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IUCN Eastern Africa Regional Programme

Partnership for Conservation

Report of the Regional Workshop on Marine Protected
Areas, Tourism and Communities

Diani Beach, KENYA

11 - 13 May, 1998



December 1998

Partnership for Conservation

Report of the Regional Workshop on Marine Protected Areas, Tourism and Communities

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WELCOMING REMARKS: MARINE PROTECTED AREAS AND THE WORLD COMMISSION ON PROTECTED AREAS

*Lota Melamari, Regional
Vice-Chair, WCPA; Chairman Board of Trustees, Tanzania Marine Parks & Reserves*

Mr Chairman,
Honourable Guest of Honour,
Distinguished Delegates, Colleagues,
Ladies and Gentlemen

I am deeply grateful to the organisers of this workshop for inviting and giving me the opportunity to say a few words regarding the World Commission on Protected Areas (WCPA) and marine protected areas.

I stand here wearing two hats that complement each other: Regional Vice-Chair for the IUCN-World Commission on Protected Areas, and the Chairman of Board of Trustees for Marine Parks and Reserves in Tanzania.

I am therefore delighted to warmly welcome all of you to this IUCN sponsored workshop in which you will be able to explore and recommend new ways of bringing conservation to people through shared roles and responsibilities.

The WCPA is one of the oldest and largest of the IUCN global Commissions. The name WCPA has replaced CNPPA (for Commission on National Parks and Protected Areas), which was the old and more familiar name of this Commission. The IUCN World Conservation Congress held in Montreal in October 1996 agreed to a proposal from the Chair and Steering Committee of CNPPA that it be renamed "The World Commission on Protected Areas." This new title is shorter, highlights the Commission's global responsibilities, and removes the redundancy in the title (since national parks are protected areas).

The strength of the Commission is pegged on:

- The role of WCPA is to provide the principal source of technical advice to IUCN, its members, and collaborating organisations on all aspects of the selection, planning, and management of protected areas.
- The WCPA mission being to promote the establishment and effective management of a worldwide, representative network of terrestrial and marine protected areas, as an integral contribution to the IUCN mission.
- WCPA achieves the above role and mission through the inputs of a network of over 1,100 voluntary protected area experts in 140 countries.
- The WCPA is served by a Secretariat based at IUCN Headquarters in Gland, Switzerland with a Steering Committee composed of the Chair and Regional Vice-Chairs drawn from one of each of the IUCN regions worldwide. There is also a Vice-Chair Marine, and this is of great interest to us here at this workshop.

Despite the growing number of marine protected areas (MPAs) in the western Indian Ocean, WCPA has few members from the region and there is little effective networking among practitioners. WCPA would like to address this and establish a good strong regional representation among its marine members, and to do what it can to promote more active networking. So we are happy to see a gathering of MPA people here and look at this as the beginning of a networking process that will continue.

This project will certainly help to get practitioners networking to some extent. Another IUCN WCPA project that should start soon is the Western Indian Ocean Marine Protected Area Programme. This is a regional project for which IUCN has received provisional approval for funding through the GEF. Among other things, the project aims to bring MPA practitioners together to design a detailed MPA programme that has both national and regional components, and that would be submitted back to GEF for funding. We are awaiting the final word on whether and when the funding will be approved, but expect the project to start sometime this year.

WCPA is involved in a third MPA activity, this one in Tanzania. This is a project development activity again funded by GEF, for which IUCN has contracted Dr Magnus Ngoile to oversee the formulation of a detailed GEF proposal for establishment of a new MPA in Tanzania. Mnazi Bay in the extreme south of Tanzania has been selected and will complement the ongoing activities along the north and central coasts, including Zanzibar Islands and Mafia.

Other MPA activities that IUCN is facilitating in the region, but that don't involve WCPA directly, include the establishment of at least one MPA in the Comores and of a series of community designed and managed MPAs along the Tanga coast of Tanzania. IUCN has also had a long history of MPA work in Seychelles (working together with the conservation authorities and Dr Nirmal Shah of Seychelles, who is a participant in this workshop).

A workshop like this one is aimed at addressing key issues that will improve the management capacity for MPAs in the face of new challenges over the coming century.

Protected area managers will need to adapt to a new agenda in the 21st century. The new managers will need to strengthen their traditional expertise but also develop new competencies (e.g., socioeconomic knowledge and communications and negotiating skills). But successful management will depend on a sympathetic environment (i.e., access to information, both state-of-the-art scientific and traditional knowledge, adequate finance, effective institutions, and a favourable policy environment).

The information base for managers needs to be expanded:

- ethnic knowledge must be incorporated into protected area management
- there is a need to improve the application of science to management
- NGOs need more information on the science base for management of parks
- appropriate extension is required to help MPA managers communicate effectively with local communities and create greater awareness of the values associated with the protected areas.

Mr Chairman, I would like to wind up my short remarks by emphasising the role of IUCN especially through WCPA in collaborative efforts to assist the nations of this region to manage their protected areas.

I wish the workshop every success.

OVERVIEW AND OBJECTIVES OF THE WORKSHOP

*Rodney V. Salm
Marine/Coastal Conservation Coordinator
IUCN Eastern Africa Regional Office*

1. Background

Marine protected area (MPA) management is becoming increasingly costly and unsustainable in its present form: the norm is for a management authority to foot the bill for MPA management in the face of escalating costs and hostility among stakeholders.

If MPAs function effectively to enhance tourism and replenish fisheries, we are justified in asking the following questions:

- Why should the government have to foot the bill to bring benefits to other stakeholders?
- Isn't there a formula whereby the benefits could be sufficiently great to entice the stakeholders to share the burden of safeguarding their interests or livelihoods?

This is what we are here to explore - the ways and means of providing the critical incentives to potential management partners to share in management in one way or another. It may be through a financial contribution, simple compliance, or some direct activity that requires an investment of funds and action. Examples include the support of a marine biologist to implement monitoring activities while providing guiding services, the installation and maintenance of moorings, the funding of specific activities and incentive schemes (e.g., turtle conservation in Kenya), provision of specialised equipment, tax breaks on equipment and fuel, village patrols and self-policing, and community-based monitoring.

IUCN has received numerous requests from its members and partners in the western Indian Ocean (WIO) region for specific assistance to address two new challenges for MPA managers:

- How to forge effective partnerships with stakeholders for collaborative management?
- How to achieve financial self sufficiency for these areas?

While there are few successful examples of MPAs under effective collaborative management in the region or that are fully self-sustaining, the WIO can boast some innovative approaches that are being tested. These approaches need to be shared among the MPA practitioners of the region and further developed.

To facilitate this exchange and refinement of approaches, IUCN and the Kenya Wildlife Service (KWS) have joined forces, with funding from BMZ (German Federal Ministry for Economic Cooperation and Development) to identify, test, and improve approaches to meet these two challenges over the course of a three-year project.

The first challenge was to find a suitable pilot site that met the following criteria:

- a long history of effective management
- considerable tourism use and value
- discrete coastal communities whose livelihoods are directly linked to the MPA
- high biodiversity value.

It is not easy to find sites that meet these criteria in this region. However, the one that probably fits them best is the Kisite Marine National Park and adjacent Mpunguti Marine National Reserve in Kenya.

The Kisite/Mpunguti complex certainly is well managed. It is surrounded by discrete communities and does provide benefits to the neighbouring coastal communities and tourism sector. We will hear more about these benefits in one of the case study presentations and directly from the beneficiaries during the excursion.

After this workshop, the challenge will be for KWS to test and refine incentives for these stakeholders to contribute directly to management and safeguard the benefits accruing to them through the MPA. We hope that the approaches generated over the next few days will inspire others sufficiently to test them back home. We will do what we can to facilitate the exchange of experiences among the practitioners attending the workshop, and keep you informed of progress.

2. The Workshop

We are gathered here as an eclectic group of people to share our different perceptions and expectations of MPAs, and discuss the opportunities for partnerships in MPA management. Our collective expertise includes representatives of MPA management authorities (government and parastatal), government sector tourism officials, private sector tour operators, economists, community leaders, folks with broad international experience, NGOs, and research institutes. While we have achieved a good balance of experience, we have failed, I notice to achieve any semblance of gender balance. Why is that I wonder? Is it because we see MPAs as areas that need strong arm enforcement tactics, and consider this men's work? Do we have sufficient appreciation for the role of MPAs in supporting the livelihoods of women too? These are things we need to consider over the next three days while pondering the opportunities for partnership.

The objectives of the workshop include:

1. *Approaches to MPA management, stakeholder collaboration and financing mechanisms shared and examined*

The role of MPAs in biodiversity conservation, financing mechanisms and collaborative management approaches will be introduced at the workshop, drawing on national, regional and global experience. This will be followed by a series of case studies examining the issues, incentives, obstacles and opportunities for partnerships for MPA management presented from the perspectives of government, parastatal, private sector, NGO, academic, and community institutions that are directly implementing MPA management.

2. *An approach formulated for achieving sustainability of MPAs through partnership between the management authority, tourism sector and communities for their management*

We will be democratically assisted to divide into working groups to examine and discuss these issues and possible solutions for them, and will reinforce this with a visit to the Kisite/Mpunguti MPA complex and discussions with the community and tour operator groups.

3. *Work plan agreed for testing and refinement of this approach in the Kisite/Mpunguti MPA complex, communicating results regularly through the region, and the wider regional application of results*

On the day following the workshop, KWS and IUCN (with the assistance of any volunteers awaiting flights home) will undertake this task.

3. Working Groups

There will be three working groups: one each to examine opportunities for MPA management partnerships with the tourism sector and with communities; and one to develop monitoring and evaluation tools to measure the social and environmental impact of the project activities.

The role of the **Tourism Sector and Community Working Groups** is to determine and tell us:

- What needs to be done (the activities)
- How it will be done (the approaches to be tested and refined)
- Who is going to do it (people and expertise needed).

The role of the **Monitoring and Evaluation Working Group** is to determine and tell us:

- How we will know we are being effective (M&E methods and indicators, both environmental and social)
- What conditions we need to be effective (assumptions).

The role of **KWS & IUCN** on Thursday is to wrap up everything and indicate:

- When it will be done (work plan)
- What resources are needed to do it (budget).

4. What next? Follow-up to workshop recommendations

The Kisite/Mpunguti MPA complex will act as a pilot site for testing and refinement of the recommended approaches and actions resulting from the workshop over 24 months. The lessons learned and experiences gained both at the pilot site and other sites will be shared through the regional MPA network established during this workshop, in two ways:

- production of a regular newsletter that will serve as a medium of two way exchange of information between the demonstration site and the other MPAs in the region
- training and study tours to facilitate exchange of lessons learned amongst MPA practitioners.

5. Global Application

This workshop and related follow-up activities are part of a global IUCN project. A similar process will be coordinated in Central America through the IUCN Regional Office there. The project will end with an interregional workshop designed to facilitate the sharing of lessons learned and successful approaches between the two regions. An output of the project that captures the experience of the two regions will be guidelines in manual form for the conservation of marine biodiversity through linking MPA development with marine tourism and community participation to achieve collaborative management.

6. A Word of Encouragement

Many of us have accelerated our ageing process considerably by trying to get MPAs established, and have very strong opinions about how one or another agency is not doing its job. This workshop is an opportunity to turn our blood, sweat, tears, and frustrations into positive experiences and help each other chart a new way forward. This workshop provides a platform for you to draw on your past experiences, both positive and negative, to identify realistic, practical solutions to the problems you have encountered in establishing good working relations with other partners. We urge you to help develop an understanding across the board of what the constraints are to partnership, and to suggest means to deal with these so that they can be tested and refined over the next two years.

KEYNOTE PAPERS

MARINE PROTECTED AREAS: CHANGES AND CHALLENGES

Rodney V. Salm
IUCN Eastern Africa Regional Office

Magnus Ngoile
Institute of Marine Sciences

1. Introduction

1.1. Background

The western Indian Ocean (WIO), which includes the eastern coast of Africa and offshore island states, has a remarkably high biodiversity caused partly by its high level of endemism. The unique biodiversity of this vast area is inadequately protected by its 35 marine protected areas (MPAs), many of which are very small, and where tourism is often the driving criterion for MPA selection.

MPAs have been late in coming to the region, which otherwise has a long and effective history of conservation through its largely land-based parks and reserves and its focus on terrestrial megafauna. Where MPAs have been gazetted, they have not always been managed. Consequently, some MPAs no longer hold any value for conservation, the ecosystems they were meant to conserve are irretrievably damaged, and the species have either disappeared or become critically endangered.

This late attention to MPAs also means that personnel and institutional capacity for their management is generally weak. However, there is an increasing pool of regional expertise and experience that, if shared, would bring considerable benefits to national marine conservation efforts. There is also considerable interest in the private sector and among individuals to contribute somehow to MPA management. One distinct advantage of the late advent of MPA establishment in the region is that it can benefit from the mistakes made on land, and the changing attitudes toward more community-based and other partnership approaches to protected area planning and management.

The WIO 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 today by 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 few coastal marine resources, and inappropriate or poorly controlled developments.

It is true that the early settlers and seafarers caused rapid disappearance of species from the oceanic WIO islands. For example, dugongs, crocodiles, giant land tortoises, and nesting green turtle populations were eliminated from the granitic islands of Seychelles, and the dodo was driven into extinction on Mauritius.

Currently, however, the trend is more ominous and wide-ranging. In addition to the ubiquitous escalation in coastal development, the major threat to 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 that, in turn, generally leads to widespread depletion of biodiversity through overharvest, possibly ending in complete loss over the long term (e.g., disappearance of many fish species from the heavily fished reefs of Tanzania, of dugongs and turtles from throughout much of the region, and of coastal forests along the Eastern African coast).

1.2. The Way Forward

MPAs can be a significant tool in addressing habitat destruction and species impoverishment. However, in light of the increasing pressures from coastal communities and the emphasis on coastal tourism development as a major source of income for the national exchequer, MPAs can no longer shut out people or ignore imperative trends in development. In fact, we can take this further and say that MPAs can no longer be sustainable if they don't include stakeholders as partners in management, both to reduce the enforcement burden and to share the management load and costs.

Conservation of marine biodiversity in the region requires a combination of research, stakeholder participation and rights to resource ownership, establishment of MPAs, including the strengthening of capacity for their management, and coastal planning, management and environmental impact assessment. It also requires regional collaboration to safeguard shared resources and linkages between ecosystems across national boundaries.

This paper will provide a brief overview of the status of MPAs in the region and introduce some changes in perceptions of MPAs, including introduce some questions concerning partnerships for their management.

2. Current Status of Marine Protected Areas in the Western Indian Ocean

MPAs are unevenly distributed through the WIO, and receive different amounts of management attention. Levels of management vary from good in some of the Kenyan, Seychelles, and KwaZulu-Natal MPAs to none for others, as in Tanzania. A number of the MPAs have never been managed, 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 Strict Nature Reserves in Madagascar designated for nesting sea turtles in 1923. Nine of the Nature Reserves listed for Seychelles in the global review 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, two new MPA complexes have been gazetted 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 and the Chumbe Reef Sanctuary, Mnemba Controlled Area, Misali Island Controlled Area, and Menai Bay Controlled Area have been gazetted off Zanzibar. The Silhouette Marine National Park has been gazetted in Seychelles, along with the Ile Cocos, Ile La Fouche, Ilot Platte National Park, and legislation and management plans are currently being considered for two Marine Parks (Blue Bay and Balaclava) off Mauritius. Significant progress has been made toward the management of the Mafia Island Marine National Park in Tanzania following its formal establishment in 1995, and preliminary efforts toward community managed MPAs are being implemented on Zanzibar and at Tanga, Tanzania.

So, while 41 MPAs were listed for the region in 1983 (Salm 1983), counting the new ones, including those in KwaZulu-Natal, and discounting those that are not managed, 46 would be a truer total (Table 1). The area of these 41 areas in 1987 was less than 1,900 sq. km, which, to put this in perspective, was an area of about 0.8% of the total protected terrestrial areas for Kenya, Tanzania, and Mozambique alone (245,270 sq. km) in 1986 (IUCN/UNEP 1987). This is a good indicator of the relative lack of priority placed on MPAs in this region in earlier years.

Table 1 lists the 46 accepted MPAs of the region. Column 1 shows the uneven distribution of MPAs through the region, with Somalia and the Comores lacking them altogether (IUCN will be assisting the establishment of the Nioumachoua MPA off Moheli Island in Comores in 1998 with funding from UNDP/GEF). There clearly is the need for better geographic representation.

Integration of MPA management with that of surrounding areas is generally inadequate (column 2), and is an area that needs to be strengthened.

There has been little progress in linking coastal people into the MPA selection, planning, and management process (column 4), and consequently little benefit to them. This problem has been recognised in Tanzania, Kenya, and KwaZulu-Natal where increased efforts are underway to ensure greater benefits to the people living adjacent to MPAs and to involve them more actively in management of the areas.

Existing MPAs generally have greater value at the national (column 5) than regional level (column 6). A greater effort is required to establish a regional system of MPAs that addresses the WIO biogeographic province as an integral unit.

3. Support for Marine Protected Areas in the Region

Support for MPAs to date has been inequitably scattered over the region and uncoordinated. This support has been guided more by perceived local or national needs and opportunities than by regional ones, and, with a few notable exceptions, tends to be short lived. Nonetheless, the related activities provide a good foundation on which to build. There are lessons to be learned and adopted from successes, and failures to be avoided.

IUCN (Seychelles, Kenya, Tanzania, Mauritius, Comores), WWF (Mozambique, Tanzania, Kenya), Endangered Wildlife Trust (Mozambique), the Netherlands (Kenya), UNDP-GEF (Madagascar), and the European Union, France, BirdLife International, and Society for the Promotion of Nature Reserves (Seychelles) have actively provided technical and/or financial support for MPA development in the region. New MPA initiatives that are being tested or planned include community-based management of reefs in Tanzania (Irish Aid/IUCN), Comores (UNDP-GEF/IUCN), Somalia (EU/IUCN), and development of a MPA programme proposal for Tanzania (GEF/IUCN). IUCN is implementing a project in partnership with the Kenya Wildlife Service that aims to demonstrate the benefits of MPAs for fisheries and tourism and establish effective partnerships for their

management. There clearly is a need to coordinate these different activities to ensure complementarity and that gaps are filled at both national and regional levels, and to enable the sharing of lessons learned.

