

RIF is currently working with various regional conservation authorities, development agencies, and the local community forums to develop tourism and social infrastructure in the Eastern Transvaal and Maputaland regions.

The objective is to enhance the conservation value of these resource-rich regions, while meeting the development aspirations of the local people.

The proposed projects, developed in "forum" by all stakeholders, will boost the region's ecotourism profile through improved access and will attract funds to meet the inhabitants' basic needs.

Projects for the Southern Maputaland Development Forum include the creation of a main road from Hluhluwe to Sodwana Bay, water reticulation projects, a regional runway at Hluhluwe, rural small business support, and tourism development.

The project for a new main road enables the deproclamation of the current main Sodwana Bay road, thus removing man-made barriers between the Mkuzi Game Reserve and Phinda – a major stride

forward in the formation of the Greater St Lucia Wetland Reserve.

The road will be re-aligned on Phinda's eastern border and will run through the neighbouring communities, providing a significant economic boost to the region and facilitating access to markets and development.

## **Eastern Transvaal Projects**

### *Small Business Loan Fund*

Early in 1993 RIF negotiated a partnership with the Get Ahead Foundation to disburse and manage a R100 000 loan fund for small business development in the communities adjacent to Sabi Sand.

Funds have been disbursed to 16 different stockvels, each consisting of a group of four borrowers. Small businesses supported include spaza outlets, hairdressers, building materials, glazing, fruit marketing, chicken farming, coalyards, sewing, hawking, clothes retailing, tin making, mini-nurseries, wood carving, and pottery.

### *Home Loans*

In 1993 RIF introduced the Future Bank home loan scheme for Londolozi staff. Future Bank was one of the few banks at the time willing to lend to inhabitants of Gazankulu and to accept borrowers' use of local contractors, rather than large contractors paid directly by the lending institution. More than 25 home loans amounting to over R200 000 have been made available thus far.

### *Health Service*

Once a week, RIF's Community Health Officer, Sister Sipiwe visits the Huntington community neighbouring Sabi Sand.

Each week, more than 70 people seek consultations – people whose health problems might not have been addressed elsewhere. This service is greatly appreciated by the community. Londolozi has obtained free building supplies to upgrade the consulting rooms, and medical supplies are obtained from the Department of Health.

### *Conservation Lessons*

With R40 000 from a local charity project group, RIF has organised a conservation education project in the communities neighbouring Londolozi.

The project is targeted at children from the local high schools who are extremely eager to visit the game reserves and learn about their significance. Twice a week 20 children and two teachers take part in the programme.

The group meets the programme leaders, two trackers, at the gate to the reserve and proceeds into the reserve on a two-hour game drive. The trip finishes at the lodge, where the leaders, over lunch and refreshments, give a presentation and answer questions.

The project group funds will enable more than 3 000 high school children and 300 teachers in the area to experience this informative safari.

### *Shalati Resort and Safaris*

RIF's first major rural venture, a partnership with a Gazankulu conservationist regarding an entertainment and safari operation, was opened in September 1993. Situated midway between Ngala and Londolozi, at the gate of Manyeleti Game Reserve, Shalati Resort and Safaris was financed by Londolozi and the Gazankulu Development Corporation (GDC) in an effort to support an enthusiastic entrepreneur and formalise his vision of black ecotourism.

### *Community Bushclearing at Londolozi and Ngala*

In partnership with the neighbouring communities, labour intensive bush-clearing programmes are being planned on both Ngala and Londolozi properties.

The proposal, which is currently being reviewed by the IDT Community Employment Programme, is to employ approximately 30 workers on each project to cut and stack the wood, and then contract out wood sales to local entrepreneurs to sell to the communities for their fuel, crafts and furniture needs. The project's income will be managed by the respective project committees representing both the reserve and the communities, in order to sustain the project or fund a new community project.

## **Conservation Corporation: Summary of Progress to Date**

In the two and a half years since the launch of The Conservation Corporation, the group has made significant progress in implementing its plans. The company has:

- ❑ Established itself as a leading force in the South African ecotourism industry.
- ❑ Raised R83 million in equity from investors, some R68 million in the initial fund-raising and a further R15 million in a rights issue in late 1992.
- ❑ Become the first South African unlisted company to raise equity finance from professional international investors since the early 1980s.
- ❑ Consolidated, rehabilitated, and restocked some 17 000 hectares of land in northern Natal (the Phinda Resource Reserve).
- ❑ Designed, built, and opened the Phinda Nyala Lodge, a 44-bed lodge on the Phinda Resource Reserve, at a cost of R5,6 million. Phinda Nyala opened on 10 December 1991.
- ❑ Entered into a management agreement with Londolozi Game Reserve to provide marketing, administrative, and financial services.
- ❑ Established Londolozi as Africa's premier game lodge – it is the only game lodge member of Relais et Chateaux and won the 1992 worldwide "Tourism for Tomorrow" Award.
- ❑ Successfully negotiated a joint venture agreement with the South African National Parks Trust in respect of Ngala Lodge in the Kruger National Park – the first private operator to be permitted to operate a facility in a South African national park.
- ❑ Designed and completed a full refurbishment of Ngala Lodge, a 42-bed lodge, at a cost of R4 million. Ngala Lodge opened on 10 October 1992. In its first year of operation (to October 1993) it enjoyed average occupancies of 52% and an achieved rate of R460 a night.
- ❑ Entered into an exclusive marketing agreement with Abercrombie and Kent, the world's highest quality tour operator, designed to provide a strong, international marketing presence for Cons. Corp. at minimum cost.
- ❑ Designed, built, and opened Phinda Forest Lodge, a 32-bed lodge on the Phinda Resource Reserve, at a cost of R7 million. Forest Lodge opened on 12 November 1993.

- ❑ Provided employment for 800 people.
- ❑ Built and trained a team at both lodge and head office levels, equipping them with a broad range of financial, marketing, and operational skills and experience.
- ❑ Established sound relationships with the new political and business order and local communities.
- ❑ Established the Rural Investment Fund to provide assistance and investment to local people to develop rural areas.

## Chapter 7

# Marine Protected Areas

### 7.1 Marine Protected Areas: Their Contribution to the Protection of the World's Natural Heritage Graeme Kelleher

This conference is considering the contribution of education to protecting the world's natural heritage. Protected areas play a vital part in preserving natural ecosystems and maintaining biodiversity. It seemed to me that a description of the IUCN's programme to establish a global representative system of marine protected areas (MPAs) would be helpful in discussing the educational aspects of protecting our world heritage.

In co-operation with the Great Barrier Reef Marine Park Authority (GBRMPA), IUCN, the World Conservation Union, through its Commission on National Parks and Protected Areas (CNPPA), has been carrying out a programme to promote the establishment of a global representative system of marine protected areas. This paper provides an overview of the programme's activities and, based on its experiences and experience gained through management of the Great Barrier Reef Marine Park, proposes future directions for effective management of the coastal zone, which encompasses much of the world's natural heritage. Education will be a vital component.

#### IUCN-CNPPA MPAs Programme

##### *A Global Policy on MPAs*

IUCN determined its policy position on marine protected areas at the 17th General Assembly held in

Costa Rica in 1986 and further refined this position at the 19th General Assembly held in Argentina in 1994.

The Primary Goal of marine conservation and management, and the means to achieve this goal, are defined in Resolutions 17.38 and 19.46 of the IUCN General Assembly. The Primary Goal is (IUCN, 1988 and 1994):

*To provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world in perpetuity through the creation of a global, representative system of marine protected areas and through the management, in accordance with the principles of the World Conservation Strategy, of human activities that use or affect the marine environment.*

The following definition was adopted for the term "marine protected area" (IUCN Resolution GA 17.38):

*Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.*

Resolutions 17.38 and 19.46 emphasise that the marine environment must be managed in an integrated way if it is to be able to sustain human use in the future, without progressive degradation. These resolutions provide the vision and policy framework for the MPAs Programme.

To co-ordinate its MPAs Programme CNPPA established the position of Vice-Chairman for marine affairs in 1986.

Since this time I have held this position, and my activities as Vice-Chairman (Marine) have been supported by GBRMPA.

### *Development of Guidelines for the Establishment of MPAs*

In planning the Programme it became clear that there was a need for practical guidance on how to go about establishing and managing MPAs. In 1987 work began on the "Guidelines for Establishing Marine Protected Areas" (Kelleher and Kenchington, 1993).

These guidelines contain principles and techniques that have been demonstrated to be successful when applied to natural resource management. They were reviewed by over 100 international experts and published by IUCN as part of its Marine Conservation and Development Report series in 1992. They emphasise the value of education.

### *Establishment of a Global Network of Marine Managers and Scientists*

In 1990 we divided the marine areas of the world into 18 regions, largely on the basis of biogeographic criteria, but for practical reasons also considering political boundaries.

A working group was established in each region, consisting wherever possible of both marine resource managers and marine scientists, so that these two groups could work together to identify priorities. Since 1990 the aims of the working groups have been:

- To divide each marine region into its major constituent biogeographic zones using a classification system suitable to the region.
- To identify gaps in the representation of these zones in effectively managed MPAs.
- To identify priority areas for the establishment of new MPAs, or the improved management of existing MPAs, to fill these gaps.

### *Identification of Priorities for Development of the Global Representative System*

In 1991 the World Bank Environment Department asked GBRMPA and CNPPA to prepare a report to identify global priority areas for marine biodiversity conservation. These priority areas have been identified by addressing the three aims outlined above to select areas of highest priority for development of the global representative system.

The project will provide strategic guidance to the World Bank (and, it is hoped, to the United Nations Environment Programme and the United Nations

Development Programme) in their efforts to support investments in marine biodiversity conservation under the Global Environment Facility (GEF). A series of 18 regional reports will be published individually and in a consolidated report in 1994/1995. The reports identify priorities for the establishment and improved management of MPAs in each of the marine regions recognised by CNPPA. These reports were submitted to the World Bank last week.

In undertaking this project the MPAs Programme is attempting something that has not yet been tackled for terrestrial or freshwater biodiversity. Although a number of studies have identified important sites or areas for the non-marine environment, these have all been based on particular taxonomic groups, habitats, or other parameters (see Myers, 1988; Bibby *et al.*, 1992, and Vane-Wright, 1991).

Our work has been carried out on the basis of existing and available data and has not involved original research. In some regions and countries there has been limited information available on some subject areas. In particular, information on the management effectiveness of individual MPAs is difficult to obtain without detailed assessment of the area. Often there is uncertainty about boundaries and it is difficult to determine whether the marine environment is included in some protected areas. Considering these factors, the report is therefore a global prioritisation based on a review of the best information available in each region. The report to the World Bank also concentrates primarily on the subtidal marine environment and does not attempt to fully assess intertidal, estuarine, and wetland areas.

The selection of sites is necessarily to some extent subjective, and the lack of information and of a well-tested and accepted global biogeographical classification system makes the determination of priorities between regions difficult. However, priorities in each region have been identified within the consistent framework of a biogeographic classification system that has been adopted as appropriate for that region for the purposes of this report.

Although the focus of the programme is on MPAs, it must be emphasised that MPAs are successful only if they are managed as part of broader programmes to conserve the marine heritage and life-support systems of the world. The high degree of linkage between marine environments and their connection to terrestrial activities and impacts imposes an urgent need for the integration of protected area management and overall conservation of the coastal zone. Large, multiple-use MPAs covering complete ecosystems are a major step towards this overall goal.

Although the report to the World Bank is concerned with sites of global importance for marine biodiversity, it is recommended that all countries within a region should attempt to conserve a representative set of sites for marine biodiversity at the national level, in accordance with Resolution GA 17.38 of the IUCN.

## Approaches to the Selection of MPAs

In most countries, there is a long history of public or sectoral use of marine areas close to the coast, often for subsistence purposes. It is thus generally the case that consideration of continuing human use within and adjacent to MPAs must play a major role in their selection, design and management. Humanitarian, economic, and pragmatic considerations often mean that, where there is a choice of ecologically suitable areas, the dominant criteria for selection of MPA locations, boundaries and management systems will be socio-economic. Clearly, where there are few, if any alternative sites, ecological criteria should be critical and decisive.

Attempts to exclude human uses from traditional areas may jeopardise the physical or economic survival of the people. Community opposition will, in such cases, be very strong and will jeopardise successful management of these areas. It is often better to establish and successfully manage an MPA which may not be ideal in ecological terms, but which nevertheless achieves the purposes for which it is established, than to labour futilely to create the theoretically "ideal" MPA.

The problems affecting choice of area and boundaries are reduced if political, legal, and social conditions allow the creation of large MPAs covering complete marine ecosystems. Education is usually the means by which such community conditions are established. This allows integrated management regimes to be established which provide for continued human use while achieving conservation objectives.

### *Criteria for Selection of Priority Areas*

The criteria used by the working groups to identify priority areas for the establishment and improved management of MPAs are outlined below. They were developed by Kelleher and Kenchington (1992) and have been adopted by the International Maritime Organisation (IMO) for use in the identification of Particularly Sensitive Sea Areas, and by the par-

ties to the Helsinki Convention for the identification of candidate sites for a representative system of MPAs for the Baltic Sea.

Priorities have been identified on the basis of ecological and biogeographic criteria in the first instance, using existing and available data. The other, equally important criteria were used to provide additional justification for or against the selection of a particular area and in considering the probability of establishing and successfully managing a marine protected area. All priority areas were therefore assessed as having a reasonable chance of success as marine protected areas.

#### **Biogeographic importance**

- Either contains rare biogeographic qualities or is representative of a biogeographic "type" or types.
- Contains unique or unusual geological features.

#### **Ecological importance**

- Contributes to maintenance of essential ecological processes or life-support systems, e.g. source for larvae for downstream areas.
- Integrity – the degree to which the area, either by itself or in association with other protected areas, encompasses a complete ecosystem.
- Contains a variety of habitats.
- Contains habitat for rare or endangered species.
- Contains nursery or juvenile areas.
- Contains feeding, breeding or rest areas.
- Contains rare or unique habitat for any species.
- Preserves genetic diversity, i.e. is diverse or abundant in species terms.

#### **Naturalness**

- The extent to which the area has been protected from, or has not been subject to, human-induced change.



#### **Economic importance**

Existing or potential contribution to economic value by virtue of its protection, e.g. protection of an area for recreation, subsistence, use by traditional inhabitants, appreciation by tourists and others, or as a refuge nursery area or source of supply for economically important species.

#### **Social importance**

Existing or potential value to the local, national, or international communities because of its heritage, historical, cultural, traditional, aesthetic, educational, or recreational qualities.

#### **Scientific importance**

Value for research and monitoring.

#### **International or national significance**

Is or has the potential to be listed on the World or a National Heritage List, or declared as a Biosphere Reserve, or included on a list of areas of international or national importance, or is the subject of an international or national conservation agreement.

#### **Practicality/feasibility**

- Degree of insulation from external destructive influences.
- Social and political acceptability, degree of community support.
- Accessibility for education, tourism, recreation.
- Compatibility with existing uses, particularly by locals.
- Ease of management, compatibility with existing management regimes.

### **The Need for Integrated Management of the Marine Environment**

As previously noted, in many countries a large proportion of the human population lives in the narrow strip of land which borders the sea.

This situation and the likelihood that it will not change with time are central to the present state of the marine environment, to many of the threats to its integrity, and to the strategic directions that we should take in protecting ecological processes and states.

As a general statement, one can summarise the stresses imposed by human activity on the world's marine environment under the headings of pollution, overfishing, physical alteration of the seabed or coastline, introduction of exotic species, and climate change.

There are two major deficiencies in our scientific and administrative systems, which place in jeopardy the attainment of ecologically sustainable use of coastal waters.

The first is the absence of comprehensive, long-term monitoring programmes covering each of the large marine ecosystems which impinge on the coastline. This deficiency prevents us from defining the levels of stress that exist now, and the trends in those levels.

The second is the lack of integration of planning, management and research in the coastal zone. Without integrated programmes, there is little chance that nations will be able to take the actions, on both land and sea, that will be necessary to prevent insidious degradation of the marine environment.

Over the past century there have been three principal approaches to marine management. The first and oldest consisted of regulation and management of individual marine activities, such as commercial fishing, by specialist agencies, with varying degrees of co-ordination of regulation between different agencies. Usually there was little or no co-ordination with management of adjacent coastal lands.

The second approach involved the creation of small marine protected areas which provided special protection for particularly valuable areas within the broad areas which were subject to regulation of fishing or, in some cases, to no regulation. This is the most common application of the concept of marine protected areas. It is usually the first stage in marine conservation initiatives which go beyond fisheries' restrictions which limit gear, catches, and effort.

The third approach is a recent development. It consists of the establishment of a large, multiple use protected area with an integrated management system providing levels of protection varying throughout the area. Ideally this integration should extend to co-ordinated management of marine and terrestrial areas in the coastal zone and beyond. However, in many circumstances, the complexity of boundaries and competition between governments and gov-

ernment agencies regarding jurisdictional responsibility effectively preclude this.

It is conceptually possible for the same management results to be achieved with either of the last two approaches. However, the integrated multiple-use protected area approach has the advantage that co-ordination of regulation of different human activities can be automatically achieved when the overriding responsibility for management rests with a single agency.

Co-ordination of management in the marine environment is in many ways even more important than it is in the terrestrial sphere. This is because the high degree of connectivity in the seas facilitates the transmission of substances and effects throughout the water column.

The tradition of common property rights in the sea has led to actual or potential conflict between users and between forms of use. Under these circumstances there is a positive incentive for individual users to maximise their exploitation of the resource, even if destruction of the resource is an inevitable result – the “tragedy of the commons”.

All of these considerations lead to the conclusions that, first, explicit responsibilities for maintaining the biological diversity and productivity of coastal marine areas should be given to agencies which are empowered and equipped to exercise those responsibilities effectively. Second, planning and management of the entire coastal zone should be carried out in an integrated way so that the costs of a human activity, such as farming, are not inadvertently borne by another sector of human activity, such as fishing or tourism. The Resource Assessment Commission’s report on the coastal zone emphasised this conclusion.

## **A Framework for Integrated Management of Marine Protected Areas**

Although many countries, including Australia, have made good progress in establishing and managing marine protected areas, we must recognise that further action is required to ensure the conservation of biodiversity and sustainable use of natural resources. For the marine environment this will depend on the management of coastal waters in an integrated way. I would like to conclude by suggesting a management option that could help make this a reality.

Constitutional and jurisdictional difficulties are likely to inhibit the creation of agencies with responsibilities covering the entire coastal zone, including

the land and sea components. It may be more practicable to proceed by a series of steps, the first of which could be the establishment of regimes that ensure integrated planning and management of the marine coastal zone of a state or country, while acknowledging that the ultimate aim is to extend such integrated management landwards.

I therefore propose the establishment of Marine Management Authorities, with representatives of national and state governments, joined by a small number of representatives of local government and community interests, with the specific function of achieving integrated planning, research and management of the marine coastal zone in accordance with the principles of ecologically sustainable development.

Because of the proven difficulty that organisations and individuals have in simultaneously attempting to achieve two goals – in this case, economic development and ecological protection – these authorities should not be responsible for detailed management of individual sectoral activities, such as fisheries or tourism. Such activities should continue to be managed by existing specialist agencies. However, the Marine Management Authorities could have the following responsibilities and functions:

- Development, in association with interest groups and the community generally, of a strategic plan for the marine coastal zone.
- Oversight of coastal development to ensure that it is ecologically sustainable.
- Design and management of comprehensive monitoring programmes which will define the state of the marine coastal environments and the trends in environmental parameters.
- Design and management of contracted, multidisciplinary, ecological research programmes aimed at solving environmental problems.
- Design and implementation of comprehensive community involvement and education programmes designed to achieve voluntary acceptance by the community of policies, programmes and actions which will lead to ecologically sustainable development; particular emphasis should be placed on educating the young.

To the maximum extent practicable, specific management programmes and actions should be

carried out by existing agencies, with the Marine Management Authorities concentrating on policy, strategy, planning, design, and supervision of research programmes and co-ordination. The enabling legislation should override conflicting provisions of existing legislation.

In the absence of an organisational framework that provides for integrated management, the energies of people and governments will continue to be dissipated in intersectoral conflicts, incompatible activities, inefficient developments, and research that is not relevant to achieving ecologically sustainable development.

## Conclusion

The urgency of the need to conserve marine biodiversity means that decisions and action must be taken without delay on the basis of the best information available.

Chapter 17 of Agenda 21, the action plan drawn up following the United Nations Conference on Environment and Development (UNCED), specifically requires that "states should identify marine ecosystems exhibiting high levels of biodiversity and productivity and other critical habitat areas and should provide necessary limitations on use in these areas, through *inter alia* designation of protected areas". The Convention on Biological Diversity will require states to adopt and carry out conservation policies to maintain biodiversity.

With the completion of its report to the World Bank, the next stage of the MPAs programme will be to develop and implement regional and national projects that aim to address the priorities for creating the global representative system of marine protected areas.

It is hoped that IUCN, CNPPA, GBRMPA, the World Bank, and the many other organisations which have contributed to the preparation of this document can continue to work together on this next phase of the programme.

In today's world it is becoming increasingly evident that the key to successful achievement of any regional or national goal is the involvement and commitment of the people. Education is the vital ingredient that both gives the people the confidence to involve themselves in complex issues (and preservation of the world's natural heritage is certainly complex) as well as the knowledge to make their involvement productive.

Education will be at the centre of the IUCN's future programme to create a global representative

system of marine protected areas, as it has been throughout the life of the Great Barrier Reef Marine Park Authority. It will be at the core of any successful attempt to establish integrated management of Australia's and other countries' coastal zones.

The purpose of this address has been to maintain that integrated management is vital to the protection of the world's natural heritage and that education is the most important tool for achieving integrated management.

## References

IUCN. 1988. Resolution 17.38 of the IUCN (World Conservation Union) General Assembly. San José, Costa Rica, February 1988

IUCN. 1994. Resolutions and Recommendations. 19th Session of the General Assembly of IUCN – The World Conservation Union, Buenos Aires, Argentina, 17-26 January 1994.

Kelleher, G and R Kenchington. 1992. Guidelines for Establishing Marine Protected Areas. A Marine Conservation and Development Report, IUCN, Gland, Switzerland. 79 pp.

Myers, N. 1988. Threatened biotas: "hot-spots" in tropical forests. *The Environmentalist* 8(3): 187–208

Stones, CR and DC Wege. 1992. Putting Biodiversity on the Map: Priority Areas for Global Conservation. International Council for Bird Preservation, Cambridge, UK

Vane-Wright, RI, CJ Humphries, and PH Williams. 1991. What to protect? – Systematics and the agony of choice. *Biol. Cons.* 55: 235-254

## 7.2 Overview of MPAs in the Western Indian Ocean

Rod Salm

*Worldwide, the coastal and marine habitats remain woefully under-represented in the [global] system [of protected areas] and far more work remains if these habitats are to be protected effectively.*

(McNeely *et al.* 1990)

Nowhere is this statement more accurate than in eastern Africa, where the big game syndrome and dependence on tourism revenue have polarised conservation action landwards, or towards areas identified as having a greater value to tourists than the conservation of marine biological diversity.

In August 1992, largely in response to the overwhelming emphasis on land-based ecosystems, wildlife, and protected areas in East Africa, and in recognition of the crucial need for conservation action in the seas of the region, the IUCN Eastern Africa Regional Office (EARO) initiated a Marine and Coastal Conservation Programme. This Eastern Africa Marine and Coastal Conservation Programme is attempting to catalyse a Western Indian Ocean Marine Biodiversity Programme that would include the following five principal components:

- A regional level coral reef initiative.
- A regional level threatened species initiative (initially focusing on turtles and dugongs).
- A regional level marine protected areas initiative
- A regional level marine biodiversity database, including a catalogue of relevant researchers and institutions.
- National and/or subnational level integrated coastal zone management initiatives.

Following a brief introduction to the special oceanographic and biogeographic features and environmental problems of the Western Indian Ocean (WIO), this paper focuses on the marine protected area initiative. It summarises achievements in the establishment of marine protected areas, analyses their effectiveness in achieving conservation of the marine environment, and proposes principal needs for further action.

## **The Western Indian Ocean: An Introduction**

The WIO encompasses the mainland states of Somalia, Kenya, Tanzania, and Mozambique, and the island states of Comoros, Madagascar, Mauritius, Réunion, and Seychelles.

Although excluded by tradition from the region, South African is linked by the southward flowing Mozambique and Madagascar currents that join to form the Agulhas Current, by the many common species, and by some straddling species that are

shared by several states of the region (e.g. turtles that nest on the Tongaland coast of South Africa but move north to feeding grounds off Mozambique, Tanzania, and Madagascar). At least the northern portion of the South African coast should be included in the WIO biogeographic region for conservation purposes.

The chapter *Region 8c – South East Africa* of the yet to be published IUCN CNPPA/World Bank document *A Global Report on a System of Marine Protected Areas* gives a good general introduction to the oceanography and environment of the WIO. IUCN/UNEP (1984) and the various contributions to *Ambio* 7(6) 1983 provide useful additional introductory details on the environments and species of the region, and their uses and abuses.

### **The Principal Habitats**

IUCN/UNEP 1984 includes a detailed classification of 40 different marine and coastal habitats, and their distributions, uses, and protection and management status in the WIO.

Rich coral reefs dominate the near shore marine environment of the WIO. Although much of the reef growth in the Indian Ocean is considered to have its origins 70 million years ago, large changes in sea level limit the reefs that survive today to probably no more than 5 000 years old. Fringing reefs are the most common type in the WIO. They border the shore, with few interruptions from northern Mozambique, along the length of mainland Africa to the Red Sea, and surround the relatively stable granitic islands of the Seychelles and the younger volcanic islands (Comoros, Mauritius, Réunion). Salm (1983a) and UNEP/IUCN provide more detailed introductory accounts of the coral reefs of the region.

Coral reefs are now known to be at least as diverse as that usual benchmark measure of diversity, the tropical rain forest. These reefs support important fisheries on which the majority of coastal fishing communities of the region depend for their livelihood, and are a significant draw card for coastal tourism. Reef tourism, especially the related sail and glass-bottom boat operations, gives employment to many coastal inhabitants, supplementing the incomes of fishermen, or providing them with an alternative earnings opportunity.

Coral reefs also break the force of the Indian Ocean swells to provide safe anchorages for fishing boats, and shelter for beaches and productive lagoons that support the growth of vast seagrass meadows.

Nursery to numerous reef fishes and home to a variety of other sea creatures, the seagrass further dampens the energy of scouring waves, allowing the build-up of beaches where people play and endangered turtles nest.

Mangroves are the third dominant component of the complex coastal ecosystem. These hardy trees turn the harsh saline tide lands into lush and productive wetlands that are breeding sites, nurseries, and homes to a variety of creatures, many of which are of great importance to us (notably oysters, crabs, prawns, and a variety of fishes). Mangroves also yield firewood, charcoal, and poles for construction and export. There are at least 654 species of algae, molluscs, crustaceans, echinoderms, and fishes of economic importance that are associated with mangroves in the WIO (Matthes and Kapetsky 1988).

Mangroves condition the coastal waters, trapping silt and winning for us new land as they creep relentlessly seaward. Their leaves drop and are cycled as detritus which is the driving force behind a productivity that supports fisheries tens of kilometres offshore.