Table 1. Evaluation of WIO marine protected areas (Source: revised from Salm 1995)

Site Name ¹	Adjacent habitat links ²	Conservation focus	Community links/value ³	National value	Regional value
Kenya					
Kisite MNP & Mpunguti MNR	Adequate?	Reefs/tourism	Good	High	High?
Kiunga MNR/Biosphere Reserve	Developing	Dugongs/turtles /reefs/seabirds	Improving	High	High?
Malindi & Watamu MNPs & MNRs	Adequate?	Reefs/tourism	Moderate?	High	High?
Mombasa MNP & MNR	Adequate?	Reefs/tourism	Improving	Moderate	Low
Diani Chale MNR	Adequate?	Reefs/tourism	Poor	Moderate	Low
Tanzania					
Mafia Island MNP	Adequate	Reefs/tourism/ biodiversity	Good	High	High
Chumbe Island Coral Park	Adequate	Reefs/island flora & fauna/tourism /education	Improving	High	High
Misali Island Controlled Area	Adequate	Diverse coral/reef invertebrates	Improving	High	High
Menai Bay Controlled Area	Adequate?	Reefs, high biodiversity	Good	High	Moderate/ low
Mnemba Controlled Area	Adequate?	Coral/turtles/ tourism	Improving	High	Moderate/ low
Mozambique					
Ilhas da Inhaca e dos Portugueses Reserve	Adequate	High biodiversity research/tourism	?	High	High
Bazaruto NP	Adequate	Dugongs/turtles reefs/tourism	Developing	High	High
Madagascar					
Mananara MNP	?	Reefs/mangroves/ dugongs?/coast	?	High?	?
Seychelles					
Aldabra Atoll SNR/World Heritage Site	Good	High endemism & biodiversity	N/R*	High	High
Ste Anne MNP	Adequate?	Reefs/tourism/ turtles	Poor?	High	Moderate
Curieuse MNP	Adequate	Reefs/tourism/ turtles/mangroves/ flora	Poor?	High	Moderate
Port Launay MNP	Poor	Reefs/tourism	Poor?	Moderate	Low
Baie Ternay MNP	Poor	Reefs/tourism	Poor?	High?	Moderate
Silhouette MNP	?	Reefs	?	Moderate?	?
Ile Cocos, Ile La Fouche, Ilot Platte NP	?	Reefs	?	Moderate?	?
Cousin Is. Special Reserve	Adequate	Reefs/turtles/birds/ tourism/education	Good?	High	High
Aride Is. Special Reserve	Adequate	Seabirds/reefs	Poor	High	High?
Brulee-Pte au Sel Reserve	Poor	Molluscs	Poor	Low	Low
Northeast Point Reserve	Poor	Molluscs	Poor	Low	Low
La Passe-Grosse Roche Res	Poor	Molluscs	Poor	Low	Low
Anse Boudin-Pointe Zanguilles Reserve	Poor	Molluscs	Poor	Low	Low
Mauritius					
Blue Bay Reserve	None	Reefs/tourism	?	Moderate	Low
Balaclava Reserve	?	Reefs/tourism	?	Moderate	Low

Site Name ¹	Adjacent habitat links ²	Conservation focus	Community links/value ³	National value	Regional value
La Réunion (France) Ile Europa Reserve Naturelle	Good	Turtles/seabirds/reefs	N/R*	High	High
Iles Glorieuses Reserve Nat.	Good	Seabirds/coconut crabs/turtles/reefs	N/R*	Moderate	Moderate
Iles Tromelin Reserve Nat. Ilot de Bassas de India Reserve Naturelle	Good Good	Turtles/seabirds Reefs	N/R* N/R*	High ?	High ?
KwaZulu Natal, South Africa					
Greater St Lucia Wetland Park (includes several gazetted reserves)	Good	Turtles/coral/birds /estuary/dune & swamp forest/ mangrove/ prawn & fish nursery/ freshwater wet-land/ecotourism,	Good	High	High
Trafalgar Marine Reserve & Mpenjati NR	Adequate	Fossils/estuary-sea interface/ rock reefs/algal beds	Moderate	Low	Low
Kosi Bay NR	Good	Estuary/lake/man-grove/fish nursery	Good	High	Moderate
Richards Bay NR	Poor	Estuary/prawn & fish nursery/ mangroves	Poor	High (as a prawn nursery)	Low
Umlalazi NR	Good	Tourism/estuary/ mangrove/dune forest/salt marsh	Poor	Moderate	Low
Amatikulu NR	Good	Estuary/swamp forest	Poor	Moderate	Low
Umhlanga Lagoon NR	Adequate	Estuary/dune forest/urban green space	N/R*	Low	Low
Beachwood Mangrove NR	Poor	Estuary/mangrove /environmental education	N/R *	Low	Low

- ¹ MNP = Marine National Park; MNR = Marine National Reserve; NP = National Park; SNR = Strict Nature Reserve; NR = Nature Reserve
- ² based on an assessment of adequate inclusion of adjacent and linked habitats
- ³ based on provisions for community participation in management & benefits to communities; N/R = not relevant for these isolated oceanic sites
- * urban sites where there are no real local communities - there are urban dwellers some of whom are Honorary Officers, etc.

4. Constraints to Establishment of Marine Protected Areas in the WIO

The *lack of adequate institutional capacity* is one of the major constraints in achieving effective management of MPAs in the WIO. While some countries have MPAs 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. Many additional MPAs have not advanced beyond proposals, while others have been gazetted then forgotten (e.g., the seven marine reserves in Tanzania that were gazetted in 1975).

Another major constraint is the general *lack of effective control of activities outside MPAs* that impinge on them. 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 cooperation is needed to enable transnational issues to be adequately addressed. For example, turtles nesting along the Tongaland coast of South Africa are protected on their nesting beaches but they move, along with those protected on the beaches of Europa Island, to feeding grounds off Mozambique.

Tanzania, and Madagascar where they are harvested. As another example, the Tanzanian reefs adjacent to and upcurrent of those of the Kisite Marine National Park in Kenya are extensively overfished and devastated by destructive fishing techniques. This must affect the quantity and varieties of larvae drifting onto the Kenyan reefs.

Another constraint that applies universally, but in particular to the WIO, is the general **public apathy toward and lack of awareness** of marine conservation issues, including a true appreciation of the value of the marine environment and of our impact on it. As a result, MPAs are afforded **little government support and low priority for funding**. It is against this backdrop that we hold this workshop, and attempt to address the issue of financing and sustainability of MPAs.

5. The Changing Roles of MPAs

The principles and approaches for MPA establishment have evolved considerably over the last 15 years. Significant advances have been made to tackle the challenge of sustainability of MPAs through innovative financing mechanisms, partnerships with the private sector and NGOs, and collaborative management between government and communities. This process has brought along with it new approaches for MPA establishment and management that are truly participatory, involving communities and other stakeholders through interaction and collaboration rather than information and consultation.

Acknowledging that there can be many subdivisions of the role of MPAs, their primary functions remain biodiversity conservation, tourism, fishery replenishment, and research and monitoring. The value of MPAs for fishery replenishment is now becoming universally recognised and MPAs are being selected and designed specifically for that purpose. At the same time, there has been a trend away from either strict protection or exclusively tourism pursuits to multiple use. This trend has led to larger MPAs and a convergence with integrated coastal management (ICM). Indeed, ICM areas that are zoned for different activities and regulated by formal policies and legislation function as large multiple use MPAs, and may include a range of different categories of MPAs within them.

Managers have come to realise that coastal communities can no longer be displaced and disenfranchised by the establishment of MPAs or marginalised in the planning process. There have been an increasing number of attempts to get communities effectively participating in the establishment of MPAs through involving them at different stages of planning and management. These attempts have made clear that getting communities effectively on board and building the requisite level of trust between them and the authorities takes time, that this time is well invested, and that this step should not be rushed.

Building effective partnerships between the management authority and stakeholders for collaborative management of MPAs remains a major challenge, along with determining and providing adequate incentives for stakeholders to take on and sustain an active role in management.

Some managers see stakeholder participation as compromising conservation objectives to achieve public support. On the contrary, if an area of high conservation value and a coastal community coexist, there are patterns of resource use or traditions that could form the basis for effective conservation action through the community to achieve both conservation and community objectives. If, on the other hand, patterns of resource use are unsustainable and resource depletion is the result, the communities will be well aware of the problem and could welcome conservation interventions that bring them measurable benefits, again achieving both conservation and community objectives.

The concept of partnership is still not well understood and often meets with suspicion. At the same time, the approaches to establish partnership are still being tested and refined, both to achieve effectiveness and sustainability.

6. Participation and Partnership

6.1. Types of participatory approaches

This section is based on a review by Beaumont (1997) of international perceptions of and approaches to community participation in MPA establishment and management. It will hopefully help us reach some common understanding of what we mean by participation as a first essential step in partnership.

Persuasion or passive participation: Public involvement techniques are used to change attitudes without raising expectations of public participation in the planning and decision-making process. This is the old type approach that planners and managers are moving away from toward one of those listed below.

Participation through consultation: User groups provide input to the government agency on proposals for a conservation area, or on management plans for the area. External agents define the problems and information gathering processes. This consultative process does not concede any share in decision making, and professionals are under no obligation to utilise the information that has been gathered. This was the approach taken until recently by the Great Barrier Reef Marine Park Authority, which offered little opportunity for indigenous people to provide information and none for them to participate in decision making. This also is fast becoming an outdated approach.

Participation for material incentives: People participate by contributing resources, for example labour, in return for food, cash or other material incentives. People have no stake in prolonging the activities when the incentives come to an end. This is not a sustainable approach and does not lead to effective partnership in MPA management.

Functional participation: Participation is seen by external agencies as a means to achieve project goals, such as reducing resistance to the establishment of a park. People may participate by forming groups to meet predetermined objectives related to the project. This involvement may be interactive and involve shared decision making, but tends to arise only after major decisions have already been made by external agents. In the Mafia Island Marine Park in Tanzania local communities participate through Village Liaison Committees that have roles in maintaining equipment allocated to each village, recording meetings and information relevant to each village, and providing information concerning resource use and access. However, they have no power in decision making.

Interactive participation: People participate in joint analysis, development of action plans, and formation of local institutions. Participation is seen as a right, not merely as a means to achieve project goals. The process involves participatory methods that yield the perspectives of different community groups, structured learning processes, and problem solving approaches. As groups take control of local decisions and determine how available resources are used, they develop a stake in maintaining structures or practices. A good example of this approach is that for Tanga in Tanzania (see Tanga case study in this workshop report). In this case, village level committees have been established to work with government in facilitating partnership for area management, including enforcement. This is a model we should be aiming for in this region.

Self mobilisation: People (or organisations) take initiatives independently but on behalf of management authorities. We will hear case studies of such initiatives taken by an NGO (BirdLife International) in Seychelles and a private sector venture for Chumbe Island off Zanzibar. This too is a model we should promote in the region.

6.2. Fostering Partnership

A look at the approach taken in Tanga yields some good pointers on how to establish effective partnership between government and communities.

Once the government extension workers and communities had overcome their mutual suspicions and perceptions, and were able to work effectively together, the communities demonstrated a willingness and capacity to invest time and effort in dealing with difficult issues of enforcement and management. But this process of building mutual trust took 18 months, and could not be rushed. The villagers have developed their own management plans for areas of sea and mangrove that include restrictions on harvest and closure of certain areas to establish community-based protected areas. In return, these areas and the related bylaws have been officially recognised by local and central government, and are being gazetted. This secured access for members of the community who are implementing management according to prescriptions they have imposed upon themselves. This concept of **user or access rights in return for management responsibility** provides a strong incentive for partnership in MPA management in this region, and is a powerful and appropriate approach.

The Tanga case demonstrates that a sense of substantive interaction by all partners is important to nurture. This in turn helps develop a sense of ownership, especially in communities concerned with collaborative management of MPAs, but presumably would apply to other stakeholders as well. This sense of ownership provides the incentive to take on board fully the assigned management or compliance activities and commitments and facilitates their evolution into a fully fledged partnership. A few actions that assist the sense of stakeholder ownership, include:

- involve the stakeholders in all stages of MPA planning and, if management is to be delegated, facilitate plan development by the stakeholders themselves wherever possible
- involve the stakeholders in final review and approval of the MPA management plan (including location of zones and boundaries), if they don't actually define these themselves
- have clear definitions of stakeholder and management authority roles and responsibilities, and establish these through formal agreements
- place stakeholders at the forefront of public activities related to the MPA (planning workshops, meetings with donors and other institutions, and media events)
- in the case of community-based management, integrate the MPA into the village institutional structure, using existing committees and customs as much as possible, and aim to reinforce these - at all costs avoid developing parallel structures
- training villagers as "specialists" in a variety of skills so that they can train or advise a larger number of villagers is effective in getting villagers on board and saves time and money for cash-strapped management authorities
- use simple methods and start small - once something is found to work it should be simplified to the critical elements only so that it can be easily understood and taken up by villagers without being excessively (and unnecessarily) demanding of their time, e.g., action plans and monitoring indicators should be simple and straightforward.

The concept of partnership for MPA management may be anathema to some authorities and individuals. It will be seen as a threat to revenues (even personal income in some societies) and erosion of power and influence. If the partnership management structure we build is to last, we need to demonstrate that it can work to everyone's advantage and achieve the goals of resource conservation and sustainable development.

7. Who Pays for MPA Management?

The challenge we face is how to sustain the multiple values of MPAs - not just those that meet the fishery requirements of communities or the destination needs of tour operators. But those that also conserve biodiversity and serve multiple functions. Biodiversity conservation, especially of those endangered species that are good to eat like turtles and dugongs, is a special challenge for MPA managers in this region of poverty-stricken coastal communities.

7.1. Biodiversity Conservation

Governments that are party to the Convention on Biological Diversity, UN Convention on the Law of the Sea, Nairobi Convention, and signatories to Agenda 21 all have obligations to implement the resolutions of these agreements, which include establishment of MPAs and related costs. But these parties also have access to funding from the global community for this, e.g., through the Global Environment Facility and bilateral donors.

7.2. Tourism

Governments are paying to manage MPAs as these support the national economy through the contribution of tourism to GDP. As the tourism sector generally benefits from MPAs, there is a case for it to contribute in one way or another to effective management of MPAs. Communities also can benefit from tourism activities in MPAs, as we will hear in some of the case study presentations. So there is the potential to enter into MPA management partnerships with those beneficiary communities interested in safeguarding their livelihoods.

7.3. Fishery Replenishment

Again, governments foot the bill to safeguard fish stocks. But this function of MPAs is usually incidental to other objectives in this region. Other than in Tanga, where MPAs were designed collaboratively by communities and local government specifically to address fishery issues, there are few if any MPAs established primarily for fishery replenishment in the WIO. As the focus of MPAs in this region shifts specifically to include fishery replenishment, opportunities will arise for communities to take the lead in design and management of these areas.

We will hear how the Kisite Marine National Park contributes to fishery replenishment and enhanced catches for communities adjacent to the park, and we will have the opportunity to speak to the communities about this directly. We will also hear how in Tanga the right of access to marine resources, and related sea tenure, provided a strong incentive for communities to take on management responsibility.

7.4. Research and Monitoring

Academic institutions have a great stake in MPAs that provide research opportunities, and it is in their interest to maintain the area in a condition suitable for their pursuits. Linked to their immediate needs for training and research, is the trend to monitor long term global phenomena, like climate change. MPAs can play a vital role in providing crucial baseline data and undisturbed conditions for these long term studies, and the funds are out there to support this work.

MPA management overheads attached to research proposals would open the way for academic institutions to take on a direct role in MPA management or to support the operations of the management authority.

8. A Final Word

This workshop is both timely and pertinent to the needs of the region as it focuses on the burning issues of how to finance management of MPAs and how to make this management sustainable. We will see how this has been or is being achieved by an NGO in Seychelles, a private sector initiative off Zanzibar, communities in Tanga, and a university in Mozambique. We will also see how South Africa coped without access to funding from the global community and achieved self-sufficiency in the management of its MPAs.

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FINANCING THE MANAGEMENT OF MARINE PROTECTED AREAS IN PARTNERSHIP WITH THE PRIVATE SECTOR

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This document discusses some of the principles relating to the financing of marine protected areas (MPAs), the relationship between stakeholders and the financing of MPA management, and aspects of partnerships between the conservation authority and the private sector.

1. The "User Pays" Model for MPAs

Although conservation authorities often believe that money generated by tourism is the solution to funding protected area management, it is a fickle industry that cannot be relied on to yield a constant income. It would be unrealistic to rely solely on tourism to pay for the management of MPAs. All beneficiaries should share the cost of MPA management. This cost sharing should be organised on a "user pays" basis where payment by users is commensurate to the value of the benefit they derive from the MPA.

In economic terms, the MPA is the resource base from which there is a flow of goods and services to the stakeholders. For the purposes of this document a stakeholder is any person or community that is affected in any way by the presence, management or use of the MPA.

Management of protected areas has two components: biodiversity management and the provision of facilities and services for users. Both of these incur costs. An analysis of the benefits and costs of managing MPAs is given in Hoagland *et al.* (1995).

Wherever possible, cost recovery should be from the stakeholders. However, it is often difficult to identify them and to get a clear measure of the relationship between the costs of specific actions and the charges for uses. An understanding of the relationship between the uses and the stakeholders will provide insights into what sort of mechanisms are available to assess and capture appropriate payment from the users.

2. Identification of the Stakeholders

The stakeholders comprise the direct users (those who enter the protected area and make direct use, either in a non-consumptive or in a consumptive manner, of the resources of the protected area), the indirect users (who make use outside the protected areas, of the goods and services generated by the area), and those who derive intrinsic benefit by knowing that the MPA, its ecosystems and its species continue to exist. Barton 1994 (in Hoagland *et al.* 1995) expands on this classification of users and the economic values attributed specifically to a coral reef environment.

2.1. Direct Users

The direct users are those who enter the MPA to benefit by consumptive or non-consumptive use of its resources. They include visitors who come for the authentic and natural values of the area. These are the people who use the facilities and services such as accommodation, boardwalks, boats, *etc.* to partake in activities such as snorkeling, scuba diving, photography, and beach activities. This group includes the specialist users such as the scientists who study the undisturbed ecosystems, habitats and species.

Consumptive users of MPAs include anglers, subsistence and artisanal fishermen, bioprospectors, and developers whose buildings "consume" space. Also in this category are the illegal users, or poachers.

With the exception of the illegal users, the direct users can all be made to pay for their use of the protected area. The relationship between their use and what they should be paying is easily shown, and money can be collected in the form of entry fees, accommodation fees, payment to guides who have concessions to work in the MPA, permits to fish, and bioprospecting fees. The challenge for the management authority is to set realistic tariffs where the user pays a proportion of management costs commensurate with benefits gained.

2.2. Indirect Users

The presence of an MPA can bring various economic benefits to the people living in adjacent areas, such as improved fishing or tourism development with its range of business opportunities. Where the benefits are easily detectable, users can be identified and mechanisms can be established for the commensurate payment for these. Some examples of mechanisms include fishing licenses and tour operator licenses. But, many of the relationships are obscure, indirect or difficult to quantify. How can the "user pays" principle be applied in an

instance where a curio sales business is established to service the tourists traveling to and from a MPA? In such cases, revenue collection is generally through taxation. The problem with tax is that the revenue usually goes into a central treasury and little if any is channeled back for management of the MPA.

Another difficulty with the "user pays" principle arises when the indirect benefits of a MPA accrue across an international boundary. In such a case, international sources may be the mechanism for funding management of the MPA.

In the case of pollution, the polluter should pay. This is the established principle for oil spills (MARPOL Convention), but is not the case for other forms of pollution.

2.3. Intrinsic (Existence) Benefits

Just as many people value and are prepared to pay for the existence of blue whales, although most will never see one, they also value the existence of coral reefs and various forms of marine life found in MPAs. This vicarious appreciation and willingness to pay for preservation of marine life translates into the intrinsic or existence value of MPAs.

Intrinsic values are shaped by culture, mythologies and general philosophies of life. They are generally stronger in more affluent societies - with impoverished people less likely to be able to afford to pay for and enjoy the luxury of MPAs for their intrinsic values.

To capture finances for MPAs from those in society who gain intrinsic benefits is difficult. Economists do have techniques to measure "existence values" but they are still difficult to quantify. Payment for intrinsic value received may be in the form of taxation, through the channelling of funds through NGOs, through donations from large business, or via international aid.

3. Application of the "User Pays" Principle

The analysis of who benefits from MPAs is complex, usually requiring the skills of a resource economist to unravel relationships. Even when this has been achieved, it is difficult to collect revenues from the users in a way that allows the funds to be channelled back directly into management of the MPA.

Stakeholders that derive different benefits from MPAs are able to contribute funds in various ways. Some of these mechanisms have been discussed above, and Geoghagen (1994) gives more detail, providing a framework for the selection of appropriate funding mechanisms.

4. Private sector involvement in MPAs

The rest of this document focuses only on the direct users of MPAs. It emphasises how partnerships can be formed with the private sector so that a part of the revenue they generate through their access to and concessions in the MPA can be channelled back into financing management activities, as well as boosting the economy in adjacent areas. However, before we can look at partnerships, we need to identify very clearly the responsibilities of a government or quasi-government (parastatal) conservation authority. These can impose certain non-negotiable constraints on the development of private sector initiatives within a proclaimed conservation area. A sample of the state's conservation responsibilities are shown in the box below.

Conservation Responsibilities of the State

To conserve biodiversity in the long term

- species conservation
- preserve representative samples of habitats and ecosystems
- maintain life-support systems (e.g. estuarine nursery function, primary productivity)

To provide public access to protected areas; and to the goods and services emanating from the MPA

- sustainably use the MPA to promote a conservation-based economy adjacent to the site

To meet international obligations, such as

- Convention on Biological Diversity
- Ramsar Convention
- Bonn Convention
- World Heritage Site Convention

Although the conservation authority may not be able to, or want to relinquish its responsibilities and cannot privatise holistic biodiversity conservation, it can create opportunities for privatisation within these constraints. The conservation authority can generate income from concessions where profitable business opportunities are established, or facilities and services are provided for visitors or to aid management. In addition, it is of benefit to the MPA to have a conservation-based economy established that spreads into the adjacent area.