Sandy beaches are another important component of the coastal ecosystem. They have immense allure for coastal tourists and consequently contribute substantially to the national exchequer. Less well-appreciated is their value as beaching areas for fishing boats, as a source of cockle shells for food, as feeding areas for migrant waders, and as nesting sites for endangered sea turtles.

These coral reefs, seagrass beds, mangroves, and beaches are the integral elements of the coastal ecosystem, elements that help nourish us and safeguard our properties, and that drive the coastal economy. They are elements, too, that hold in store for us a little tapped but valuable potential for future use.

### **General Biodiversity Patterns and Distribution**

In this forgotten western Indian Ocean corner of the world, not only do we not know the extent of our marine biological wealth, but we also certainly do not know the rate at which we are losing it. To most coastal people here, UNCED and the Biodiversity Convention – indeed, the concept of marine biodiversity itself – are as foreign as octopi to ostriches.

There has been an attempt to analyse marine biodiversity issues in the WIO (Salm 1994), but information on regional marine biodiversity and biogeography is scarce, and difficult to compile. IUCN/UNEP (1984) presents lists and accounts of endemic and threatened marine and coastal species

of the WIO, summarising their distributions, uses, and protection and management status.

There is a general decrease in species diversity west across the Indian Ocean from the Australasian region (centred on Indonesia) that, in some cases, is offset by endemic WIO species. Centres of higher endemism appear to be the southern African coast and the outlying islands to the south (Mauritius and Réunion). Salm (1994) presents a synthesis of available data on species distribution and endemism for corals, mangrove-associated species, fishes and molluscs. The distribution of endemic marine species for certain taxa is summarised in **Table 1**.

This lack of precise knowledge of WIO biodiversity patterns makes it difficult to identify areas of greater or lesser conservation interest in the region.

We need to proceed with caution when applying biodiversity as a criterion for selection of marine protected areas. Although, for example, seagrass beds and mangroves would rate very low on a species diversity scale, compared to coral reefs, they are of inestimable value as nurseries for many species of direct commercial or subsistence value, and as ecological support systems for the nearshore marine environment (see Saenger *et al.* 1983 and Salm and Clark 1984 for discussions of the value of mangroves).

Rather than simply focusing on diversity of mangroves and their complement of species, we need to identify important associated and obligate biota in the WIO (i.e., those confined by specific requirements to a distinctive diet or habitat – in this case, mangroves), and their status regionally, nationally and locally. Thus, a mangrove species may be common globally or regionally, but rare or threatened locally, and consequently of greater significance at this level.

For example, in South Africa the mangroves *Ceriops tagal* and *Lumnitzera racemosa* and the mangrove whelk *Terebralia palustris* are listed as "vulnerable", and hence of special concern nationally, although they are generally common elsewhere in the region. The mangrove kingfisher *Halcyon senegaloides* is also "vulnerable" there, and in Madagascar the mangrove teal *Anas bernieri* is both endemic and "vulnerable" (Saenger *et al.* 1983), and hence of critical concern.

Beaches, in particular, with their full complement of two to three obligate mollusc species (Taylor 1971) underscore the folly of using biodiversity alone as a measure of conservation importance, and of separating elements of the coastal ecosystem for isolated conservation action.

**Table 1:** Endemic marine fauna of the Western Indian Ocean (based on available data).<sup>1</sup>

Species	Som	Ken	Tan	Moz	Mad	Reu	Mau	Com	Sey <sup>2</sup>
Corals		8	8	17	5	9	26		4
Ascidians							2		
Polychaetes							1		
Molluscs					1	2	5		
Damsel fishes <sup>3</sup>	6	10	10	3	9	8	12	3	3
Other fishes	4	5	5	8	8	1	11	4	26
Coastal and seabirds					2	2		1	4

<sup>1</sup> Some species are found in more than one area, but all are endemic to the WIO.

<sup>2</sup> Som = Somalia, Ken = Kenya, Tan = Tanzania, Moz = Mozambique, Mad = Madagascar, Reu = La Réunion, Mau = Mauritius and Rodriguez, Com = Comoros, Sey = Seychelles, Aldabra and other outlying islands.

<sup>3</sup> The distribution of a few of the species in these totals extends to include the Red Sea, Chagos, or northern South Africa.

For example, *Donax faba*, a small intertidal bivalve of sandy beaches, is harvested extensively throughout the WIO. Our sandy beaches are extremely low in mollusc species (generally only two), but are vital for their other obligate species. These include ghost crabs (*Ocypode* spp.), feeding areas of migrant shorebirds, and nesting sites for turtle species, one of which is "vulnerable" (*Caretta caretta*), and four that are "endangered" (*Chelonia mydas*, *Eretmochelys imbricata*, *Lepidochelys olivacea*, *Dermochelys coriacea*).

Clearly, we need to take great care when we apply biodiversity as a criterion for the selection of sites for conservation action. The example of molluscs shows that inter-habitat comparisons of diversity are fallible, and that the range of species diversity can only be conserved to maximum benefit by including the full range of habitats in the coastal ecosystem, each with its distinctive species assemblages, whether high or low in diversity.

### Threats to WIO Environments and Species

Early settlement by colonisers and resource use by seafarers led to the rapid disappearance of species from the oceanic islands. For example, dugongs, crocodiles, giant land tortoises, and nesting green turtle populations were eliminated from the granitic Seychelles Islands, and the dodo was hunted to extinction on Mauritius.

The more recent impact of people on the environment of the WIO has been extensively documented (*Ambio* 12(6) 1983; UNEP OCA/PAC RSRS 7-12, 39, 41, 51, 57, 60, 61, 84, 105, 106, 113, 139). In summary,

there are two principal problems threatening the marine environment, both of which lead to loss of biodiversity:

- Habitat degradation sometimes leads to complete destruction.
- Over-exploitation of species may lead to local extirpation of some populations. The challenge is to identify the underlying causes of these problems and to apply appropriate actions to address them.

Levels of industrial development are low relative to many other parts of the world. Consequently, there is relatively little problem posed by industrial pollutants and toxic wastes. However, there are few safeguards on development, resulting in serious and often irreversible damage to the environment and loss of biodiversity caused by the poor siting of developments. The institutional capacity for environmental planning and management is not always sufficiently strong or advanced to ensure appropriate zoning of activities and developments. This is one underlying cause that requires urgent attention.

The major threat to the biodiversity of the region is one of unrelenting impoverishment resulting from the activities of poor and burgeoning coastal communities dependent on the same few traditional resources. This leads to an escalation in subsistence use which, in turn, generally leads to widespread impoverishment of biodiversity through over-harvest, possibly ending in complete loss over the long term (e.g., the disappearance of many fish spe-

cies from the heavily fished reefs of Tanzania, and the loss of coastal forests along the northern Tanzanian coast).

Given a lack of opportunities for these coastal communities to diversify their activities, they are resorting to increasingly destructive means to survive, and continued resource use has become unsustainable. Income diversification at the level of coastal communities is another issue requiring urgent action.

Marine protected areas can be a significant tool in addressing habitat destruction and species impoverishment. Following a brief introduction to the marine protected areas of the region, an outline of how we might proceed with a regional programme to strengthen and complete these areas is presented in preliminary form below.

## Marine Protected Areas in the WIO

### *Current Status*

The IUCN CNPPA/World Bank document *A Global Report on a System of Marine Protected Areas* gives a current synthesis of information on marine protected areas of the WIO. It was compiled from the following principal sources: IUCN/UNEP 1984, IUCN/UNEP 1987, and UNEP/IUCN 1988.

Marine protected areas are unevenly distributed through the WIO, and they receive varying amounts of management attention. Levels of management vary from good in some of the Kenyan and Seychelles marine protected areas to none, as in Tanzania and Mauritius.

A number of these areas have never been managed, may not even be known to the management authority, have been severely degraded since they were gazetted, lack appropriate protection status, and should not qualify as protected areas. This applies especially to the six fishing reserves in Mauritius (several of which are heavily used for sand extraction), the seven marine reserves in Tanzania that were gazetted in 1975 (one of which, Maziwi Island, has been completely eroded away), and the five strictly controlled nature reserves in Madagascar designated for nesting sea turtles in 1923.

Nine of the nature reserves listed for Seychelles in the IUCN CNPPA/World Bank report are actually island reserves for birds (though four have nesting turtles), nine of the nature reserves listed for Mauritius and one for Madagascar also include islands only, and three game reserves listed for Mozambique are terrestrial, reaching to the coast.

Since 1983, at least two new marine protected area complexes have been established in Kenya (Mombasa Marine National Park and Marine National Reserve, and the Diani Chale National Marine Reserve). Mananara Marine National Park was established in 1989 off Madagascar, the Silhouette Marine National Park has been gazetted in Seychelles, legislation and management plans are currently being drafted for two marine parks (Blue Bay and Balaclava) off Mauritius, significant progress has been made toward the formal establishment of the Mafia Island Marine National Park in Tanzania, and preliminary efforts toward community-managed marine protected areas are being implemented on Zanzibar.

So, while 41 marine protected areas were listed for the region in 1983 (Salm 1983b), counting the new reserves, and including Mafia Island with these (total = five), and discounting the island reserves (18) and others that are not managed (14, including the Silhouette Island Marine National Park which receives no management and has no provisions for management in the foreseeable future), 28 is a truer total of marine protected areas for the WIO (Table 2). The surface area of these 41 areas was less than 1 900 km<sup>2</sup> in 1987, and probably remains much the same today. To put this in perspective, this area is about 0.8% of the total protected terrestrial areas for Kenya, Tanzania, and Mozambique (245 270 km<sup>2</sup>) in 1986 (IUCN/UNEP 1987). This percentage is a good indicator of the relative importance placed on marine protected areas in the region.

### *Analysis of WIO Marine Protected Areas*

If the number of marine protected areas is a suitable measure of conservation achievement, it should be clear from the preceding section and Table 2 that some WIO countries have achieved more than others. However, the establishment of a system of reserves aimed at preserving the full range of biodiversity and social values has not been the driving criterion for selection of these marine protected areas. In Kenya, for example, value for tourism appears more important as a selection criterion than biodiversity. Nonetheless, marine protected areas, if properly designed and managed, will prove viable as centres for conservation of a variety of values.

Table 2 lists the 28 accepted marine protected areas of the region. Column 1 shows the uneven distribution of marine protected areas in the region, with Somalia, Mauritius, and the Comoros lacking them altogether. There is a need for better geographic representation.

**Table 2:** Evaluation of Western Indian Ocean marine protected areas.

Site name <sup>1</sup>	Adjacent habitat links <sup>2</sup>	Conservation focus	Community links/value <sup>3</sup>	National value	Regional value
<b>KENYA</b>					
Kisite MNP-Mpunguti MNR	adequate?	reefs/tourism	good	high	high?
Kiunga MNR	?	dugongs/turtles/reefs/seabirds	?	high?	high?
Malindi and Watamu MNPs/MNRs	adequate?	reefs/tourism	moderate?	high	high?
Mombasa MNP/MNR	adequate?	reefs/tourism	improving	moderate	low
Diani Chale MNR	adequate?	reefs/tourism	improving	moderate	low
<b>TANZANIA</b>					
Mafia Island MNP	adequate	marine biodiversity	good	high	high
<b>MOZAMBIQUE</b>					
Ilhas da Inhaca e dos	adequate?	high biodiversity			
Portuguese Reserve	?	research/tourism	?	high	high
Bazaruto NP	adequate?	dugongs/turtles/reefs/tourism	?	high	high
Paradise Island MNP	?	tourism?	?	?	
<b>MADAGASCAR</b>					
Mananara MNP	?	reefs/mangroves/dugongs?/coast	?	high?	?
<b>SEYCHELLES</b>					
Aldabra Atoll SNR	good	high biodiversity	N/R	high	high
Ste Anne MNP	adequate	reefs/tourism/turtles	poor	high	moderate
Curieuse MNP	adequate	reefs/tourism	poor	high	moderate
Port Launay MNP	poor	reefs/tourism	poor	moderate	low
Baie Ternay MNP	poor	reefs/tourism	poor	moderate	low
Brulee-Pte au Sel Reserve	poor	molluscs	poor	low	low
North-east Point Reserve	poor	molluscs	poor	low	low
La Passe-Grosse Roche Res. Anse Boudin-Pointe	poor	molluscs	poor	low	low
Zanguilles Reserve	poor	molluscs	poor	low	low
<b>REUNION</b>					
Ile Europa Reserve Naturelle	adequate?	turtles/seabirds/reefs?	N/R	high	high
Iles Glorieuses Reserve Nat.	adequate?	seabirds/coconut/crabs/turtles/reefs?	N/R	moderate	moderate
Iles Tromelin Reserve Nat.	adequate?	turtles/seabirds/reefs	N/R	high	high
Ilot de Bassas de India Reserve Naturelle	adequate?	reefs?	N/R	?	?

<sup>1</sup> MNP= Marine National Park; MNR = Marine National Reserve; NP = National Park; SNR = Strict Nature Reserve.

<sup>2</sup> Based on an assessment of adequate inclusion of adjacent and linked habitats.

<sup>3</sup> Based on provisions for community involvement in management and benefits to communities; N/R = not relevant for these isolated oceanic sites.



Integration of marine protected area management with the management of surrounding areas is generally inadequate (column 2), and is an area that needs to be strengthened. This is a much-needed agenda item for a regional workshop aimed at developing sustainability for marine protected areas.

Further analysis is needed for column 3, taking into account the distribution and threats to biodiversity, endemic and threatened species, and critical marine habitats (Sensu Ray, 1976).

There has been little progress in linking coastal people into the marine protected area selection, planning, and management process (column 4), and there is consequently little benefit to them. This problem has been recognised in Tanzania and Kenya where increased efforts are under way to ensure greater benefits to the people living adjacent to marine protected areas and to involve them more actively in the management of the areas. A regional workshop to share ideas and experiences on this subject would be timely and valuable, especially if linked with other topics relating to the sustainability of marine protected areas.

Existing marine protected areas generally have greater value at the national level (column 5) than at the regional level. A greater effort is required to establish a regional system of marine protected areas which addresses the WIO biogeographic province as an integral unit.

#### *Constraints on the Establishment of Marine Protected Areas in the WIO*

The lack of adequate institutional capacity is one of the major constraints in achieving the effective establishment of marine protected areas in the WIO. Although some countries have marine protected areas in place, many of these lack adequate management.

Others give inadequate consideration to the needs and interests of traditional users of the included areas (the inherited outdated colonial approach), resulting in little community support or, worse, outright antagonism on the part of the community. Many additional marine protected areas have not advanced beyond proposals (and others were gazetted in 1975).

Another major constraint is the general lack of effective control over activities outside marine protected areas which impinge on the areas. This is particularly true of activities that destroy the natural environment and impoverish biodiversity through the extirpation or reduction of species populations and ecosystems that serve as sources of propagules

and nutrients to communities inside the protected areas.

Bilateral or multinational co-operation will be needed in some instances to enable transnational issues to be addressed adequately. For example, turtles nesting along the Tongaland coast of South Africa are protected on their nesting beaches but they move, along with turtles which are protected on the beaches of Europa Island, to feeding grounds off Mozambique, Tanzania, and Madagascar, where they are harvested. Another example is that of the Tanzanian reefs adjacent to, and upcurrent from, those of the Kisite Marine National Park in Kenya. They are extensively overfished and devastated by destructive fishing techniques. This must affect the quantity and variety of larvae drifting onto the Kenyan reefs.

Another constraint that applies universally, but to the WIO in particular, is the general public apathy toward, and lack of awareness of, marine conservation issues.

This apathy also entails a lack of appreciation of the value of the marine environment and of our impact on it. This has the following direct consequences:

- As we cannot easily see what happens underwater, the sea is regarded as an inexhaustible source of food and a convenient place to dispose of our wastes. We have little awareness of our impact on submerged life, and it is generally more difficult to monitor and investigate this impact. We know little of the functioning of ecosystems and the life cycles of species, so it is difficult to anticipate the influence of various activities on them. Consequently, we lack a good biogeographic classification scheme from which to ensure adequate representation of regional biodiversity in marine protected areas; we are depleting species populations faster than we can document the process; and our management decisions are guided more by theory and speculation than the application of proven methods.
- There is a general perception that the sea has an endless capacity for self-healing. Consequently, active interventions to restore degraded habitats and depleted populations, which are a common practice among wildlife and protected area managers on land, are not seen to be necessary, or are regarded as too difficult.
- Research on or under the sea is unpopular or difficult to break into, and deferred in favour of ef-

fort on land where it is perceived to be of greater immediacy and priority. Consequently, our knowledge of the seas is sparse relative to land. We are still making major discoveries in the seas, e.g., in the WIO, the coelacanth *Latimeria chalumnae* was discovered alive in 1958, having been considered extinct ca. 70 million years ago.

### **Possible Approaches to Marine Protected Area Establishment in the WIO**

Conservation of the marine-coastal realm involves a number of related activities. In a more traditional approach, a system of marine protected areas would be established to include areas of special interest, and to enable strict protection, controlled access, regulation of activities, and intensive management. Generally, however, marine protected areas in isolation will have to be large and numerous to achieve the goal of conservation of the full range of resources and their support systems.

There still is value in protecting small areas which remain essential for safeguarding vital habitats such as seabird colonies. However, these sites cannot stand alone in the vast interconnected coastal environment, where winds, current, and species movements ensure a great deal of linkage between far distant areas (Salm and Clark 1984). We would need to fit them into some larger, meaningful, cohesive ecological and administrative framework (Salm and Dobbin 1989).

When this is not achieved, as happened at Mazwi Island in Tanzania (Yonazi and Mwamoto 1982; Fay 1992), we can expect spectacular failure of the conservation area. In this case, a turtle reserve disappeared when, according to popular belief, the surrounding reef was blown apart by fishermen using explosives, although the truth may be more complex and attributable also to sea level rise (Fay 1992).

Because of the linkages between sea grass, mangroves, and coral reefs, and their proximity to each other, we should group estuaries and mangroves, tidal flats and sea grass, and lagoons and coral reefs into a complex of habitats forming a typical tropical coastal ecosystem. This unit, with its full complement of component habitats, should be the focus for conservation action.

How can this be achieved, short of creating a protected area covering the whole coastal zone of a country and all parts linked to it by wind transport of seeds, salt spray, and pollutants, and by streams, rivers and run-off from land? We have to settle for some realistic and achievable alternatives.

One approach would be to establish vast, multiple use reserves incorporating a full range of linked habitats. These would be zoned for a variety of pursuits, ranging from strict protection to controlled development and extractive activities.

A more practical approach in the region may be to integrate the management of marine protected areas with general land use planning, for example through coastal zone management, and to facilitate the participation of coastal communities in this process. Establishment of marine protected areas in the broader context of participatory coastal zone management planning provides an effective means to buffer these areas from upstream and other interactive activities and processes that could degrade the included ecosystems (Salm and Clark 1984; Salm 1987), while addressing the needs and aspirations of coastal communities.

In terms of this approach, the entire coastal zone of the country essentially functions as a large conservation area in which all significant ecosystems receive protection without the deployment of permanent field managers. Thus only the minimal core areas need specific management attention from the protected areas authority. Management activities are free to focus on the protection of critical marine habitats or core areas (reducing conflict between user groups), and on the restoration of damaged areas.

Land-use policies are used to achieve *de facto* protection for a range of sensitive and scenic environments (including beaches, dunes, wetlands, estuaries, coastal cliffs and mountains, and headlands). This generally underexploited means of protecting critical habitats and scenic areas has one main advantage: it enables broad environmental protection without the need to define, legislate, and manage numerous small and scattered reserves.

The advantages of buffering marine protected areas by broader coastal zone management as a means of conserving marine and coastal resources include the following:

- Species will obtain some degree of protection throughout the coastal zone. This helps ensure that more populations than just those in protected areas, hence greater intraspecific genetic diversity, receive protection from major damaging activities (such as pollution, over-harvesting, and reclamation).
- A greater variety of habitats will receive protection from major damaging activities. Many coastal and marine environments normally com-

prise clusters of habitats separated into spatially discrete components by headlands, creeks, river mouths, channels, or bays. These components function as "islands" of habitats that could provide survival opportunities to different members of a set of competitive species.

- A catastrophic event (oil spill, tropical storm, crown-of-thorns starfish outbreak) is not as likely to destroy all of a number of separate areas. Considering the dispersal ability of many marine and coastal species with larvae or drifting seeds, recolonisation of damaged areas should be possible so long as a source is available. For example, one or a system of protected coral areas would remain susceptible to predation during a major crown-of-thorns outbreak, but would be severely deprived of larvae for recolonisation if set among a complex of destroyed reefs.

There is no evidence that any of the current marine protected areas of the region have consciously incorporated either of these two approaches, although the soon-to-be-gazetted Mafia Island Marine National Park has come closest to achieving this.

Related to these approaches is the critical need for research to yield information on species and ecosystem distribution, uses, and threats, and the processes sustaining them. This is an activity that can be promoted and expedited in marine protected areas. For example, the Kenya Wildlife Service has facilitated ongoing research on the impact of fisheries on coral reefs by the New York Zoological Society's Coral Reef Conservation Project.

Finally, and crucial to the success of marine protected efforts, is the fundamental need for community involvement in the form of participation in the selection, planning, and management process, and through extension and educational activities.

## Developing and Strengthening the System of Marine Protected Areas in the WIO

### Marine Protected Areas Needs in the WIO

Earlier in this report several needs were identified to improve the current system of marine protected areas. These needs can be grouped broadly under the following two themes that would form the core of a regional marine protected areas programme:

- The need for an improved regional system of marine protected areas, including:

- the need for a clear definition of marine protected area objectives, and assessment of whether these address the full range of regional conservation issues; and

- the need for better geographic representation.

- The need for improved management capacity for marine protected areas, including:

- the need for integration of marine protected areas into broader management frameworks;

- the need for marine protected areas to provide improved community participation and benefits; and

- the need to strengthen marine protected area management capacity and action.

### Framework for Regional Co-operation

The establishment in 1979 of the Indian Ocean Sanctuary (encompassing the entire Indian Ocean to 55 degrees south latitude) for the conservation of whales is among the greatest achievements of its kind in marine conservation. It offers an example of achievement in international co-operation for resource management and conservation and, together with the Protocol Concerning Protected Areas and Wild Flora and Fauna in the Eastern African Region generated through the UNEP Regional Seas Programme, provides an excellent framework for collaboration in the development of a regional marine protected areas programme.

In practice, national interest will take priority over regional interests – the first duty of a nation is the well-being of its people, but there are regional responsibilities, implications and interests, too.

A carefully planned and executed national biodiversity conservation plan will still serve the regional interest, and would leave relatively little more to be done at that level. However, the challenge is to establish an active and interactive network of protected area practitioners who work together to share experiences and lessons learned, and to develop a working system of protected areas that truly safeguards the resources of the region.

### Programme Goal

To safeguard marine and coastal biological diversity of the Western Indian Ocean through the establish-

ment of a representative system of marine protected areas.

### *Programme Objectives*

Within the context of the needs, opportunities and priorities of the region, and the aspirations of the people, and in close consultation with relevant government authorities, non-governmental organisations (NGOs), and the concerned communities:

#### *Phase 1*

- To establish an interactive regional network of marine protected area practitioners and to develop mechanisms for regular exchange of information and experience.
- To design an integrated representative system of marine protected areas for the conservation of biological diversity.
- To define a programme of activities to strengthen the capacity of appropriate institutions to manage marine protected areas.
- To develop project proposals to governments and funding agencies to enable the implementation of the above two objectives.

#### *Phase 2*

- To implement a focused programme of training, workshops, study tours, and higher learning to further develop capacity for MPA management in the region.
- To provide technical and other support for the implementation of projects for the establishment and improved management of marine protected areas.

### *Activities*

#### *Phase 1*

It is proposed that the marine protected area needs and programme objectives could be met through the following activities:

- Establish an interactive network of marine protected area scientists, planners, and managers to enable and promote the regional sharing of expertise and experience, including inter-agency agreements to provide personnel on secondment to assist with problem-solving and programme development.

- Through a working group drawn from the network, and building on the IUCN CNPPA/World Bank report, define a framework for a regional system of marine protected areas, including:

- a definition of the region-specific goal, objectives and selection criteria for a regional marine protected areas system;
- a detailed review of the findings and recommendations of the IUCN CNPPA/World Bank report concerning existing and proposed marine protected areas and their contribution to the conservation of marine biodiversity, fisheries and tourism, and assessment of whether existing systems are adequate to conserve representative biodiversity;
- formulation of a regional strategy for marine protected area establishment and management that builds on the IUCN CNPPA/World Bank and UNEP OCA/PAC reports, and national initiatives to:
  - identify any additional areas for establishment as marine protected areas
  - identify priorities for action within the context of the programme goal and objectives
  - integrate the above into a proposed representative system of marine protected areas for the conservation of regional marine biological diversity, and recommend a course of action for establishment of these areas
- the development, in close collaboration with all relevant government agencies, NGOs, and communities if appropriate at this stage, of detailed proposals for projects aimed at implementing the conclusions from the above activities – these projects will incorporate strong elements of institutional strengthening, training, public education, community participation, networking, and evaluation, and will address the following general themes:
  - marine protected area planning and management;
  - management oriented research and monitoring (both environmental and social);

- public education and community awareness;
  - training and strengthening institutional capacity for management.
- Critical review, by the network, of management objectives, policies, and practices for marine protected areas, to assess:
- whether marine protected area design and management practices are adequate to fulfil management objectives;
  - whether mechanisms to achieve effective management action beyond marine protected area boundaries, or to integrate these into broader management frameworks (such as through coastal zone management), exist and are adequate to buffer the protected areas from surrounding developments and activities;
  - whether processes and approaches to coastal community participation in marine protected area planning and management, and means to have these bring tangible benefits to the communities, are successful and transferable within the region;
  - and to identify successful management sites and methodologies that would form the basis for regional study tours and wider regional application.
- Critical review of the institutional arrangements, planning and management capacity for marine protected areas in the region to assess training and technical assistance needs, and define a course of action to address these.

#### Phase 2

- Implementation of training programmes, including:
- special regional training courses for marine protected area planners and managers, possibly through the College of African Wildlife Management in Mweka, Tanzania (Kenya Wildlife Service have indicated that they would be willing to facilitate this through their base at Shimoni to enable participants to acquire first-hand experience in the Kisite Ma-

rine National Park, a good example of a working park);

- a sharing of experience and lessons learned through workshops, study tours to sites in the region, including expansion of the IUCN EARO Marine Programme network newsletter and information dissemination activities, possibly through partnership with a regional NGO such as the Western Indian Ocean Marine Science Association (WIOMSA).
- Provision of support for implementation of project activities developed in Phase 1 of the programme, including fund raising and technical advisory services.

#### Organisational Framework

A lead agency will need to be identified to coordinate and implement the programme. This role could be assumed by IUCN as the technical partner with UNEP OCA/PAC, but the region would be better served if a suitable regional NGO could be located for the role of implementing agency.