The conservation authority can facilitate this by creating a policy framework within which the private sector can operate. The framework would define the enabling environment that supports entrepreneurial initiatives while enabling the conservation authority to ensure that its responsibilities are not compromised and uncontrolled private sector development does not occur to the extent that the "tail wags the dog." A range of initiatives from small to large, as appropriate for each site, can then be established with clear operating terms as guided by the framework.

It should be noted that promotion of micro-scale enterprises should be a high priority as these are more likely to be taken on by individuals or groups from local communities. These enterprises provide communities with the entry and training opportunities for business and possibly larger projects, and hence contribute to their empowerment. However, care should be taken when fostering the development of enterprises by local communities to protect them from being overwhelmed by larger-scale enterprises with better developed business skills.

5. Some Considerations for Partnerships Between the Conservation Authority and the Private Sector

1. The different time scales and objectives driving conservation authorities and private enterprise need to be appreciated. Conservation authorities are tasked to conserve biodiversity in perpetuity (i.e., long time scales). The private sector is more driven by short time scales and the need to make a profit.
2. The economic environment is dynamic. It often needs the flexibility of the private sector to make the best of opportunities.
3. For a private enterprise to develop and become profitable, adequate security of tenure should be given so that the necessary infrastructure can be developed.
4. Responsibility should be given to the involved private enterprises. They should have a significant input into management of the MPA. However, care should be taken not to violate the fundamental conservation principles to the extent that the "tail wags the dog".
5. The conservation authority and the private enterprise should be fully aware of each other's responsibilities. These need to be based on a clearly defined set of standards and specifications that are stipulated in a contract. These specifications should define requirements such as zoning for use, carrying capacities for different zones, and defined levels of acceptable change resulting from human activities. They should deal with the standards for the personal safety of visitors (covering crime, health and accident risks) and quality of the experience, so that visitors receive value-for-money and have access to the resources that have attracted them to the MPA. These standards need to be monitored for compliance.
6. For private initiatives to be successful they must be attractive to the investor (i.e., they should make adequate profit). Thus tariffs and rentals imposed on them should be realistic. In addition there is an economy of scale, where enterprises should be the correct size to be viable. The economy of scale also applies to the environmental impacts of enterprises. For example, it is preferable to have a single large resort on a coastline than a ribbon of small developments as this would have less environmental and aesthetic impacts.
7. Revenues received from concessions to private enterprise often go into central coffers and are not used for the MPA in which they were generated. To counter this, contracts may be drafted where a proportion of the benefits are paid for in kind.
8. It may be necessary to protect some of the small local community based enterprises that could be swamped by larger private sector initiatives. This will benefit the MPA by generating community support for it.

The nature of conservation is changing. MPAs were formerly run entirely by the responsible conservation authority. Nowadays the tendency is to form partnerships so that many of the tourist facilities and services are developed and run by the private sector, using local labour so that neighbouring communities can also benefit from the MPA. There is a school of thought that believes that nature conservation endeavours can be run entirely by the private sector. However, it is over-ambitious to think that tourism development alone can fund all the biodiversity conservation, education, law enforcement, and visitor and other services expected from the conservation authority - let alone maintain the MPAs so that entry is affordable for the people of the country (Hughes 1998).

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MANAGING MARINE PROTECTED AREAS IN PARTNERSHIP WITH COMMUNITIES

Grazia Borrini-Feyerabend

1. Introduction

If this meeting would have taken place about ten years ago, my presentation would have focused entirely on arguing for management of marine protected areas (MPAs) in partnership with local communities (and other stakeholders). I would have dwelled on the benefits such partnerships can bring to management authorities and justified inclusion of many community interests in management. Beyond this justification, I may have ventured to speak of the moral and equity grounds and socio-ecological conditions that make the involvement of local people particularly relevant. In other words, my presentation on community involvement in MPA management would have focused on the "Why?" question.

Although I will still begin by introducing the topic in the "Why?" context, I will quickly move into other issues of greater practical interest to us here. I will discuss a number of lessons learned on the "What?" and "How?" of partnerships. I will do that on the basis of various examples, but without dwelling on any one of them, as others have been asked to do exactly that in this workshop.

The reason I am able to move from the "Why?" to the "What?" and "How?" has to do with the current political and intellectual perception of protected area management. This has evolved substantially over the last decade, and many countries have embarked on ambitious programmes to translate the rhetoric of participation into practice. Kenya is one of those countries – thanks to the high professionalism and capacity for innovation of the Kenya Wildlife Service. During this workshop, we will have the opportunity to hear about participation and partnerships in other countries in the western Indian Ocean region. Throughout the world, in fact, the need to develop effective management partnerships is now broadly recognised (Amend & Amend 1995; Baland & Platteau 1996; Barzetti 1993; Berkes & Farvar 1989; Borrini-Feyerabend 1996; McNeely 1995; Stevens 1997; Wells & Brandon 1990; West & Brechin 1991; Western & Wright 1994; White, Zeitlin Hale, Renard & Cortesi 1994).

Attempts to translate the need for participation into practice span many countries of both the so-called North and South. In Australia, the Great Barrier Reef Marine Park – the largest and most remunerative MPA in the world – has been experimenting for some time with various forms of participatory management processes and institutions (GBRMPA 1996; G. Kelleher pers. comm.). In marine sanctuaries, such as Hikkaduwa in Sri Lanka (Decosse & Jayawickrama 1996) and San Salvador in the Philippines (Tongson 1996), successful partnerships between management authorities and local communities have developed with the help of project support and NGO assistance. In Scotland, the only successful marine reserve is St. Abbs Head, which is based on a voluntary agreement and significant advisory input from local fishermen (Govan & Humbrey 1995). The management of protected marine species in Canada, such as beluga whales, is effectively entrusted to collaborative management arrangements (Binder & Hanbidge 1993). Numerous small islands and archipelagos in Italy are acquiring protected status under the impetus and jurisdiction of local administrations (Licciardi 1997).

Because of the migratory nature of fish and other marine creatures and the potential for wide distribution of nutrients and pollutants, MPAs are intimately linked with their unprotected surroundings – possibly even more so than their terrestrial counterparts. For instance, even if a ban on resource extraction is enforced in a MPA, the viability and health of the ecosystem may still depend on current practices outside it, such as land-based industrial activities or fishing practices in the unprotected surroundings. What does this imply? First, that the management systems of a MPA and of its bordering marine and terrestrial environments can rarely function in an independent manner. Second, that MPAs need the collaboration and acceptance of stakeholders that affect marine and terrestrial resources over an area much larger than the MPA itself. It is thus quite appropriate to explore and understand the "Why?", "What?" and "How?" of participatory MPA management. While we do that, let us keep in mind that we need to translate all into practice for the Kisite/Mpunguti MPA complex, about which we will learn more over the next few days.

2. Why Develop Management Partnerships with Local Communities?

There are a number of concrete benefits to be expected from community involvement in managing MPAs. Box 1 lists some of particular interest to MPA management authorities, while examples of potential, broader social benefits are listed in Box 2.

Box 1. Benefits from community involvement in MPA management

- *Increased effectiveness of management and reduced costs* as a consequence of harnessing the knowledge, skills, and comparative advantages of the local community (e.g., for monitoring the status of natural resources, determining the MPA borders, etc.)
- *Reduction in enforcement expenditures* because of voluntary compliance
- *Effective sharing of management responsibilities* thus lessening the burden of the agency in charge and enhancing the legitimacy of the regulations in the eyes of the community
- *Alliances between the agency and local stakeholders* to fend off resource exploitation from non-local interests (which often represent the main threat to the conservation of marine resources)
- *Increased trust between the management authority and local stakeholders*, shared ownership of the conservation process, and greater commitment to implement decisions taken together
- *Increased sense of security and stability* of policies, priorities, tenure, etc. leading to increased confidence in investments, long-term perspectives in planning, and sustainability of negotiated management agreements
- *Decreased problems and disputes* through increased understanding and knowledge of the views and positions of others, and thus less time and resources wasted
- *Increased public awareness* of conservation issues
- *Increased integration of conservation efforts* into the social, economic, and cultural issues and agendas for the areas bordering the MPA
- *Enhanced capacities in resource management* for both the agency in charge and the local stakeholders (as a consequence of enhanced communication and dialogue and of the increased management adaptability in a climate of open communication)

Box 2. Main social benefits of community involvement in MPA management

- *Negotiated specific benefits for all parties involved* – this point has major ethical implications as some negotiated benefits may be crucial for the survival of some local communities and/or compensate for losses incurred (see Box 3)
- *Contribution towards a more democratic and participatory society* – promotion of local associations, more open and intense communication, possibly even impetus towards new policies and laws

I use the term local community or community to describe a non-homogenous (highly differentiated) social unit settled in the geographic proximity of a given MPA, and having a variety of direct interests and concerns in its management. Notice that this definition of community does not comprise all possible stakeholders with interests in management of the MPA. Some, in fact, possess interests and concerns beyond (or independent of) the tie of locality. Also, it leaves a number of important questions open. What defines a social unit, an administrative border, a sense of cultural identity, and an economic interdependence? Are communities to be self-defined or defined by outsiders, and what about the different voices and interests within any geographically defined community? Can a partnership respect that plurality? If yes, how?

These questions cannot have single, definitive answers, but they can be explored further by discussing the different grounds on which the community participation in MPA management can be perceived as appropriate, desirable, and legitimate (if not outright legal under existing laws). By exploring those roots (see box 3), we can disaggregate a local community into the interest groups that compose it. This is important, as it is very rare that a community acts in a uniform way. It is more common for different stakeholders within a community to represent different interests and make different contributions to the management process.

Box 3. Foundations for local community and interest group participation in MPA management

- Existing rights to adjacent land or natural resources (e.g., property, access, user, and customary rights)
- Direct dependence for basic needs (e.g., food, medicine, communication)
- Dependence for basic income
- Historical, cultural and spiritual relations with the environmental resources at stake
- Unique knowledge and skills for the management of the resources at stake
- Continuity of relationship (e.g., local residents versus visitors and tourists)
- Losses and damage incurred in the management process
- Degree of effort and interest in management
- Actual or potential impact of the activities of the stakeholder on the resource base
- Equity in access to resources and distribution of benefits from their use
- Number of people bringing forth the same interests and concerns
- General recognition of the value of the perspective/position (e.g., on scientific grounds or on the basis of local knowledge systems)
- Compatibility with the country's stated development policies
- Compatibility with international conventions and agreements

The interests listed in box 3 provide entry points for negotiation and collaboration in a management partnership that can be used in two ways. On the one hand, they can be considered alongside the rationale for conservation

to provide a comparative view of the issues at stake in managing a protected area. On the other hand, they may be investigated for a neighbouring community to help identify different stakes and stakeholders: a process generally referred to as stakeholder analysis. In this way, the agency in charge can identify potential partners, neutral bystanders, and/or potential adversaries of conservation initiatives.

3. What is a Partnership with a Community for MPA Management?

Even seemingly homogeneous units, like of a local community, include within themselves a variety of different interests and concerns - what benefits one group and meets conservation objectives may harm another. A programme to diminish land-based sources of pollution, for example, may benefit the fishermen but harm the agricultural workers in the community; and the owners of tourist businesses may be well served by a total ban on fishing but the local fishers or processing enterprises may suffer from it.

In this sense, accepting a multiplicity of voices and expressions of interests in resource management is a prerequisite for fairness and equity in management. However, this in no way means that all stakes and all entitlements are equal. Equity is a concept that differs profoundly from equality, as it sums up a variety of considerations and concerns. For instance, it is clear from Box 3 that different stakeholders possess different interests on which to base their claims. Who has the authority to judge those claims? At best, the claims get decided through a self-adjusting social/historical process through which people and groups perceive themselves as stakeholders, get organised, present their claims, get these socially accepted as entitlements, and negotiate a fair share of relevant rights and responsibilities in management (see Figure 1). In this sense, the fair share would imply that some stakeholders are considered more entitled than others (some speak of primary and secondary stakeholders) and/or are entitled to assume different roles in the management of the natural resources at stake.

It is possible to accommodate various claims and combine different capacities in a complementary way in a management partnership. In fact, no one stakeholder possesses all the capacities and comparative advantages to optimally manage natural resources. For example, important regulatory and coordination functions are usually vested with government authorities at the national or district level, while the surveillance power could rest with local resident communities. Similarly, entrepreneurial capacity (e.g., to set up a tourism initiative) may reside with business firms, but convening power (e.g., to ensure that all stakeholders sit together and reach agreement) may be mastered only by a local leader or NGO. The detailed understanding of the local environment (e.g., the critical conditions for the preservation of the habitat for a given species) may be with the elderly, while accounting skills may be a prerogative of the educated youth.

The term collaborative management is used to describe a situation in which some or all relevant stakeholders in a MPA are involved in a substantial way in management activities. In this sense, a management partnership with a local community is a form of collaborative management between the MPA authority and the community, and possibly other stakeholders.

In the working definition just mentioned, the concept of management partnership is broad enough to encompass a variety of interpretations. I believe it is useful to have such an open and flexible understanding as there is a myriad of social contexts in which participation in management implies different timings, actors, processes, and results that are determined by historical heritage, cultural peculiarities, and political and economic constraints (see Figure 2). An open understanding of what a partnership implies allows us to recognise both the variety and common elements that can be compared among diverse experiences.

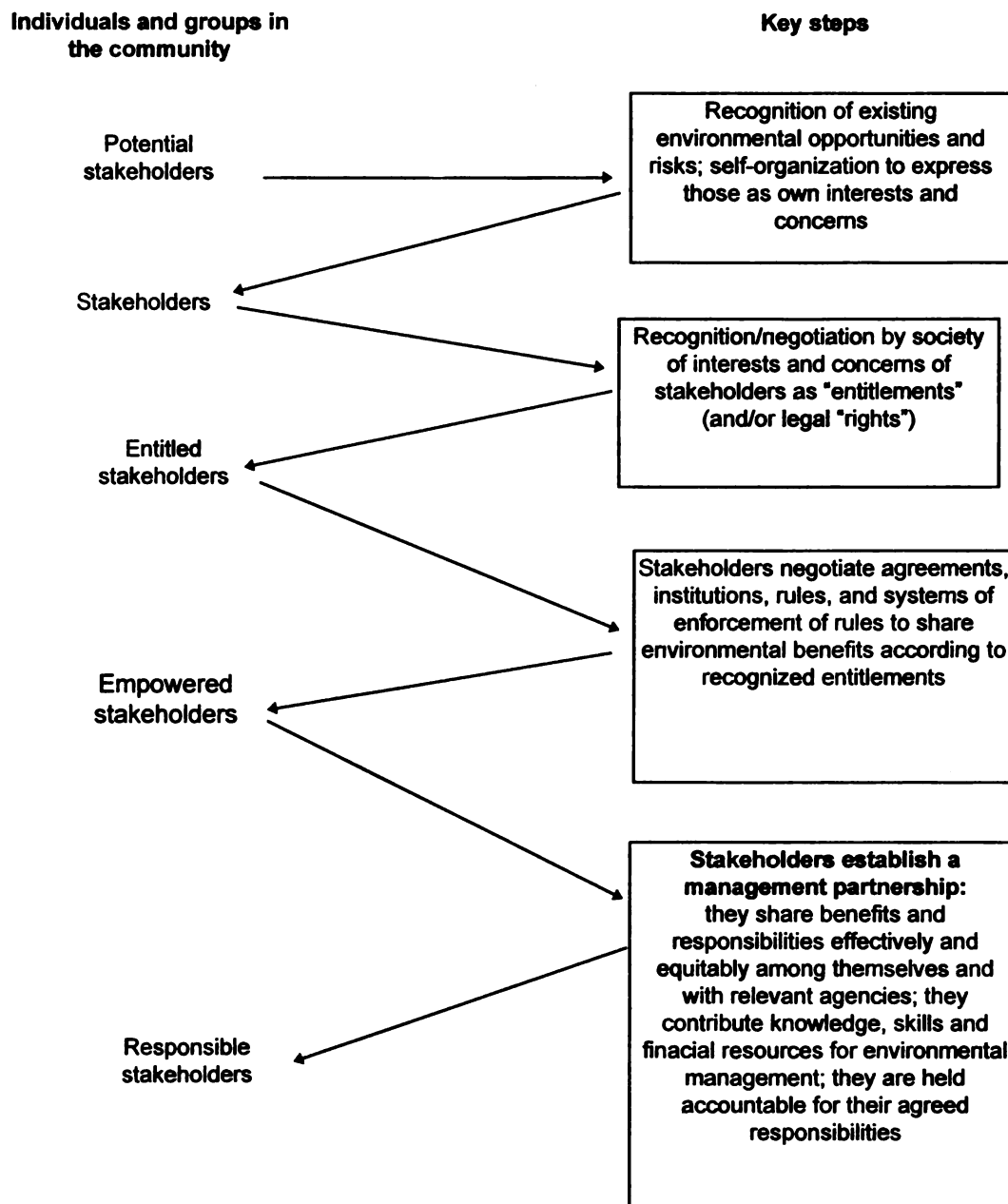
At least four common elements of a management partnership can be identified:

- a (favourable) context
- a process
- an agreement
- an institution

The *context* within which a management partnership develops comprises the policies and laws, the broad socioeconomic environment, the history and the culture, the institutions, and the rules that make up the relevant social milieu. Obviously, different contexts are differently suited to engender and support management partnerships. Issues such as recognition and respect of human rights and the rights of indigenous peoples, security of tenure over resources, legal status of common property resources in the country, incentives and disincentives for conservation, form and extent of democratic governance, extent of government decentralisation, existence of economic opportunities, variety of technological choices available, and many others, combine to form unique situations. As a result, the feasibility and modalities of a management partnership can only be determined on a case by case basis.

The *process* is the series of events by which the partnership develops and unfolds. During the process, various partners recognise one another as entitled stakeholders and negotiate, agree upon, and implement a share of management functions, benefits and responsibilities associated with the MPA. This is not easy to achieve, and a variety of related issues and lessons learned can be discussed at great length. Figure 3 lists some of the key phases and steps in the process of partnership development (Note: there is no single step-by-step procedure that applies to all cases; every step needs to be assessed and adapted to suit the characteristics of each site).

Figure 1. Towards empowered, responsible stakeholders



The *agreement* (which can be the same as the management plan) spells out the compromise or consensus reached among the management partners. The agreement is one of the main products of the process, and is usually only as good as the process that generated it. In general, the agreement clarifies all the essential elements of management, including:

- the protected marine area and its boundaries
- the range of functions and sustainable uses it can provide
- the recognised stakeholders in the protected area
- the functions and responsibilities assumed by each stakeholder
- the specific benefits and rights granted to each stakeholder
- an agreed set of management priorities and a management plan
- procedures for dealing with conflicts and negotiating collective decisions about all of the above
- procedures for enforcing such decisions
- specific rules for monitoring, evaluating, and revising the partnership agreement, and the relative management plan, as appropriate.

This transformation of stakeholders into shareholders is a most interesting mechanism to inject a measure of social equity in the establishment of a MPA (Simoncini 1996).

4.2. Beware of generalisations and stereotypes!

A partnership process delivers some of the best results when it is innovative and creative, and individuals and groups allow themselves to move out of rigid systems of understanding and behaviour. At the beginning, this may require an open, fresh look at the ecosystem and its relationships with human communities. Some initial investment in research, especially on traditional practices and behaviours in marine resource use, may be extremely valuable. In some cases, you may find that resources have always been considered abundant and thus not needing specific management. In other environments, such as many coastal communities in Indonesia and the Pacific, you may find a variety of mechanisms by which people have regulated the use of marine resources, which can be profitably integrated in the MPA management practices (Klee 1985).