WIOMSA is a young regional NGO based in Zanzibar that has members from all WIO states. WIOMSA would be an appropriate choice for implementing agency, and could be assisted in this capacity by IUCN. WIOMSA would act as secretariat to the Working Group, co-ordinating all its meetings and ensuring regular contact and exchange of information. WINDOWS, the newsletter of WIOMSA, would provide an effective means of communication for the network of marine protected areas practitioners.

IUCN, through its Eastern Africa Marine and Coastal Conservation Programme, would continue to take the lead in catalysing interest and commitment to the programme. If so requested, IUCN would be the principal technical partner to WIOMSA. In this case, IUCN would:

- Assist WIOMSA with its secretariat functions, at least in the initial stages of the project and until such time as WIOMSA has sufficient capacity to manage this activity independently.
- Facilitate linkages and co-ordination within the region, with GBRMPA (under the terms of a Memorandum of Understanding to be developed), IUCN Regional Office for Southern Africa, IUCN Headquarters Programmes and Commis-

sions (especially CNPPA), UNEP's Regional Seas Programme, and regional biodiversity initiatives;

- Assist WIOMSA with the development of project proposals in partnership with relevant institutions or, if so requested by WIOMSA, take the lead role in development of these proposals;
- Provide technical advice to WIOMSA, or directly to national project implementing agencies within the overall framework of the programme, including direct support and supervision of project activities, as appropriate, and recruitment of suitably qualified technical advisors and trainers as required;
- Provide the services of a full-time Working Group Leader, if required.

The working group leader will direct and facilitate implementation of the programme developed by the working group. In particular, the working group leader will:

- Oversee development and implementation of the programme;
- Assist WIOMSA to identify and recruit working group members;
- Assist WIOMSA to identify, recruit, and supervise the activities of support staff;
- Liaise closely with the IUCN to ensure co-ordination with other national, regional or international initiatives relevant to the programme.
- Report on programme implementation.

The working group will support the working group leader in carrying out the activities of the programme. This will include facilitating co-ordination with relevant national authorities and assistance in the identification, design, prioritisation and implementation of projects that aim to achieve the goal and objectives of the programme.

## Conclusion and Recommendations

The Western Indian Ocean remains an area of great biodiversity interest, but the full extent of this value is unknown. It is known, however, that since the advent of Arab and European seafarers, biodiversity in the region has been lost and is threatened due to intensive tourism development, the international and

local souvenir trade in marine products (including of endangered species), the near total subsistence of poor coastal communities on a few coastal marine resources, and inappropriate or poorly controlled development.

Conservation of marine biodiversity in the region requires a combination of research, community participation and rights to resource ownership, establishment of marine protected areas, including the strengthening of capacity for their management, and, for coastal planning, management and environmental impact assessment.

It is strongly recommended that the following actions for marine protected areas be considered priorities among the nations of the region and the donor community:

- Establishment of an interactive network of marine protected area planners and managers.
- Formulation of a regional strategy for marine protected area establishment and management.
- Review of management objectives, policies and practices for marine protected areas, and identification of successful sites and methodologies that foster community participation and integrate management with that of surrounding areas.
- Review of the planning and management capacity for marine protected areas in the region, and implementation of training programmes, including regional study tours.
- Related activities that are important to promote include:
  - Biodiversity-related research, especially when linked to the development of management strategies and action plans.
  - Coastal zone planning and management, incorporating community development activities, and the establishment of marine protected areas designed to meet multiple objectives.

## References

- Fay, MB. 1992. Maziwi Island off Pangani (Tanzania): History of its destruction and possible causes. UNEP Regional Seas Reports and Studies No. 139. UNEP, Nairobi, Kenya: 20 pp., 28 figs

IUCN/UNEP. 1984. Marine and coastal conservation in the East African region. UNEP Regional Seas Studies and Reports No. 39. UNEP, Nairobi, Kenya: 293 pp.

IUCN/UNEP. 1987. The IUCN Directory of Afrotropical Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK: XXIX+1034 pp.

Matthes, H and JM Kapetsky. 1988. Worldwide compendium of mangrove associated aquatic species of economic importance. FAO Fish. Circ. (814): 236 pp.

McNeely, JA, KR Miller, WV Reid, RA Mittermeier, and TB Werner. 1990. Conserving the world's biological diversity. IUCN, Gland, Switzerland; WRI, CI, WWF-US and the World Bank, Washington, DC: 193 pp.

Ray, GC. 1976. Critical marine habitats. In Proceedings of an International Conference on Marine Parks and Reserves. IUCN Publication (n.s.) No. 37. Gland, Switzerland: 15-64

Saenger, P, EJ Hegerl and JDS. Davie (eds). 1983. Global status of mangrove ecosystems. Commission on Ecology Papers No 3. IUCN, Gland, Switzerland: 88 pp.

Salm, RV. 1983a. Coral Reefs of the Western Indian Ocean: A Threatened Heritage. *Ambio* 12(6): 349-353

Salm, RV. 1983b. Marine and coastal protected areas in the Western Indian Ocean. *Ambio* 12(6): 330-331

Salm, RV. 1987. Coastal zone management planning and marine protected areas. *Parcs - Parks - Parques*, 12(1): 18-19

Salm, RV. 1994. Marine biodiversity of the Western Indian Ocean. Status and Conservation Framework. Proceedings of The Policy Conference on Integrated Coastal Zone Management in Eastern Africa including the Island States, 23 April 1993, Arusha International Conference Centre, Tanzania (In press)

Salm, RV and JR Clark. 1984. Marine and coastal protected areas: A guide for planners and managers. IUCN, Gland, Switzerland: 302 pp.

Salm, RV and JA Dobbin. 1989. Planning, management, and administrative processes for marine protected areas. Keynote Paper No.7, UNESCO/IUCN

Taylor, JD. 1971. Reef associated molluscan assemblages in the western Indian Ocean. *Symp.zool. Soc. Lond.* 28: 501-534

UNEP. 1985. Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region and related protocols. UNEP, Nairobi: 39 pp.

UNEP/IUCN. 1988. Coral reefs of the world. Volume 2: Indian Ocean, Red Sea and Gulf. UNEP Regional Seas Directories and Bibliographies. IUCN, Gland, Switzerland

and Cambridge, UK/UNEP, Nairobi, Kenya: i+389 pp., 36 maps

Workshop on the Application of the Biosphere Reserve Concept in Coastal Areas, 14-20 August 1989, San Francisco

Yonazi, J and BAS. Mwamoto. 1982. The Maziwi island disappears. What is the future of the Eastern African marine turtles? Tanzania Fisheries Research Institute. Mimeo. report: 10 pp.

## 7.3 The Marine Protected Areas (MPAs) of South Africa

Robbie Robinson

Effective management of the oceans and coastlines of the world requires international co-operation and organisations such as the United Nations Environmental Programme (UNEP) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO), which have played important roles.

The IUCN - now known as The World Conservation Union - has also played a significant role, especially through its Commission on National Parks and Protected Areas (CNPPA), under whose auspices the Fourth World Congress was held in Caracas, Venezuela from 10 to 21 February 1992. The theme of the Congress was, "Parks for Life: Enhancing the role of conservation in sustaining society". Several workshops were devoted to developing approaches for the protection of the marine environment.

Over the past decade or so, planners of MPAs have become increasingly aware that small marine protected areas cannot be managed as enclosed, isolated entities. The scale of marine ecosystem processes is usually larger than the marine zones of coastlines which belong to a particular country.

Furthermore, the newer interpretation of MPAs favours a multi-use approach to the management of marine resources, including living resources such as fish and shell fish, and space for urban development, tourism, and industry. Experience has shown that this new approach has to be implemented in an environment of strongly competing sectional interests, of which nature conservation *per se* is only one. Many sectors have overlapping interests, involve

ment, or jurisdiction in respect of the same ocean and coastal space.

The challenge for marine planners during the next decade will be to ensure that they work within the context of larger regional and even international planning programmes. One of the workshops at the Caracas meeting focused on how regional strategic planning (and MPAs) could contribute to ecologically sustainable development and the enhancement of biodiversity.

With further reference to the Caracas meeting in particular, special attention was given in the IUCN's CNPPA network of Marine Protected Areas. The entire marine environment was divided into 14 areas. A Regional Area Review of each of these areas was prepared by various contributors. These reviews were requested and co-ordinated by Prof. G Kelleher, Vice-Chair: Marine, of the IUCN's CNPPA network.

The immediate aim of the reviews was two-fold:

- To divide the marine environment into its major constituent biogeographic zones
- To identify gaps in the representation of MPAs within the zones.

This approach will eventually lead to the achievement of a third aim:

- To propose possible sites for the establishment of MPAs to fill such gaps.

This project will be carried out by the IUCN's Commission on National Park and Protected Areas (CNPPA), the Great Barrier Reef Marine Park Authority (GBRMPA), and the World Bank, to identify priority area for the establishment of a global representative system of marine protected areas.

I was given the responsibility for Region 6, extending from the South African/Republic of Namibia border at Oranjemund, northwards along the entire west coast of Africa to Tanger (Tangier) in Morocco, situated in the western Mediterranean and forming part of the Strait of Gibraltar (Robinson and de Graaff, 1992).

Subsequent to the 1992 Caracas meeting, additional developments have taken place on the international MPA scene. Kelleher, on my recom-

mendation, requested the extension of the West African Region (Region 6) of the African continent, to include the coastline of South Africa as well, from Oranjemund on the Namibian border southwards and eventually north-eastwards to Ponta de Ouro on the Mozambican border. A document was prepared under the auspices of the Council for the Environment (Robinson and De Graaff, 1994), and it forms part of the response by South Africa to comply with the requirements of the IUCN Marine Protected Areas Programme.

Adopting the rationale and approach of Kelleher and Kenchington (1992), the document identifies some 112 MPAs along South Africa's coastline. This should be seen as an intermediate and temporary arrangement which, it is hoped, will contribute to the development of a fully fledged Marine Protected Area database of the Republic of South Africa, as part and parcel of the MPAs of the Afrotropical Realm as defined and interpreted by the IUCN.

Although no evaluation of South Africa's MPAs was undertaken in the document, the bigger reserves of Tsitsikamma National Park, West Coast National Park, De Hoop Marine Reserve and the Maputoland-St Lucia area may be cited as making a significant contribution to the preservation of biodiversity and fish yield in the areas surrounding these MPAs (see map in **Figure 1**, indicating these MPAs).

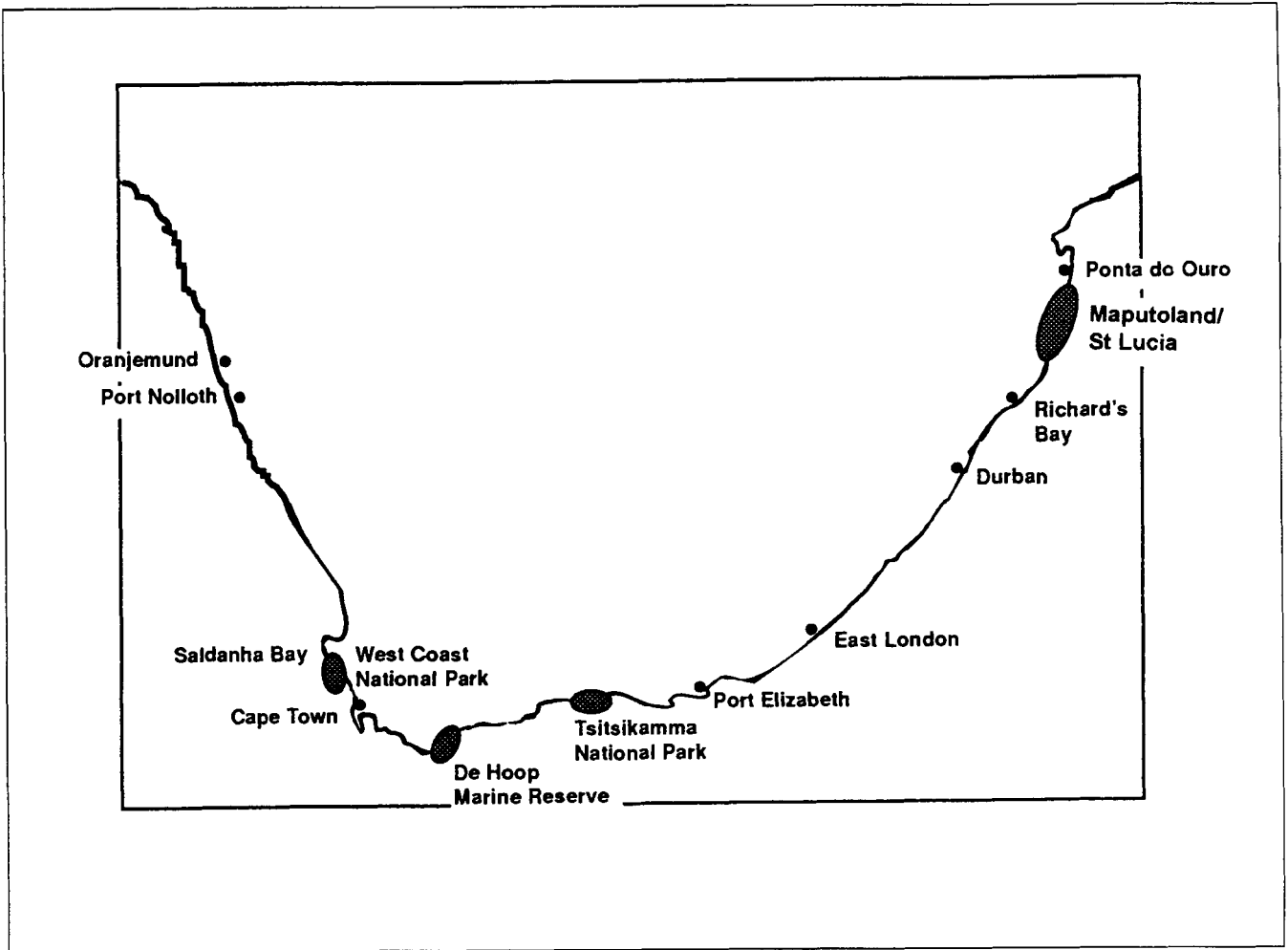
The quantification of the benefits from these MPAs and from a system of MPAs which will preserve the biodiversity in all the biographic provinces around southern Africa is now a priority.

## References

- Kelleher, G and R Kenchington. 1992. Guidelines for Establishing Protected Areas. A Marine Conservation and Development Report. IUCN, Gland, Switzerland
- Robinson, GA and G de Graaff. 1992. The IUCN-CNPPA-Network of Marine Protected Areas (MPAs). Area 6. (West African Marine Realm). In: Reviews of Marine Protected Areas in Selected Regions. IUCN: Gland. (Mimeo report prepared for the Fourth World Congress on National Parks and Protected Areas, Venezuela, February 1992)
- Robinson, GA and G de Graaff. 1994. Marine protected areas of the Republic of South Africa. Council for the Environment Report. Pretoria, South Africa



**Figure 1:** The major marine protected areas (MPAs) in South Africa.



## Chapter 8

# Impact of the Convention on Biological Diversity

### 8.1 The Convention on Biological Diversity Jeff McNeely

One of the most influential publications in recent years was *Our Common Future*, the report of the World Commission on Environment and Development (WCED, 1987). It led to the Earth Summit held in Rio in June 1992, several new conventions, a significant expansion of government interest in the environment, and considerable additional international funding for the environment. But not everyone realises that the term "biological diversity" does not appear anywhere in *Our Common Future*, because it is a new phrase in the international lexicon, carrying new meanings and new implications for the way conservation problems are addressed. It also provides new opportunities for protected area managers, as I will discuss in this paper.

The Global Biodiversity Strategy (WRI, IUCN, UNEP, 1992) defines "biological diversity" (or "biodiversity") as the measure of the totality of genes, species and ecosystems in a region. More formally, as defined in the Convention of Biological Diversity, it means "the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (UNEP, 1992).

Biodiversity is valuable because we cannot know what will be an asset in the future, because variety is inherently interesting and more attractive, and because our understanding of ecosystems is insufficient to allow us to be certain of the role and the impact of removing any component. Everyone at

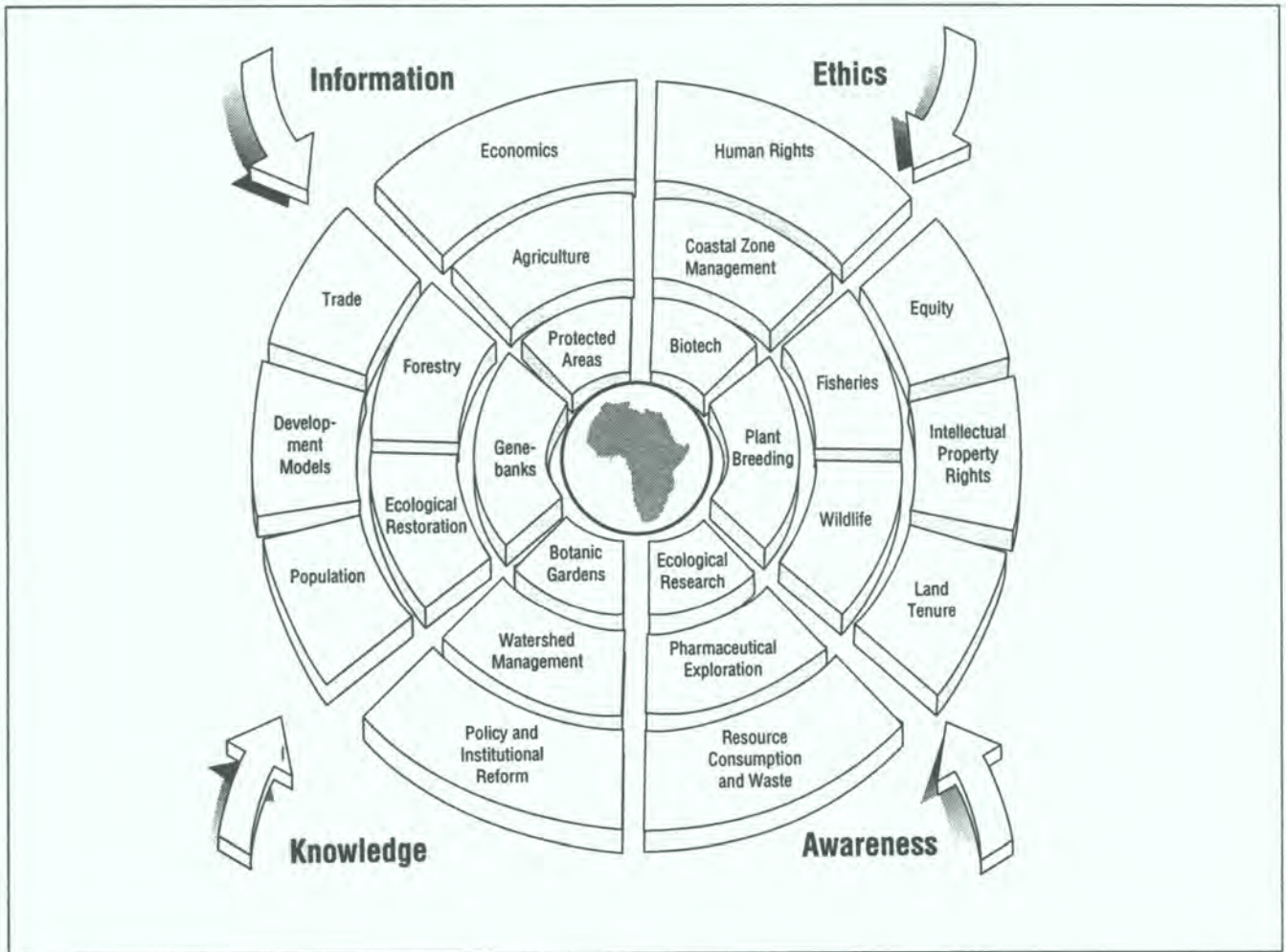
this meeting will surely agree that it is injudicious and short-sighted to sacrifice ecosystem redundancy in order to achieve short-term financial and economic objectives, especially since lower species diversity and less biotic regulation of energy flow and biogeochemical cycles may have profound implications for humanity. Biological diversity as defined above sounds rather all-inclusive, and governments are finding it difficult to translate the concept into a regulatory framework.

But this concept has proved to be extremely useful, building on information, knowledge, awareness, and ethics to include a complex mixture of protected areas, agriculture, economics, intellectual property rights, land tenure, and trade (Figure 1).

The comprehensive approach represented by "biodiversity" has enabled governments and conservation organisations to break away from old measures carried out in the name of "conservation", such as excluding people from their traditional lands. The virtual extinction of the Ik people who were dispossessed upon the establishment of Kidepo National Park in Uganda is only the most extreme illustration of a problem that has been repeated throughout Africa. It has spawned the Convention on Biological Diversity, which was signed by over 150 governments at the Earth Summit in Rio in June 1992, entered into force at the end of 1993, and has been ratified by some 90 countries already (including 14 from Africa – see Box 1).

The World Resources Institute, IUCN and UNEP published the *Global Biodiversity Strategy* in 1992; UNEP has promoted numerous biodiversity action plans; new journals on biodiversity have come out in several countries; and literally dozens of books have been published and conferences held in all parts of the world to further develop the concept of biodiversity and build global consensus for the actions required to conserve it.

**Figure 1: The scope of biodiversity conservation.**



Important regional biodiversity publications include *Biodiversity in Sub-Saharan Africa and its Islands: Conservation, Management and Sustainable Use* (Stuart and Adams, 1990), and *African Biodiversity: Foundation for the Future* (Biodiversity Support Programme, 1993). International and domestic funding for biodiversity have increased significantly.

**Box 1:** African countries which have ratified the Convention on Biological Diversity (as of 30 September 1994).

Benin	Malawi
Burkina Faso	Mauritius
Djibouti	Nigeria
Ethiopia	Seychelles
Ghana	The Gambia
Guinea	Uganda
Kenya	Zambia

So what does all this mean for protected areas? Protected areas are the front line in the battle to conserve biodiversity; after all, these areas are often selected and managed specifically to protect species and ecosystems of outstanding value for society.

Under the Convention on Biological Diversity, contracting parties are expected to identify and monitor ecosystems and habitats containing high diversity, large numbers of endemic or threatened species, or wilderness; required by migratory species; of social, economic, cultural, or scientific importance; or which are representative, unique, or associated with key evolutionary or other biological processes (Article 7). In most countries, this especially means protected areas.

Countries are also expected to establish a system of protected areas, develop guidelines for the selection, establishment and management of protected areas, promote environmentally sound and sustainable development in areas adjacent to protected ar-

areas, with a view to furthering protection of those areas, and co-operate in providing financial and other support for those efforts (Article 8). Contracting parties agree to promote training and research (Article 12), public education and awareness (Article 13), transfer technology relevant to conservation (Article 16), exchange information (Article 17), and promote technical and scientific co-operation (Article 18); all of these measures can help protected areas in Africa. Countries are also expected to provide the necessary financial support and incentives to address national priorities (Article 20); but where countries cannot provide sufficient funding domestically, funding can be provided under the convention, a point to which I shall return later.

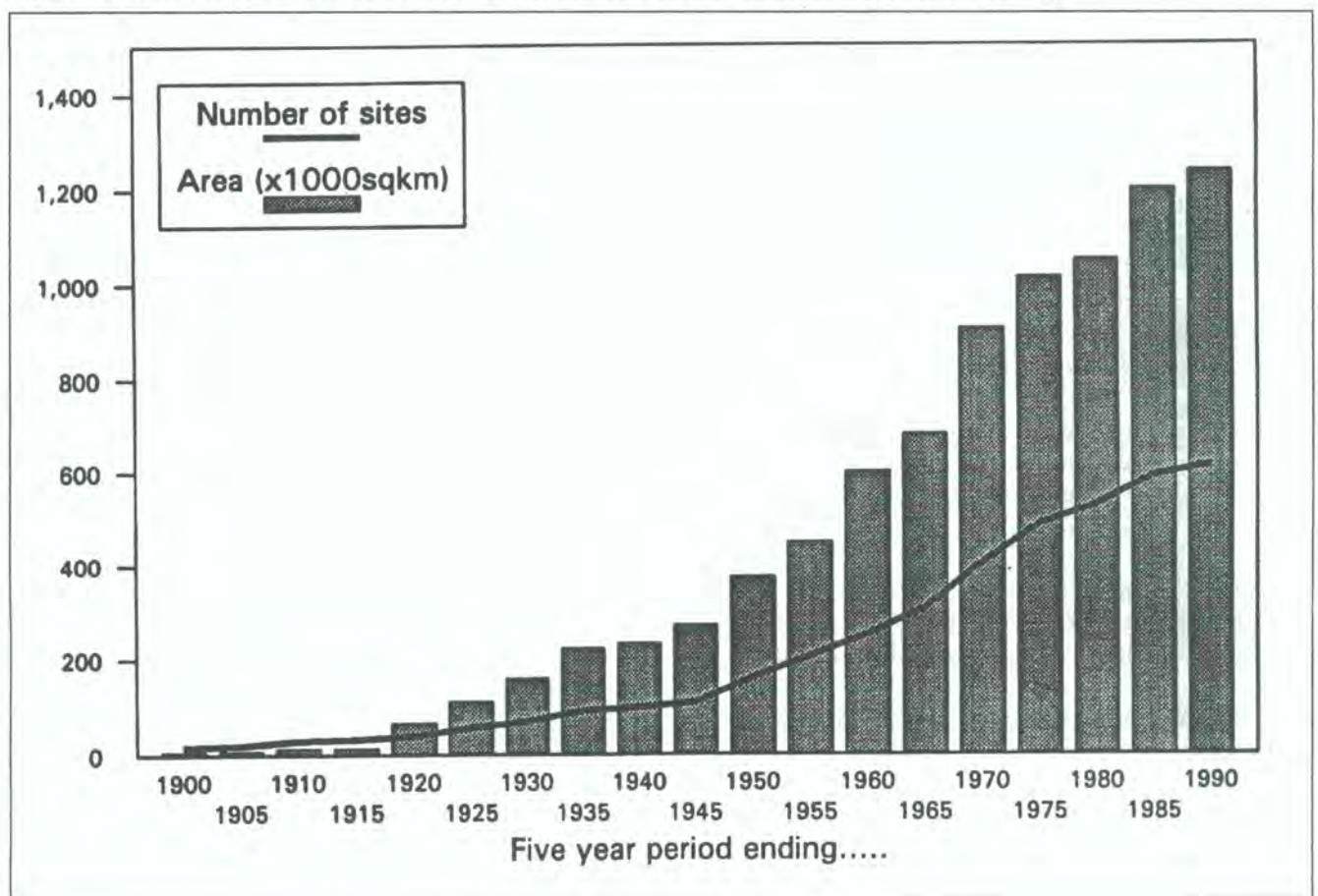
Nevertheless, it must be apparent to all of you that protected areas are still receiving woefully inadequate support from governments and even from the general public.

More protected areas (see Figure 2) are being expected to make greater contributions to society, with

less means of doing so. Stronger support for management is clearly needed, and "biodiversity" may give protected area managers the fresh new perspective that will enable you to earn the broader backing you so desperately need. As the Caracas Action Plan pointed out, "biodiversity" suggests that protected areas can take advantage of the new opportunities for making these areas more relevant to the needs of society in four main ways (McNeely, 1993):

- Addressing biodiversity more specifically in protected areas management.
- Establishing linkages between protected areas and other sectors and interests.
- Building relationships with surrounding lands and communities.
- Providing a framework for international co-operation.