In Polynesia, Micronesia, and Melanesia, for example, there are resident "fishery ecologists" or masters of the fishery process who grant permission to fish to different groups and individuals according to specific rules. These rules include cultural practices, such as avoidance of certain foods, taboos (prohibitions that limit catch to certain species and specific places, times, and means), regulated tenure of fishing areas by specific groups and lineage, various forms of taxation, sharing of catch, and opening and closing of fishing seasons for economic reasons and also for reasons of religion and respect (e.g., if someone dies). Severe punishments are inflicted on violators. While these practices may be profitably incorporated into management plans, others may be negative and counterproductive for both people and the environment. These need to be challenged, even if they are a part of local culture.

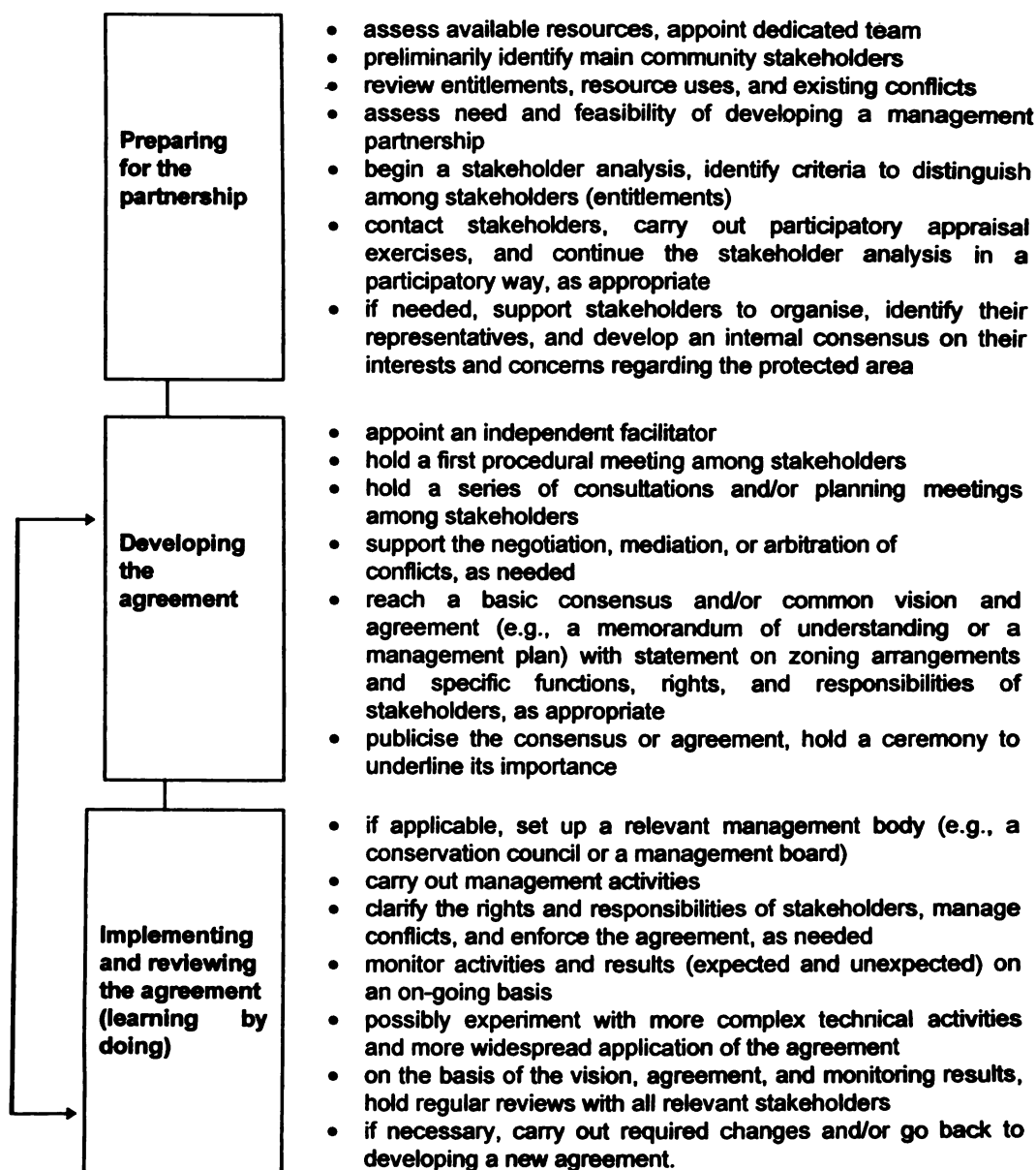
Initial research may also be very valuable in identifying existing and potential threats to the resources. While a compromise is being painstakingly crafted at the local level, powerful economic and political forces may arise to challenge the agreement. For instance, if management of the MPA is effective in restoring marine resources at a particular site, some non-local fishing industry may be attracted to come in and exploit the newly restored stocks. Phenomena such as these can be foreseen and addressed in advance. In fact, addressing external challenges may become a most important cohesive element in building the partnership between government and local communities. Obviously, research on existing and potential opportunities, such as conservation incentives and policies, would be equally useful, especially when done by professional researchers in collaboration with interested stakeholders.

4.3. Challenge orthodoxy in institutions!

It is often assumed that when elected political representatives are given a role in management (e.g., a seat on a management committee), the people who elected them are automatically involved. This is not the case. Minority groups can best address issues of interest to them through their direct involvement. In fact, a democratic process of dialogue and consultation is an important process in which both delegated representatives and direct representation are important. All types of democratic processes benefit by starting from a point of absence of rules and preconceived solutions. This gives scope to pursue different points of view and creative experimentation. In terms of natural resource management, this experimentation begins the moment stakeholders are invited to define their stake and present their views, interests, and concerns in an open forum. Through this process, rules will be developed by the participating individuals and groups, rather than being imposed from above. For example, the MPA management authority could help set up an open forum where, at regular times, anyone could introduce and discuss issues of relevance to the MPA and help identify effective management options and opportunities.

Many channels of communication can be attempted to achieve effective community participation. For example, the Great Barrier Reef Marine Park Authority (GBRMPA) found that it could not rely on only one channel of communication, and achieved better results by using several different ones, including phone interviews, letter campaigns, and open forums among stakeholders (D. Benzaken pers. comm.). Experiments can also be attempted with size of management units (e.g., the local Advisory Councils for the GBRMPA have proven to work better in smaller than larger communities). Working with different levels of agreements can also be very useful. For instance, an initial broad statement of principles for a protected area that is agreed among all stakeholders can be the best platform on which to develop more detailed rules: this is strongly confirmed by the experience of the Conkuati Reserve, Congo Brazzaville (J.C. Nguingiri pers. comm.). Voluntary codes of practice are also important and, like soft, incentive-based mechanisms, often are more effective and respected than hard rules.

Figure 3. Possible steps in a developing a management partnership with a local community from the perspective of the agency in charge (adapted from Borrini-Feyerabend 1996)



4.4. Emphasise flexibility, learning by doing, and a long-term approach!

In a management partnership, it is important not to overemphasise early results and strive for those at the expense of the long-term relationship among stakeholders or the foundation of a sustainable management structure. It can be argued that the most important product of the partnership is a tested management institution, rather than a management plan, that is capable of responding with flexibility to challenges. The principle here is that it can be better to develop simple, thoroughly discussed agreements than sophisticated plans that no one is committed to implement.

If the management partnership adopts a learning by doing approach, it can start small with simple agreements and expand to include more areas and resources and more complex regulations and arrangements. For example, new forms of compensation and incentives may emerge, or new needs (such as training opportunities), more appropriate legislation, and increasingly refined management rules (such as seasonal restrictions on harvest). This piloting approach is likely to evolve through learning by doing towards more complex and sophisticated forms of stakeholder participation: for example, from the basic chance to vote yes or no in a crude zoning scheme toward the opportunity to develop finely tuned rules approved by many people and interest groups.

Last but not least, developing a management partnership implies a large investment of time in communication, negotiation, conflict management, and learning processes. This may be one of the most important drawbacks for the management authority. Yet, it is heartening to see that what could not be achieved yesterday can possibly be

achieved tomorrow. For instance, local management plans in the Cairns area of the Great Barrier Reef Marine Park were developed by an interminable series of meetings over many years. Social acceptance and compliance increased throughout the process as community groups developed their own coalitions and the political leaders became more involved. Similarly, several years of dialogue brought about an important marine sanctuary in El Nido, the Philippines.

5. A FINAL WORD

Throughout the world, agencies and people concerned with MPAs are working hard to respond to the many challenges of conservation. Developing management partnerships with local communities will help them ensure that their efforts are grounded in reality and will remain effective and sustainable through time.

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NATIONAL REPORTS

NATIONAL PERSPECTIVE OF MARINE PROTECTED AREA MANAGEMENT IN KENYA

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1. Background

1.1. Status and Objectives of MPAs in Kenya

Under the Wildlife Conservation and Management (Amendment) Act of 1989, responsibility for marine protected areas (MPAs) in Kenya lies with the Kenya Wildlife Service (KWS). KWS is a parastatal that was previously under the Ministry of Tourism and Wildlife, but is now under the Ministry of Natural Resources. Both terrestrial and marine protected areas in Kenya are grouped in one of two categories, National Parks or National Reserves, which determine their broad objectives.

The major conservation objectives of KWS include to:

- ensure the conservation of Kenya's biological diversity and functioning of ecological processes
- ensure viable populations of selected endangered species
- enhance environmental quality, e.g., protection of catchment areas, reduction of soil erosion, etc.
- enhance educational and scientific value by maintaining near natural ecosystems
- provide for development and diversification of recreation and tourism
- contribute to the economic and environmental well being of Kenya
- protect and preserve selected areas of scenic beauty or special interest.

In Kenya, there are four Marine National Parks (Malindi, Watamu, Mombasa, and Kisite) and six Marine National Reserves (Kiunga, Malindi, Watamu, Mombasa, Diani-Chale, and Mpunguti) (Table 1). In all cases marine national parks are adjacent to (e.g., Kisite) or encompassed in marine reserves (e.g., Watamu, Malindi, and Mombasa). Both Watamu and Kiunga Marine National Reserves have also been designated Biosphere Reserves under the UNESCO Man and the Biosphere programme. No form of extractive use is allowed in marine parks, but traditional forms of fishing are allowed in the marine reserves.

Table 1. The marine protected areas of Kenya

Marine protected area name	Date gazetted	Size (sq. km)	Location
Kiunga Marine National Reserve	1979 (Biosphere Reserve 1980)	25	Lamu District
Malindi Marine National Park and Reserve	1968 (Biosphere Reserve 1979)	Park: 6.3 Reserve: 165	Kilifi District
Watamu Marine National Park and Reserve	1968 (Biosphere Reserve 1979)	Park: 10 Reserve: 10	Kilifi District
Mombasa Marine National Park and Reserve	1986	Park: 10 Reserve: 190	Mombasa District
Diani-Chale National Reserve	1995	250	Kwale District
Kisite/Mpunguti National Park and Reserve	1978	Park: 28 Reserve: 11	Kwale District

The MPAs of Kenya encompass a diverse selection of marine habitats including coral reefs, mangrove forests (especially in Kiunga), and seagrass beds. Endangered species occur in the waters of all of Kenya's MPAs, such as sea turtles that also nest on beaches adjacent to the Kiunga, Malindi, Watamu, Mombasa, and Diani MPAs. Marine mammals, including dugongs, dolphins, and whales, are periodically sighted in all MPAs. Some of Kenya's MPAs lie adjacent to the most heavily developed tourist beaches in Kenya, such as Bamburi, Nyali, and Diani beaches, and the Mombasa Marine Reserve is next to the port of Mombasa, which raises concerns about the threat of pollution.

1.2. Management and Activities in MPAs

KWS has recently gone through a restructuring process that has led to a more regionalised and localised system of management. The daily management of an MPA falls under the administration of a Tourism Officer (previously called park warden) who reports to an Area Warden. Area Wardens have authority over several MPAs and report to the Regional Assistant Director at the coast (who heads one of eight KWS regions). The Tourism Officers are assisted by a cadre of staff who include a Biodiversity Officer responsible for research and monitoring activities in the park, a Partnership Officer responsible for community relationships, uniformed Rangers who provide visitor handling, security, and revenue collection, and drivers, artisans, clerks, and other office staff.

Several tourist activities are allowed within Kenya's MPAs (Table 2). Glass-bottom boat tours of the coral reef are currently the most popular activity. The visitors frequently also snorkel and SCUBA dive. Windsurfing, jet skiing, sailing, and dolphin watching from traditional and modern craft are all common tourist activities. Daily entry fees and annual boat fees are collected by park rangers in all parks except the Mombasa Marine National Park and Reserve, where a new system of management has developed (Box 1).

Table 2. Tourist activities in MPAs in Kenya

ACTIVITIES	REMARKS
Glass-bottom boat tours	Tourists and local residents hire these boats to go to the coral garden, often snorkelling from the boat. A daily park fee is charged
SCUBA diving	Tourists and locals are taken to the reef edge, wrecks, and caves to SCUBA dive, usually by companies affiliated with hotels. This activity requires daily park fees
Snorkelling	Visitors to the park who swim from shore to snorkel over the reef are charged a daily fee
Sailing	Modern and traditional sailboats including dhows and <i>ngalawa</i> ply the waters of MPAs either for tourist or fishing purposes. Sailing does not require a fee
Windsurfing	Tourists and locals can windsurf in MPAs without paying a fee
Jet skiing	Several hotels have watersport desks that hire out jet skis. MPA managers restrict the area and time for this activity by legal notice

1.3. Role of Coastal Communities in MPAs

Artisanal fishers living adjacent or close to marine reserves fish in them using different types of gear (Table 3). Dugout canoes are the most common fishing boat, but small sailboats (*ngalawa*) are also used. Currently, the Fisheries Department licenses all fishing activities and controls the fishing areas and types of gear. However, MPA managers can limit the type of gear and areas fished by posting legal notices. Only fishing with traditional and non-destructive gears and techniques are allowed in marine reserves. However, many local fishers are not licensed and even the Fisheries Department does not have basic information on these fishers, making it difficult for MPA managers to get an idea of the fisheries off-take. To make matters worse, transient fishers often fish in areas on a seasonal basis and target a specific resource, e.g., lobsters or sea cucumbers.

Table 3. Fishing activities in Kenya's MPAs

ACTIVITY	REMARKS
Spear fishing	A rudimentary gun made from wood with sharpened metal rod and often a simple mask of window glass with metal and rubber sides are used. Spear fishing is restricted to shallow reef areas and seagrass beds in marine reserves
Trap fishing	Reed traps baited with seaweeds, urchins, or trash fish and usually set in seagrass beds or channels in the reef
Hook and line	Fishers use small canoes to get to the reef edge or channels in the reef and fish with hook and line baited with shrimp, squid, or octopus
Beach seining	A weighted net is set out in a U-shape and the water is beaten to scare fish into the net. As considerable damage to coral is caused by this type of fishing, it is discouraged in marine reserves
Gill netting	Gill nets with a stretched mesh size of 2.5 inches (often much less) are used, but discouraged in most reserves as they are considered an unsustainable form of fishing
Gathering	Snails, sea cucumbers, oysters, and octopus are the main organisms collected, usually during low tide from intertidal lagoons, reef flats, and mangroves

Local community members also own glass-bottom boats and boats traditionally used for fishing, e.g., *ngalawa*, which they have converted to take tourists on sailing trips and tours, such as in Mombasa Marine National Park. Along the beaches of most MPAs local communities also run curio and handicraft businesses, safari/tour sales, and camel rides (in reserves only), which are licensed by the Tourism Department. KWS does not have any control over the numbers and types of activities on the beach, but has some influence through its membership on the Tourism Licenses Processing Committee. Many of the beach operators do not come from communities living adjacent to MPAs, which is a cause of resentment for the local boat owners.

1.4. Tourism Support for MPAs

The link between the KWS and the tourism sector is very strong. Much of the tourism industry in Kenya is based on wildlife and KWS funds its entire recurrent budget from tourist revenues. In addition, 70% of tourists that come to Kenya travel to the coast and account for 75% of visitors to Kenya's MPAs. Over the last few years, the tourism

sector has been a major force in the drive to increase conservation areas, including the Mombasa Marine National Park and Reserve and to a large extent the Diani-Chale Marine Reserve. The Mombasa Marine National Park beach management programme is a good example of a mechanism that has allowed close collaboration between the KWS, private sector (hotels), and local boat operators (Box 1). Individual hotels also support awareness programmes, including the annual marine environment day and the Kenya sea turtle committee (KESCOM), among others.

2. National Perspective of Collaborative Management of MPAs in Kenya

2.1. Benefits of Collaborative Management

In the past, biodiversity conservation in Kenya has tended to emphasise the international and scientific values and benefits of biodiversity. However, many Kenyans depend to a large degree on biological resources for subsistence, including for agriculture, livestock, fisheries, and forest products, which makes these resources very vulnerable. Given this overwhelming dependence on biological resources, it has become increasingly clear that new strategies incorporating local and national interests must be developed. At the national level, there is a new awareness that sustainable economic development and biodiversity are intricately linked. Furthermore, as a signatory to the Convention on Biological Diversity the government of Kenya has shown its commitment to biodiversity conservation. Institutions mandated to manage natural resources, including KWS, Fisheries Department, and Forestry Department, are placing increasing emphasis on integration of communities and other stakeholders into the management of areas and resources under their control. However, the framework to support such collaborative management at the national level is inadequate.

2.2. Enabling Environment for Collaborative Management

The evolution of KWS over the last five years has been driven by the need for a more participatory form of management that involves many stakeholders, including local communities, regional and national government authorities, scientists, private sector, and NGOs. The restructuring process in KWS and the draft Wildlife Bill (pending discussion in parliament) emphasise this need for collaborative management. Several instruments to enhance collaboration between different sectors, including Memoranda of Understanding and Memoranda of Agreement, have been signed between KWS and the Coast Development Authority (1994), Kenya Marine Fisheries Research Institute (1995), Forestry Department (1994), Fisheries Department (pending), and the National Museums of Kenya (pending).

Box 1. The Beach Management Programme: a new concept in MPA management in Kenya

The Beach management programme (BMP) is based on a joint agreement between KWS, boat operators, and hotels adjacent to the Mombasa Marine National Park and Reserve. The agreement was formulated after a stakeholders workshop in 1992 that identified ways to enhance cooperation among themselves and the Mombasa MPA. The agreement is voluntary, with member hotels charging guests \$ 0.5 per bed night and remitting the funds to KWS. This minuscule fee entitles visitors unlimited daily entry to the Mombasa MPA for the period of their stay. In return, KWS maintains security on the beach, assists beach users with information, and cleans beaches of non-biodegradable materials. The boat operators have benefited through assistance from KWS in setting up the Mombasa Boat Operators Association (MBOA), which has a monopoly over the local glass-bottom boat and sailing business in the Mombasa MPA. The MBOA has also benefited from donations of equipment and maintenance materials for their boats, improved business since they market only the boat and tour charges - not the park fee, reduced annual boat fee, and through a safer and more aesthetically pleasing environment in which to market their business. The hotels benefit through improved security and less harassment of their guests, lowered park fees for their guests, and cleaner beaches adjacent to their hotels. KWS benefits through a timely and less cumbersome collection of revenue, which allows staff to concentrate on the primary business of protection of biodiversity. The daily management of this programme falls under the responsibility of the park manager. However, an Advisory Committee that comprises hotel managers, KWS, tourism sector and association representatives, MBOA, and the Local Administration meets monthly to coordinate the BMP. Despite problems in the initial stages, the BMP at Mombasa MPA has recorded high visitor satisfaction especially in relation to safety and beach cleanliness.

KWS has also formed partnerships with NGOs and local and international universities to enhance collaboration in monitoring and other scientific studies. For terrestrial protected areas, local associations and landowners have been encouraged to manage wildlife in collaboration with KWS. Projects, such as the Tana Delta GEF project and the GTZ integrated forest management project in the Shimba Hills, emphasise integration of all stakeholders into the management of biodiversity within the protected area. Unfortunately, these kinds of arrangements have not been developed for MPAs. However, the Mombasa Marine National Park and Reserve beach management programme (Box 1) is one example of collaboration between stakeholders.

2.3. Constraints to Collaborative Management

The constraints to collaborative management can be divided into those that occur within KWS (internal) and those that occur nationally or globally (external). Internal constraints include:

- the lack of adequate skills in collaborative management
- inadequate resources

- new wildlife policy not yet endorsed by Parliament
- lack of enforcement of policies
- managers still hold on to the old way of doing things.

External Constraints include:

- inequality in resources between potential partners
- variation in skills between potential partners
- lack of trust and suspicion among partners
- lack of recognition of key players
- political interference
- overlapping mandates.

2.4 Threats and Conflicts in MPAs

The principal threats to MPAs in Kenya are similar to many MPAs in the region and include:

- *Unsustainable resource utilisation in marine reserves:* annual monitoring of fish has shown declines in commercial fish indicating overexploitation. Also, interviews with fishers indicate that fish stocks are overexploited in most marine reserves. Overexploitation of fisheries has caused increases in sea urchin populations resulting in increased reef degradation on some of Kenya's lagoonal reefs, especially at Diani.
- *Destructive fishing:* beach seining, in particular, is very destructive to the environment and causes damage to both coral and seagrass beds. If the habitat is destroyed, the fish stocks invariably will decline. Fishers in most protected areas are aware that this form of fishing is destructive, yet they continue to do it or claim that it is foreigners, and not local fishers, that use this method.
- *Sediments and nutrients from rivers and runoff:* these pose a threat to reefs from Malindi to Ras Tenewi. Coral cores from the Malindi Marine National Park have shown an increasing amount of sediments from the 1960s. Although there has not yet been a dramatic change in the community structure of the reefs, this trend is still cause for concern.
- *Pollution from sewage and solid waste:* most MPAs in Kenya are adjacent to heavily urbanised and tourist areas, including the port of Mombasa. The development of infrastructure and sewerage are not keeping up with the rapidly growing population, thus the threat from pollution is very high.
- *User conflict:* Many tourist and recreation activities occur in the MPAs of Kenya. One of the main conflicts is between local communities and hotels. Local communities feel that some businesses should be left to them, e.g., glass-bottom boats and the handicraft and curio trade. Park managers have therefore zoned some areas for specific uses thus minimising the conflicts.

3. Means to Resolve Constraints and Conflicts

To facilitate collaborative management in Kenya's MPAs, the following issues have to be tackled:

- *Provision of adequate resources:* KWS is responsible for all wildlife in Kenya but depends mainly on revenue from a few popular protected areas to support its conservation activities. It has become difficult over the years to maintain normal operations without donor support. It is important that the government allocate adequate resources to cover some costs, especially security.
- *Identification and sensitisation of key players:* the Diani-Chale Marine Reserve has met with a great deal of resistance from the local communities mainly because communities were not duly recognised as key players and inadequate time was spent working with them.
- *Due recognition given to local leaders and authorities:* local leaders and authorities have a closer relationship with communities and they must be given due recognition and integrated fully into negotiations
- *Development of integrated management plans:* recognising the multidisciplinary nature of coastal resource use issues, integrated management plans should be developed for all MPAs that include a framework for collaborative management.
- *Identification of alternative resource uses:* there is a great deal of pressure on the resources of marine reserves. Alternatives should be developed to help minimise this pressure, e.g., seaweed, blacklip pearl oysters, and sea cucumber farming.
- *Awareness:* improving awareness of coastal issues among communities, local government authorities, etc. would assist generate support for conservation efforts.

4. MPAs, Tourism, and Fisheries

KWS is a parastatal organisation that has been exempted from the provisions of the Corporations Act, thus allowing for the collection and retention of revenue. However, KWS does not receive any supplemental funds from the Kenya government. There are 52 protected areas in Kenya, but only a few generate revenue, placing reliance for many programmes on donor funds. Despite the hope that KWS would become self-sufficient and generate enough revenue to cover recurrent and development costs, this has not been realised and is unlikely to occur given the slump in tourism over the past year. It is against this background that KWS has requested

financial subvention from the Kenya government to cover key operation areas, especially security. This would not only increase KWS's ability to provide services to visitors, but would also send out a strong message to donors that the government is committed to biodiversity conservation. Entry fees are the only source of revenue for MPAs, and not all of them charge these fees. Also, although tourism and fisheries are the main activities in MPAs, KWS does not issue the licenses and therefore does not benefit from this potential source of revenue or have any control over numbers of licensees.

Even with government subsidy, there would still be a need to develop ways to enhance the management of MPAs. In the tourism sector, the Beach Management Programme (Box.1) is one strategy to directly benefit KWS, boat operators, tourists, and hotels that is under experimentation. The KWS/Netherlands Wetlands and Training Programme is also in the process of funding the development of integrated MPA management plans that will incorporate a framework for collaboration among stakeholders. Finding alternative resource uses for the communities utilising marine reserves has also been initiated at the Mpunguti Marine National Reserve, where fishers have been provided with motorised boats and fishing gear funded by USAID. This enables them to fish further offshore thus minimising fishing within the reserve itself. The development of other alternatives, including aquaculture, reef restoration, and artificial reefs, are also being explored. In the area of research and monitoring, partnerships with the Coral Reef Conservation Project and the Kenya Marine and Fisheries Research Institute have provided the scientific data required for effective management of MPAs.

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NATIONAL PERSPECTIVE OF MARINE PROTECTED AREA MANAGEMENT IN SEYCHELLES

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1. Background

Marine National Parks in Seychelles are managed by the Marine Parks Authority of Seychelles, which was established in mid 1996 as a parastatal body under the Environmental Protection Act (Cap. 9/94). The National Parks and Nature Conservancy Act (Cap. 141/91 ed) specifies the areas that it is responsible for managing (Table 1) and its operational principles.

The primary management principles are listed in schedule 2 of the Act (see Annex 1) and include principles of sustainable development, environmental conservation, and opportunity for public appreciation of the natural environment. A set of integrated regulations for all areas designated as Marine National Parks are presently in preparation.

The administrative structure and responsibilities of the Marine Parks Authority are specified in the Environment Protection (Marine Parks Authority) Order of 1996 that was issued under the Environmental Protection Act and the Parastatals Corporation Act (Cap. 154/91 ed), and in more detailed regulations issued under these Acts. Day to day management is under the control of a Managing Director who reports to and is instructed by a Board, which is required to meet six times a year. The Board presently comprises a representative each from the Ministry of Environment (Chairperson), the Ministry of Community Development (land use planning), the Ministry of Education and Culture, the Ministry of Tourism and Transport, the Seychelles Fishing Authority (fisheries), and the Seychelles Broadcasting Corporation (public broadcasting). Non-Governmental persons and Organisations are not represented on the Board.

The Marine Parks Authority employs officers who are authorised to patrol, collect fees, search vessels, confiscate illegal items, and issue violation notices within areas designated as Marine National Parks.

Access and appropriate use of areas designated as Marine National Parks are free for all Seychelles Nationals and foreign residents. Persons with a visitors permit have to pay for entry. Most tourists visit the Marine National Parks in glass-bottom boats, but also visit to snorkel, scuba dive, and relax on the beaches. No extractive and/or damaging uses by tourists are allowed. There are no limits set for the number of tourists, but they are limited in practice by the amount of available space as no anchoring is allowed on sensitive habitat such as coral.

The Marine Parks Authority is a publicly accountable and service oriented body that aims to respond effectively to the concerns of stakeholders. Within this framework, there is presently only a limited public participatory role for coastal communities in marine protected areas (MPAs) in Seychelles. Legislation provides opportunity for the designation of honorary wardens but so far there is only one. Residents (i.e., holders of land within or adjacent to designated Marine National Parks) have right of access to their land through the protected area and limited reef gleaning and fishing privileges.

General recreational, artisanal, and commercial fishing and other extractive marine uses are not allowed within Marine National Parks. Holders of land can use their land provided that it meets the regulations.

The Marine Parks Authority is a founding member of the newly formed Seychelles National Coral Reef Network, which provides a forum for discussion of wider coral reef management issues amongst stakeholders.

Coastal communities have no direct role in tourism activities in MPAs, although commercial operators employ locals. Most tourists access and use Marine National Parks on tours organised by large national tour operators. A smaller number enter using smaller local operators who should be licensed independently.

The MPAs are not a central component in marketing tourism in the Seychelles. The annual SUBIOS (Indian Ocean underwater festival) markets SCUBA diving in Seychelles, but the diving options in Marine National Parks are limited and the entry charges are considered too high by certain operators to justify marketing MPAs. Nonetheless, most marketing-directed visits to Seychelles organised by the Ministry of Tourism and Transport include a visit to one or more Marine National Parks.

The Marine Parks Authority survives on income generated from sale of permits for entry and use of areas designated as Marine National Parks. There is also a small (25% of revenue) Government subvention. Income does not meet expenditure. Most tickets are purchased in bulk by major tour operators directly from the Marine Parks Authority administration. Some tickets are also purchased from rangers. Revenue is placed in accounts controlled by the Marine Parks Authority and disbursed according to Ministry of Administration and Manpower regulations. An annual budget is generated, approved by the Board, and submitted to Government for approval. Accounts are independently audited annually.

Table 1. Summary of areas designated as Marine National Parks.

No.	Name of MNP	Designating regulation	Date designated	Map base	Land* area (ha)	Sea* area (ha)	Total* area (ha)
1	Ste. Anne Marine National Park	National Parks (Ste. Anne Marine)(Designation) Order. Cap. 141, Sub. Leg. pg. 1-2.	19/03/73	A35 No. 1986; ML/ADN/10. Series Y851 (DOS 204). Sheet Mahé 4. Edition 4-OSD 1988.	388.71	996.04	1384.75
2	Baie Ternay Marine National Park	National Parks (Baie Ternay Marine)(Designation) Order. Cap. 141, Sub. Leg. pg. 5-6.	11/06/79	ML/ADN/45: Series Y851 (DOS 204). Sheet Mahé 2. Edition 4-OSD 1986.	0.99	86.28	87.27
3	Curieuse Marine National Park	National Parks (Curieuse Marine)(Designation) Order. Cap. 141, Sub. Leg. pg. 6-7.	11/06/79	ML/ADN/46: Series Y851 (DOS 204). Sheet Praslin 1. Edition 3-OSD 1990.	294.46	1283.69	1578.15
4	Port Launay Marine National Park	National Parks (Port Launay Marine)(Designation) Order. Cap. 141, Sub. Leg. pg. 7.	11/06/79	A35 No. 3850: Series Y851 (DOS 204). Sheet Mahé 5. Edition 4-OSD 1986.	3.59	154.26	157.85
5	Silhouette Marine National Park	National Parks (Silhouette Marine)(Designation) Order. Cap. 141, Sub. Leg. pg. 9.	26/10/87	ML/ADN/69: Series Y851 (DOS 204). Sheet Silhouette Island. Edition 1-DOS 1978.			
6	Ile Cocos, Ile La Fouche, Ilot Platte National Park	S.I. 20 of 1997 (National Parks and Nature Conservancy (Ile Cocos, Ile La Fouche, Ilot Platte) (Designation) Order, 1997	19/02/97	ML/ADN/76: Series DOS 104. Sheet Felicité Island. Edition 2-DOS 1980.	5.05	165.48	170.53

* 10,000m²: 1ha and 100ha: 1km²

Areas calculated by tracing from boundary maps authenticated by the Government Survey Authority and using mm graph paper to calculate areas (to the nearest mm²).

Land area includes areas marked as offshore rock, beach and artificial structures extending offshore.

Areas calculated by tracing from boundary maps authenticated by the Government Survey Authority and using mm graph paper to calculate areas

2. National Perspective of Collaborative Management of MPAs in Seychelles

2.1. Benefits of Collaborative Management

It is the policy of the Marine Parks Authority to reduce the recurrent costs for management of Marine National Parks by delegating management activities to the stakeholders. The Marine Parks Authority hopes to assume a coordinating role that concentrates on monitoring of compliance, management related research, and education and public awareness to improve public support for management initiatives. The reason for this is that it is considered that collaborative or delegated management is likely to be more effective and also less of a recurrent burden on the general taxpayer. A case in point is the move to require commercial users to install, maintain, and control use of their own moorings. Marine Parks Authority staff would then not need to allocate resources to providing this service, and could concentrate on ensuring compliance.

2.2. Enabling Environment for Collaborative Management

The Marine Parks Authority has the mandate to manage areas designated as Marine National Parks according to the principles of environmental conservation specified in Schedule 2 of the National Parks and Nature Conservancy Act (Cap. 141/91 ed). This Act also specifies the right of public access to areas designated as Marine National Parks for the purpose of appreciation of the natural environment. Where access and use conflicts with environmental conservation the Marine Parks Authority, has to identify new regulations and implement existing regulations to restrict access and use.

The Marine Parks Authority considers that this framework provides an appropriate enabling environment for a dialogue with stakeholders leading eventually to collaborative and delegated management.

2.3. Constraints to Collaborative Management of MPAs

The major constraints to collaborative management of MPAs are, to some extent, interdependent and can be summarised as:

- too few tourists to interest tour operators to take on a management role
- the lack of secure and adequate revenues to provide effective management while mechanisms for collaborative and delegated management are being developed and implemented
- the lack of control over investments in areas designated as Marine National Parks (lack of land title, etc.)
- the relatively small area of Marine National Parks
- the existing multiple uses of these areas provide little scope for collaborative agreements, potentially conflict with the conservation mandate, and may not be negotiable under the Marine Parks Authority mandate (e.g., oil storage facilities and ship anchorage in the Ste Anne Island Marine National Park, and lease of Round Island there with revenues paid direct to government)
- inadequate development of a service oriented work ethic in staff.

2.4. Conflicts in MPA Management

Where an activity is proposed or occurs that does not meet with the Marine Parks Authority's mandate, a dialogue is opened with the concerned parties. If the matter cannot be reconciled within this mandate and other relevant national regulations, it is referred to the Board and then, if necessary, to the Ministry of Environment as specified in the Environmental Protection Act (Cap. 9/94). A number of cases exemplify this:

- *Proposal to develop a golf course in Ste Anne Marine National Park:* In principal, this proposal does not meet the mandate of the Marine Parks Authority because it proposes to restrict access to the general public on non-environmental conservation grounds and its purpose is not aimed at appreciation and environmental conservation of the natural environment. So, the proposal was referred to the Board. The Board resolved to withhold official comment until a project memorandum was submitted to the Marine Parks Authority.
- *Increased entry fees for tourists from cruise ships:* A number of Seychelles tour operators expressed concern that an increase in entry fees for Marine National Parks from the equivalent of US\$5 to \$10 was proposed after completion of negotiations on the upcoming rates with cruise operators. The Board resolved that the existing fee would be retained for a grace period extending until the end of April 1998.
- *Anchoring in the Port Victoria anchorage which extends into the Ste Anne Marine National Park:* Regulations currently under preparation propose that vessels must either drift, anchor in a limited number of designated anchoring areas, or moor at approved sites in areas designated as Marine National Parks. A series of meetings held with the Port Operations and Marine Navigation authorities led to agreement that a single limited circular anchorage (diameter 250m) would be allowed where Victoria Port overlaps the Park.
- *Non-payment of entry fees by tourists with an unlicensed Seychellois tour operator:* Tourists under the guidance of a local non-licensed tour operator were found to be in a Marine National Park without tickets. The tourists refused to pay because they said the guide was responsible. The guide refused to pay because

he said the fee was the responsibility of the tourists, and that he himself was exempted from payment on grounds of nationality.

After issuing a violation notice without effect, the Marine Parks Authority wrote to the Licensing Authority and the Ministry of Tourism indicating that any party dealing with tourists should be bound by the code of ethics for tour guides and asking for advice and action. The guide was issued a warning and the fee specified on the violation form was paid.

- *Illegal trap fishing in MPAs:* It is a regular duty of rangers to remove fish traps from Marine National Parks. This has been going on for years, particularly in the Ste Anne Marine National Park without sign of reduction. It has been considered that a dialogue with the local fishermen would be counterproductive, primarily because fishing rights are not negotiable, and secondarily because the responsible fishermen are not represented by an umbrella organisation that could control their activities.
- *Community participation in proposed MPAs boundary extensions:* Proposals to extend the boundary of a Marine National Park have been raised and, in contrast to past practice, will be presented and discussed with the community adjacent to the affected area. Hopefully this process will lead to consensus management with the stakeholders and perhaps to a dialogue with fishermen who may resent the restrictions on their use of Marine National Parks. In turn, this dialogue may lead to an improved understanding of the reasons underlying establishment of the Marine National Parks and acceptance of the restrictions they impose of certain activities.

3. The Way Forward: Means to Resolve Constraints and Conflicts

Collaborative management will be facilitated when the policy to delegate management to the user is clearly defined, when logistics allow a regular dialogue with stakeholders, and when a schedule of financial support allows for the following:

- secure funding of centrally managed coordination, compliance monitoring, and extension work
- introduction of effective centrally administered management
- transition to delegated or collaborative management
- legal precedence for implementation of the environmental conservation mandate.

4. MPAs, Tourism, and Fisheries

The Marine National Parks have been managed by a parastatal for just over 15 months only. The reason for passing management responsibility to a parastatal was to increase efficiency and to make sure that revenues generated from use of Marine National Parks were directly used for their management. Unfortunately, the assumption was wrong that revenues generated would be adequate to fund effective management, at least in the short term. Also, a parastatal is by nature derived from Government and tends to retain a Government, rather than a free market, perspective.

Against this background, it has to be remembered that the Marine National Parks of the Seychelles are a national asset managed for the benefit of present and future generations of Seychelloise and should only support sectoral developments if they meet the environmental conservation mandate.

4.1. Tourism

Sale of tickets to tourists for entry into Marine National Parks is the major source of revenue for their management. Tourism numbers can only really be expanded, and/or value added to justify increased charges, if there is substantial investment in additional infrastructure. Government has been approached to seek low interest loans from international banks and donors to encourage substantial infrastructure investments, subsidise the incremental costs of providing environmental best practice, and earn interest on the loans. Projects include ecotourism lodges, a small aquarium, reception facilities for solid and liquid waste, and a revolving fund for moorings. Government has also been approached to transfer the land titles of government owned land within Marine National Parks to the Marine Parks Authority to facilitate investment and ensure that revenues from these investments revert to the Authority.

If these investments are forthcoming and tourism revenues grow, it follows that local communities and the private sector will have greater commercial involvement in and benefit from Marine National Parks, as well as retaining their rights of access and environmental appreciation.

4.2. Fisheries

Resource reserves: It is the policy of the Marine Parks Authority that Marine National Parks should act as renewable resource reserves for the wider Seychelles marine environment. Healthy populations of marine fauna and flora within Marine National Parks should serve to replenish depleted populations outside these areas.

Extractive uses: The Marine National Parks are relatively small, both in absolute area and in the area of reefs that they contain. It is debatable whether commercially viable levels of reef-based fisheries could be maintained within them without compromising the environmental conservation status of these Marine National Parks. Therefore, it is not the policy of the Marine Parks Authority to encourage development of wild fisheries within Marine National Parks.

Mariculture: A concession for an oyster farm exists within the Curieuse Marine National Park, although the Marine Parks Authority generates no revenue from this operation. There is no doubt that properly managed MPAs could have increased importance for mariculture because of their high water quality. However, mariculture activities do not strictly comply with the environmental conservation mandate of Marine National Parks, and are hardly justified even if revenues are used to subsidise the costs of more effective environmental conservation management. Mariculture also provides three serious risks to the environmental conservation status of Marine National Parks.

One is the use of feeds which may cause eutrophication of waters. A second is the use of chemicals for disease and other stock control which may contaminate the marine environment. The third is the risk of invasion from the introduced strains or species. The introduced species can escape into the natural environment and displace resident species or introduce exotic diseases to non-resistant resident species.

Therefore, the policy of the Marine Parks Authority is not to encourage mariculture within Marine National Parks.

Artificial reefs: Artificial reefs can increase the yield of reef-based fisheries in areas where there are limited natural reefs. Artificial reefs designed to enhance fisheries do not strictly speaking meet the environmental conservation mandate of Marine National Parks because they do not enhance appreciation of the natural environment (artificial reefs are not natural). However, if they are viewed as means to attract fish for viewing purposes, this should be acceptable as would such other facilities as an ecotourism lodge or an aquarium.

It is not, however, the policy of the Marine Parks Authority to encourage development of artificial reefs for fisheries purposes within Marine National Parks.