**Figure 2:** Growth of the Protected Areas Network in sub-Saharan Africa (Source: WCMC).



## Addressing Biodiversity in Management

Since biodiversity is a new term, it is not surprising that relatively few protected areas have been established expressly for the objective of conserving biodiversity.

The Fourth World Congress on National Parks and Protected Areas, held in Caracas, Venezuela in February 1992, recognised the key relationship between biodiversity and protected areas (McNeely, 1993; Barzetti, 1993), calling on all countries to identify additional sites of critical importance for conservation of biological diversity, and to accord total protection to such areas whenever possible. It also called on countries to take steps to survey and safeguard the genetic resources which occur in their protected areas.

These general prescriptions are transformed into reality at the site level, where explicit management objectives can be established for conserving biodiversity.

Examples of protected areas management objectives for conserving biodiversity might include:

- To prepare an inventory of all species of plants and animals found in the protected area, as a basis for monitoring their status and trends.
- To maintain viable populations of all species of plants and animals found in the protected area.
- To manage economically important species in ways that will maintain natural genetic variability within and among populations.
- To manage biological resources within the protected area in ways that are compatible with the needs of people living in surrounding lands.
- To use the protected area as a site for increasing scientific understanding of biodiversity, and for applying that understanding to conservation action.
- To use the protected area for promoting public awareness and understanding of biodiversity, both within the protected area and more broadly.
- To develop and implement means of using the protected area to explore for valuable genetic resources, supported by regulations that prevent negative impacts of such exploration and any consequent harvesting (Miller, 1992).

When it adds explicit attention to biodiversity to its management programme, each protected area management agency needs to review the objectives of its system, and of its component sites, to consider how these can be made more directly relevant to biodiversity concerns. This will help expand the linkages between protected areas and other sectors concerned about biodiversity.

## Establishing Linkages with Other Sectors

Protected areas have sometimes suffered from an island mentality, surrounded by incompatible land uses and hampered by a policeman-like relationship with people living in and around the protected areas. The concept of biodiversity highlights the point that protected areas cannot be managed in isolation, but instead will benefit greatly from partnerships with other sectors. Examples may include:

- Agricultural**  
Conserve wild relatives of domesticated species, as in Ethiopia. Provide shelter to pollinators. Supply clean water to farmers, as at Mt Kenya National Park.
- Forestry**  
Provide breeding materials for trees used in forestry operations. Provide a baseline of conditions against which forestry management can be compared.
- Fisheries**  
Provide reservoirs for economically important species which are harvested outside the protected area, as in Lake Malawi National Park.
- Wildlife**  
Conserve viable populations of important species. In some categories of protected areas, provide opportunities for hunting. Provide reservoirs for species which can be harvested outside the protected area. Tanzania provides an excellent example of how national parks and game reserves can work together to provide a range of benefits from wildlife to the country.
- Tourism**  
One of the leading foreign exchange earners in many African countries, tourism is often dependent on the attractions of protected areas. Kruger

Park is an outstanding example, but virtually all tourism to Africa is related to protected areas.

□ **Energy**

Provide watershed protection for important reservoirs, as at Akagara National Park in Rwanda. Many protected areas also permit harvesting of dead wood, which provides an important source of energy to local villagers.

□ **Industry**

Provide clean water to industry. Provide a buffer between some industries and populated areas. In South Africa industries such as mining may set up their own habitat management regimes on their own land, thereby contributing to national conservation objectives.

□ **Health**

Support plants which are important for traditional medicines, as in Madagascar's Andohahela National Park. Many protected areas are also serving as reservoirs for plants which may be important for advanced biotechnology and pharmaceuticals.

□ **Military**

In many countries in Africa (as elsewhere), protected areas are located along international boundaries, thereby providing a buffer zone between countries and reducing the need for military presence. In other cases, areas under control of the military may be important for conservation, and thereby contribute to the national conservation effort.

□ **Education**

Protected areas provide living laboratories for educating students and the general public about the resources found in the country. Many African countries have active wildlife clubs which build local support for protected areas.

□ **Research**

Protected areas have been the site of much of Africa's most innovative research on plants, animals, and ecosystem functioning. They are an essential control against which human-modified habitats can be compared. The Biosphere Reserve networks in Benin, Burkina Faso, Central African Republic, Congo, Côte d'Ivoire, Gabon, Ghana, Kenya, Madagascar, Nigeria, Sudan, Tanzania, and Zaire are examples.

□ **Zoos and botanic gardens**

In some countries, strong linkages have been established between zoos, botanic gardens, and protected areas, especially in the fields of research and education.

□ **Desertification**

Protected areas can provide a buffer between desert areas and agricultural areas, thus helping to stop the spread of desertification, as in Senegal, Mali, and Chad.

□ **Local administration**

Many protected areas, such as Masai Mara in Kenya, bring considerable economic benefits to local administration, especially through the presence of many tourist lodges outside the protected area. And in South Africa, the land on which the Richtersveld National Park lies is owned and occupied by a Nama community which has leased it to the government, but has retained rights to graze an agreed number of livestock and conduct controlled harvesting of natural products. The lease payments are deposited into a trust appointed by the community to manage the funds.

One of the reasons why building linkages with other sectors is so important is that other sectors can have profound negative influences on protected areas if the concerns of protected areas are not integrated into larger development plans.

Consider the example of the Waza National Park in Cameroon, which has been devastated by the construction of dams that have reduced natural flooding of the floodplain of the Logone River. Floodplain fish populations have declined to less than 10% of their former size, dramatically affecting the well-being of 6 000 local people who depended on the fishery. Floating rice cultivation has virtually ceased, and the floodplain pastures have been degraded, following the loss of perennial grass species which depend upon regular flooding.

The loss of 900 km<sup>2</sup> of floodplain pastures has meant a decrease in carrying capacity of about 100 000 to 150 000 domestic livestock. Wildlife too has suffered, with kob declining from 30 000 to only 2 000 animals, and waterbuck and reedbuck disappearing completely.

Still, protected areas will prosper only if they are supported by the public, the private sector, and the full range of government agencies. This support is most likely to be forthcoming when all parts of society are aware of the importance of protected areas to their interests; when the protected areas are well

managed and contribute to the welfare of the nation in a cost-effective way; and when the public is aware of the contributions that the protected areas are making to their lives and to the society in which they live. "Biodiversity" helps open doors to new partnerships.

### Building Relationships with Surrounding Communities

Although strictly protected areas (in IUCN Categories I-III) are crucial for conserving biodiversity, these areas form only a relatively small proportion of the total landscape, only about 3% of the earth's surface. But in many parts of the world, other kinds of protected areas (in IUCN Categories IV-VI) are also making important contributions to protected areas conserving biodiversity, and bringing the total protected area estate to nearly 5% globally and close to 10% in Europe, Central America, and South America (sub-Saharan Africa totals 5,7% – Table 1).

Conserving maximum biodiversity in no way demands leaving environments "natural" since species diversity within a given ecosystem may not neces-

sarily increase through habitat succession (Sprugel, 1991; Holling, 1986), and in any case, people have had a profound influence in determining so-called "natural" habitats (Gomez-Pompa and Kaus, 1992). Genetic diversity may be enhanced or reduced by the management system applied, depending on the understanding of the vegetation or wildlife population dynamics on which the management is based (Maini, 1992).

A lack of active management, for example by attempting to exclude human intervention completely, may reduce genetic diversity, although in other circumstances this may be necessary to conserve specific genetic resources: The problem of excess elephant population is a good illustration of the dynamics involved.

The most species-rich areas are likely to be those with a rich mixture of habitats, including secondary forest in various stages of ecological succession, where the fire regime mimics nature, and judicious wildlife management prevents any species from becoming over-dominant.

In fact, more biodiversity exists in the agricultural, pastoral, forestry and other human-managed ecosystems than in protected areas, because these

**Table 1:** Percentage of land area included with protected areas qualifying for inclusion in the 1993 United Nations List of National Parks and Protected Areas (by CNPPA region).

Country	Country area (sq. km)	Cats. I-V (ha)	% protected
Antarctic	14 266 827	242 535	0,02
Australia	7 682 300	93 545 457	12,20
Caribbean	223 597	2 117 741	9,47
Central America	542 750	4 892 438	9,01
East Asia	11 789 415	68 170 914	5,78
Europe	4 997 983	54 241 097	10,90
North Africa and Middle East	11 689 075	33 273 161	2,85
North America	23 453 544	294 762 240	12,60
North Eurasia	22 100 900	69 516 526	3,15
Pacific	750 813	6 288 175	8,38
South America	17 910 095	112 801 056	6,30
South and South East Asia	8 448 801	50 336 338	5,96
Sub-Saharan Africa	23 934 931	136 161 968	5,69
<b>Total:</b>	<b>147 791 011</b>	<b>926 349 646</b>	<b>6,27</b>

**Note:** Data based only on sites qualifying for inclusion in the 1993 United Nations List of National Parks and Protected Areas. Minimum size for inclusion is 10 sq. km, except in the case of completely protected areas, which are included down to a minimum size of 1 sq. km.

systems cover 80% of the world's terrestrial environment (Pimentel, *et al.*, 1992). Biological diversity in agricultural, fisheries, and forestry systems can be best conserved by maintaining abundant biomass and plant and habitat diversity, conserving soil, water and biomass resources, and reducing the use of pesticides and similar toxic chemicals in agriculture and forestry. Maintaining this biological diversity is essential for productive agriculture, fisheries, and forestry, and ecologically sustainable agriculture, fisheries, and forestry systems are essential for maintaining biological diversity. A productive natural partnership therefore seems to be possible between local people and protected areas managed for biodiversity-related objectives, especially when the local people can participate with a true sense of ownership and when the value of their knowledge is given due recognition.

The involvement of local people in protected area management is essential to the conservation of biological diversity. This lesson is slowly, but steadily, being learned in Africa (Anderson, 1992; Metcalfe, 1992; Cohen, 1992; Lusigi, 1992). Their active participation enables protected area agencies and local people themselves to justify their involvement in protected area management in terms of benefits to the conservation of biological diversity, rather than in political terms such as land rights issues or access to resources. Although such political issues remain, recognising the interests of local communities in conserving biodiversity and using biological resources sustainably enables their legitimate aspirations in protected areas to be addressed as management issues separate from political agendas.

We all realise that it is not always easy to work with local communities. Indeed, many protected area staff believe that the co-operative approach could ultimately reduce the quality of the protected area, and that strong legislation supported by vigorous law enforcement is the best option for long-term conservation. And indeed, experience has shown that local people often are as likely to misuse privileges under co-operative management as anyone else.

Even so, given the insufficient staff and logistics support available to most protected areas and the backlash experienced by strictly-protected areas when public order breaks down (as in Ethiopia or Sudan), the "strict preservationist approach" is both impossible to implement and of doubtful validity on conservation grounds. The conciliatory and co-operative approach advocated above may be the only viable long-term option under today's conditions in Africa.

## Providing a Framework for International Co-operation

The World Heritage and Ramsar conventions offer numerous opportunities for international co-operation, as does the Biosphere Reserves Programme of UNESCO. As mentioned above, the new Convention on Biological Diversity explicitly recognises protected areas as a crucial means for conserving biodiversity. Defining "protected area" as "a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives," the convention calls for international funding to help support protected areas (Article 8) and establishes a mechanism to provide financial resources to developing country Parties to help implement the convention.

This financial mechanism is to be under the authority of the Conference of the Parties. The interim funding mechanism is the Global Environment Facility (GEF).

The GEF is operated jointly by the World Bank, the United Nations Development Programme and the United Nations Environment Programme. The World Bank administers the GEF and has the responsibility for the Global Environment Trust Fund and is responsible for the GEF-financed investment projects. UNDP provides technical assistance, identifies projects, and runs a small grants programme for NGOs.

This small grants programme has been established with an initial grant of US\$5 million to make individual grants of up to US\$50 000 (US\$250 000 if they are regional projects) to support projects related to the GEF focal areas. The grants are allocated by national committees composed of NGO representatives. UNEP provides the Secretariat for the Scientific and Technical Advisory Panel (STAP) and contributes environmental expertise to the GEF process.

To date, GEF has allocated US\$303,5 million to 54 projects in 43 countries (four of the projects are global in nature, in support of the objectives of the Convention) (Table 2).

Excluding the global projects, all but six of the remaining projects address the needs of protected areas, including 17 for Africa (Table 3).

Two of the projects are devoted to establishing trust funds, in Peru and Bhutan, but 11 of the other projects also incorporate a trust fund element in order to provide for the long-term support of the activities to be carried out under the project.

Averaging around US\$4,5 million each, these GEF protected area projects in Africa have the po-



**Table 2:** Distribution of GEF biodiversity projects.

Region	No. of projects	Percentage	US\$ million	Percentage
Africa	17	32	76,2	25
Europe/Middle East	8	15	31,6	10
Asia/Pacific	11	20	75,1	25
Latin America	14	26	107,8	36
Global	4	7	12,8	4
<b>Total:</b>	<b>54</b>	<b>100</b>	<b>303,5</b>	<b>100</b>

tential of being extremely useful for supporting protected area management. But some significant problems have arisen. As was pointed out by the World Congress on National Parks and Protected Areas, which represents the consolidated work of the world's top professionals in this field, a prior condition for a country to determine how it might spend significant new international funding on protected areas is to prepare its own national protected areas system plan.

Such a system plan would evaluate coverage of species and ecosystems by the protected area system, assess gaps, assign protected areas to appropriate management categories, and determine priorities for investment. So long as countries lack such a sys-

tem plan, they will find it difficult to make a convincing case for significantly expanded investments in protected areas. Very few such plans exist, and few GEF projects support their preparation. GEF would be providing a very significant service if it were to stimulate the preparation of protected area systems plans as part of national strategies to conserve biodiversity rather than emphasise single "flagship" protected areas.

Further, the investments in single protected areas such as \$6,2 million for Tana in Kenya tend to establish these as "Rolls Royce" parks when the rest of the protected areas in the national system are still back in the horse-and-buggy stage. Although the funds doubtless are very welcome as far as the "rich

**Table 3:** GEF projects in Africa with a protected areas component.

Country	Project title	GEF budget (\$ million)
Cameroon	Biodiversity Conservation and Management	5,0
Congo	Wildlands Protection and Management	10,0
East Africa Region	Institutional Support for the Conservation of East African Biodiversity	10,0
Ghana	Coastal Wetlands Management Project	7,2
Kenya	Tana River Primates	6,2
Malawi	Lake Malawi Biological Diversity	4,0
Mauritius	Restoration of Highly Degraded and Threatened Native Forest in Mauritius	5,0
Mozambique	Transfrontier Conservation Areas and Institution Strengthening	5,0
Seychelles	Biodiversity Protection and Abatement of Marine Pollution	1,8
Uganda	Biological Diversity Conservation	4,0
Uganda	Action Programme for the Environment	20,0
West/Central Africa	Protecting Wildlife in Western and Central Africa	1,0
Zimbabwe	National Parks Rehabilitation and Community-based Environmental Management	5,0

park" is concerned, site-restricted investment creates an atmosphere of inequity, arbitrariness, and lack of cohesive programmes.

Finally, protected areas offer an excellent opportunity for regional programmes. Previous CNPPA meetings have generated the Action Strategy for Protected Areas in the Afrotropical Realm (IUCN/CNPPA, 1987) which identified priorities agreed by the experts from within the region; I hope that this meeting too will initiate a process for generating a new action plan.

These action plans call for increased support for training, research, information exchange, technology transfer, and technical advice – all the kinds of services that could be provided by a regional protected area programme that is responsible and flexible.

This would seem a very appropriate field for GEF investment, and would yield far greater benefits for biodiversity than support for a few individual protected areas (however important they may be).

All of this suggests that, even though GEF has been extremely useful and certainly should be continued and expanded, the protected areas community could be far more effective in directing the funding to the highest priority issues.

The current round of action plans being prepared by IUCN's Commission on National Parks and Protected Areas could provide a very helpful tool in this regard. But the larger responsibility is going to remain at the national level, where the protected area agencies need to work more closely with the foreign ministries, which tend to be the focal point for relations with the Biodiversity Convention, and the Finance Ministries, which tend to be the focal point for GEF.

Protected areas agencies need to be much more specific about their own priorities, perhaps based in the first instance on national systems plans.

All in all, GEF provides an excellent mechanism for generating significant funds for protected areas. The limitations experienced to date were arguably inevitable, given the innovative nature of the GEF and the need to allocate relatively large amounts of funding relatively quickly.

Now that the Biodiversity Convention has entered into force, the responsibility is with the protected area agencies to make more explicit their needs for improving the effectiveness of their protected area systems in conserving biodiversity. CNPPA should work to support such national efforts, perhaps joining with SSC to help ensure that species issues are addressed as well.

## Conclusion

Having worked with protected areas at the international level for 25 years, I am convinced of their importance, but frustrated by the often-inappropriate support they are given internationally. I sometimes worry that we are becoming over-complex in our approaches to conservation, that we are building a planning and regulatory system that may choke on its own bureaucracy.

Sometimes conservation threatens to become a paper exercise, divorced from the reality on the ground. We call for measures such as more basic and applied research; more science, technology and monitoring; more government regulations; improved standards of professional ethics; better protected area regulations; more co-ordinating mechanisms; better law enforcement and stiffer penalties for miscreants; more conservation strategies, master plans, system plans, management plans, and site plans; more environmental impact assessments; more economic analysis; and many others. Although most of us will be convinced that such measures are necessary, useful and important, they almost invariably lead to more bureaucrats in government, more consultants preparing more reports for the files, and more protected areas staff spending more of their time dealing with paperwork instead of real-life conservation.

The system is becoming increasingly tightly bound, with more and more effort spent maintaining the system rather than conserving biodiversity. This leads to higher costs, fewer services to visitors, less attention to the resources, and ultimately a decline in public support for protected areas.

We therefore also need to consider how to simplify our approaches to managing protected areas for conserving biodiversity. This will usually require a site-specific solution, but a general principle might be to put more faith in the rural population, the people whose way of life depends on how well they manage their biological resources. We also need to use economic incentives to stimulate conservation activities, and we must get more resources into the field, where the real action is.

The way that governments, politicians, scientists, and conservation organisations have responded to the new concept of biodiversity gives cause for considerable hope. Perhaps the conservation message is finally being packaged in a way that is breaking through past barriers to progress, and conservation ideals can now begin to be put into practice on the ground more effectively.

Protected areas are an excellent place to begin, because many are already being managed in ways consistent with conserving biodiversity.

In order to take maximum advantage of the opportunities presented by "biodiversity", managers need to ensure that site management programmes are modified to incorporate the full range of biodiversity concerns, protected areas are linked with other sectors and interests, relations are improved with the surrounding lands and the communities living there, and all governments participate actively in international programmes. In short, we need to demonstrate that protected areas are not "set aside", but are in the mainstream of society's concerns about developing a sustainable relationship between people and the rest of nature.

## References

- Anderson, Jeremy. 1992. Agreements between conservation agencies and tribal neighbours in South Africa. Paper presented at IVth World Congress on National Parks and Protected Areas, Caracas, Venezuela
- Barzetti, Valerie (ed.). 1993. Parks and Progress. IUCN and Inter-American Development Bank, Washington DC. 240 pp.
- Biodiversity Support Programme, 1993. African Biodiversity: Foundation for the Future. USAID, Biodiversity Support Programme, Washington DC
- Cohen, Michael. 1992. The South African Natural Heritage Programme: A new partnership among government, land owners and the business sector. Paper presented at IVth World Congress on National Parks and Protected Areas, Caracas, Venezuela
- Gomez-Pompa, Arturo and Andrea Kaus. 1992. Taming the wilderness myth. *BioScience* 42(4):271-279
- Holling, CS. 1986. Resilience of ecosystems: Local surprise and global change. pp. 292-317. in Clark, WC., and RE Munn (eds.). Sustainable Development of the Biosphere. Cambridge University Press, Cambridge
- IUCN/CNPPA. 1987. Action Strategy for Protected Areas in the Afrotropical Realm. IUCN, Gland, Switzerland
- Lugisi, Walter. 1992. How to build local support for protected areas. Paper presented at Fourth World Congress on National Parks and Protected Areas, Caracas, Venezuela
- Maini, JS. 1992. Sustainable development of forests. *Unasylva* 43(2): 3-8
- McNeely, JA. (ed.) 1993. Parks for Life: Report of the IVth World Congress on National Parks and Protected Areas. IUCN, Gland, Switzerland. 252 pp.
- Metcalf, Simon. 1992. Communities, parks and regional planning: A co-management strategy based on the Zimbabwean experience. Paper presented at Fourth World Congress on National Parks and Protected Areas, Caracas, Venezuela
- Miller, Kenton. 1992. International Cooperation in Conserving Biological Diversity. Paper presented at Fourth World Congress on National Parks and Protected Areas, Caracas, Venezuela
- Pimentel, David, *et al.* 1992. Observing biological diversity in agricultural/forestry systems. *BioScience* 42(5): 354-362
- Sprugel, Douglas G. 1991. Disturbance, Equilibrium and Environmental Variability: What is "natural" vegetation in a changing environment? *Biological Conservation* 58:1-18
- Stuart, Simon and Richard Adams. 1990. Biodiversity in Sub-Saharan Africa and its Islands: Conservation, Management and Sustainable Use. IUCN, Gland, Switzerland
- WCED (World Commission on Environment and Development). 1987. Our Common Future. Oxford University Press, Oxford, UK
- UNEP. 1992. Convention on Biological Diversity. UNEP, Nairobi
- WRI, IUCN, UNEP. 1992. Global Biodiversity Strategy: Guidelines for Action to Save, Study, and Use Earth's Biotic Wealth Sustainably and Equitably. WRI, IUCN, UNEP. Washington DC. 244 pp.

# The Role of Development Assistance

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### 9.1 Development Finance for National Parks and Wildlife Management

Leif Christoffersen

Allow me to focus on two important and relevant quotations from participants at this regional gathering:

- Protected areas programmes in Africa have long suffered from inadequate funding.
- Africa has suffered from too much reliance on outside development assistance.

International assistance to Africa has many different forms. I shall only focus on what is called official development assistance (ODA), which are the funds made available by governments in developing countries. This funding is largely provided through so-called bilateral programmes, managed by a particular country allocating such money through its own budget process. A smaller but still substantial part is channelled through multilateral institutions, such as the United Nations Development Programme and the UN specialised agencies, the regional development banks, and IDA, the soft-loan window of the World Bank. For most of sub-Saharan Africa, these funds are provided on very concessionary terms, either as grants, or as loans which carry no interest rate at all, or very low interest rates.

A basic assumption regarding these forms of development assistance has been that they should supplement rather than substitute for the country's own funding of development programmes. This is still an

important principle, even though it is often not observed.

Another principle has been the reluctance to engage in recurrent cost financing on a continuing basis. An important reason for this has been the belief that the supplemental effect of IDA would be better served if it generally focused on the investment needs and on covering the costs associated with external technical assistance. Problems can arise when there are misjudgements of either the ability of a given government, or of its real interest and commitment, in financing the ongoing costs once the initial external funding phase has been completed.

Follow-up operations have sometimes provided an extended period for recurrent expenditures, but the providers of ODA are still very reluctant about such financing. Generally, none of the external funding agencies seems prepared to fund operating costs indefinitely, and indeed this makes good sense for longer-term sustainability.

From early on, sub-Saharan Africa received special attention in allocations of ODA. With hindsight, one of the unintended results of this may have been that more ODA has been made available in each country than could be utilised effectively for development purposes under government programmes. This observation applies to both investment projects and technical assistance programmes, though some of the multilateral programmes for technical assistance now have sharply reduced the use of foreign experts.

Since the Rio Conference of 1992, it appears that the industrialised countries will not be able to deliver further increases in the flow of official development assistance to developing countries. In this respect, the Rio conference may have resulted in considerable disappointment, since it has raised expectations of substantial increases in ODA flows in respect of the principles of sustainable development.

It is possible that we may see ODA levels maintained at about the present levels in the near future, but we must also be prepared for a possible further decline in ODA in the years ahead.

This may not be all that bad for Africa, if, as several of the participants here have stated, the problem in the past has been over-reliance by African countries on ODA.

However, the problem facing you, the managers of Africa's protected area programmes, is that little of this past funding has come to you, except perhaps in very recent years. Most of the past funding has been for economic and social programmes. Only recently have environmental programmes enjoyed good access to ODA funds.

Environmental project funding began to grow substantially in the mid-1980s and has increased since then. Environmental programmes no longer need take a back seat to other programmes in getting access to ODA funds, provided they are well interfaced with the main development objectives of the country concerned. Hence, environmental funding no longer has to be justified on an incremental basis, unless we only pay lip service to what national leaders agreed at Rio. Certainly the very positive funding responses that have come forth in several countries recently – in response to national environmental investment programmes following a national environmental action plan or strategy – are evidence of strong ODA support for environmental programmes, including national parks and wildlife programmes.

The main point I have tried to convey so far is that environmental funding through ODA channels to sub-Saharan Africa has the potential for further increases in the years ahead, even though ODA volumes more generally have levelled out or will likely be reduced in the years ahead for this continent. In fact, regular ODA channels most likely will become the main source of external funding for biodiversity and other environmental investment programmes in the foreseeable future.

Let me next comment very briefly on the prospects for substantial funding to be generated under the new global environmental conventions. This is not likely to happen, except for funds provided under the new Global Environmental Facility.

For example, it now seems quite clear that the new Desertification Convention, which was given high priority by the African countries at the Rio Conference, will not provide any new funds for land degradation activities in Africa. Its main focus will be, as I understand it, to make better use of existing resources available for such activities. Hence, any

funding needed for activities under this new Convention will come from possible reallocation within existing ODA levels through bilateral and multilateral channels.

The new conventions will not provide much additional funding from high-income to low-income countries outside the Global Environment Facility (GEF). There is a basic institutional reason for this, which has been a feature of all international funding organisations over the past fifty years. Generally, the decision-making processes in international organisations fall under three major categories:

- Those in which a few large countries have veto rights, as in the case of the UN's Security Council.
- Those based on the principle of "one country one vote", as in the case of the UN General Assembly and most of the UN specialised agencies.
- Those based on the so-called "weighted voting" principle, which means that the financial contributors have votes in some relation to what each contributes in financial terms. This is the case for all major financial institutions within the multilateral system.

Attempts have been made since the early beginnings of the UN system to have multilateral funds set up under the voting rules where each country has one vote, but without much success. Not only the World Bank and the various regional development banks, but also other funding initiatives, such as IFAD in Rome, are based on a decision-making system within which the financial contributors (i.e. high-income countries) have a comfortable majority influence in setting the policies and making the decisions that govern allocation of funds. As long as this principle is absent from the environmental conventions, it is quite unlikely that significant amounts of funding for environmental activities may be raised from official sources through possible financial mechanisms within each convention.

Where, then, do we look for sources of international funding for programmes such as those that you manage? The short answer is that, apart from GEF, which is still quite modest, most international funding for parks and wildlife programmes will have to come from the traditional ODA providers – the bilateral and multilateral development assistance agencies.

The prospects for getting such attention from these agencies are very good, in my view, but almost

all of this funding will continue to come through national programmes. Funding for regional programmes is much more modest in size and relatively rare. This means that, for regional action plans, the specific actions must be easily understandable and convincing to national leaders. It is at the national level in Africa that the main decisions are taken on the composition of annual or longer term development assistance programmes which include allocations to parks and wildlife programmes.

What is needed, therefore, is to make sure that the developmental importance of parks and wildlife programmes is presented in the most effective way to the national leadership in your countries, particularly the ministries of finance, planning, and economic affairs.

Although most biodiversity programmes will provide future generations with long-term benefits of a kind that is difficult to quantify, each programme must also have developmental benefits that are more immediately available. It is my strong conviction that a very good case can be made for presenting parks and wildlife programmes in much more forceful economic development terms, but that this rationale has thus far not been communicated well to national economic policy makers.

By focusing more attention on presenting the economic importance of your programmes, you may have a better chance of generating more funds from your own operations and from both the public and private sector within each country. I am sure there is considerable scope for making your programmes more self-financed. Yet, even so, this is an activity in which the government itself can be fully justified in maintaining substantial budget support.

But is this possible? The developmental needs in most African countries are, of course, formidable. Budget crises are frequent and often prevailing. The funding needs of parks and wildlife programmes throughout Africa have long been critical. As mentioned earlier, international funding is not likely to persist if it appears to substitute rather than supplement national efforts. Likewise, the greater the leadership and commitment demonstrated, and the greater the contributions, at national level, the more sympathetic the responses from ODA sources are likely to be.

How does one determine reasonable national efforts in this context? Clearly this is not easy, but nonetheless it is something that most ODA programmes cannot shy away from. I anticipate that this question will become even more important in the future, given the prospects of reduced volumes of ODA.

Among the fundamental questions likely to be raised in this connection are the following:

- How does the government allocate its budget between developmental and non-developmental expenditure categories?
- Within the development budget, how do the parks and wildlife programmes fare in relation to other development categories in terms of both investments and recurrent costs?
- What is the scope of private sector support for wildlife programmes?
- To what extent will government policies allow flexibility for self-financing mechanisms – through changes in fee structures, the freedom to negotiate beneficial contracts with tour groups and concessionaires, and the authority to seek grants and endowment funding from the private sector in the country?

I do not have the time to discuss these questions in depth, but I cannot accept the notion that government is unable to make a solid budget contribution to the programme of a core park. It is true that countries in Africa suffer from budget crises; that they are undergoing difficult structural adjustments; and that export earnings in many countries have declined. Yet, it is also true that there is ample room for government core funding of protected area programmes in all countries, if there is the will, since there is considerable scope to reallocate funding for non-development budget items to more important biodiversity programmes.

Let me comment only very briefly on one reason for this optimism. As much as one third of Africa's heavy external debt burden is the result of military purchases. Military spending in Africa increased from 0,7% of GNP in 1960 to 3,5% of GNP in 1990. This is the only region in the world where the ratio of military spending to social spending has increased from 27% in 1960 to 43% in 1990. Sub-Saharan Africa continues to spend over \$8 billion a year on defence – a staggering volume of spending, which is equivalent to more than double the size of the combined annual lending programmes of the World Bank and IDA to the countries of sub-Saharan Africa.

Let me also make another comparison: If GEF can make about 40% of its funding available for biodiversity in the next three years – about \$280 million annually – and if Africa can get one fourth of this –

about \$70 million – then African countries would need to cut their military expenses by only about 1% to make available on an annual basis the same volume of funding that, at best, GEF can provide for biodiversity programmes in Africa.

With the Cold War over, many have expressed hopes for a substantial “peace dividend” to result from the dismantling of the huge military machines in the NATO countries and in the Old Soviet Union. Likewise, there should be considerable scope for realising significant “peace dividends” from the dismantling of the excessive military establishments in many countries on the continent. This could act for the benefit of people, through sustainable development programmes. It will not require much reduction in military spending for African countries to be able to cover most of the funding needed for key economic, social, and environmental programmes.

In summary, let me focus briefly on five points which I think have some importance in regard to your regional action plan:

- National leadership is a key to your future. As experts, you should take a pro-active stance on this matter. Give careful attention to the need to communicate with, interact and educate, if need be, your national economic policy-makers about the substantial developmental benefits which derive from your programmes.
- This point is related to the first one. Make major use of the traditional ODA channels which are now quite open to environmental funding requests from your governments. The new international funding mechanisms, such as GEF, can provide only modest further additions for very specific and strategic activities.
- The third point concerns a task for which you as scientists and technical experts are well suited and qualified, namely to establish a framework for determining the scientific and technical priorities for nature conservation on a continental basis, including priorities for national programmes to bring out the key cross-border linkages. These are often difficult to determine from a purely national perspective.
- Help to bring out the “best practices” of what works and what does not work in term of practical approaches to providing tangible benefits to local communities. This is crucial for the future of parks and wildlife programmes on this continent,

which has so many magnificent biodiversity assets. International ODA staff and international experts also need to be better educated regarding what you consider the best operational practices.

- Finally, I believe that you should be encouraged to go beyond being a consultative body and an advocacy group. You should become active in helping to bring out the strengths and weaknesses in each national system and in helping to evaluate them from an independent professional viewpoint. In 1986 the IUCN published *Managing Protected Areas in the Tropics* under Jim Thorsell’s guidance. Among its many good ideas is one that focuses on the need for “independent assessments of protected areas by a panel of outsiders who are directly associated with the programme”.

In my view there is no group better than yours to set up a system of peer group reviews of such programmes, preferably from among parks managers on active duty or in retirement. Perhaps this should be done on a regular rotational basis. This might eliminate the concern that independent reviews are only for “problem cases”. Your willingness to organise yourselves in such a way, if this is operationally possible, would in my view be a most welcome step forward – for your own benefit, but also because it would provide external funders with better guidance regarding “what works” and “what does not work” in protected area programmes in Africa.

## 9.2 The World Bank and Protected Areas Conservation in Africa: Some Operational Quandaries

Agi Kiss

The World Bank is increasingly involved in financing projects aimed at assisting countries around the world to maintain and benefit from their natural biological resources.

The maintenance and management of protected areas (PAs), which are intended to preserve intact

natural ecosystems and communities, are important elements within this overall objective. A growing number of Bank-assisted projects involving PAs in sub-Saharan Africa are currently being implemented or are in a preparatory stage. In many cases, these projects are to be fully or partly funded by the multi-donor Global Environment Facility (GEF) which is administered by the Bank, but some are components of operations supported by regular Bank loans or credits with no proposed GEF input. The projects which do not include GEF financing are, at least in theory, those for which it has been possible to demonstrate that the country has an important, direct economic stake in maintaining the areas in a basically natural state.

Rather than listing or describing all the conservation projects and programmes which the Bank is assisting in Africa, or contributing another monologue on the general features of protected areas financing and management (e.g. the search for sustainability and recurrent cost financing, the role of ecotourism, the necessity of involving local communities, and so forth), I would like to highlight for discussion some of the key factors which, based on my personal observations, are currently having a major impact on Bank strategy and operations in this field.

My main qualification to offer such observations is that I have been involved both in formulation of Bank policy relating to support for conservation projects and in attempting to implement such policies as an operational "Task Manager".

I have thus experienced both the frustration of trying to get Bank operational staff and national counterparts to internalise and implement essential policies, and the frustration of trying to get the job done in the face of operationally "impossible" policy requirements.

Whereas a presentation on progress and achievements would perhaps be more gratifying, a better understanding of present problems and shortcomings is essential if we are to strengthen our capability to make a positive contribution to this aspect of the worldwide, multi-party effort for conservation of PAs.<sup>1</sup>

At the risk of appearing negative, therefore, I will focus on just a few of the main issues and constraints which we and many other donor organisations find ourselves facing in trying to support these kinds of activities.

## People in Parks: Resettlement and Indigenous People

The issue of resettlement and indigenous people may well be the most ubiquitous and intractable issue facing conservation of PAs today. From the World Bank's perspective, the question of what to do about people who are inhabiting PAs, or who are dependent on harvesting their plant and animal life, is now holding up or eliminating proposed Bank-financed projects in countless countries all over the world. Africa is no exception: projects in Kenya, Uganda, Côte d'Ivoire, Cameroon, Burkina Faso, Malawi, and other countries immediately spring to mind.

Although I would not propose that all people should be removed from PAs in order to maintain stable ecosystems and diverse biological communities, it is quite certain that no PA could survive if everyone who wished to occupy and utilise it were allowed to do so without restriction. This is guaranteed by the realities of human population growth, by changing lifestyles and growing demands, by the diminishing availability of arable land, and by the political and economic factors which translate these issues into rapidly growing numbers of landless people.

Agricultural encroachment is almost always the greatest problem, in terms of both scale and overall destructiveness. Direct harvesting of biological products such as wood, bush meat, and non-timber plant products also takes its toll, however, by preferentially targeting certain species or phenotypes, by reducing propagation and recruitment into mature age classes, and by generally disrupting delicate ecological balances and interdependencies (see, for example, papers by Redford, Peters).

World Bank support is not needed in those rare cases where there is no apparent human presence or interest, for example the needle rock areas of Madagascar, which are fully protected by their total inaccessibility. Everywhere else, however, there are people either residing and/or cultivating inside PAs, or with compelling claims that they have been forcefully and immorally displaced from these areas.

Given the fluid nature of human population movements, most areas could be reasonably claimed by several groups of people, depending on how many years one goes back and what types of claims one considers valid. Regardless of the validity of the claims, the ultimate question is whether or not the PA is to be maintained against the wishes of those people (and there are always many, regardless of efforts to win the support of local communities) who

<sup>1</sup> *The challenge of promoting biodiversity conservation outside formal protected areas is beyond the scope of this paper.*



want to use the area for their own purposes and who often seem to have no realistic alternative livelihoods or opportunities. This presents an enormous problem for the Bank, as it tries to implement its own well-intentioned policies on indigenous peoples and on resettlement. This issue has become a main focus of NGO complaints and attacks on the Bank.

Although the Bank has no absolute prohibition against involuntary resettlement (but rather provides specific guidelines that must be followed), the general presumption seems to have developed that involuntary resettlement is not permissible for conservation purposes, at least not if GEF money is to be involved.

The Bank's approach for some time has been to require that these extremely complex issues and conflicts be resolved during project preparation and appraisal. This has inevitably led to long and costly preparation periods. Some projects have finessed the question by indicating that these problems will somehow be resolved to the satisfaction of all parties during project implementation (e.g. through participatory preparation and execution of a management plan). This only serves to delay the day of reckoning, however, with the risk of launching into a major project which will fail owing to obstacles that may in fact turn out to be insurmountable.

Two examples with which I am currently directly concerned may be used to illustrate the point. The first is the proposed Uganda GEF project for conservation of the Bwindi (Impenetrable Forest) National Park and the nearby Mgahinga National Park. Preparation of the project has been ongoing for two-and-a-half years, mainly because of the innovative nature of the project and institutional challenges (for example a trust fund to be jointly managed by government, NGOs and local communities). The penultimate step, project negotiations, was completed last March. Since then, Bank approval for the project has been held up by two issues:

- The eviction/resettlement of a small number of people living in or cultivating one small area of the park (103 households, of which only six have their primary residence within the park).
- The question of the project's responsibility for addressing the needs of approximately 1 000 Batwa pygmies living in the vicinity. (The Batwa historically occupied the general area when it was forested, but were displaced by mostly Bakiga agriculturalists who in effect cleared the

forest out from under them, forcing them to become squatters and labourers on Bakiga lands. There have been no Batwa groups living exclusively within the small remnant Bwindi Forest for some 30 years.)

The delays and problems encountered so far in this very modest project have underlined that resettlement must be regarded as a very significant issue to be addressed in the preparation of a proposed large-scale Bank-financed project to rehabilitate and improve management of PAs in Uganda. An overall national strategy will have to be developed and implemented. Uganda is, of course, by no means unique or even unusual in this respect.

A second example is the proposed GEF project for conservation of the Tana River Primate National Reserve in Kenya, which has also been under preparation for two-and-a-half years and now seems almost certain to be dropped. There, too, a small group of Pokomo agriculturalists are residing and cultivating inside the current Reserve boundaries (illegally, according to Kenyan law). Attention (including strong NGO pressure against the project) has focused on this group, particularly a small subgroup which is pressing to have the Reserve degazetted entirely, rather than on the much larger number of people, particularly pastoralists, who use the Reserve and its resources on a seasonal basis and want it maintained.

The debate has centred on whether or not cultivation inside the reserve must be curtailed, and other uses severely restricted, if the Reserve and its resident endangered primate populations are to be viable.

The responsible authority, the Kenya Wildlife Service, has indicated that those currently residing inside the Reserve will not be forced to leave but that further forest clearing and expansion of cultivation inside the Reserve will be strictly prohibited. This has led to the argument that this is still tantamount to involuntary resettlement, since the prevailing slash-and-burn style of cultivation is not sustainable unless the people are permitted to open up new areas.

My colleagues working in other countries and regions report similar blockages in the projects they are working on. Many incipient projects have simply been abandoned under the pressure of conflicting messages, internal and external interference, and impossible demands.

Another issue which arises continually is that donors, including the Bank, readily insist on generous packages of compensation and resettlement assis-

tance, but so far generally show a strong reluctance to provide the necessary funds.

### Community Participation and Benefits

It has become a truism that PAs cannot be sustained in the absence of the support and active co-operation of surrounding communities, and that this can only be obtained if the communities see a concrete (primarily economic) benefit in the fairly short-term.

One of the first attempts to put this principle into practice was in Kenya, in the mid-1970s, where a Bank-assisted project aimed to provide benefits to communities around the Masai Mara National Reserve and the Amboseli National Park. Much has been written about the success or failure of these and similar efforts elsewhere, but I would argue that none has really lived up to the initial expectations. Nevertheless, this policy remains an important component of Bank policy, even though its implementation continues to present major operational problems.

Some of the persistent problems relate to:

- How to determine which people are to be included within the beneficiary communities.
- How to ensure that benefits are distributed with at least some degree of equitableness and have a broad positive impact (hinging largely on the question of who or what are the legitimate authorities and institutions to act on behalf of the affected communities).
- How to ensure that the benefits are sustainable.
- How to avoid creating a "magnet" effect, whereby ever greater numbers of people are drawn to the area by the benefits, thus aggravating the situation.
- To what extent people should/can be involved in actual PA management, as opposed to simply receiving some form of benefit from the PA.
- How to maintain a linkage between the benefits and people's appreciation of, and contribution to, the actual conservation effort.

Another important, if often unsuspected issue, relates to the need to devolve authority and control over valuable resources to local authorities and to communities if they are to participate in any sub-

stantial way. Empowering and enriching the people inevitably means removing some power and revenues from others, often centralised authorities which may be reluctant to give it up.

From a conservation perspective, the issue of maintaining a perceived linkage between conservation-related benefits and responsibilities is perhaps the most significant. In the case of Amboseli Park, for example, my limited interactions with local group ranch members indicate that many, if not all, believe that, by virtue of their location on the boundaries of the national park (and, equally significant, the fact that the park occupies land which they consider to belong to them historically), the KWS is obligated to provide them with social services and benefits such as schools, clinics and community centres.

I have heard people who utilise the clinic, and whose children attend the schools provided through the wildlife project, insist very sincerely that they have never received any benefits from wildlife. Clearly the linkage, if ever really perceived, has largely been lost.

Even though the Bank (and everyone else) continues to pursue and insist on a community participation approach, only very modest and sporadic progress has been made in addressing the real-world problems. As with resettlement and indigenous peoples issues, one of the main impacts from the perspective of Bank operational staff is the inevitable conflict between doing the job of project preparation "right", and doing it quickly.

To even begin to engage local communities in a meaningful way requires a detailed familiarity with their sociocultural make-up, authority and decision-making structures, and economic pursuits and livelihood needs. This in turn requires years of study, which is inconsistent with realistic project preparation schedules and resources. (The two-and-a-half year period devoted to the preparation of the Uganda and Kenya GEF projects noted above is virtually unprecedented and has been a major source of concern both within and outside the Bank).

In some cases, considerable information is available from long-term studies carried out by others (e.g. university-based anthropologists). The Bank tries to take advantage of this, but is often constrained by a certain degree of scepticism as to the motivations of the researchers and the legitimacy and relevance of their findings, as they were not engaged by the Bank to meet the Bank's specified needs.

The result is very often that we wind up accepting members of some sub-group, usually drawn

from the local political structure and the more educated and powerful elite, as spokespeople for the community. In doing so, we ignore strong empirical evidence that this is often (usually?) not legitimate, at least in so far as ensuring that voices of the less well connected are heard and their needs addressed.

Experience tends to show that, in the case of cash disbursement (whether from park revenue-sharing or from community development components of conservation projects), the money tends to stop where the information stops (that is, those who do not know what they should be getting, do not get it). This realisation has led to a strong emphasis on transparency and accountability, but we are woefully short of good models of how this can actually be ensured at the local community level.

The frequently-cited approach of the Zimbabwe Campfire programme, which relies on calling a community-wide meeting and handing out the cash in direct sight of everyone, can only work for relatively small, localised communities.

The other frequently adopted approach is to forego cash disbursements entirely, in favour of funding small development projects which enjoy broad community support. There are problems with this approach too, however: many view it as paternalistic, and the process of identifying, selecting, preparing, and implementing such projects can be very time-consuming, institutionally challenging, and fraught with opportunities for undesirable political influence.

## Co-financing

Although the popular view of the World Bank is that it has virtually unlimited resources and, if anything, is too eager to disburse money, Bank staff are in fact strongly encouraged to find co-financing for projects from sources such as bilateral donors and specialised UN agencies. This applies particularly to components such as environment and PA/wildlife conservation, for which developing country governments are reluctant to take a loan – even a concessional IDA credit – when grant funds may be available.

In recent years, the GEF has been viewed as a major source of co-financing for such components of regular Bank lending operations. At the same time, because the GEF is intended to act at a “catalyst” to mobilise other funding, GEF task managers are also strongly encouraged to find external co-financing for GEF projects.

The principal problems with co-financing are, first, that each financier tends to bring its own priorities and agenda to the table and, second, that the project becomes subject to the bureaucratic requirements, timetables, and political constraints of additional parties.

In an ideal situation, the governments prepare a well-thought-out, cohesive programme consistent with well-defined national objectives and priorities, and then request support from one or more donors to implement them. In reality, projects are often modified to accommodate donors’ priorities and particular interests.

This can lead to fragmented projects with important gaps, to overlapping and competing components supported by different donors, and, if the project strays too far from the government’s priorities and interests, to a loss of government commitment.

Even if a cohesive, well integrated programme is proposed initially, it can run into problems when different donors “adopt” selected components as discrete projects which then move ahead in their own directions and at their own pace. This has been the experience of the large multi-donor effort to support the development programme of the Kenya Wildlife Service. For a variety of reasons, several of the donors have found it necessary to delay the start-up of their contributions, whereas others have moved forward. The predictable result has been that crucial elements have not been in place, thereby reducing the effectiveness of some components which were receiving funding.

There are many other examples of delays and complexities introduced through co-financing. In the case of the GEF project in Uganda mentioned above (the Bwindi Trust), approval of the Bank-administered GEF grant to capitalise the Trust is contingent upon USAID mobilising its contribution, which will establish and cover running costs of the Trust Administration Unit for the first two years.

Without this USAID contribution, the project would not have been viable and would have had to be dropped. Nevertheless, the World Bank-supported component and the USAID-supported component have, unfortunately, succeeded in delaying one another at various points along the way. Similarly, preparation of a proposed GEF project for forest conservation in Cameroon has experienced delays, in part because of a “last minute” addition, with strong support by the French government, of a new component for rhino conservation in savannah areas.

Effective donor co-ordination is a large part of the answer to such problems, but even with the best will and intentions, obstacles and problems can arise which make it impossible for a given donor to deliver support when and how it is expected by the government and by other donors. This indicates that the concept of individual donors funding individual but interdependent project components is fundamentally unsound and should be replaced wherever possible with donors contributing into a central pool from which the implementing agencies can draw in order to carry out mutually agreed activities (e.g. through an annual work plan approved by all parties). In this way, if any one donor withdraws or is delayed in mobilising its contribution, the project can continue in an integrated manner, even if its scale must be reduced.

The funding mechanism must also be sufficiently flexible to meet changing situations and needs. For example, the Kenya Wildlife Service did a remarkable job in reducing poaching in Kenya in the late 1980s/early 1990s. To do so, it developed (with donor assistance) a strong paramilitary capability. If poaching remains at moderately low levels (helped, for example, by the ivory trade ban), the organisation may not need to maintain such a strong force in this area. The greatest challenge now appears to be human/wildlife conflicts, calling for a greater focus of human and other resources on "problem animal control" and mobilising wildlife benefits for private and communal landholders.

## **Economic Evaluation and Calculating Costs**

Like all financing organisations, the Bank traditionally requires an economic evaluation of a proposed project and individual project components in order to justify the investment. This was relatively easy to do when the Bank focused primarily on infrastructure development and similar engineering activities, and addressed only a fairly narrow range of direct costs and benefits which could be estimated reliably in advance.

Things became much more complicated as the Bank branched out into "soft" areas of development, such as education, health, institutional development, and the environment, and as it began to see the need to incorporate into the evaluation a wider range of costs and benefits which had previously been treated as "externalities" and therefore excluded from the analysis.

The immediate difficulty has been that many of these facets, including biodiversity conservation and many other aspects of the environment, have defied all attempts to "monetise" them, as would be required to factor them into conventional economic analysis. Similarly, one of the fundamental principles of the GEF is that it should cover only "incremental" costs, that is those specifically incurred to obtain global benefits over and above national benefits. In principle, at least, it is possible to envision how this concept can be applied to industrial processes relating to reducing emissions of greenhouse gasses and ozone depleting substances. All efforts to extend it to the biodiversity conservation component of the GEF mandate have failed, yet the concept has been retained in the second phase of the facility (GEF 2).

Despite impressive and sustained efforts, in my opinion there are as yet no really convincing paradigms to translate the full range of values of biodiversity into monetary terms. I personally do not expect to see any, because I believe the nature of the phenomenon, which has to do with averting unknown future risks and providing very different kinds of benefits to a wide range of stakeholders, fundamentally defies monetisation. The best that can be said for most of the approaches that have been proposed is that they provide a value much greater than zero, which is what would be used in the absence of any alternative value, however fanciful. This is in itself extremely valuable, but does not justify a great deal of further analysis and manipulation of these estimates, for example to identify "incremental" costs or to compare the importance of different natural areas.

In any case, my experience with World Bank-assisted and other projects is that there are only two economic principles that consistently and effectively come into play in identifying, designing and evaluating projects: "willingness to pay" and "least-cost approach". The size of conservation projects is rarely determined by a painstaking calculation of actual direct costs, let alone an estimation of total economic returns. Rather, a certain amount of money which governments and donors are willing to provide must be split up among many competing proposals, based on some type of decision as to the relative importance of different uses (e.g. comparative biological significance of different PAs) and the cost-effectiveness of different approaches (e.g. investment in management institutions versus infrastructure, or strengthening enforcement capacity versus community relations).

## Need for Specialist Input

The fact that such decisions need to be made underlines the critical need of institutions such as the World Bank for specialists, including zoologists, botanists, mycologists, ecologists, anthropologists, and environmental economists.

Even more than the specialised knowledge, however, donor agencies and governments require scientific consensus. One of the most frequent complaints I hear from colleagues working on conservation-related projects is the lack of consensus on priorities and approaches to be followed.

Faced with visits from one earnest, committed field scientist after another, often contradicting and even denigrating one another, their understandable reaction is to say that they cannot take any decisions or actions until the specialists speak with one voice.

Alternatively, they ally themselves with one party who may be more articulate or persuasive than others, but who is not necessarily more knowledgeable.

As with any effort to achieve consensus and provide concrete, fairly simplistic advice on a very muddy and complex subject, the real specialist is likely to find himself or herself frustrated by the need to simplify and compromise. An unwillingness to do so, however, risks having the effect of excluding that person's voice altogether.

The scientific community cannot take the chance of devoting itself to internal debate and argument for the next 20 years, while the world's biodiversity continues to disappear at an exponential rate. Any sensible action is better than none, but donors and governments cannot act until actions are identified

and widely supported by the recognised authorities in the field.

I am often struck by the recollection of a workshop which I "crashed" several years ago in Thailand. Representatives of some 12 Asian countries attended, mostly top echelon officials from ministries and agencies responsible for nature conservation, supplemented by a handful of recognised international authorities on Asian biodiversity. The purpose of the meeting was to develop a regional strategy for biodiversity conservation, identifying the top priorities for investment and action. The remarkable thing was that senior officials from several countries readily agreed that areas and resources in other countries should have precedence over their own, as they were of higher international priority.

This conclusion was based on a large body of research work stretching over many years, forming the basis for a fairly good scientific consensus regarding the most important "hot spots", based both on their biological resources and on the prospects for effective intervention.

I wonder whether any such meeting has ever taken place, or could at present take place in Africa. Do we have the needed breadth and depth of scientific data, and a willingness on the part of the specialists to subjugate their own special interests to develop a broad consensus to inform and influence governments' priorities? Do we have a willingness on the part of responsible authorities to accept and support the scientific consensus, even if it does not necessarily support their own agendas and perceived priorities? Until we do, donor support for conservation will continue to be sporadic, arbitrary, and ultimately ineffective.

## Chapter 10

# Research and Monitoring Challenges

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### 10.1 Introduction

Adrian Phillips

This session consists of the following background papers:

- Report of the Caracas Congress workshops on Research and Monitoring (1992).
- Co-ordinating Research and Management to Enhance Protected Areas (published by IUCN, 1994).
- Report of the workshop on Research and Management at the IUCN General Assembly in Buenos Aires (1994).
- A UNESCO publication from a workshop in Mweka (1990) on the Management of Protected Areas in East Africa, edited by Walter Lusigi.

The four speakers will provide an overview of research and monitoring in Africa, with special reference to Zaire (Dr Mankoto Ma Mbaelele, Zaire); reports on case studies on the biophysical aspects of research and monitoring (Panta Kasoma, Uganda), and the socio-economic aspects (Andrew Agyahare, Ghana); and a global perspective from Don Gordon, World Conservation Monitoring Centre (WCMC), on information handling and monitoring questions.

Discussion will focus on four themes:

- **The importance of research and monitoring**  
Often these issues are neglected, but they are es-

sential to underpin informed management of protected areas.

- **The need to monitor management actions**  
Feedback from monitoring is required at the site, national, and supra-national levels. No such monitoring capacity was built into the regional action plan adopted at Niamey; this mistake must not be repeated in any plan adopted after the Skukuza meeting.
- **The need to link research and management**  
Researchers should work on topics which are relevant to managers, then managers would use the results of research.
- **The need to attend to socio-economic aspects**  
As much attention should be given to socio-economic aspects of research as to biophysical aspects, and the local community should be involved in research, as in other aspects of management.