Research: Effective environmental conservation management and enhanced appreciation of the natural environment require levels of understanding that can only be gained through research.

Therefore, it is the policy of the Marine Parks Authority to encourage applied research that leads to improved management or to enhanced appreciation and understanding of the natural environment. One study being supported is a programme of tag-release-recapture of fish within a Marine National Park. This programme will explore the importance of Marine National Parks as replenishment areas for renewable resources. Evidence that Marine National Parks are important as renewable resource reserves for the Seychelles fisheries sector will help to justify their role in support of the fisheries sector, and argue for an increase in MPAs and greater government contribution for their management.

Monitoring: As a publicly accountable parastatal, the Marine Parks Authority views the regular monitoring and reporting on its administration and the environmental conservation status of assets under its management as important responsibilities. Bearing in mind logistical constraints, the Marine Parks Authority is doing its best to operate a standards-based approach to monitoring and reporting. Logistical constraints and, in particular, the economies of scale resulting from being in a small island developing state, require that these standards be developed and implemented in cooperation with national, regional, and global initiatives on these issues.

I welcome the opportunity that this workshop provides for developing and implementing these standards and I look forward to the results of our endeavours.

Annex 1. Main Management Objectives of the National Parks and Nature Conservancies Act

2/19/1982 SCHEDULE 2 Section 3(4)

**MAIN OBJECTIVES OF ENVIRONMENTAL
CONSERVATION**

[As stated in the World Conservation Strategy prepared
by the International Union for the Conservation of
Nature and Natural Resources (IUCN)]

- a. **to maintain essential ecological processes and life-support systems** (such as soil regeneration and protection, the recycling of nutrients, and the cleansing of waters), on which human survival and development depend;
- b. **to preserve genetic diversity** (the range of genetic material found in the world's organisms), on which depend the functioning of many of the above processes and life-support systems, the breeding programmes necessary for the protection and improvement of cultivated plants, domesticated animals and microorganisms, as well as much scientific and medical advance, technical innovation, and the security of the many industries that use living resources;
- c. **to ensure the sustainable utilisation of species and ecosystems** (notably fish and other wildlife, forests and grazing lands), which support millions of rural communities as well as major industries.

NATIONAL PERSPECTIVE OF MANAGEMENT OF MARINE PROTECTED AREAS IN MOZAMBIQUE

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1. Introduction

1.1. Background

The coast of Mozambique is the country's most valuable natural resource requiring conservation. Despite a coastline of about 2,700 km length, Mozambique has so far gazetted only two marine protected areas (MPAs), covering an area of approximately 250 sq. km:

- *Ilhas da Inhaca e dos Portugueses Reserve*, important for its coral reefs, seagrass beds, mangroves, dunes, marine invertebrates, and turtles, and which is managed by the Inhaca Marine Biological Station under Eduardo Mondlane University.
- *Bazaruto National Park*, which was the first national park to be proclaimed (1971), covering the islands of Bangué, Magaruque, Benguerua, Bazaruto, and Santa Carolina. It is important for turtles, dugongs, coral reefs, seagrass beds, and a variety of different fish species, and is managed by a park administrator that reports to the National Directorate for Forestry and Wildlife (DNFFB). A management plan is being prepared with financial and technical support from the European Union and WWF (see case study of Bazaruto National Park in this workshop report).

In addition, there are three coastal game reserves:

- *Marrromeu Game Reserve*, which lies within the Zambezi River Delta and includes coastal dune forests, wetlands, mangroves, seagrass beds, as well as terrestrial fauna and habitats.
- *Pomene Game Reserve* in Inhambane Province includes coastal dune forests, estuaries, mangroves, turtles, dugongs, dolphins, coral reefs, and terrestrial fauna. Although under the jurisdiction of DNFFB, it is hoped that the private sector will meet the investment and recurrent expenditure costs.
- *Maputo Game Reserve* in the south, which includes coastal dune forests, beaches, mangroves, and turtles, as well as terrestrial fauna. It is managed by a private concessionaire and integrated in the Transfrontier Conservation Areas Project funded by GEF.

Mozambique possesses the singular advantage of a long and exquisite coastline, which is unrivalled in tourism potential in the region. The coastal environment has been a major asset for tourism development in Kenya and Tanzania. The synergistic linkage between coastal tourism and wildlife tourism should dictate the development and resource management priorities and influence investment decisions. DNFFB has a central role to play in the conservation of the coastal zone. Apart from managing existing State Protected Areas, the major emphasis for DNFFB will be in reforestation of coastal dunes, restoration of mangrove areas, and sustainable use of coastal aquatic wildlife and plants. Thus, their strategy will focus on implementing the following four activities:

- preparation of a plan for coastal zone conservation and management in cooperation with the Ministry for Coordination of Environmental Affairs
- development of community-based sustainable use programmes in support of the conservation of biological diversity
- training of staff and building of capacity to carry out the programme
- establishment of linkages and networks with institutions and other countries undertaking similar programmes.

Some plans have been developed and activities are being implemented along these lines in both Bazaruto Archipelago and the Inhaca Islands.

1.2. Bazaruto National Park

There are six tourist establishments in the archipelago: two on Bazaruto Island, two on Benguerua Island, one on Magaruque Island, and another on Santa Carolina Island. The islanders benefit little from tourism. Over 90% of the hired staff come from the mainland, and concession duties are paid to the central authorities that permit developments. However, in recent years, tourism levies are being implemented in the islands. About 4% of total expenditures by tourists is deposited in an account that is delivered to the community representatives to support activities that bring social benefits to the islanders.

The Master Plan for the Archipelago which is being concluded for approval establishes a number of activities that will be carried out to meet the main objective of "maintaining the social and ecological integrity of the Bazaruto

National Park through the involvement of the resource users". The following main actions are planned for implementation:

- extend the borders of the Bazaruto National Park to include all islands in the Bazaruto Archipelago and propose its candidacy as a World Heritage Site
- establish mechanisms for co-management of Bazaruto National Park that would involve local communities, tourism operators, DNFFB, and other governmental institutions
- engage the local communities in the management and conservation of the Bazaruto National Park
- improve the socioeconomic conditions of the islanders, through distribution of the economic benefits generated by the Bazaruto National Park
- implement training programmes and ecological and socioeconomic research to ensure appropriate organisation and management of the Bazaruto National Park
- establish a mechanism for sustainable financing of the Bazaruto National Park so that it may function by itself, once the project is concluded.

1.3. Ilhas da Inhaca e dos Portugueses

A plan for integrated development of Inhaca Island was drawn up in 1989. The plan was meant to serve as a reference document for the implementation of a development programme for the island, focusing on a survey of the island's existing problems and alternatives for development. To address the latter, it will be necessary to develop employment alternatives and more appropriate techniques, and reduce dependency on natural resources. In addition, regulatory measures will need to be introduced to minimise the number of outsiders settling on the island. Several actions were planned, including:

- create a Centre for Integrated Development of Inhaca to facilitate participation of the local population and various institutions on and off of the island in the decision making
- create an Advisory and Multidisciplinary Technical Team
- implement education and environmental management
- combat erosion
- create a protected nature zone
- reduce use of the natural forest
- protect endangered species
- create the necessary prerequisites for open sea fishing
- develop integrated tourism.

2. National Perspective of Collaborative Management of MPAs

The main objective of government intervention in conservation is to realise the full potential of Mozambique's forest and wildlife resources through sustainable use and conservation of biological diversity. This would be achieved through a set of coherent interventions by the state forest and wildlife administration, rural communities, private sector, and NGOs, and that include institutional strengthening and certain strategic objectives of which the following two apply to coastal areas:

- rehabilitate state protected areas
- develop community-based natural resource management (CBNRM), by empowerment and participation of rural communities as agents and beneficiaries in the integrated management, use, and conservation of forest and wildlife resources.

The State Protected Areas in Mozambique are grouped into four major categories: National Parks, Game Reserves and "Coutadas," Forest Reserves, and Coastal Parks/Reserves.

Mozambique has developed a sound policy structure to enable the inception of CBNRM projects in a variety of land tenure situations. The most important foundation on which CBNRM projects can be built is one where local communities are given custody or ownership for the use and management of their natural resources. Clear policies are needed to establish the roles of a variety of institutions.

NGOs have proven to be very useful in helping to build community institutions and develop local skills. With the support of DNFFB, it is expected that NGOs will play a major role in assisting communities to achieve the potential of their natural resources.

CBNRM has the advantage that the concepts it espouses can be readily understood at many different levels. From a community perspective, CBNRM provides opportunities for alternative livelihood strategies. The private sector, through CBNRM, is able to operate in a more secure commercial environment that encourages longer term investment. The key factors that contribute to success of CBNRM tend to lie in improved administrative procedures (i.e., empowerment, streamlining of bureaucracy), rather than in technical or material assistance.

There is a need to formulate sector policies and to adjust legislation and regulations so that they respond adequately to the new political, social, and economic environment. The outputs would comprise:

1. Revised Policy and Legislation by analysing policy and development strategy, including:
 - the institutionalisation of a policy and strategy discussion group involving representatives of concerned government agencies, donors, and other partners
 - review of the existing forestry and wildlife legislation
 - review of the resource use and land tenure rights of the rural communities and the private sector
 - assessment of the changing roles of the state forestry and wildlife administration
 - participation in international treaties and conventions.
2. Updated regulatory framework for private sector and local communities by:
 - the development of practical incentives to encourage the sustainable management of forest and wildlife resources
 - development of transparent administrative procedures for concession application, granting of concessions, and for effective concession management
 - development of guidelines and administrative procedures with regard to community-based forest and wildlife resource management.

The following general constraints were identified in National Parks and Reserves:

- depleted wildlife as a result of unsustainable use
- an absence of protection and management systems due to an absence of staff in the field
- difficulties in tourism development due to poor infrastructure inside and outside parks (e.g., degraded access roads)
- failure to invest in the minimum overhead costs needed to secure the resources
- failure to involve local communities in the management of protected areas
- outdated legislation which now needs to focus on enabling mechanisms for local communities and provide greater flexibility to the State
- an inappropriate institutional structure that divides responsibilities for tourism and coastal development amongst more than one ministry, and fails to internalise expenditure and revenue for natural resource activities in a single accounting system.

4. The Way Forward: Means to Resolve Constraints and Conflicts

On one hand, mechanisms for private sector concessions, including community participation, have been included and agreed to in several component projects. On the other hand, the recently approved Land Law provides a workable basis upon which to commence implementing community programmes. The new Forest and Wildlife legislation will be more important in this respect because it will provide the mechanisms through which authority can be conferred on local communities to manage their resources. This enabling legislation is the only way to get community-based resource management initiated in the thousands of Mozambican rural communities.

DNFFB has put forward proposals based on the retention of 50% of its annual revenues from forests and wildlife, which would more than assure its self-sufficiency.

Concepts were also explored for retention of portions of forestry and wildlife resource charges by those responsible for managing them. The revenue will be retained by the province or district responsible for overseeing the concession. In this way, sufficient basic funds to conserve and manage forest and wildlife resources will be ensured.

5. MPAs, Tourism, and Fisheries

Both tourism and fishing activities are important activities that are considered in the respective master plans for the two existing MPAs (Bazaruto Archipelago and the Inhaca Islands). The diversification of economy in the Inhaca Islands is one of the priority actions, with commercial fishing and tourism expected to play important roles in leading the development process. These developments can create the economic resources necessary to stimulate a diversification of enterprise, thus making viable other commercial alternatives and the production of services. This will also reduce the dependency on agriculture as the one means of support.

Traditional fishing is the principal economic activity of the islanders in Bazaruto Archipelago, involving over 70% of the population. Even without sophisticated equipment and methods, the fishermen manage to satisfy personal needs and to dry sufficient fish to sell on the mainland. Sport fishing is one of the main tourist attractions in the archipelago. Tourists usually go fishing for large pelagic fish, like tuna, marlins, kingfish, and others, all of which are abundant around the islands. Prospects for sustainable tourism development are very good in these paradise islands.

Figure 1. State protected areas

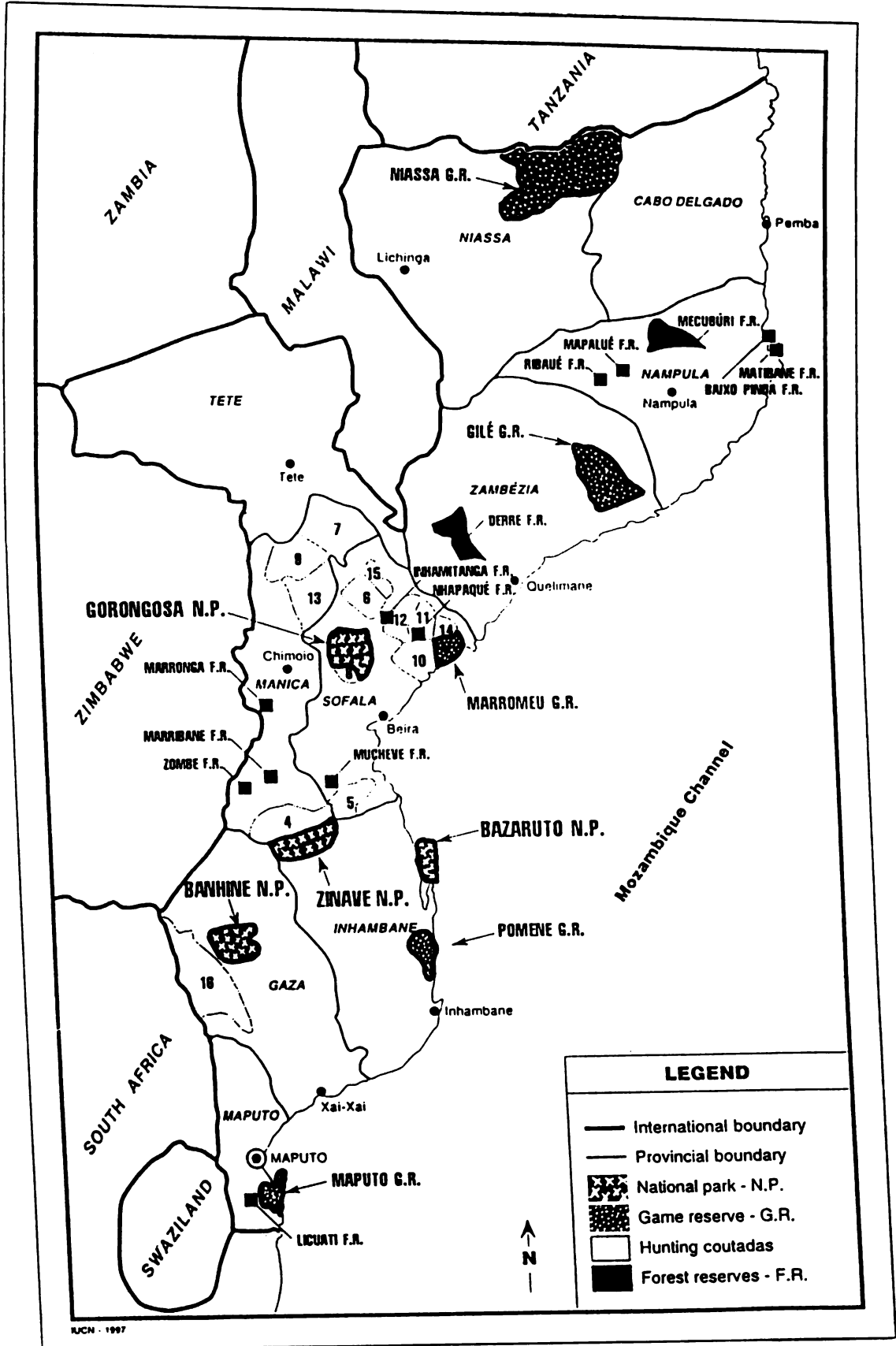
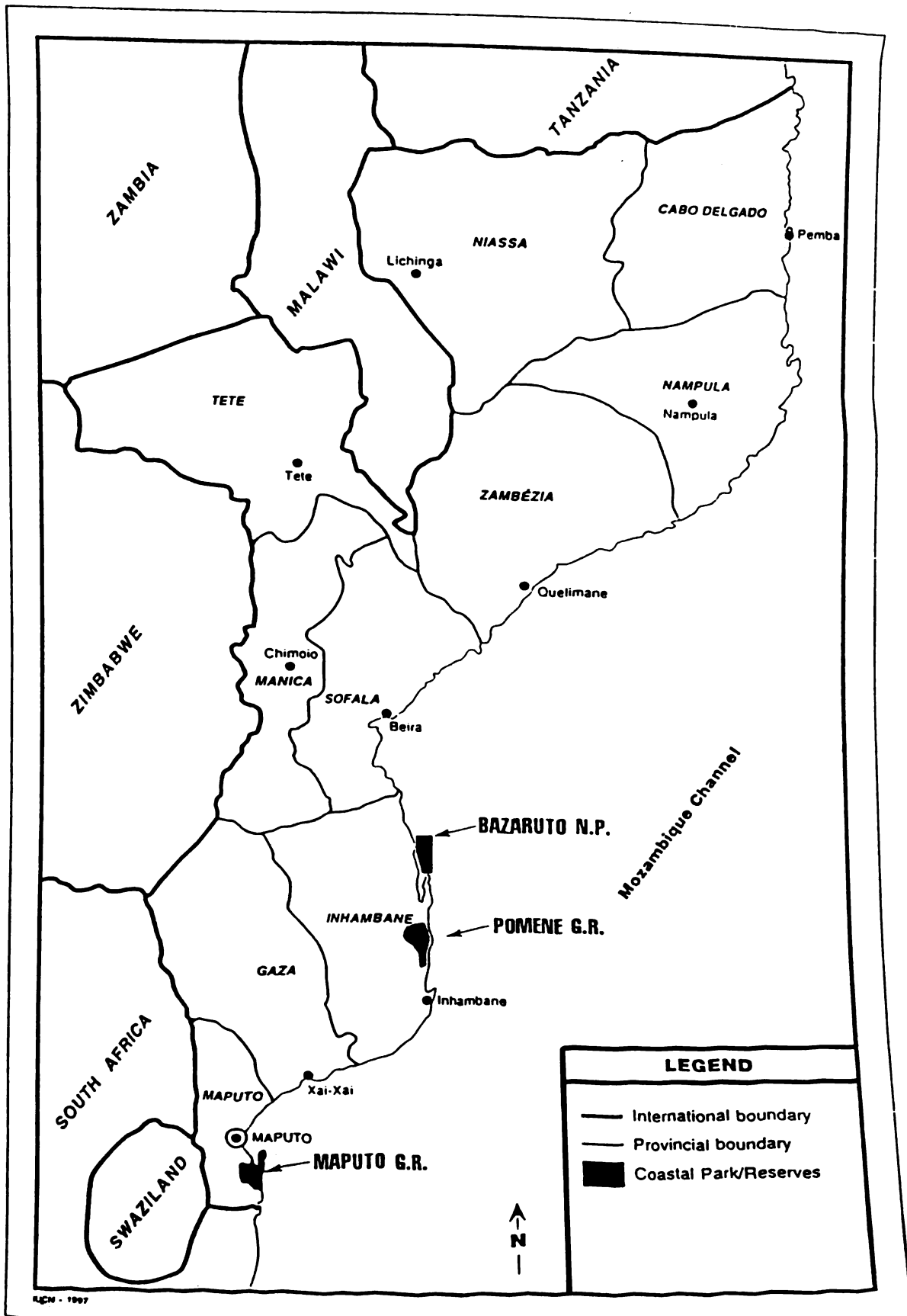


Figure 2. Coastal parks and reserves



NATIONAL PERSPECTIVE OF MARINE PROTECTED AREA MANAGEMENT, TANZANIA MAINLAND

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Manager Marine Park & Reserves Unit

1. Background

The Tanzania coastal waters contain some of the richest marine resources in the Indian Ocean, including some excellent coral reefs and valuable species of aquatic life. The diversity of coastal and marine habitats supports a wide range of marine fishes and invertebrates, some of which are important and valued species, outstanding biodiversity, and a variety of endemic species of flora and fauna. Other resources include coral reefs, mangrove forests, minerals, and sandy beaches that attract tourists and other recreational uses.