### 10.2 Biodiversity and Monitoring Challenges

Donald Gordon

#### Outline

##### *Focus*

To present and discuss issues surrounding biodiversity information management and monitoring at the global level, and links to national initiatives.

### Statement

Effective monitoring can only occur if a well-planned, co-ordinated, and focused information management system has been developed.

### First steps to monitoring

Establishment of base-line biodiversity information.

## The Next Step and Role for the Future

### Historical backdrop

Agenda 21 and the Convention on Biological Diversity (CBD) deal with aspects of research, monitoring, access to and transfer of technology, and the development of national plans, strategies and programmes, these being dependent on the generation and application of reliable, up-to-date environmental information in a form that directly supports enlightened management decisions.

### Caracas Action Plan and World Conservation Monitoring Centre (WCMC)

- WCMC should be strengthened as a scientific co-ordination and data analysis agency.
- WCMC should further develop inventory, research and monitoring objectives and priorities to address world ecosystem protection requirements generally and locally, as appropriate.
- WCMC should further encourage and support relevant research and monitoring initiatives by helping to secure funding assistance, expediting interchange of information and expertise, and encouraging development of standard data management systems to ensure conformity with international scientific standards.

### WCMC response

Biodiversity "capacity building" projects at WCMC (with UNEP/GEF and EU support):

- Preparation of guidelines for carrying out institutional surveys.
- Resource inventory of tools, methodologies, models, and organisations involved in biodiversity information management.

- Institutional needs analysis.
- Development of a consortium of institutions to facilitate collation and development of biodiversity information standards, and to provide access to information and technology.
- Review and document existing standards and guidelines for biodiversity information management, including for protected areas.
- Development of generic data flow models for biodiversity information management.
- Production of a guide for biodiversity database developers.

### Monitoring and Information Management Developments and Trends regarding PAs

- Data standards and formats are receiving consideration, in order to allow meaningful exchange of information between agencies involved in protected areas work.
- Monitoring initiatives are being reviewed and supported at the site level, with a view to deriving a generic data model which can be used to assist in management and monitoring endeavours. Examples of monitoring include:
  - Biological monitoring in Uganda.
  - Socio-economic work in Ghana.
  - Tanzania Wildlife Conservation Monitoring: (Survey and Earth Sciences/KWS).
  - GIS analysis and modelling in Amboseli to assist with decision-making in the location and distribution of biodiversity resources.
  - Kew Botanical Garden – floral inventories.
  - ODNRI.
  - Smithsonian Institute.

**Note:** The 1992 WCMC study *Status of Plant and Animal Inventories for Protected Areas in the Tropics* revealed that of 8 715 protected areas in the tropics, only 5% are known to have been inventoried for one or more taxonomic groups – birds the best, butterflies least. It is clear that protected areas are poorly described.

- More consideration is being given to habitat indicators from which monitoring initiatives can commence. Habitat indicators can assist pro-

tected area management in, *inter alia*, meeting management goals, mitigating threats, and monitoring climatic change.

- With regard to the future, the information generated from generic data models could lead to national, regional and global analysis of changes across protected area networks.
- Also at some future stage, predictive modelling at national, regional, and international levels could enable park managers, decision-makers and planners to decide, ultimately, what sort of protected area they want in future.

#### **Statement revisited**

Effective monitoring can only occur if a well-planned, co-ordinated, and focused information management system has been developed. At the national, regional and international levels, this requires that base-line information is updated and validated on a continual basis and that new information is captured, managed, exchanged, and analysed in support of protected area agencies and initiatives.

This has implications for protected area databases at the global (WCMC), regional (IUCN/WWF/UNEP), and national (e.g. forestry and wildlife departments, community organisations) levels for sub-Saharan Africa.

Areas for consideration include:

- Threats.
- Management effectiveness.
- Good management practices.
- Socio-economic considerations.
- Cultural aspects.
- Integration of private-sector and community reserves/schemes.

#### **Points for discussion**

- The desirability and need for information management systems in the management of protected areas. Are these adequate in terms of the technology and staff needed for their use?
- How can organisations such as WCMC, managing global protected area data sets, be of best

service to the countries of sub-Saharan Africa in both information management and monitoring activities.

#### **Proposals**

- Establishment of a clearing house mechanism for sharing information on protected areas, for example to pull together success stories on local participation, to reflect on and share knowledge relating to information management technologies, and to provide input on aspects of monitoring from national, regional, and global perspectives.
- Updating of the 1987 Afrotropical Directory of Protected Areas in Sub-Saharan Africa.

#### **Process**

1. Review the format and structure of the site descriptions.
2. Review, edit, update the content, with emphasis on those areas of most concern to protected area managers in sub-Saharan Africa.
3. Decide how the final product is to be produced and distributed (publication, diskette, Internet).
4. Create a small working group of CNPPA to be responsible for points one to three and to set the timing and funding agenda for the production of the "Directory".

## **World Conservation Monitoring Centre**

#### **Mission**

WCMC provides information management services on the conservation and sustainable use of the Earth's living natural resources.

#### **WCMC Data Holdings**

- Species data**
  - plants (75 000)
  - animals (25 000)
- Habitats data (GIS)**
  - tropical forests
  - coastal and inshore marine
  - wetlands



- biogeography/vegetation
  - Antarctica
  - GIS Biodiversity Map Library
- Protected areas (25 000 sites)**
- all countries
  - individual site sheets
  - World Heritage sites
  - Biosphere reserves
  - Ramsar wetland sites
- Wildlife utilisation**
- CITES trade (1,6 million transactions)
  - ITTO tropical timbers elephant ivory (0,7 million transactions)
  - Sustainable use
  - Economic values
- Bibliography**
- Published
  - Unpublished (50 000 items)
- Staff**
- 40 scientists

#### **How Data are Handled**

Multiple sources of statistical, spatial and text data are managed on databases managed on an Ethernet network of PCs and SUN workstations, running under Banyan Vines. The sources include:

- GIS (ARC/INFO)
- FoxPro, Revelation, Ingres
- WordPerfect 5.1
- Bibliographic database (CAIRS)

#### **Outputs**

Standard products

- Diskettes with, for example, Folio
- CD-ROMs (e.g. Antarctica, GBSR)
- Books (*Conservation Atlas of Tropical Forests, Red Lists, Global Biodiversity Status Report*)
- Directories (protected areas)
- Bibliographies (plants)

- Maps and posters

WCMC wishes to expand its range of standard products and advertise them through a catalogue.

## **10.3 Research and Monitoring Challenges**

### **Mankota Ma Mbaelele**

#### **The Purpose and Importance of Research in Protected Areas**

National parks and protected areas offer the best conditions and facilities for nature (biodiversity) conservation. In contrast with the balance of the national territory which has been spoiled by human activity, protected areas are nature laboratories and standard milieus for science, education, and culture.

But the upkeep of these ecosystems within an ever changing environmental context is possible only when people are capable of understanding the various factors and mechanisms bearing upon the global system. Research therefore appears as a tool for the promotion of scientific knowledge of protected areas, for the purpose of long-term management and utilisation of natural resources.

Research is an important means for regional planning, since, by way of zoning, it prevents land use conflicts and renders protected regions accessible to visitors.

Research plays a major role in the prospecting and installation of protected areas and national parks. They were created in the past and were based primarily on the "show" element, on the fauna, not in the least considering the preservation of the "actual ecosystem" aspect. This type of unilateral vision has sometimes forced populations to be displaced, bringing about frustration and discontent which have given rise to the present conflicts about land use. Joint biological and socio-economic research can help to solve these kinds of problems.

#### **Research Projects in Protected Regions of Africa**

The most sensible selection and the most favourable long-term utilisation (and therefore the best man-

agement) of a protected area depends on a preliminary, yet thorough, scientific study of the region concerned. Research must not be seen as an end in itself, but certainly as an indispensable activity for the sake of conservation and integrated development.

Without disregard for basic research, which is important for the understanding of the ecosystem in general, I believe that we in the developing nations should consider linking closely basic research with management (applied research), the latter making use of the former for the purpose of practical conservation.

The most coherent and best integrated research programmes in the national parks are found in those countries where the parks have been given a clear and definite role to play. In East Africa, for instance, where the parks' gates are thrown wide open for the visiting tourists, we find wildlife research units helping to adopt specific management and intervention policies (i.e. wildlife management). This is in marked contrast to the equally famous West and Central African parks – genuine wildlife sanctuaries, where for several decades a protectionist policy was strictly applied.

These different views regarding the organisation of nature conservation were conceived by the French and Belgians in French-speaking Africa, on the one hand, and by the British in English-speaking Africa, on the other hand, more than fifty years ago, but they still serve as the foundation for current policies. They deserve to be compared, however, to see whether we can learn from them how to face new challenges.

## East African Countries

### *Tanzania*

In Tanzania, the national parks policy was the most clearly defined and research programmes attracted the most qualified contributors and the most generous financial support.

The authorities in Tanzania and the Serengeti National Park enjoy considerable help at hand for dealing with management problems. The Serengeti International Research Institute, with the associated Michael Grzimek Memorial Laboratory, is situated at Seronera, in the very heart of the park.

The Serengeti Research Institute is officially integrated as a service which is directly responsible to the Parks Board – it was given strictly defined targets and tasks, one being the study of all aspects of

ecosystems relating to the layout and planning of future amenities.

The Tanzanian National Parks Board, on the advice of its scientific commission, decided that the research programme should consist of a series of closely integrated studies of the climate, geology, soil, vegetation, and wildlife, in order to register any changes which may occur and to ensure uninterrupted observations.

In order to ensure good co-ordination of all research, to verify its quality as well as the progress achieved, the scientific commission which consists of internationally renowned members, meet once a year at Seronera. They record new directions taken and observe the applications of the programme findings by the park authorities in formulating basic policies.

For the purposes of conceiving and conducting this programme, the National Parks Board called in the most distinguished East African scientific bodies (EAAFRO, East African Wildlife Society, NUTAE, Nairobi and Dar-es-Salaam universities, and others) and international organisations and programmes (International Biology Programme, PBI). Also involved were European and American research and scientific institutions (London Royal Society, New York Zoological Society, British Council for National Environment Research, Max Planck Institute, A&M Texas, and Wageningen, Manchester, Cambridge and Oxford universities).

The most prominent scientific and philanthropic organisations were approached for funding, resulting in a strong group which interacted effectively. This multiple co-operation network – which resembles an ecosystem – secures the stability of the system as a whole: any failure at a certain level can be compensated for at another level and can effectively be ignored, since its effects are absorbed by the body as a whole.

### *Uganda*

Uganda profited, in the same way as Tanzania, from having a model organisation. It became the first country to follow an active management policy for the control of animal overpopulation, of elephants in particular, in the Murchinson Falls National Park (Kabalega National Park) and hippos in the Rwenzori National Park.

In this instance the National Parks Service and the University College of Makerere appealed to the Nuffield Foundation, which agreed to sponsor a ten-year animal ecology research programme. Thus

came into being, for the first time in Africa, a field laboratory devoted to the study of wild fauna (NUTAE), which was inaugurated in 1961 at Mweya Lodge in the Rwenzori National Park.

To ensure a high rate of productivity, and also to attract international recognition, the fund was managed by Cambridge University, and the unit was made part of its Zoology Department. The management was advised by a scientific commission. In 1965, NUTAE obtained grants from the Ford Foundation, the London Royal Society, and the International Biology Programme (PBI).

In 1969 NUTAE employed about 20 scientists. The basic programme consisted of a grass savannah project, for the purpose of evaluating primary production (on a site selected by the International Biology Programme) and analysing the various cycles of the biogenic elements, as well as energy transfers. Most of the work researched vegetation renewal (or regeneration) in relation to veldfires and herbivorous consumption. Specific studies were devoted to hippos, buffaloes, waterbuck, and warthogs. One particular study concerned – with some help from a veterinarian – herbivore diseases and parasites, and also their predators. Research was then rounded off with studies on birds.

For all these given tasks, the unit was allocated offices, a meteorological station, a fleet of vehicles, a boat, an aircraft fully equipped for aerial photography, hunting devices, and apparatus for marking and radio-locating wildlife.

It was agreed that after a ten-year long Nuffield operation the research unit would become an integrated part of Makerere University. Thus Uganda today has an ecology institute, concerned with the Rwenzori National Park, and a head-office at Lake Katwe.

### *Kenya*

Kenya participated in all main regional conservation undertakings (working with NUTAE in Uganda, and the Serengeti Programme in Tanzania, either through East African organisations, or through its own institutions, such as Nairobi University, which attracts a large audience well beyond the region).

Kenya created the Kenya Wildlife Management Project and also research projects concerning its main parks and reserves. Nairobi University gained international repute with the development of its Zoology Department, with specific studies of all wildlife in the parks. Researchers in the region produce a widely read publication with authoritative articles

(*East Africa Wildlife Journal*, now renamed *African Journal of Ecology*).

No wonder, therefore, that as far as ecology and ethology are concerned, the focus of interest has moved from Europe and America to East Africa, to Nairobi University in Kenya and the Serengeti Research Institute in Tanzania, which have both established themselves as powerful and well-organised international research facilities which are attracting many professionals who are keenly interested in making further contacts.

### **The French-speaking West and Central African Model**

In Central Africa, and particularly in Zaire, from the date of establishment of the very first national park, the powers-that-be at the time opted for “mobile scientific research units” interested only in fauna, systematic botanics, and collecting scientific samples.

Since we realise that our national parks came into being long before the East African ones (1925) it is rather perturbing to find that we never acquired any laboratories or research stations similar to those in East Africa.

What is more, the attitude adopted by the management of national parks in West and Central Africa, which is to attach exaggerated importance to wildlife exclusively, at the expense of rational study of the local vegetation and the human and biophysical environment characteristics, is in contrast to the general way of thinking which inspires the responsible authorities in East Africa, which is based on the evaluation of ecological phenomena at ecosystem level.

This, we believe, explains the start in the sixties, and the further advanced development, of eco-research, and also the appearance of rational management methods for national parks in East Africa, in stark contrast to the stagnant character of nature conservation concepts in West and Central Africa.

Research was badly oriented from the start – which explains why, in the first place, French-speaking Africa did not share in the considerable investments for research purposes in protected areas. Luckily, the situation is now changing: research stations and training centres are being created in protected areas, and multidisciplinary research projects are being launched, thanks to the broadmindedness of the new generation.

Indeed, a number of our protected regions now draw considerable benefits from high-level study

and research programmes, of which the following list of examples is by no means complete:

- Nasinga Wildlife Ranch (Burkina Faso)
- Niokolo-Koba National Park (Senegal)
- Air et Ténéré World Heritage Site (Niger)
- Banc d'Arguin National Park (Mauritania)
- Boucle du Baoulé National Park (Biosphere Reserve) (Mali)
- Pendjari Biosphere Reserve and National Park (Benin)
- Tai National Park (Ivory Coast)
- Bamingni-Bangora Conservation Area (Central African Republic)
- Impasa-Makoku Integral Nature Reserve (Gabon)
- Djà Forestry and Fauna (Game) Reserve (Cameroon)
- Dimonika Biosphere Reserve (Congo)
- Karisoke Research Centre, Volcanoes National Park (Rwanda)
- Lulimbi Research Station, Virunga National Park (Zaire)

However, research in protected areas in West and Central Africa remains unsatisfactory and far from well known. Results are badly published, if at all. Field research remains the prerogative of foreign structures. Often, visiting scientists depart without contributing any papers, let alone any iconographic documents (e.g. pictures, tapes, video recordings, and maps), which contributes to the fact that we do not possess any data on the natural characteristics of any of the proclaimed and protected regions. As a result, we lack the ways and means for their proper and reasonable utilisation.

Lack of means, shortage of personnel, but in many cases also a marked lack of interest and real motivation on the part of both researchers and students, who simply dislike working in the bush under demanding conditions, can be cited as the reasons for this situation.

## Challenges, Priorities, and Research Policy in Protected Areas

Research activities should be developed so as to broaden the spectrum of information related to the management of national parks and protected areas.

The top priority is the evaluation and monitoring of resources. The training of technicians for speedy data gathering is therefore absolutely essential.

For further data gathering, some kind of analytical methods should be elaborated with directions for their most effective applications, according to the specific climatic zones. We must therefore:

- Give priority to research by multidisciplinary teams.
- Establish a data bank.
- Set up a specific structure – in each state – to coordinate all research relating to national parks and protected areas.
- Strengthen and rehabilitate existing research structures, setting up more if necessary, to liaise with a network of national and/or regional stations.
- Develop and reinforce local (working together with national universities and science foundations) and international partnerships (researchers and experts exchange programmes with dynamic institutions specialising in Africa).

Research relating to national parks and protected areas also has a socio-economic objective. For this objective to be achieved, not only must the necessary parameters for the effective management of these regions be acquired, but the data must be applied so as to improve the living conditions of the local populations staying in the immediate vicinity of the protected regions.

Hence it is imperative to do some research about the socio-economic and political aspects related to the resource management of protected areas. Priority should be given to matters with a direct impact on socio-economic conditions (firewood, solid building materials, fishing, hunting, tourism (ecotourism)).

In short, priority should be given to any type of research aimed at improving the material needs of the population, with special reference to improving the living conditions of all communities concerned.

Three major problems have to be addressed here, in order to obtain the best and most effective results from these research programmes: financial backing, the training of human resources, and communication and distribution of research findings (the quest for publications).

#### *Financing*

We need to make use of all possible means and strategies to draw financial support from African and international institutions, (BAD, CILSS, CEE, ACCT, UNESCO, WWF, IUCN, USAID, GEC) and diverse conventions (Biological Diversity Convention, Ramsar Convention, World Heritage Convention, and others). Also, we should endeavour to gain recognition for research into national priorities.

#### *Training*

Training is obviously inadequate, considering the importance of the national parks and protected regions in West and Central Africa. We suggest the following solutions:

- Twinning the national parks with the protected areas; setting up an exchange system and partnership between north and south staff members, also for field studies.
- Strengthening existing institutions, the regional ones in particular, e.g. Garona Fauna Specialist Training School (Cameroon), by creating a tertiary study cycle (doctorate).
- Following up the project of establishing a post-graduate forestry and natural resources management school in Zaire. This project was launched after a special recommendation made by French-speaking African experts at the conclusion of the African Tropical Forestry Seminar organised in Zaire in March 1991 by UNESCO, ACCT, and IUCN.

#### *Publications*

Efficient use should be made of existing technical journals relating to regional natural resources, such as *Nature and Fauna*, mouthpiece of the FAO regional office in Accra (Ghana). But it would be equally effective to launch a typical French language scientific publication similar to the *African Journal of Ecology*.

## 10.4 Biological Aspects of Monitoring in Respect of Protected Areas Management

Panta Kasoma

Protected areas (PAs) are now accepted as necessary for the indefinite protection of biological diversity, because outside them the human impact is often too great to ensure the long-term survival of many species. Because of the human factor, it is no longer possible simply to demarcate areas, declare them protected, and hope for the best. It is now necessary to implement active management in order to ensure the survival of those areas.

Managers should know what floral and faunal species occur in their areas, how they interact with each other, and what the long-term prospects are for their survival. They should, therefore, have at their disposal a variety of tools with which to manage effectively. One such tool is biological monitoring capability.

Hellawell (1991) defined monitoring as an intermittent (regular or irregular) surveillance, carried out in order to ascertain the extent of compliance with a predetermined standard, or the degree of deviation from an expected norm.

Four components of monitoring may therefore be identified (e.g. Furness and Greenwood, 1993):

- Surveillance.
- Assessment of any changes against some standard or norm.
- Clear objectives in relation to an overall programme.
- Integrated data collection, so that any departures from the expected results can be explained.

Biological and ecological monitoring is of tremendous value, as shown by Spellerberg (1991). Among the objectives he enumerated, four are of direct relevance to this workshop:

- Monitoring as a basis for managing biological resources for sustainable development and resource assessment.

- Monitoring so that ecosystems and populations can be managed and conserved effectively.
- Monitoring land use and landscapes as a basis for better use of the land, that is, combining conservation with other uses.
- Monitoring as a way of advancing knowledge about the dynamics of ecosystems.

Monitoring requires financial and other resources. A basic management-related point is that, where money is invested, monitoring tells the investors whether their money is achieving its purpose.

### Application to Protected Areas

As conservationists, we are interested in the changes that are taking place in populations of plants and animals, especially in view of the unrelenting destruction and alteration of the natural environment by human beings. There is concern about declining populations of organisms. It would not be possible, in many cases, to establish causes of the declines without data from surveillance and monitoring studies.

Despite the phenomenal advances in ecological knowledge, a lot still has to be learnt about the long-term processes in ecosystems. Undisturbed ecosystems are becoming increasingly rare, and the establishment of PAs was and still is an attempt to preserve some representative habitats of our disappearing natural ecosystems. It is therefore important that we keep a tab on these areas to know how they are functioning and whether they will continue to function as natural units indefinitely.

Natural ecosystems are quite complex and, to a large extent, very poorly understood. It is therefore often difficult to determine what to measure or record for purposes of monitoring. A hypothetical example by Pomeroy (1993) illustrates this point:

If a decline in the gorilla population in a protected area such as Bwindi Impenetrable National Park (Uganda) is observed over a given period (e.g. 100 years) and the cause for the decline is eventually identified as reduced survival of young, which in turn is related to nutritional deficiencies, there are still various possible causes, such as:

- Disappearance of a minor but key plant in the diet, which is pollinated by bees whose numbers have declined owing to too much honey collection.

- Honey-gatherers cutting a key tree species whose fruits are essential to gorilla health.
- Long-term effects of occasional fires.
- Some unexplained effect of human disturbances.

Despite the complexity of natural systems, a large number of biological variables and processes that might be used in monitoring have been identified (e.g. Spellerberg, 1991). These include variables such as:

- Size of animal population
- Biomass of vegetation
- Species richness
- Species diversity
- Community diversity
- Vegetation classifications
- Presence or absence of indicator species
- Reproduction rates
- Occurrence of rare species and processes such as:
  - Productivity
  - Litter accumulation
  - Colonisation
  - Succession

These variables and/or processes permit the determination of standards or norms. Monitoring is then carried out to determine whether the prevailing conditions match the previously determined norms.

### Basic Requirements of a Monitoring Programme

Before embarking on a monitoring programme, it is necessary to satisfy the following requirements:

- Identifying the aims and objectives for monitoring, so as to be able to terminate the programme as soon as those objectives are satisfied.
- Identifying key indicators – the parameters to be measured. In protected areas, these could be total

counts of large mammals, waterfowl counts, and vertical vegetation photography.

- Identifying a monitoring yardstick in terms of a baseline from which all future change is to be assessed. Owing to the difficulty of knowing just how representative a state of affairs in a PA is when a monitoring programme begins, it is essential that adequate surveillance is carried out to establish a reliable baseline.
- Choosing an appropriate method that ensures reliability without necessarily being complicated, so that it can be repeated by different people at different periods.
- Deciding how the data will be handled so as to furnish the necessary information needed to fulfil the objectives. The analysis should produce results that are easily interpretable, so that PA managers may take remedial action without difficulty.

Theoretical and practical aspects of the requirements of a monitoring programme are discussed in detail by Usher (1991).

### Monitoring in Uganda's Protected Areas

There are a variety of PAs in Uganda. Forest reserves are under the jurisdiction of the Forest Department in the Ministry of Natural Resources. Game reserves and sanctuaries, as well as controlled hunting areas, fall under the Game Department of the Ministry of Tourism, Wildlife and Antiquities. National parks fall under a government parastatal, Uganda National Parks, in the same ministry.

Because of the sectoral management of the different PAs, there has been no co-ordinated system of monitoring in the country, and each department has attempted to manage as best it could on its own.

#### *Forest Reserves*

The Forest Department (FD) in Uganda has always had a policy of setting aside areas of undisturbed forest as nature reserves. The establishment of such areas was not, however, in accordance with any scientific principles.

Over the past two years, biological survey and inventory activities involving woody plants, birds, mammals, and moths have been going on in 62 of the larger forest reserves. This exercise, which ap-

parently is the biggest of its kind in tropical Africa, aims at evaluating the reserves for biodiversity, as a basis for identifying the most appropriate sites for nature reserves (Howard and Viskanic, 1994).

The FD hopes to set up long-term ecological monitoring of natural forest community dynamics, using the identified nature reserves as a basis (Kigenyi, 1991).

It is also hoped that permanent research plots which were set up in various forest reserves, starting in the early 1930s, will be re-surveyed and used for their original purpose, which was to determine the growth characteristics of natural forests in various places. These plots are largely neglected today. Already an Oxford University researcher, Doug Sheil, is doing this in Budongo Forest Reserve. The research is expected to yield extremely valuable information, as the sample size is quite large and these are the longest-running plots in tropical Africa (D. Pomeroy, Pers. Comm.).

There are also efforts by private researchers to monitor various aspects of forest ecology. Alan Hamilton, for example, established a permanent plot in Mpanga Forest in 1968, and he has been monitoring it at ten-year intervals for aspects such as species composition and abundance, tree growth characteristics, and mortality (P. Mucunguzi, Pers. Comm.). Apart from such instances there is as yet no proper long-term monitoring strategy by the FD, although the baseline data that would be required for that activity are being gathered.

#### *Game Department*

With the exception of a few irregular aerial surveys to establish the status of large mammals in game reserves, there has been no monitoring of fauna or flora. Currently, a biological inventory exercise is being conducted in the reserves to gather baseline data that could form the basis for future monitoring activities.

#### *Uganda National Parks*

The Nuffield Unit of Tropical Animal Ecology (NUTAE) was established in 1961 and was instrumental in initiating ecological research in PAs in tropical Africa. One of its mandates was to monitor ecological phenomena in Uganda's national parks. Therefore, from the early 1960s annual censuses of large mammals such as elephant, buffalo, and hippo were carried out.

In certain parks, such as Murchison Falls and Queen Elizabeth National Parks, aerial photographic

transects were made (Malpas, 1980). Such data have made it possible to follow trends in the large mammal and vegetation communities.

The Uganda Institute of Ecology (UIE), the successor to NUTAE, has continued, whenever funds have permitted, to keep track of large mammal numbers, but the erratic availability of financial support has hampered the evolution of a well-organised biological monitoring system for all the national parks. Further, the quality of the data is often low (as reflected in large variances).

A study of large ciconiiform wading birds carried out in Queen Elizabeth National Park (Kasoma 1989) provided baseline data on which a small monitoring programme has now been established (Table 1). Counts are carried out annually along the same section of shoreline, and it is hoped that in 1995 or 1996 it will be possible to analyse the census data to determine whether there have been changes in species composition.

This is in view of the fact that *Vossia cuspidata*, a floating macrophyte, appears to be spreading in the study area.

This might influence the type of species that occur along the shoreline, part of which is a popular place for launch trips in the national park. These waterbird counts, organised by the Uganda Wetlands Working Group of the East Africa Natural History Society, are probably the only properly organised monitoring programmes of any size for Uganda's fauna.

### *The National Biodiversity Databank (NBDB) at Makerere*

The NBDB was established in 1990 as a unit of Makerere University Institute of Environment and Natural Resources (MUIENR). One of its main objectives is to collect, monitor, and store information on Uganda's biological diversity, with specific reference to the status and distribution of species and ecosystems.

The kind of data that the NBDB gathers is varied, but as far as biological monitoring is concerned data are collected on species and ecosystems in the country using a variety of sources, including publications, repositories (museums and herbaria), and field activities. Site data, especially of PAs, have been collected. There is information on all PAs except forest reserves of less than 500 ha. Data are also being gathered on sites of scientific importance that are currently not protected.

In addition to trying to access data that are already available, the NBDB, through its own efforts and those of other individuals in collaborating departments, is collecting inventory as well as quantitative data, particularly on birds, mammals, woody plants, and butterflies. The ultimate aim, of course, is to gather data on all species and ecosystems, but this is still hampered by inadequate finance and expertise.

Species lists for birds and mammals are already available for all of Uganda's ten national parks. Such

**Table 1:** Summary of counts of selected ciconiiform-species over a 30-km length of Lake Edward and Kazinga Channel shoreline, Queen Elizabeth National Park, Uganda.

Species	Year				
	<sup>1</sup> n <sup>2</sup> =80	1991 n=1	1992 n=2	1993 n=2	1994 n=2
Grey heron	14,5	26	29,0	25,5	16,5
Goliath heron	6,6	31	2,5	5,0	7,0
Squacco heron	5,3	27	3,5	4,5	12,0
Great white egret	6,4	11	6,5	12,5	8,0
Little egret	22,5	45	23,0	28,5	27,5
Saddlebilled stork	1,7	1	2,0	1,5	2,0
Yellowbilled stork	18,5	14	31,0	25,0	52,0
Sacred Ibis	8,2	13	17,5	5,0	12,05
African spoonbill	2,0	1	8,5	1,5	1,5

<sup>1</sup> Baseline data from Kasoma (1992)

<sup>2</sup> n = the number of counts. These figures are computed by totalling the counts and then dividing by the number of counts n.



lists are indispensable for a programme of biological monitoring, particularly if species richness or diversity are going to be used as standards for the monitoring. The problem with such lists is that one is never really sure whether they are exhaustive, because as areas get visited more frequently, new species are added to the lists. This is why it is often more prudent to rely on indicator species for monitoring purposes.

As regards ecosystems, it is now known that Uganda's PAs do not adequately cover all ecosystems present in the country (UNEP/ACI, 1993), yet these ecosystems are increasingly being encroached upon.

The latest vegetation map for Uganda was that by Langdale-Brown *et al.* (1964). It is not clear whether the 90 plant communities identified in the 1950s and early 1960s still exist as such.

In collaboration with the Institute of Terrestrial Ecology in UK, and with funding from the Darwin Initiative, MUIENR is expected to produce a land unit map of a sample area in southern Uganda, using satellite imagery and GIS technology. It will now be possible to compare present plant communities with what is in Langdale-Brown *et al.* (1964) and to determine to what extent there has been change. After the pilot phase, this technology will be used for other parts of Uganda, and the results will form the basis for future monitoring of vegetation types in the country.

## Conclusion

It is clear that monitoring activities in Uganda have not reached the level of sophistication that is often indicated in current texts on ecological monitoring. However, there are obviously some data that could form the basis of a monitoring programme. In many cases, field activities were actually intended to be part of a long-term monitoring programme, e.g. the various large mammal counts and the permanent research plots in various forest reserves, but for a variety of reasons this was not achieved.

It is gratifying to note that various institutions concerned with natural resource management have now realised the importance of a viable monitoring programme in sustainable management. What is lacking is the will to commit resources, especially financial resources, to such a programme.

If the proposal regarding the establishment of an independent ecological monitoring unit with a mandate to undertake various monitoring activities in and outside protected areas is supported financially,

this would be a step in the right direction. This proposed unit would employ a core of professionals knowledgeable in various forms of monitoring and would enable the UIE to concentrate on other ecological studies.

## Acknowledgements

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## References

- Furness, RW and JJD Greenwood (eds). 1993. *Birds as Monitors of Environmental Change*. Chapman and Hall, London
- Hellawell, JM. 1991. Development of a rationale for monitoring. In *Monitoring for Conservation and Ecology*, FB Goldsmith (ed.). Chapman and Hall, London
- Howard P and P Viskanic. 1994. Biodiversity Assessment for the Planning of Forest Nature Reserves in Uganda. A paper presented at IUFRO-Forest Biodiversity in tropical and temperate forests 28 August – 2 September 1994, Chiang Mai, Thailand
- Kasoma, PMB. 1989. Aspects of the feeding ecology of some large wading birds in Queen Elizabeth National Park, Uganda. PhD Thesis, University of Cambridge
- Kasoma, PMB. 1992. Distribution and abundance of Ciconiiform wading birds around Mweya, Queen Elizabeth National Park, Uganda. Proc. VII Pan-Afr. Orn. Congr. 45-61
- Kigenyi, F. 1991 Introduction to Forest Department Nature Conservation Programme. In *Nature Conservation in Tropical Forests: Principles and Practice*. PC Howard (ed.). Forest Department, Kampala. (Unpubl.)
- Langdale-Brown, I, Osmaston and JG Wilson. 1964. The vegetation of Uganda and its bearing on land use. Government Printer, Entebbe
- Malpas, R (ed.). 1980. *Wildlife in Uganda*. A report to the Minister of Tourism and Wildlife, Uganda
- Pomeroy, DE. 1993. The Basis of Monitoring Flora and Fauna. In *Research and Monitoring, Bwindi Impenetrable National Park, Mgahinga Gorilla National Park*. A report of a workshop at Makerere University, 28-29 October 1993
- Spellerberg, IF. 1991. *Monitoring Ecological Change*. Cambridge University Press, Cambridge
- UNEP/ACI, 1993. Biodiversity in Uganda. An Overview. A Report of a Workshop held 28-30 January 1993 in Lake

Mburo National Park, Uganda. Makerere University Institute of Environment and Natural Resources, Kampala

Usher, MB. 1991. Scientific Requirements of a Monitoring Programme. In *Monitoring for Conservation and Ecology*. FB Goldsmith (ed.) Chapman and Hall, London

## 10.5 Socio-economic Aspects

### Andrew Agyare

A nation's biological diversity is seen in its biological resources, which are mostly located in the rural areas. Rural, or traditional, people are therefore the immediate custodians of biodiversity and are primarily responsible for its "protection".

In spite of the tremendous benefits of biodiversity conservation, traditional people live in socio-economically deprived areas with little or no access to basic necessities of life. Their livelihood is land based, with farming, subsistence hunting, and gathering of non-timber forest products (NTFP) their major activities.

Traditional people have, through their culture, manipulated the biosphere to provide the greatest benefit for themselves. Through their activities they have also assured with some success the potential of the biosphere to provide for the needs and aspirations of posterity.

The norms and behaviour of traditional people have served as the vehicle underpinning the socio-cultural, religio-spiritual, economic, political, and technological changes needed for sustainable development.

Traditions of sustainable natural resource management in Ghana are gradually being lost, owing to demographic pressure, drought, mass unemployment, the lack of alternative economic bases for the people, and the fact that traditional systems have largely been supplanted by centralised state institutions.

Reserves have been established by the Government of Ghana to conserve representative samples of the various ecosystems in each vegetation zone in the country. These reserves have been officially managed, for over twenty years in the case of wildlife, without much success. This is because the method used was militant, with little regard for the traditional dependence of the people on natural resources. Conservation of a nation's biological resources comes at a cost. The greater part of the cost

is borne by the local people who live next to the resources. Local people, however, receive very little if any of the benefits of conservation.

## Conservation of Biodiversity in Ghana: The Case of Protected Areas

The problem of biodiversity conservation and protected area management centres on conflicts of interest which arise between local communities living around protected areas, and the attitude of the State towards exploitation of the country's biological resources.

The strategies adopted by State institutions have, in some ways, alienated the local people for whom the resources were to be primarily conserved, and have turned them into poachers. Given these circumstances, local people have been uncooperative and have often engaged in antagonistic practices that have largely affected the protected areas and led to a loss of biodiversity.

There is a global realisation that sustained socio-economic and cultural development of a nation depends on the achievement of a balance between the pursuit of national development and economic growth, on the one hand, and the rational and sustainable use of its natural biological resources, on the other (GWD/IUCN, 1994).

This has led to new ways of thinking. The real need now is to ensure sustainable use of natural resources, with the involvement of the local people. Against this background, the Government of Ghana and the World Bank agreed, within the context of the Forest Resource Management Project (FRMP), to undertake a comprehensive and systematic evaluation of the protected areas in Ghana.

### *Socio-economic studies and management plans*

As part of FRMP, socio-economic data were collected as input into management plans that have been drawn up with IUCN technical assistance for eight scheduled reserves. Field studies involved gathering information which was analysed on the basis of the social setting of the local people, taking into account demographic and ethnic composition, and their socio-economic activities and how these affect reserves. Other topics were the perceptions and hopes of the people, and their attitudes, regarding protected areas, and ways of integrating them in the management of the reserves.

Two methods were used in the primary data collection phase: structured questionnaires, in conjunc-

tion with focus group meetings, and participatory rural appraisal (PRA) methods.

Given the mistrust and general suspicion with which local people regard modern systems, it is recommended that PRA methods, rather than formal sample surveys, should be used in village studies regarding protected areas.

The use of these methods was instrumental in breaking the inertia that characterises the relationship which communities around protected areas have with the reserve management. Even more important is that PRA methods also help to initiate the anticipated participatory process that is being advocated. The participatory nature of the PRA methods generates community discussion and makes follow-ups easier.

This does not, however, negate the value of employing sample surveys using structured questionnaires. The possibility of statistical analysis which this method allows, makes it valuable for monitoring and evaluation.

It is recommended, therefore, that sample surveys could be used, but only after enough rapport has been established in a given area through the use of various PRA methods.

The management plans that have been produced have brought into focus the concerns of indigenous peoples and have suggested ways of integrating local people into modern resource management systems. These management plans have attempted to address problems and conflicts of interest which arise between local communities and other parties with regard to protected areas and the State's attitude towards exploitation of the country's biological resources.

### *Ghana Wildlife Policy and World View*

The new wildlife policy objectives of the Government of Ghana recognises protected area management as an option for rural development. This policy calls for strategies to not only involve local people who live around protected areas, but to also accommodate them and find ways and means to plan and help develop local communities in ways commensurate with national or regional planning perspectives. This is in line with some of the recommendations contained in the reports of the World Commission on Environment and Development (WCED), particularly the Convention on Biological Diversity and Agenda 21, which clearly demonstrate that issues of environmental conservation and development are inseparable and need to be addressed as a complex system of cause and effect, (GWD/IUCN, 1994).

The concerns expressed in WCED pose a challenge to all natural biological resources managers and development personnel to develop strategies, taking into consideration the nation's socio-cultural and economic situation and the technological changes needed for sustainable development.

### *Management Initiatives*

Ghana is faced with the problem of rural-urban migration, and its associated socio-economic and environmental consequences. Most policy makers believe that employment creation, poverty alleviation, and income generation in the rural areas must receive priority in order to check the drift, and possibly cause a reversal of the trend. Multiple use of land resources may be the answer.

The management plans recommend that local people should be given access and rights to use some of the resources on a sustainable and accountable basis. They would be held responsible for the resources that are within the jurisdiction of the various communities.

In order that the local people can benefit more when they are integrated into the management system, it has been suggested that the status of some of the protected areas be changed. Hence, game production reserves are to be designated resource reserves. Mole National Park, the largest and most developed wildlife protected area in the country, is to be managed as a biosphere reserve.

This change in status is in view of the possibility that resource reserves could produce, in addition, wild products other than bush meat for harvesting. Mole National Park could also, in line with its new designation, provide logistic, conservation, recreational, and development roles for sustainable development.

The above suggestions are particularly significant to local people in those areas, because they are offered (when given the chance) wider opportunities to practice many more of their traditional resource uses on a sustainable basis in the reserve.

### *Incentives to Local Communities*

Within the context of the needs and aspirations of the local people, as identified through the community studies, and in order to incorporate the local people into the emerging management systems, the following are suggested:

- First and foremost, efforts should be made to boost the economy of the local people by provid-

ing them with better and more informed extension services. Other concerns, such as lack of proper storage facilities and access to credit, should also be addressed. Further studies should be conducted to find a viable alternative economic basis for the people.

- The infrastructure of the communities should be improved, especially communication, health and sanitation, and schools.
- Local people should be helped to establish areas of co-operation around boundaries of reserves where "spillover" benefits of the reserve can be realised through bush meat ranching, safari hunting, honey production, for example.
- Beekeeping should take place within the reserve, where feasible, as should sustainable harvesting of selected botanical resources, e.g. shea nut, Dawadawa thatch grass, and, where possible, fishing in seasonal pools. These activities may be permitted periodically in selected areas.
- Range headquarters of GWD protected areas should be sited strategically and as close as possible to certain key communities, in order that community services centres can be established to provide schools, health post water resources, and other services.
- Revenue sharing should be instituted: This would include revenues from gate fees, (community development levy on gate fees), and fees for visiting native/sacred sites or historical sites.
- Local people should have free access to their bona fide properties in the reserves for cultural purposes. Properties include sacred and historical sites.

In energy-deficient areas such as the Shai Hills area it has also been suggested that a perimeter woodlot be established by the local people, with the support of the reserve management. This woodlot will serve as a firebreak for the reserve and, when appropriate, it would be harvested on a sustainable basis for use by the local people, (GWD/IUCN, 1992, 1994).

When allocating benefits, care should be taken that no community, be it indigenous or settler, feels alienated, because such a situation could endanger the anticipated results of the collaboration.

Furthermore, such opportunities must be attractive and profitable enough to sustain the people, but much less attractive to outside and more capable people who may want to take advantage of emerging opportunities to capture the benefits and cause a net migration to such areas (Agyare, 1994).

## The Need for Monitoring

The stage has been set through the PRA methods to assure functional participation or involvement of the local people in protected area management. Several strategies may be pursued in future by a community liaison officer of the Department. Strategies may include direct benefits from protected area operations to the local people, and conservation education for functional partnership. The following arguments justify the need for monitoring.

Communities around protected areas may be many and of heterogeneous ethnicity and different cultures. They may also have differing perspectives on what protected areas can offer them, given their historical or cultural attachment to the protected area. In view of the mistrust and inertia that characterise the relationship between local communities and protected area management, any collaboration with rural communities needs close monitoring for information on changes in behaviour on both sides. This is especially important since, as Danso (1994) states, having become used to state controls, protected area managers may corner local people into an unequal partnership that could render the anticipated "marriage" illusory.

There is also the possibility that, if local people are given the chance to harvest certain biological resources from protected areas on a sustainable basis, people may come to overestimate the contribution which protected areas can make to sustained human welfare. This may lead to over-indulgence on the part of the beneficiaries, in order to achieve maximum gains at the expense of biodiversity. This becomes especially likely if people feel that they have won the freedom to exploit what is traditionally theirs.

Sustainable levels of resource "harvesting" are difficult to determine from the outset. It is imperative that resource and development personnel should co-operate to make informed, judicious, and decisive concessions to the target beneficiaries. Regular monitoring and evaluation become the key issues that provide answers to ensure sound conservation of biodiversity.

Economic incentives and disincentives to local people could help to ensure conservation of biodiversity aims and could create opportunities for providing viable and sustainable alternative economic options. When the alternative opportunities which have been provided enhance the living conditions of the people, behavioural changes in taste and consumption patterns may occur which will exert unforeseen pressure on other available biological and land resources that are not unintended for immediate utilisation. This may endanger the anticipated gains in community collaboration and environmental integrity.

The capacity of any given community to take advantage of concessions which are intended to allow them to benefit directly from protected areas will vary significantly from community to community. The extent to which any incentive package can make an impact on the community and allow it to achieve the objectives of the new dispensation will depend on how clear and explicit the objectives are to the beneficiaries. It will also depend on how organised the community is, and how able it is to utilise the incentives that have been made available effectively. The level of motivation of the community and the time required for the incentive to bring about the desired change in behaviour are also important. All these factors call for the collaboration to be monitored, in order to keep track of events and to ensure sustainable utilisation at all times.

Globally, protected area managers are turning away from the traditional protectionist management system of resource management, to a more human-centred approach. Protected area management is therefore now being viewed within the context of rural socio-economic enhancement. Protected area managers cannot function as rural development agencies as well, and therefore have to rope in cross-sectoral involvement by other natural resource and rural development disciplines, such as health, education, public works, and agroforestry. These institutions work within different policy frameworks, and multisectoral collaboration therefore creates the possibility of a conflict of interest regarding land and resource uses. The activities of the various agencies must, therefore, be co-ordinated, monitored, and evaluated to ensure cohesion for sustainable development and conservation of biodiversity.

In most cases, conservation and environmental projects do not take into account economic externalities in the economic analysis of the projects. It is therefore often realised at a later stage that damage has inadvertently been done to biodiversity, but that remedial measures have not been budgeted for.

It is imperative to invest in the conservation of biodiversity, rather than in its repair.

### *Monitoring and Evaluation Tools*

Agyare in 1994 suggested socio-economic surveys to ascertain changes in levels of co-operation between reserve management and indigenous/local people. The parameters to measure are:

- Qualitative assessment of the readiness of both parties to volunteer information on emerging issues of interest to each other.
- Number of reported cases (by local people) of poaching and other illicit activities which hitherto would not have been reported.
- Increase in number of people who voluntarily seek a licence/permit to hunt and/or to collect.
- Institution of the office of Community Development Liaison Officer (CDLO) within the Department.
- Formation and maintenance of effective Community Conservation Committees.
- Increased interaction between local people and the CDLO.

A second important function of socio-economic surveys would be to ascertain changes in levels of satisfaction of parties as to their hopes and aspirations. The parameter to measure is:

- The extent to which agreed goals and aspirations have been achieved. This could be measured by a Satisfaction Impact Assessment (SIA), as indicated in **Table 1**.

Key issues to consider are:

- Are both parties committed to the goals and objectives of the initiatives? (How interested, motivated and involved are both parties in the new arrangement?)
- Does mutual trust exist between the indigenous/local people and reserve management? (How transparent are the two parties to each other in their daily interactions?)
- Are strategies politically accepted and supported?

**Table 1:** Satisfaction impact assessment (SIA).

Level of satisfaction	Social			Economic			Environment		
	Edu	Hlt	Hou	IL	PP	MS	San	WQ	PC
Highly satisfied									
Satisfied									
No impact									
Highly dissatisfied									
Dissatisfied									

Edu = Education

Hlt = Health

Hou = Housing

IL = Income Levels

PP = Purchasing Power

MS = Market Security

San = Sanitation

WQ = Water Quality

PC = Positive Climatic Changes

- What innovations provide alternative sources of economic activities for the indigenous/local people?
- Is reasonable market security obtained (e.g. price stability, strong bargaining power)?
- Are continued conservation-oriented activities undertaken within the communities on the people's own initiative to protect the environment and to support their economic activities?

## Conclusion

An objective monitoring and evaluation exercise requires reference to a good database that provides detailed knowledge of the status of the ecosystem and productive histories of biological resources.

There is, however, a general lack of research (especially in developing countries, where it is apparent that an insignificant fraction of the national budget is allocated to research and development) to provide databases for any constructive analyses needed for informed decision-making in development and conservation of natural resources.

As a result, there is a lack of a holistic understanding of the relationship between man and development on the one hand, and environment and ecosystem dynamics on the other. This problem could be mitigated by a more fluid north-south flow of information.

McNeely (1988) states that, as human pressure on land increases, it becomes necessary to put an economic value on both the direct and indirect benefits provided by biological resources, and to predict the likely immediate and future cost to the community and the nation as a whole if the diversity of these resources is depleted.

The monitoring and evaluation of research provides the key to obtaining answers and to the required interventions in a complex system of cause and effect. During the GWD/IUCN collaboration a computer-assisted system for the input, storage, retrieval, analysis and display of geographic data (GIS) was installed at the GWD head office in Accra. The system serves as a database which is updated as and when information becomes available. No such system is available yet for socio-economic indices, because it is only recently that socio-economic issues in biodiversity conservation are being given the necessary attention.

The GWD has a planning team which is a product of the GWD/IUCN collaboration. Among its other duties, this team is to undertake research and monitoring activities in wildlife issues, to evaluate and make practical decisions for management consideration. The problem, however, is the lack of adequate training for the members. There is, therefore, a need for more training in research and monitoring and information management to bring the team up to reasonable levels of know-how and efficiency. The major limitation to GWD's future aspirations in respect of research and monitoring is its inability to secure funding to train staff. The situation is made worse by the fact that GWD is unable to recruit and retain qualified staff, owing to poor conditions of service.

A productive research, monitoring, and evaluation system also requires an effective and comprehensive national policy and implementation framework which should necessarily serve as the basis for the policy objectives of all land-based institutions and developers to ensure consistency in approaches. This will make information management easier.

If conservation of biodiversity is to be achieved in the long run, we need effective community rela-

tions and mobilisation; comprehensive environmental education and awareness strategies; and institutional reforms to remove administrative bottlenecks that inhibit ready implementation of decisions.

Political support for, and commitment to, tested strategies and effective decentralisation of political power are also essential elements in ecosystem and biodiversity conservation. Politicians should note that investment in biodiversity conservation cannot be recoverable in all cases. There is, therefore, the need to put more money into research and development and to ensure a better dissemination of information.

## References

Agyare, AK. 1994. The Socio-Economic Setting for Management Planning of Protected Areas. A paper presented

to the Ghana Wildlife Department Seminar Wildlife in Ghana: Securing the Future. FAO Conference Hall, 20 April 1994. 10 pp.

Danso, EY. 1994. Socio-Economic Aspects of a Systems Plan for Protected Areas of Ghana. Forest Resource Management Programme. GWD/IUCN Project 9786. Unpublished

GWD/IUCN. 1992. Shai Resource Reserve Management Plan. Forest Resource Management Project No 9786

GWD/IUCN. 1994. Mole National Park Management Plan. Forest Resource Management Project No 9786

GWD/IUCN. 1994. Draft Concept Paper on Biodiversity and Protected Areas Management Project. Ghana. Unpublished

McNeely, Jeffrey A. 1988. Economics and Biological Diversity: Developing and Using Economic Incentives to Conserve Biological Resources. IUCN, Gland, Switzerland. xiv + 232 pp.

## Chapter 11

# Education and Training Requirements

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### 11.1 The Difference Between Education and Training

Roy Siegfried

The selection, proclamation, and management of protected areas, including the regulation of their use, require an expanding range of specialised skills and knowledge.

The actions of future managers in protected areas will have to take into account policies affecting the dynamic use of the surrounding land and sea. Indeed, increasingly the attention of managers is being directed at events in the surrounding mosaics, as opposed to focusing solely on phenomena within protected areas.

The managers need to understand these "external" events and policies and their implications. Such understanding is dependent on an appropriate mix of formal and informal training and re-training and education and re-education. The traditional "game ranger", no matter how well trained and skilled, is unlikely to become tomorrow's warden, unless he or she is educated as well.

There is a difference between training and education. Education aims at challenging and broadening the mind, whereas training aims at focusing a student's thinking on specific means to ends, rather than on the ends themselves. Education allows an informed judgement to be made between a range of options. Training provides the skills for attending to one or more particular tasks at a time.

At the tertiary level generally, universities should be involved in education and technical colleges and other similar institutions in training.

### 11.2 PARCS Training Needs Survey

Patricia Ngari

The Protected Areas Conservation Strategy (PARCS) is a project of the Biodiversity Support Programme (BSP). BSP is itself a USAID-funded consortium of three non-governmental organisations: the World Wildlife Fund (WWF in USA), The Nature Conservancy, and the World Resources Institute.

The main goal of the PARCS project is to improve the protection of Africa's biodiversity by increasing the capacity of relevant management authorities (both governmental and non-governmental) to manage their protected area systems effectively. In Africa, the PARCS project aims to achieve the above goal by:

- Assessing training opportunities, constraints, needs, skill levels, and priorities in the three regions of sub-Saharan Africa (i.e. eastern, central, and southern Africa).
- Establishing a pilot programme in each of the three regions to implement recommendations from this assessment.
- Developing a broad series of recommendations for training protected area management staff.

The project has a four-year term, the first of which ended in July 1994, having been spent on carrying out a macro-level assessment of training needs in protected area management.



## The Approach

A team of three members of staff of three organisations charged with the task of carrying out the assessment in Africa was elected:

- Ms Deborah Snelson of African Wildlife Foundation (AWF) conducted the assessment in eastern Africa.
- Dr Annette Lanjouw of Wildlife Conservation Society conducted the assessment in central Africa.
- Dr Mike Dyer carried out the survey in southern Africa on behalf of the World Wildlife Fund.

In total, 15 countries participated in the needs assessment and training opportunities were assessed in South Africa.

The PARCS team focused its attention on training needs of the highest ranking manager on site in a protected area, whom they referred to as a Protected Area Manager (PAM).

They argued that if the PAMs are well-trained, they would be in a better position to identify training needs for the other personnel working under them.

The PARCS team designed the assessment to:

- Assess skills needed for effective protected area management in sub-Saharan Africa.
- Assess present skills levels.
- Determine the types, amount and frequency of training currently received.
- Assess training needs.
- Identify constraints to adequate and effective training.
- Identify institutions and programmes currently used for training.
- Identify potential opportunities for relevant training.
- Identify pilot activities to test innovative training methods.

## Methodology

The PARCS team used two principal techniques for the assessment. A questionnaire was designed to assess the training needs of PAMs in the field, and a large number of interviews were held, either on a one-to-one basis or in a workshop setting in order to complement the information obtained from the questionnaires.

The format of the questionnaire was that of a matrix which could serve as a job description for field-based PAMs. On the vertical axis were listed 11 main responsibilities and accountabilities of a PAM:

1. Ensure availability of competent and well-motivated staff.
2. Ensure appropriate infrastructure within the budget.
3. Ensure financial and accounting integrity of the protected area.
4. Ensure development of tactical plans and budgets and contribute to protected area strategic planning.
5. Ensure that all activities within the protected area comply with laws and regulations of the country.
6. Ensure optimum levels of visitor satisfaction.
7. Ensure agreed intervention (e.g. early burning, problem animal control) programmes are completed to budget and time tables.
8. Ensure harmonious relationships with neighbouring communities.
9. Be aware of research activities and progress against plan.
10. Represent the protected area and its interests at public meetings.
11. Ensure an appropriate balance between resource conservation and use in protected areas.

Finally, a section was provided at the bottom of the questionnaire for the PAMs to list the type of training they had received.

On the horizontal axis were listed 16 main skills, in three groups:

1. **Knowledge skills**
  - technical (wildlife/tourism)
  - management
  - planning
  - legal
  - policies/procedures
  - financial/accounting
2. **Mental / Social skills**
  - comprehension
  - problem analysis
  - creativity
  - evaluation
  - oral
  - written
  - working with others
3. **Attitudes**
  - work ethics
  - commitment to conservation
  - community attitude

Each of the cells of the matrix contained a number of questions linking the responsibility (or duty) with the skills required. For each question, the respondent indicated the level of skill considered necessary to satisfy the needs of the job, and the level which the respondent felt reflected her/his skill level.