The marine and coastal waters are important for a number of economic activities, including artisanal fisheries, extraction of natural gas and salt, marine transport, recreation, and water supply, and also support a wide range of wildlife. Coastal communities depend on fishing as their main source of income and diet. Mangrove forests provide poles and timber for construction of houses and boats, firewood, tannin, and medicine.

Despite Tanzania's abundant and diverse marine resources, protection and conservation management of the seas has not been given as high priority as terrestrial areas. A number of areas were declared marine reserves in 1975, but were never managed. Even the reserves used for tourism have not been provided with protection or management staff and facilities. It is only recently that the Government of the United Republic of Tanzania started to take seriously its obligations for conservation of the abundant living marine resources. The creation of the Board of Trustees for Marine Parks and Reserves in 1996 as the national body responsible for establishment and management of Marine Protected areas (MPAs) is seen by the Tanzania public and the international community as a major step toward committed conservation and protection of marine life and its fragile environment.

The Mafia Island Marine Park (MIMP), which is the largest MPA in Tanzania, was established in April, 1995, and became operational in July the same year. MIMP covers the southern part of Mafia Island and surrounding seas, and has an estimated area of 400 sq. km. There are ten villages in the marine park, with an estimated population of over 15,000 people.

MIMP was established and is being managed and developed in conformance with the Marine Parks and Reserves Act (1994), which clearly stipulates that marine parks and reserves should be based on the concept of integration of conservation with sustainable development and the socioeconomic plans of the local community.

Tanzania's main marine conservation objective is to maintain the essential ecological process and life support systems upon which both human survival and national development depend. The establishment of marine parks and reserves contributes to the achievement of this principal goal.

The function of Marine Parks in Tanzania is to provide for the conservation and protection of marine and coastal resources through regulation of the different uses. They also provide protection for the livelihoods of coastal communities who depend on the related resources. Therefore, Marine Parks are developed and managed as multiple-use areas that provide for a range of activities that are compatible with the overall conservation objectives. Potential conflicts among different user groups are addressed through zoning, which defines areas for different uses. Different types and levels of use in each zone are regulated according to the conservation priorities identified for that zone.

On the other hand, Marine Reserves provide for the protection of strategic resources by excluding all extractive uses. Tanzania has five Marine Reserves, namely, Fungu Yasin, Mbudya Island, Bongoyo Island, and Maziwi Island. Mainland Tanzania has adopted a collaborative management approach for Marine Parks, whereby all user groups and stakeholders contribute to the decision making process.

During the initial years, development and management of MIMP focused on community development. Activities included establishment of mechanisms for interaction between the park managers, villages, and Mafia District authority; assisting communities in the design and implementation of small self-help projects; working with women and unemployed youths to identify alternative sources of income; and encouraging private sector investment in tourism as another means to create employment opportunities for the local community.

Grassroots community members, apart from being involved in operational activities, are also given management and leadership roles through representation on the MIMP Advisory Committee and Board of Trustees for Marine Parks and Reserves. The latter is the highest MPA authority on the Tanzania mainland.

2. National Perspective of Collaborative Management of MPAs

As already indicated, Tanzania's guiding marine conservation policy is to create and manage MPAs in partnership with the user communities. Their establishment has to be in direct response to marine and coastal conservation needs. Whether MPAs have strict protection or multiple-use functions, they need to be designed and enforced with a clear focus on harmony with sustainable and traditional resource use patterns of the people who live within or surrounding the areas. Thus, in planning for a marine park or reserve, ecological and social concerns are given equal consideration. Developing a thorough understanding of communities and their dependence on the environment requires the use of participatory approaches that involve all interested parties and users.

This approach, which is supported by the Marine Parks and Reserves Act (1994), is seen as an effective strategy in creating ownership of management plans by the community. This in turn helps with monitoring, control, and surveillance of the MPA to protect it from damaging activities. At the same time, this participatory approach provides equitable access to resources for both men and women.

3. The Way Forward

Development of effective collaborative management is a challenging task for the Board of Trustees for Marine Parks and Reserves. With the prevailing poor economy, poor infrastructure, poverty amongst the coastal communities, and inadequate investments in coastal tourism, the circumstances do not favour rapid implementation of collaborative MPA management. However, some NGOs and coastal hotels recently have shown encouraging interest in working in partnership with both the Board of Trustees and communities for management of MPAs. Unfortunately, these NGOs and institutions also face financial difficulties and inadequate capacity and technical skills.

The greatest potential conflict facing MPA management is poverty, which outweighs conservation issues in the eyes of the communities. With the coastal people entirely dependant on marine resources, establishment of MPAs has to address poverty alleviation if it is to succeed. Community empowerment is the key to success in coastal and marine conservation programmes.

4. MPAs, Tourism, and Fisheries

Provision of support for tourism and fisheries is an important potential function of MPAs. Both activities generate income for communities and the private sector. They are also seen to provide good incentives for communities affected by the MPA zoning regulations to comply with management prescriptions.

Apart from creating employment for local communities, tourism discourages destructive practices, increases public awareness of resource values, and its revenues help to finance MPA management. Even so, tourism activities, like diving and snorkelling, need to be regulated to avoid excessive use that could lead, for example, to coral degradation.

Although marine tourism activities have not been highly developed on the Tanzania mainland, regulation of activities has been found to be effective in conservation and protection of the island reserves of Mbudya and Bongoyo near Dar es Salaam. For example, Msasani Slipway operates excursions to Bongoyo island, cleans it, monitors the environment, provides guided tours, and has cleared a nature trail through the island forest. Before Msasani Slipway initiated these tourism activities in 1995, the island was degraded by dynamite fishing, clearing of mangroves, and collection of coral rock. The advent of tourism slowed these activities and the island is now in a much better state.

Arrangements are underway to introduce tourism activities on Mbudya Island in partnership with the NGO Marine Action Conservation Tanzania. The focus of these activities would be enhancement of conservation and management of the marine reserve.

Replenishment for support of artisanal fishing is a great incentive for coastal communities to support marine conservation. However, it is equally important that the local fishermen are advised about sustainable fishing gears, trained in their use, and assisted in improving their markets. Introduction of the user permit system, whereby the revenue collected is retained by the villagers through their established institutions and used for community development activities, could also provide another incentive.

NATIONAL PERSPECTIVE OF MARINE PROTECTED AREA MANAGEMENT IN ZANZIBAR

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Summary

Zanzibar has a variety of productive and attractive marine ecosystems, such as mangroves, seagrass beds, and coral reefs that provide protection, feeding, and breeding habitats for a variety of organisms, including fishes.

Early proposals for establishment of marine protected areas (MPAs) in Zanzibar were made in 1989, followed by others in the early 1990s. Five areas were proposed for Unguja and four for Pemba.

In Zanzibar, MPAs can be established under the Fisheries Act of 1988 and Environmental Legislation of 1996. To date, four MPAs have been established: Chumbe Reef Sanctuary, Menai Bay Controlled Area, Mnemba Controlled Area, and Misali Controlled Area. Chumbe and Mnemba are managed by private investors under special management agreements with the government, while Misali and Menai Bay are under the control of the Commission of Natural Resources.

An initiative in 1993 to establish a single agency, the Zanzibar Nature Conservation Trust (ZNCT), with sole responsibility for managing protected areas in Zanzibar was not supported by the government. Instead, two alternatives were proposed: establish the Commission for Natural Resources as the protected areas authority, or establish a section within the Commission that would be responsible for managing protected areas. The latter has been opted for and the modalities are being worked out.

Problems facing protected areas under management by private investors include delicate relations with other stakeholders and inadequate capacity to deal effectively with cases of destructive fishing on behalf of the enforcement authority. Problems facing protected areas under the control of the Commission for Natural Resources include disappointment by local communities with the way law enforcement institutions treat cases of destructive fishing and lack of effective mechanisms for revenue collection and expenditure to support management of protected areas.

1. Introduction

1.1. Background

Zanzibar is endowed with a diversity of marine ecosystems that provide protection, feeding, and breeding habitats for a variety of organisms and thus sustain the richness of biodiversity. These ecosystems include mangrove forests, seagrass beds, coral reefs, estuaries, beaches, intertidal flats, and sea water itself. As they are potential sites of extreme resource use conflicts, increased efforts to protect them are urgently needed.

In Zanzibar, the concept of MPAs was introduced in the late 1980s, even though the need for them existed well before this time. Since the 1950s, there have been a range of environmental issues affecting marine ecosystems, such as indiscriminate cutting of mangroves, use of corals for lime production and building blocks, damage to coral reefs by destructive fishing gears and techniques, use of poisons for fishing, and harvest of immature fishes. In fact, the current decline in fish catches can be attributed to these destructive practices, which are common to other countries in the region.

Currently, most coastal villagers in Zanzibar are aware of these environmental issues and their impact on marine resources. Many villagers have taken initiatives to conserve their marine resources for sustainable use. Others have requested the government for assistance to protect their marine areas.

In this presentation, the term marine protected area is used broadly to include all resource management regimes declared by the Revolutionary Government of Zanzibar, through the relevant institution, to be a marine park, marine sanctuary, marine controlled area, or marine conservation area.

1.2. Early Proposals for Marine Protected Areas in Zanzibar

MPAs in Zanzibar were first proposed in 1989 in a UNEP report: *Coastal and Marine Environmental Problems of the United Republic of Tanzania*. Other proposals by the Institute of Marine Science and Biodiversity Strategy report followed in 1993. These reports proposed the following areas for protection:

Unguja Island

- Latham Island and the surrounding marine environment
- Mwarugo and Nyange reefs
- Mnemba Island and the surrounding marine environment
- Menai Bay
- Chwaka Bay.

Pemba Island

- Misali Island and the surrounding marine environment
- Matumbini reef complex
- Mtangani reefs
- Muongoni Bay
- Ras Kiuyu.

2. The Legal Basis for Marine Protected Areas in Zanzibar

MPAs can be established in Zanzibar under the Fisheries Act of 1988. For instance, Section 6(1)(e) of that Act empowers the Director of Fisheries to establish marine parks and sanctuaries in territorial waters of Zanzibar. Section 7(1) of the same Act empowers the Minister responsible for fisheries to declare any marine area as a controlled area.

However, many issues regarding MPAs are not addressed in the Act. For example, nothing is said about community participation or the collection and use of funds derived from management activities in protected areas.

In 1996, environmental legislation was enacted that addressed establishment of protected areas in Sections 70 to 90. Some of the issues addressed by this legislation include:

- setting criteria for selection of national protected areas
- setting categories of national protected area (e.g. controlled areas, reserves, sanctuaries, parks and conservation areas)
- establishment of a National Protected Area Board (NPAB), its functions, powers and rules
- mechanism for managing national protected areas.

This Environmental Legislation addresses issues pertaining to national protected areas, leaving others with different status to be dealt with under other relevant legislation, such as the Fisheries and Forestry Acts.

3. The Existing Marine Protected Areas in Zanzibar

Currently, there are four MPAs established under the Fisheries Act of 1988, all of which correspond to the proposals listed in section 1.2 above. These are:

- Chumbe Reef Sanctuary (management contract with private sector)
- Mnemba Controlled Area (management contract with private sector)
- Menai Bay Controlled Area (community-based management)
- Misali Island Controlled Area (in process of developing community-based management).¹

3.1. Chumbe Reef Sanctuary

Chumbe Reef Sanctuary was established in September 1994 under Section 6(1)(e) of the Fisheries Act of 1988. It is managed by a private investor under a management agreement signed in January 1994 (see case study of Chumbe Island in this workshop report).

No extractive uses, such as fishing, are permitted in the sanctuary. However, in cases of emergency, fishers are allowed to anchor in coral-free areas within the sanctuary.

In the early stages of sanctuary establishment, there were many problems between user groups and the private sector management authority, possibly due to insufficient consultations and reluctance by the user groups to lose access to the area. Fishers frequently used to intrude into the sanctuary, and cases of resulting coral damage were recorded. Law enforcement was difficult because of a lack of facilities, such as patrol boats, communication equipment, and a reliable patrol unit.

The situation is now much improved, and very few cases of law infringement are reported. The employment of people from nearby villages has helped ease tensions and win support for the sanctuary.

¹ Misali Island has now been formally established as a Controlled Area (22 May 1998)

3.2. Mnemba Controlled Area

Mnemba Controlled Area was established in July 1992 under Section 7(1) of the Fisheries Act of 1988. The area includes a healthy coral reef. It is also managed by a private investor. No extractive uses are allowed within this controlled area. However, fishers are allowed to dig up worms for bait from the sand banks during low tides.

In the beginning, there was considerable conflict between the stakeholders and the investors. The stakeholders were not happy with the decision to outlaw fishing activities within the controlled area. They claimed that the coral reef in the area had supported their livelihoods from time immemorial. Consequently, the fishers often entered the controlled area to fish using dragnets and spearguns. Cases of verbal abuse and physical confrontation between the fishers and island staff were often reported.

As was the case for the Chumbe Reef Sanctuary, the Mnemba conflicts resulted from insufficient consultations between the stakeholders and the investor, and reluctance of the stakeholders to reach any compromise with the investor.

Legal measures against the offenders could not be taken for the reasons already explained for Chumbe Reef Sanctuary. However, the Local and Central Governments have intervened and settled the situation. The Mnemba Controlled Area now has new management, which is working with a better understanding and in consolidated cooperation with the stakeholders.

3.3. Menai Bay Controlled Area

The Menai Bay Controlled Area was the result of community initiatives started in Nyamanzi, Fumba, Bweleo, and Dimani villages. The villagers were fed up with destructive fishing practices carried out in Menai Bay, mostly by visiting fishers.

After consultations with the relevant government institutions (Department of Environment and Sub-Commission of Fisheries) and the Institute of Marine Sciences (which carried out a survey to evaluate the extent of habitat degradation), the villagers came up with a pilot plan to manage the marine resources in Menai Bay. This plan banned the use of any destructive fishing gear and methods. It also fixed opening and closing dates for fishers' camps (locally known as "dago"). The whole plan was being executed by a special committee that involved leaders of the four villages and government officials.

Despite the existence of the plan and the local communities' initiatives, destructive fishing practices could not be stopped. Also, the "dago" periods prescribed in the plan were not followed. In general, the pilot plan was not successful for these main reasons:

- there was little cooperation between the four founder villages and the other 16 villages surrounding Menai Bay, as the latter were not involved in development or execution of the plan
- there was no legal basis for the whole plan, boundaries of the conserved area were not known, and the plan was not declared in the Zanzibar Government Gazette
- law enforcement was not efficient due to lack of facilities such as a patrol team, radio communications, a budget for running patrols, and because several provisions of the plan had no legal basis.

After being approached by the Commission for Natural Resources, the World Wide Fund for Nature (WWF) agreed to support the Fumba community initiatives. Among the activities that have been accomplished are:

- fixing of the boundaries and declaring the Menai Bay Controlled Area in the Zanzibar Government Gazette (9th August, 1997)
- establishing Village Committees (including all villages surrounding the Bay), District Committees, and Steering Committees
- purchasing a patrol boat and radios to facilitate communications.

Currently, random patrols are being carried out involving villagers, the Zanzibar Navy, and fisheries staff. There has been a gradual decline in destructive fishing. Four cases involving 65 fishers accused of destructive fishing are now in court.

3.4. Misali Island Controlled Area

The Misali Island Controlled Area has a spectacular, unique, and diverse terrestrial and marine environment. Recent studies have shown that the area has about 42 coral genera and about 300 fish species. It is relatively undisturbed compared to other areas of Zanzibar. Because of that, the area provides a dependable fishing ground and is also an important tourist attraction. In addition, the island itself supports a relatively undisturbed indigenous forest.

The initiative to establish the Misali Island Controlled Area started in 1996, with technical support from the Environment and Development Group Project in Zanzibar. From the beginning, the project took the approach of frequent consultations with user groups and village leaders and, consequently, all pledged to support the

initiative. These stakeholders were involved in the planning process, and now are participating in implementation of the plan through their District Committees.

4. Institutional Arrangement for Managing Marine Protected Areas

The Zanzibar Government Institutions that have an interest in natural resources are the Commission for Natural Resources (the lead institution), the Department of Environment (the coordinating and advisory institution), and the Commission for Tourism (a major stakeholder). All the existing protected areas are, in one way or another, under the control of the Commission for Natural Resources.

In early 1993, these institutions initiated special efforts to establish a single agency with the power, motivation and resources to carry out management of protected areas. This agency would work within the limitations of government policies and legislation, but would be autonomous in financial matters and employment.

The agency was to be known as the Zanzibar Nature Conservation Trust (ZNCT). For some reason, government did not support establishment of the agency and directed instead that an Authority be created that was responsible for protected areas. Two alternatives were proposed: either to establish the whole Commission for Natural Resources as the Authority or to make a section within it responsible for managing protected areas. Currently, the latter alternative has been selected, and mechanisms to achieve this are being worked out.

5. Sustainability of Protected Areas in Zanzibar

The crucial element for conserving protected areas is their ability to generate revenues from conservation activities and use it to support management. All the existing protected areas in Zanzibar have revenue raising opportunities through tourists, researchers, and other visitors.

MPAs managed by private investors under special management agreements with the government have their own mechanisms of collecting revenue and using it to meet operating costs. Thus, the sustainability of these areas in terms of financial inputs from government does not pose any problem.

The problem lies with those MPAs under the control of the Commission of Natural Resources (Misali and Menai Bay Controlled Areas). Revenue collection has not yet started in these sites. However, when it does, all the collected revenue will belong to government and will have to go to the Treasury in conformance with financial procedures. This will prevent any funds raised from conservation activities becoming available for promoting management of the protected areas that generate them, and will jeopardise their sustainability. However, measures have been taken to enable a certain percentage of revenues to be retained on request for management of the protected areas.

CASE STUDIES

BENEFITS OF THE KISITE MARINE NATIONAL PARK AS PERCEIVED BY STAKEHOLDERS

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1. Introduction

1.1. Background

Studies to assess the benefits of no take zones on adjacent fisheries concentrate mainly on the ecological impacts of these areas (Bohnsack 1993, Roberts & Polunin 1991, Russ 1996, Watson 1996). Little has been done to measure the socioeconomic impacts. The assumption seems to be that the expected ecological improvement will be reflected in time by an improvement in the social condition of the surrounding communities. This paper describes the results of a study that aimed to determine if and how no take zones, such as the Kenyan Marine National Parks (MNPs), benefit surrounding communities that use marine resources.

However, the degree of dependence on marine resources varies among communities, and fishing may be the last resort for some. Thus, the time lapse between the closure of fishing grounds and the expected improvement of the fishing around the no take area can have dramatic effects on the communities. It is also known that participation by surrounding communities is essential for successful management of these areas. However, for communities to be willing to participate in management, they need to see the advantages of the no take area and be able to wait for the benefits to appear.

Kisite MNP was chosen as a study site to develop tools to monitor and assess the socioeconomic situation of surrounding fishing communities. The criteria for this choice were: a 20-year relationship between the local people and the MNP, a limited development of tourism, the existence of distinct communities, completed biophysical assessments of the coastal and marine environment (Samoilys 1988; University of York 1993), and a recent study on the role of the Kisite MNP on the management of the reef fish stocks (Watson 1996).

Over the course of a year, the impacts of the MNP were studied to determine the link between the socioeconomic status of the neighbouring communities and the presence of the MNP (employment, changes, wealth, fishery). The assumption behind the research was that if the MNP had improved the situation of the communities, whether directly or indirectly, it would be reflected in their food security. A cumulative food security index using food coping strategies as a food security indicator was chosen as the main tool to measure and compare the socioeconomic status of five villages (Mkwiro, Wasini, Kichangani, Kibuyuni, Anzwani), which are more or less closely associated with the MNP. At least 30% of the families in each village (i.e., people living under the same roof and sharing the same food) were sampled randomly. A girl from each village was employed as a research assistant, translator, and facilitator, which made the fieldwork possible.

An objective of the research was to determine the ecological and historical context in which the MNP was established, and the understanding and perception of the MNP by the communities. The relationship between the MNP and the communities was also studied. Group interviews with fishers and MNP authorities and semi-structured interviews were used to collect the necessary information.