This gave the PARCS team an inherent standard of comparison. PAMs levels were also assessed by their field operations directors (FOD) at headquarters and their colleagues in the field. This was done to provide a different perspective on the training needs of the PAMs in the field, and not to validate the self-assessment of the PAMs. It enabled the PARCS team to cross-check against different expectations of people within the protected area authority.

The data from all the countries were analysed at AWF in Nairobi by country, using the Statistical Package for the Social Sciences (SPSS). Country reports have been disseminated to the relevant protected area authorities in each of the 15 countries and are also available from the BSP.

## Findings of the Assessment

The assessment showed that, although there were training needs across the board:

- Certain needs showed greater gaps between the required skills levels and the actual skills levels of the PAMs than others.
- Competencies and main divisions of the job in which greatest needs were recorded were similar in all the countries assessed.

Although the levels of need may differ, and in some cases the order of prioritisation is different, the greatest needs were consistently noted in the same areas:

1. **Knowledge skills**
  - planning
  - policies and procedures
  - legal
  - technical and management
  - finance and accounting
2. **Main divisions of the job in which greatest training needs were noted**
  - community conservation
  - intervention
  - tourism
  - research/resource conservation
3. **Mental and social skills (especially if decentralisation is envisaged)**
  - problem analysis
  - evaluation
  - creativity

## Recommendations

The recommendations that resulted from the PARCS training needs analysis were also very similar across the continent.

- There is a need for training to be planned within the protected area authority, institution, or organisation. An evaluation of the training needs must be carried out by the organisation and it must be the one to decide what, who, how, when, and where training must occur.
- The most adoptive form of training, and the form for which there is the greatest need, is an in-service, modular form of training. This does not mean that other forms of training are not useful or needed, but that the greatest need at present is to develop in-service training programmes.

## Conclusion

The PARCS project has a remaining term of three years, within which it cannot develop and implement training programmes. PARCS does not even intend to do what it can within this time alone. PARCS can initiate programmes and has already started with a workshop held in Arusha in September 1994, where the process of developing training plans was discussed. Country-specific strategies need to be developed with the collaboration of the relevant protected areas management authorities.

To begin with, PARCS will continue to work in five countries (Uganda, Tanzania, Zambia, Malawi, and Congo) to establish pilot programmes in each of these countries, following recommendations made in Phase 1 and building on identified opportunities.

In Tanzania, PARCS will assist in the development of an in-service module for Tanzania National Parks (Tanapa), Wildlife Department, and Ngorongoro Conservation Area Authority. The module will be implemented by the College of African Wildlife Management at Mweka in Tanzania.

In Uganda, once the proposed merger of Uganda National Parks and Wildlife Department is effected, PARCS will assist in the establishment of a training officer position and in the creation of a training department/section to deal with human capacity building. The same will be done in Congo.

## 11.3 Central and West Africa

J Ngog Nje

The magnitude of African biodiversity – in the broadest sense of the term – is universally acknowledged, but the threats to this diversity are just as complex as its evolution.

The African continent, plagued by numerous ills, from political instability to high population growth rates, a drop in the value of its raw materials, monetary instability, natural disasters, ill-adapted agricultural policies for pastoral forestry, energy problems, and growing poverty, daily sees its biodiversity diminishing.

Who bears the responsibility? Africa itself, for sure, but Africa shares the responsibility with some industrialised countries.

The managing authorities of protected regions have a vital role to play in the protection and conser-

vation of the biological and cultural resources of the continent.

Management of these areas has become a highly complicated enterprise, with a rapidly growing need for a multidisciplinary approach. We must at all times consider the “adequacy-training-job” equation, however difficult this may be. After finding a solution for this first one, another might show up: “adequacy-job-training”. The solution will depend more on the decision-makers than on the training personnel.

Training institutions are faced by several challenges. To illustrate this fact, I want to consider the responsibility facing the Garua Fauna School.

### Garua Fauna School, Cameroon

#### Location

The Training School for Fauna Specialists (Fauna School, in short), was established in 1970 by Presidential decree, following a recommendation submitted as early as 1961 by the World Conservation Union (IUCN). It is located in Garua City, near the International Airport (9°20' Lat. N, 13°23' Long.). The site was selected for its proximity to the best-developed national parks in the country.

The rainy season normally extends from June to September, and the dry season from October until May (August rainfall is the highest, measuring 211 mm). Average annual rainfall is about 1 000 mm. Average annual temperature is 28°C, (April being the hottest month (32,5°C), with 39,7° the maximum average. December is the coldest month (26°C), with 16,8°C the minimum average.

#### Objectives of the Establishment

- To train personnel (for senior, middle and junior management) from French-speaking African countries. Nationals from English-speaking or other foreign countries are admitted on condition that they are able to follow instructions in French.
- To offer crash courses and seminars for training and re-training all personnel concerned with the conservation of natural resources.
- To promote mesological education.
- To enable the teaching members of the staff to take part whenever possible in the organisation

and planning, and in the initial management of protected regions.

- To undertake research on fauna or any other subject, on request from government or private agencies.

### **Infrastructure**

The school comprises one administration building; two halls for offices for the teaching staff; six classrooms; one herbarium housing a collection of about 7 000 samples of 1 300 species indigenous to Cameroon wooded savannahs; three biology laboratories; one exhibition hall with trophies, skulls and mounted birds; one library stocked with about 2 200 books and 100 journals and periodicals, most of them concerned with ecology and the specialised management of fauna and flora; 11 staff housing units; three 100-bed dormitories; one kitchen cum cafeteria complex; and a fleet of 14 vehicles.

### **Funding**

Several countries and organisations have been – and are still – contributing towards the funding of the school (infrastructure, training bursaries for students, teachers' salaries, the vehicle fleet). Recently, however, there has been a marked global decline in bursary grants. This is why Cameroon nationals form the major part of the trainees' body, because other African countries cannot afford to cover the study fees for their students.

The Fauna School concentrates on the region. If the school fees amount to FF14 000 per student per annum (as from September 1991, and as against FF12 000 before this date) the running costs, in real terms, amount to FF70 000 per student per annum, of which the Cameroon Government pays two thirds.

### **Current Programmes**

The school at present provides full-time training for middle-management and part-time training, on a regular basis, for senior and junior management.

### **Recruiting**

Specialised training is offered to students already familiar with forestry, stock farming, and other affiliated matters, and who are already involved in nature conservation. There are, in principle, no "outside" candidates, although these may enrol at

the school, provided they pay the prescribed class and residence fees.

Intake of trainees has occurred every second year since 1977. Aptitude tests are taken in the country of origin, from where they are sent to the school, depending on the number of vacancies. All candidates must be entered by their own and respective government organisations and must be in possession of the *ad hoc* schooling certificates.

- For B series: former training equivalent to Matric (preferably secondary education C and D series).
- For C series: first part school certificate or similar grade.

### **Teaching Syllabus**

Subjects offered:

- Biology and natural history
- Ornithology and taxidermy
- Veterinary techniques
- Animal ecology
- Habitat arrangement
- National parks
- Zoological gardens
- Mechanics and civil engineering
- Fire arms
- Economy
- Legislation and administration
- Management techniques
- First-aid and sport

### **Probationary Period**

Students must attend a 45-day pre-professional training course, between the two academic years, in their country of origin.

The above programmes date from September 1989.

## Future Needs

With due consideration being given to adapting the syllabus to environmental realities, the school intends to amend the curriculum as from 1995. The new syllabus will concentrate on the form and basics of the current lessons, with the addition of other subjects. Particular emphasis will be given to the sociological aspects, the integration of conservation with development, the importance of biodiversity, conservation in high-humidity regions, and international conferences on biological resources conservation.

The new programmes will improve the existing infrastructure, but they will also certainly require additional finance and human resources.

Over and above the B and C series currently being offered, the Fauna School has presented the training authorities with an advanced study programme for the creation of an A series course (a postgraduate university-level syllabus destined to allow for the re-training of senior personnel). This advanced programme was prompted by requests from interested countries which reckon, quite rightly, that biological resources are badly in need of imaginative management in the sphere of planning, and, in particular, research planning.

## Conclusion

In its 24 years of existence, the Fauna School has made a significant contribution to biodiversity conservation in Africa.

Of a total of 664 students from 22 different countries (Benin, Burkina Faso, Burundi, Cameroon, Central Africa, Congo, Ivory Coast, Gabon, Guinea Bissau, Guinea Conakry, Madagascar, Mali, Mauritania, Morocco, Niger, Nigeria, Rwanda, Senegal, Chad, Togo, Tunisia and Zaire) who registered between 1970 and 1993, 638 (about 96%) completed their courses (the others left for personal, employment, or other reasons). A total of 316 diplomas and 25 school-leaving certificates were awarded to B series students, and 268 diplomas and 29 school-leaving certificates to C series students (the failure rate was 7,3% and 9,8% for B and C series students, respectively).

Most failures were due to certain countries not always adhering to the prescribed academic recruiting conditions, thus causing a level discrepancy in the classroom and making the teachers' mission more difficult.

The current training course involves 48 students from 13 countries.

It should be borne in mind that the adequacy-job-training formula is not always true. Another complicating factor is the shortage or total lack of material means, which make it almost impossible for even capable staff to do a proper job.

In order to allow the Fauna School to fulfil its role, it is imperative that multilateral efforts be coordinated between the institution itself, the participating countries, and the sponsors, for the long-term management of biological resources in the subregion.

## 11.4 Mweka College of African Wildlife Management: Its Role as a Regional Training Institution

### Deo Gratias Gamassa

### History

Mweka College of African Wildlife Management was established in June 1963 as a pioneer institution for the training of wildlife managers. Over the past few decades Mweka College has trained over 2 000 protected area managers from 19 African (mostly east and southern African countries) and 30 other countries.

From a humble beginning Mweka College of African Wildlife Management has grown to assume a regional role, which it has played very well.

Some of the officers that have been trained at Mweka College occupy important positions in their various countries.

They include: Mr Lota Melamari, the Director General of Tanzania National Parks; Mr A Mwenya, the Director of National Parks and Wildlife Service in Zambia; Mr Modise, the Assistant Director of Wildlife in Botswana; Mr Joe Kioko, the Assistant Director of Kenya Wildlife Service; and Dr Ngog Nje, the Director of Cameroon Wildlife College. I myself was trained at Mweka, and I am currently the Director of Wildlife in Tanzania.

This brief list indicates that Mweka College has contributed to capacity-building in wildlife conservation in many African countries.

## Location

Tanzania has all representative types of major biological systems, thus enabling students to be taught about, and take advantage of, systems which vary from the montane protected areas to the savannahs, *parachystegia* woodlands, wetlands and marine ecosystems.

## Courses

The syllabus at Mweka College of African Wildlife Management has evolved gradually and logically into a number of courses geared towards making wildlife managers proficient and efficient. Mweka runs the following courses:

- Certificate course (two years).
- Diploma course (two years).
- Postgraduate diploma (one year).
- Special courses which are tailor-made.

The course consists of two parts, *viz* a theoretical portion (60%) and fieldwork (40%). The students spend 70 days doing fieldwork each academic year. Our aim has always been to produce an officer who has a theoretical understanding of wildlife management, practical skills, and scientific knowledge.

## The Future of Mweka

Mweka believes in a responsive and adaptive training programme. The college has therefore been reviewing its curriculum regularly. The last and most comprehensive review was done in May this year. It involved the clients (employers, the trainers and trainees) through a series of workshops.

Beginning 1995/96 a new curriculum will be in operation. It is based on the following recommended modules:

- Community-based wildlife conservation
- Resource inventory
- Park planning

- Park interpretation and conservation education
- Human resource development of management
- Environmental impact assessment
- Infrastructure development of management
- Resource utilisation
- Conservation ecology
- Policy and legislation

## The Regional Role of Mweka in the SADC Context

Mweka College of African Wildlife Management has been identified by the SADC countries as an institution responsible for the training of middle-level wildlife managers, and by the University of Zimbabwe as an institution for the training of people who wish to pursue further studies beyond the diploma and advanced diploma levels. With this setting, the SADC and EEC have approved a project with the following components to be implemented at Mweka:

- Infrastructure development whose aim it is to increase enrolment capacity to 200 from the present 140.
- A scholarship programme of 100 scholarships, spread over a period of five years.
- An outreach programme.
- Resource person exchange programme.
- Training of college teaching staff to different levels, in accordance with the requirements of the people requisitioning such training.

## Conclusion

Given these excellent prospects, Mweka will enter the 21st century better equipped to continue with its role of training wildlife managers. These endeavours deserve widespread support.

## 11.5 South African Overview

### Joe Venter

The first phase of a new Protected Area Manager (PAM) training initiative is in the final stages of planning. This training initiative, the Southern African Wildlife College, has been developed in consultation with conservation and training organisations throughout southern Africa. The history of this initiative is given below.

#### Background

The then Southern African Nature Foundation (now WWF South Africa) convened a working group to look at the establishment of a training initiative. Representatives of this working group included:

- National Parks Board
- Former conservation authorities
- Wildlife Society of Southern Africa
- Development Bank of Southern Africa
- Endangered Wildlife Trust
- Technikons
- Conservation Corporation (Pty) Ltd
- Rhino and Elephant Foundation
- National Botanical Institute

This working group contracted consultants to do a preliminary analysis of training facilities for PAMs in South Africa. The findings were that:

- Five technikons offer a National Diploma in Nature Conservation;
- Fort Cox College of Agriculture offers a Diploma in Nature Conservation;
- Most nature conservation agencies conduct in-service training of staff;
- Important private initiatives include: Wilderness Trust, Umgeni Valley Project, and Game Ranger Training Co-ordination Group.

Organisations with training facilities for PAMs were interviewed and were very positive towards accepting students for in-service training courses. They were also prepared to second staff to an independent training establishment for short courses of up to three weeks. However, long-term secondment of staff to the establishment posed a problem and there would be financial implications. General recommendations arising from the preliminary analysis were that a training initiative should be launched, aimed at wardens and potential wardens currently active in protected area management (in South and Southern Africa).

In selecting potential trainees, emphasis should be placed on relevant experience and mid-management potential, rather than on academic qualifications. Based on the findings of the preliminary analysis, the consultants were also tasked to make preliminary proposals for a curriculum of a Wildlife Management Training College in South Africa.

The main recommendations made by the consultants were that a protected area management plan should provide the conceptual framework for the course; in the South African context, the initiative should be aimed at redressing past imbalances through affirmative action in training of PAMs; and there should be a small but efficient administration and co-ordinating staff, using imported expertise, where appropriate, rather than a large, resident lecturing staff.

#### Selection of a Suitable Site for a Wildlife Management Training College

Based on input from the working group, seven potential sites were identified and four of these were short-listed for a detailed assessment. The Hans Hoheisen site near Orpen Gate was found to be the best option, but the transfer of land and infrastructure from the controlling body was an issue. As a result, the College is now located on contractual national park land on the western boundary of the Kruger National Park, about 10 km from the Orpen Gate.

#### Mission Statement

The mission of the Southern African Wildlife College is to provide protected area managers with the motivation and relevant skills to manage their areas and associated wildlife populations sustainably, and in co-operation with local communities.

## Current Status

The College has been endorsed by the Land and Agriculture Desk of the African National Congress and by the Wildlife Sector of the Southern African Development Community. Construction commenced in September 1995, and Phase 1, with accommodation and supporting infrastructure for 50 students, is due for completion in November 1996.

Building design will include appropriate technology with the emphasis on sustainability, energy and water conservation, and low running costs. Local communities will be involved in the construction.

Training will initially concentrate on PAMs from southern Africa, including Mozambique and Angola, who are currently working in national parks and game reserves. The college will have a small permanent staff, but it will draw on existing expertise within South African conservation agencies, universities and the private sector.

## Key Issues

The following key issues were identified for discussion at the Education and Training Working Session:

- The role which protected areas can play in sustainable development.
- What community development skills do PAMs need?
- What labour relations skills do they need?
- What conflict resolution skills do they need?
- The role Afrotourism can play in sustainable rural development.
  - What Afrotourism and service-related skills do PAMs have?
  - What other people management skills do PAMs have?

The following process was suggested to the working session:

1. Identify broad "people management" skills needed for the effective and efficient functioning of African protected areas.
2. Are these skills needs being addressed adequately at present?
3. If they are not being addressed adequately, how can this be done?



## Chapter 12

# Resolutions and Recommendations

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### 12.1 Letter to President Nelson Mandela

State President Mandela  
President of the Republic of South Africa  
Private Bag X1000  
PRETORIA  
0001

Dear President Mandela

All the delegates attending the IUCN-CNPPA AFRICA WORKING SESSION, held at Skukuza in the Kruger National Park from 11 to 17 October 1994, salute you for what you and South Africans have recently achieved. A peaceful revolution and election surely make South Africa a truly democratic state and one of which you and every South African can be justly proud.

Secondly, we avail ourselves of this opportunity to express our heartfelt appreciation for your special message wishing us a constructive and fruitful meeting, and for encouraging us to protect and utilise Africa's precious natural assets in ways in which our spectacular wildlife and natural heritage can be turned to the advantage of all our people in a sustainable way for now and for posterity. Your words inspired, motivated and guided the meeting attended by representatives of no fewer than 40 countries, including 30 African nations, creating a spirit of goodwill and international co-operation. Your leadership in this regard is world renowned. We thank you for all of this.

It is our wish not only to express deep and sincere appreciation for your personal support and encouragement of our endeavours, but also to appeal to you to make a major international declaration on the necessity of the wise use of Africa's environmental assets, both terrestrial and marine. Africa has much to offer the world and if its natural and cultural assets are protected and nurtured they will benefit not only Africans but the world at large. Sir, due to your immense stature as a world leader and as the most admired and respected African statesman, a strong and clear message from you will undoubtedly be a powerful incentive for the achievement of our goals, encourage funding from international sources and, indeed, focus the world's attention on Africa's natural and cultural assets. Africa, through your words, will be showing the world that we really care about our natural environment, and that this continent is not going to allow its natural and cultural heritage to be destroyed.

Appended, please see the copy of the "Skukuza Declaration" reflecting the sentiments expressed and endorsed by all the delegates at the meeting.

Sir, we thank you and wish you good health, long life and every success in the sterling work you are, so ably, doing.

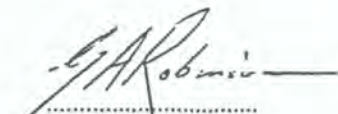
VIVA AFRICA!



Mankoto ma Mbaelele  
Vice-Chair West Africa



Dr Perez Olindo  
Vice-Chair East Africa



Dr G A Robinson  
Chief Executive, NPB

Delegates of the IUCN-CNPPA Africa region working session,  
SKUKUZA  
1994-10-17

## 12.2 The Skukuza Declaration

***"I believe African countries can become world leaders in the preservation and promotion of humanity's natural heritage."*** (President Mandela in his message to the IUCN CNPPA African regional working session).

*National parks, nature reserves and other protected areas can provide great economic and other benefits, of many kinds, for the people of Africa. They can be the key to sustainable development.*

*However, many such areas have, in effect, been destroyed under the pressures of a rapidly expanding human population. This has been made worse where wars and civil disorder have brought about the collapse of the system of administration. Also, as a result of inadequate funding, those areas which still survive often cannot be properly managed.*

*These damaging trends must be reversed, and the time to do so is now, when the world is at last recognising the value of Africa's heritage of biodiversity.*

*Accordingly, we, the 123 participants from 30 African countries and 10 international organisations at IUCN's Commission on National Parks and Protected Areas, meeting for the first time in South Africa, at Skukuza Camp in the Kruger National Park on 11 to 17 October 1994, respectfully request the leaders of the Governments of Africa:*

- 1. To prepare a Protected Areas System Plan for each country which establishes clear national objectives for the system and specifies how those objectives will be achieved. These plans should include proposals for new protected areas.*
- 2. To provide protected areas with sufficient resources to enable them to yield in perpetuity their many benefits to local people, the nation as a whole, and the world at large.*
- 3. To negotiate additional resources for protected areas from international sources, including those of the Global Environment Facility, the World Bank, the World Heritage Fund, United Nations Development Programme, United Nations Environment Programme, IUCN – the World Conservation Union, World Wide Fund for Nature, and bilateral assistance agencies.*
- 4. To foster productive partnerships with local people, non-governmental organisations, industry and commerce, scientists and government officials of all concerned sectors in support of their many values.*
- 5. To invest now in protected areas, at a time when global concern for natural heritage conservation is a major issue and the need for high military expenditure is declining, so as to guarantee continued human welfare and prosperity.*
- 6. To adhere, without delay, to international agreements to conserve biodiversity and the environment, in the spirit of commitment created by the Earth Summit.*

*We are convinced that the people of Africa realise that their welfare cannot be separated from that of the plants and animals around them and the soils, waters, and air upon which these depend. We urge everyone to strengthen efforts to conserve nature for the benefit of society.*

The Skukuza Declaration was signed by all the delegates to the IUCN CNPPA African Regional Working Session.

## Chapter 13

# Report on the Working Session

### 13.1 Conference Report

Roy Siegfried

"I believe African countries can become world leaders in the preservation and promotion of humanity's natural heritage."

Inspired by this message from President Nelson Mandela, 123 participants from 30 African nations and ten international organisations met in South Africa for the first time to discuss the future of national parks and other protected areas in Africa.

Important, and potentially far-reaching, conclusions were reached, and converted into action, at the meeting. The principal objective of the meeting was the formulation of an action plan for the establishment and management of a complete and comprehensive system of protected areas in Africa south of the Sahara.

Africa is different. It always has been and always will be. Judged by western industrialised, or eastern-rim technological ability, Africa is a failure. It never will be globally competitive in these spheres. It has been the recipient of billions of dollars of development aid, with little noticeable effect. Repeated apparent failure has caused Africa to become "marginalised".

But it is this very "differentness" of Africa that is its strength. Ignorance of this fact is a danger that in the past has intruded into several action plans and hampered so-called solutions for problems besetting the security and management of protected areas in Africa.

The Skukuza meeting embraced plenary sessions and regional workshops, and case histories and practical demonstrations to exemplify pre-selected topics under discussion.

The major topics were:

- An analysis of the strengths, weaknesses, opportunities and threats of African protected area systems.
- The involvement of local human populations.
- Ecotourism or, as it came to be called at the meeting, afrotourism.
- The Convention on Biological Diversity.
- Development assistance.
- Research and monitoring.
- Educational and training requirements.

In addition, there were special plenary sessions devoted to marine protected areas and world heritage sites.

Many of the specially invited presentations, and the results of the deliberations of the regional workshops, included much indigenous empirical information and analytic evidence in support of propositions, both old and new, which often in meetings of this kind tend to be little more than recycled clichés and platitudes, based on developed-world premises. Indeed, it became clear that Africa is beginning to understand and accept at last that it has to develop its own "agendas" for tackling the many problems that attend the survival of its national parks and other protected areas, both terrestrial and marine.

A persistent problem in the past has been insufficient communication between representatives of the continent's Anglophone and Francophone nations. In this context, the availability of simultaneous French-English translation services at the meeting greatly facilitated an improved, more balanced co-

operation between all parties, governmental and non-governmental, which are concerned over the future of Africa's protected areas.

Whereas African government agencies have the primary responsibility for the security and management of the use of these protected areas, they do not have, in either cash or kind, the resources to do the job adequately on their own. There has to be co-operative commitment to action by the full spectrum of interested and affected parties.

Moreover, the general state of the African environment dictates that such action has to be initiated now, and not left on the shelf as yet another set of pious words. This urgency is part of a trend that has emerged strongly of late in other parts of the world, but that has been somewhat retarded in Africa. Hence, there exists an urgent need for involving all stakeholders, their requirements, and their values in the design of action plans affecting the future of protected areas in Africa.

The outcome of the meeting's discussions was transformed and elaborated by the delegates into a political statement called the "Skukuza Declaration". This declaration, reflecting the sentiments and endorsed by all the delegates at the meeting, calls upon the leaders of all governments in Africa to, *inter alia*, prepare plans for protected area systems in each country, including national objectives of each system and the specifications for how these objectives are to be achieved.

The preamble to the declaration emphasises that protected areas can provide significant economic and other benefits, of several kinds, for the people of Africa. They can be the key to sustainable development. The declaration closes with an appreciation of the interdependency between the welfare of the people of Africa and that of their air, water, soils, plants, and animals.

More particularly, conclusions flowing from the meeting included the following:

- Africa is the custodian of many of the crown jewels of the world's environmental assets.
- Africa, Africans, and African nature constitute a holistic basis for the compilation of indigenous, integrated plans for the future of the continent's protected areas.
- The future of Africa's protected areas is affected positively by both national and international economic demand, strong political will, and a strong resource base (for example knowledge and products).
- Principal negative factors include fragmentation and isolation of protected areas and the knowledge and skills for managing their use, alternative land-use threats, and poverty and strife.

The meeting proposed that the following actions should be initiated urgently:

- Include protected areas as legitimate elements in integrated land-use planning, at regional, national and local levels.
- Market protected areas as sound ecological and economic investments for sustained multi-purpose use of natural resources.
- Promote public "ownership" of protected areas at international, national, and local levels.
- Develop socio-economic monitoring to evaluate the efficacy and efficiency of all marketing, promotional, local-community outreach, and other programmes.
- Undertake research to reveal monitoring needs and to develop protocols for statistically robust and cost-effective monitoring.
- Assess educational and training capacity-building requirements attending all sectors of personnel involved in the operation of protected area systems (including marine systems).

The preceding and several subsidiary elements are being incorporated into a complete and comprehensive action plan which, as stated, was the principal objective of the meeting.

Action plans are well and good, but implementing them is another matter. In the final analysis, how is poverty-stricken Africa to realise plans for the survival of its national parks and other protected areas into the 21st century, however carefully crafted these plans might be? In his keynote address at the opening of the Working Session, Noël de Villiers, the Executive Director of an organisation called the Open Africa Initiative, said: "Now it is our turn. Africa is standing at the threshold of what could turn its environment into the most valuable product on earth. There are 400 million tourists in the world today, which figure will double by the turn of the century, and the fastest-growing proportion of which want nature. If we deliver the product, through them the fortunes of this entire continent could be turned around."

Tourism could, and should, contribute significantly to a change in the generally pessimistic prognosis attending the future of Africa's protected areas. It would, however, be imprudent to regard afrotourism as a panacea for the continent's ailments. Tourism is a fickle "industry". Nor should it be viewed in any way as a substitute for governmental responsibility for the conservation of indigenous biodiversity, especially in terms of commitments to the International Convention on Biological Diversity.

Development aid, which to a large extent has made possible the survival of many of Africa's protected areas in the past, has been obtained mainly on the basis of political arguments. This has recently changed, however, and increasingly African nations are being required to put forward economic argu-

ments in order to qualify for development aid. Hence, economic arguments will have to be paramount in justifying the security of Africa's protected areas in future.

If, under this scenario, sub-Saharan Africa can continue to spend in total some US\$8 billion annually on its military dispensation, as it does at present, Africa should be able to make just as good a case for development aid for the survival of many of the world's environmental crown jewels.

The key lies in attaching values to living organisms and the ecosystems that they constitute. Unless we, the people of Africa, accept that there are values to be conserved in protected areas, and perceive that there are benefits to be gained from doing so, it is unlikely that we shall alter our ways so as to ensure the survival of these areas.

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