The second and main objective of the research was to measure the impacts of the park on the socioeconomic situation of the people associated with it on both a short term and a longer term basis (i.e., food security, changes in wealth and social structures). The idea was to compare the food security status of villages that have different relationships with the MNP (i.e., occur at varying distances from the MNP or from the main tourism related employers) and, as discovered later, different economic structures. Anzwani was identified as a control population. Questionnaires were designed based on in-depth interviews and group interviews with women in each village. Two rounds of surveys were completed during different seasons, and 216 women/families interviewed twice.

A third objective was to study the importance of various factors that might influence the benefits attributed to the park, such as tourism. It was important to determine whether tourism benefited from the park or contributed to its perceived benefits, such as through creating employment and contributing to improved food security. The information was collected through formal questionnaires and informal interviews.

Some results of the study are presented in this paper. However most data are still being analysed.

This paper is extracted from a study done for an on-going PhD degree (Warwick University, UK)

1.2. Application of the Study

Managing a MNP goes beyond law enforcement to monitoring the state of the environment, user impact, and also impact on users. Monitoring in MNPs is usually perceived as a means to check how fast and well the natural resources recover within the area. However, the impact of the MNP on the surrounding communities also needs to be monitored as they may be affected either directly (loss of fishing grounds) or indirectly (tourism).

Past failures of no take zones are often due to the lack of or poor communication between the management authority and affected communities. It is now a widely accepted opinion that the management of natural resources is about the management of people. Some basic information and understanding are needed to be able to communicate with and effectively manage people.

To many communities, environmental protection as such is meaningless. Their preoccupation is to make a living, hence environmental protection to them may only be of interest if associated with a direct profit. Their economic activities are predominantly based on fishing (e.g., 48-83% of families are fish dependent in four of the studied communities) and tourism, which is increasing in importance (39% of families in Wasini village depend on MNP-related tourism).

This study provided information on the socioeconomic structures of the different communities, their evolution, how the communities relate to the MNP, how they perceive it, and how the MNP has affected their livelihoods. This information should help managers of the MNP through creation of a better understanding of the affected communities, and therefore lead to better communication between them and the management authority. The study will provide enough background information to enable managers to continue or start their research and adapt the approaches and management policy of the MNP if necessary.

2. Costs and Benefits of the Kisite Marine National Park and Incentives for Partnership

2.1. Community Perception of the Kisite Marine National Park

To collect information on the perception of the MNP by the surrounding communities, focus groups were established in each of the studied villages. These focus groups comprised from four to eight young and old fishers. The issues discussed by the groups were divided into history (how the MNP was introduced to them, how and why was it created), relations with KWS, and advantages and drawbacks of the MNP.

Concerning the historical background, all the communities recall the creation of the MNP as something akin to a war. They also recall winning a major battle against the administration to get Mpunguti established as a Marine National Reserve, and thereby enabling them to fish there again. There is general agreement that the MNP was created to attract tourists and generate money for the government. They believe the area was chosen because of interest by the English in the seabirds nesting on the islands included in the MNP, and to increase the patrols to keep out Tanzanians coming to dynamite the reefs for fish. They do not perceive the MNP as being established for conservation or to benefit communities.

Although the communities were fiercely against the MNP when it was first created, they have learned to live with it. The focus groups acknowledged that it takes time to build up a relationship. They slowly got used to the MNP and now can see its benefit, whereas previously they only saw the costs (loss of their rights and fishing grounds). The two steps that led to acceptance of the MNP were the creation of Mpunguti as a reserve and the aid and assistance provided by KWS, which came much later on.

Table 1. Focus group perceptions of the advantages and drawbacks of the MNP

Groups	Advantages	Drawbacks
5	Aid (boats, building of classrooms, wells, etc.)	Unjustified arrests (locking people up)
4	Better control of fishing methods (dynamite and seine nets kept away)	
3	Employment (in tourism, in KWS)	Loss of fishing best grounds
2	Rescue (KWS sends a boat to help fishers in trouble)	
1	Better fish	MNP not well marked Gear often impounded because someone has violated regulations, but the gear has multiple owners Fewer fish as they have moved into the park Authorities suspicious of good catch

The main perceived benefit of the MNP is the aid and assistance given by KWS (Table 1). The project that was most successful in winning acceptance of the MNP was the gift of six boats with engines and fishing gear to

three villages (Shimoni, Mkwiro and Kibuyuni). The building of classrooms has also been a success. However, these projects came 12 years after the creation of the MNP. Another important perceived benefit of the MNP is the improved control of fishing methods, which has reduced destructive types of fishing in the area. It is interesting to note that ten years ago Mkwiro took the initiative to ban the Wapemba seine net fishers. The ban was then supported by the administration. Mkwiro sees a direct link between the ban and the fact that their children can again fish close inshore after school. They see the improved control of destructive fishing methods as a direct consequence of their actions, whereas other communities see it as a benefit of the MNP.

Employment derived from the MNP, identified as a benefit by three focus groups (Table 1), is linked to tourism, which the communities are slowly integrating in their economy. Wasini is the only community with a high percentage (39%) of tourism-dependent families linked to the MNP. This activity is also growing in other communities, such as Mkwiro and Shimoni.

Rescue was mentioned twice as a benefit. Strangely, the KWS rangers interviewed denied they provided rescue services to fishers, nor had they the opportunity to do so. However, several tour operators have helped, which might have been associated with the MNP by fishers.

Kibuyuni, which has 83% of families dependent on fish, was the only group to mention the benefit of better fish linked to the presence of the MNP. They claim to see a difference between the fish caught in the vicinity of the MNP and those caught further away. Other communities often mentioned their reluctance to go near the park as they were afraid of being arrested, which might explain why they do not find differences in fish catches near the MNP.

In recent years, the communities generally have grown used to the MNP and have begun to see it as a benefit, chiefly through aid and assistance. This aid and assistance is the main incentive for communities to accept the park, although there is still some opposition to it. Communities, such as Kichangani, that have not received as much aid as others, still see the loss of fishing grounds as the main negative impact of the MNP. Even though Mkwiro people are resigned to and sometimes supportive of the MNP, they would prefer it to disappear. However, Wasini and Kibuyuni support the MNP and would like it to stay. Wasini benefits directly from park-linked tourism activities (employment, fish demand, private boat owners), which mostly involve young and middle-aged men and women (e.g., as cooks). Kibuyuni villagers see a difference in the fishing and, as the most rural of the studied communities, see future tourism opportunities.

The degree of resignation, tolerance, and acceptance of the MNP by the surrounding communities seems to vary mainly with the amount of aid received. As the communities differ greatly in their relation to the MNP, they are structurally different and hence should be approached with an understanding of these variables.

2.2. Perceived Benefits by Other Stakeholders

2.2.1. Tour Operators

Tourism operations include the larger, structured tour operators and the local boat owners. Questionnaires for the former were specifically distributed to seek their opinion on the management of MNP and fisheries, changes in the area, and mainly to determine how much employment and income tourism generates in the area.

Three sport fishing operations are based in Shimoni but fish in deeper offshore waters, such as the Pemba Channel, along with an operator catering for diving off Pemba. Their activities are not linked to the park.

Three main dhow operators run trips to the MNP. One markets dolphin viewing and catered for up to 12 people a day in the peak season. It is now extending its capacity to 50 people. A small-scale operation based on Wasini Island takes small groups of tourists to snorkel or dive in the MNP, and a larger operation takes up to 150 tourists/day there. An educational tour of Wasini village is also offered by these operators. All the above operations provide traditional lunches. A locally owned hotel on Wasini Island accommodates 20 people in the peak season and has a seafood restaurant that seats up to 100 people. The owner also has dhows to take people snorkelling in the MNP. A mainland-based hotel that has up to 200 people a year, takes people into the MNP to snorkel and dive. These operations are totally linked to and dependent on the MNP. Another seven or eight privately owned boats take tourists into the park daily.

The larger tour operators that use the MNP, other than the Wasini-based one, are critical of park management. They generally agree that illegal activities continue in the reserve, such as spear fishing, that nothing is done about it, and that there is a lack of continuity in management. They try to help as much as they can with management of the park through improving security. They would like to see management strengthened, whereas the communities already see KWS as a forceful body despite their improving relationship.

Small boat owners and people employed by them do not complain about the policing side of management. They depend on the MNP for their livelihood and hence see the direct benefits of it. Their criticism of park management is based on their perception of unfair competition from larger tour operators and inequity in access

to tourists. Some complain that the larger operators try to prevent tourists getting on their boats. They all agree that the MNP provides them with tourists but would like profits to be shared more evenly.

The operations that are independent of the MNP (e.g., sport fishing) support the park. One person interviewed mentioned informally that the park has closed the best area for bait fishing. People had varied opinions on the quality of the management of the MNP and seemed keen to help. However, some felt that the state of the MNP was deteriorating, and damage was more evident. They attributed this to tourist pressure.

2.2.2. Tourists

One hundred and eighty two English and French questionnaires were distributed to tourists using the larger operators to determine why they chose to do the day trip, and whether the park was the main attraction for them. Although marine related reasons (e.g., snorkelling, diving, marine life) were mentioned on 75% of the questionnaires, only 9% of the questionnaires mentioned the MNP as the drawing card. This suggests that tourists might not be familiar with the concept of MNPs and are unaware of the differences in marine life inside and out of the marine protected areas. Their decision to visit the area seemed to be based more on the offer of an excursion than on the existence of the MNP.

3. Improving Current Management and Increasing Commitment to Partnership

3.1. Improve Communication

Interviews provided several points concerning the relationship between communities and the MNP:

- there is no understanding of the environmental conservation function of the area as such (some groups mentioned that the area protected was too large as no one seemed to take tourists to Mako Kokwe indicating the general perception of MNP as a tourism site)
- KWS is still seen as a forceful body
- the MNP is tolerated but some communities would rather it did not exist
- the aid and income to communities derived from the park are perceived as the main benefits.

More needs to be learned about the communities to facilitate communication. This will help to improve management of the park. Communication here means to inform, but also to listen and interact. Managers must put themselves at the often uneducated level of the communities (perhaps by employing part-time facilitators from the villages) to improve understanding between parties.

3.2. Education

Education is a long term process, but essential for the management of natural resources. Children need to do more than just accept the MNP. They need to learn more about why it is there and its values other than direct aid. Children were extremely enthusiastic and responded well to the Marine Environmental Day organised by Wildlife Clubs of Kenya in conjunction with KWS. These projects should be encouraged, along with formal school educational programmes.

Furthermore, the local communities never go into the MNP. It would be interesting to share the park with them. Perhaps a park open day for local people, with fishers as volunteer boat operators, could be organised so that people could have a firsthand look at what the MNP is all about.

3.3. Participation in Monitoring of the Resource

Fishers should be encouraged to participate in monitoring of the Mpunguti reserve, as is being done through the Tanga Coastal Zone Conservation and Development Programme. Women could also be involved in monitoring and assessment of the octopus fishery. It would be profitable for KWS and the Fisheries Department to collaborate and work closer with communities. The Fisheries Department should be involved in the design of a monitoring programme and in the decision over how to distribute tasks to be carried out by the fishers. The roles of Fisheries Officers could be redefined to make them more interesting, generate enthusiasm, and help them understand the importance of their role. Small scale boat operators could contribute to monitoring of resources in the park, as well as regularly report sightings of marine mammals, turtles, and poachers.

3.4. Discussion and Coordination

Tour operators are interested in the MNP whether their business depends on it or not. The larger operators appear keen to help in the management of the park. This opportunity should be turned to advantage, and their involvement should be given recognition, support and encouragement. However, there is considerable discordance among tour operators. To improve management of the MNP, discussions and regular meetings between stakeholders should be organised and facilitated by KWS staff. This would help defuse conflicts among tour operators concerning the park, and would help KWS to identify and coordinate the roles of different stakeholders in management of the MNP.

3.5. Promotion

At present, the main incentive for communities to accept the MNP is the support provided by KWS for their projects (e.g., school rooms), which are usually needed but not directly related to the park or reserve. It would be

valuable for KWS to help these communities promote themselves in relation to the MNP. For example, many women make hats and could be assisted to improve their skills and promote their craft to park visitors. The locally-based small scale tour operators, who complain about unfair competition, could be assisted to promote themselves in hotels like the better organised larger operators.

Finally, tourists do not seem to be sufficiently aware of the attractions of the MNP. KWS should collaborate with tour operators and associations to promote the Kenyan marine protected areas more effectively, especially in Diani, which provides most of the tourists going to the MNP.

4. Concluding Remarks

It is essential to be aware that a MNP is not always a benefit to the neighbouring communities and to seek ways to make it beneficial. To improve the current management of the MNP, coordination of willing partners, education, participation in monitoring, communication, and promotion should be encouraged. It is also important to involve the most willing communities, as well as those that are least supportive and accessible.

To get people to contribute to the management of the MNP will be difficult unless a relationship of mutual understanding is established between the stakeholders and KWS. As the communities themselves say, it takes time and effort to build this relationship, so a long term vision is essential.

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COUSIN ISLAND SPECIAL RESERVE: A CASE STUDY OF MARINE PROTECTED AREA MANAGEMENT IN PARTNERSHIP WITH AN NGO

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1. Introduction to the Protected Area

1.1. Background

Cousin is one of the 115 islands that make up the Republic of Seychelles. It is a very small, low, granite island, 27 hectares in area and 69 metres high. It is about two kilometres from Praslin, the second largest granite island in the Seychelles. Cousin Island is physically dominated by a granite hill running directly into the sea on the rocky south and west coasts and is bordered to the north and east by a broad flat plain of phosphatic sandstone fringed by beaches of sand (Diamond 1985). In 1968, the island was purchased by the International Council for Bird Preservation, now BirdLife International, with funds raised through an international campaign. The island is currently held in trust for the purchaser by the Royal Society for Nature Conservation (RSNC). BirdLife International managed the island from its UK office until this was taken over by BirdLife Seychelles in January 1998. Cousin Island was designated a Special Reserve under national law in 1975, and is managed as a sea and island reserve, with its marine life afforded the same protection as terrestrial biota.

The Special Reserve area includes the surrounding marine waters up to 400 metres offshore in all directions around the island. To the north and east there is about 90% coral cover on the reef although recent coral bleaching has occurred. In the northeast the spur and groove formation has a rich coral community but different from that on the main reef front. Patch reefs are also found here (Frazier & Polunin 1973). A massive synchronous spawning of corals took place at the end of April 1998 (Shah *pers. obs.*). One hundred and sixty nine species of coral reef fish have been recorded within the Reserve boundaries (Scott & Clutton Brock 1998). Approximately 30 hawksbill turtles nest annually on Cousin, one of the most important breeding sites in the western Indian Ocean for this species (Mortimer & Bresson 1994). The transformation of the coconut plantation into a forest of indigenous species notably *Pisonia grandis*, *Morinda citrifolia* and *Phyllanthus casticum* has taken place through BirdLife's ecosystem restoration work. About half of the 130 or so plant species on Cousin are native to the Seychelles, and the island supports four terrestrial birds endemic to the Seychelles. The seabird fauna is of less conservation interest but is more spectacular. Seven species of breeding seabirds nest in numbers exceeding one third of a million individuals. Cousin Island is free of rats and cats, which have wiped out many indigenous species elsewhere in Seychelles.

The National Parks and Nature Conservancy Act 1973 states that a Special Reserve is "an area which the characteristic wildlife requires protection and which all other interests and activities are subordinate." Diamond (1980) lists the specific objectives of the Cousin Special Reserve as:

- to maintain the maximum possible populations of endemic land birds
- within this framework to restore the original habitats of the island
- to maintain the maximum possible population of hawksbill turtles
- to maintain the maximum possible populations of seabirds breeding on the island
- to make full use of the island's educational and research potential.

Activities on the island have traditionally revolved around scientific research, conservation, and education (including tourism). Approximately 125 scientific papers, articles, and reports have been written on Cousin's biodiversity to date. Conservation on Cousin has been hugely successful including the increase in numbers of the Seychelles warbler from 30 birds in 1959 to about 350 in 1998 (Richardson *pers. comm.*). Educational activities through tourism bring 6,000-8,000 visitors a year to the Reserve, which is open to visitors four times a week. There is no overnight accommodation for tourists.

1.2. Partnership Arrangements

Expatriate Scientific Administrators, advised by an Advisory Panel in London and a local Committee on Mahé formerly headed the management of the Reserve. This practice ceased about 1983 when a Seychellois manager and six local wardens took over management activities. Management is currently implemented by BirdLife Seychelles.

The island was declared a Nature Reserve in 1969 under the *Wild Birds Protection (Nature Reserves) Regulations* and further legislated as a Special Reserve in 1975 under the *National Parks and Nature Conservancy Act*. In 1979, the *Cousin Island Special Reserve Regulations* were promulgated under this Act. The Regulations provide authority for BirdLife International to manage and protect the island. Certain actions, such as setting of fees and access arrangements, are to be made in agreement with the Seychelles National

Environment Commission (SNEC). The *National Parks and Nature Conservancy Act* is administered by the SNEC. In 1992, the powers of this Commission were transferred to the Director of Conservation and National Parks. In 1996, the powers of the SNEC were again transferred, this time to the Marine Parks Authority, a move which was seen as inappropriate and ill advised (Shah 1997). To date, no formal links have been established with the Marine Parks Authority. Research and monitoring of biodiversity in the Reserve is discussed with the Ministry of Environment and Transport, the parent Ministry of the Marine Parks Authority, and any other relevant body and the necessary permits are secured prior to implementation, if required.

The island has been managed by the owners, BirdLife International, and since January 1998 through its country office, BirdLife Seychelles. Management authority is provided for by national legislation and implemented in consultation with the government.

2. Mechanisms for Partnerships

2.1. Reaching Agreement

Cousin's first Scientific Administrator was the only trained biologist on the island apart from Agricultural Department staff. He was therefore useful to the government in many ways. For many years the biologists on Cousin were often called upon to help with research and conservation problems in Seychelles (Diamond 1985). This tradition continued through several government administrations and built a solid base for reaching agreements regarding management of Cousin Island Special Reserve. In addition, the local Cousin Committee, which assisted in the management for many years, was composed of senior government staff including the Director of Agriculture (who was then responsible for conservation) and other prominent local citizens. The Committee therefore facilitated government cooperation and support.

The first Director of Conservation and National Parks appointed in 1989 was coincidentally also BirdLife International's Seychelles Representative, a post he had occupied since 1987. Communications with the then Department of Environment was greatly augmented through this singular arrangement. The relations between the government and BirdLife have continued to be cordial and professional. The government has provided tax exemptions for equipment imported for Cousin Island Special Reserve, waiver of Gainful Occupation Permits for expatriate staff, and free tickets on the national carrier for project staff. These concessions were sanctioned by the President of the Republic himself, and more recently by the Vice President who is currently the Minister for Environment and Transport. Mechanisms for reaching these agreements are through formal meetings and/or are made in writing.

BirdLife Seychelles also discusses several other issues that may have an impact on Cousin with various government agencies. Discussions range from climate change to coral reefs through bilateral arrangements and membership of committees including the National Coral Reef Network and the National Climate Change Committee.

Relations are however becoming more complex as Seychelles society evolves and as multiple pressures mount. The immense work that has gone into cementing the special bond between the Government of Seychelles and Cousin over the last thirty years should nevertheless be built on. It is clear that historical ties are now insufficient. More formal arrangements between BirdLife Seychelles and the Ministry of Environment and Transport may be necessary to reduce tensions.

Agreements have historically been reached through personal relationships and the close ties between the Seychelles Government and BirdLife International. However, in a changing and complex society more formalised relations are necessary.

2.2. Accessing Funds

One of the three main activities on Cousin is education, largely through tourism. In the early days, visitors to Cousin were few and far between. For a few of the early years, tourism was facilitated by visits of the natural history tour ship Lindblad Explorer. The owners of this vessel in fact paid the salary of the first Warden. Coinciding with the boom in tourism in the late 1980's, and the subsequent increase in local tour operators and charter vessels, the island has received 6,000-8,000 international and about 500 local visitors a year. International tourists pay a landing fee US\$ 20. There is no charge for locals. The island administration also sells soft drinks and T-shirts. Although the island is open to visitors only four days a week and allows only day trippers, the revenues they provide are sufficient to make Cousin financially independent. Revenues are all ploughed back into the Reserve, into staff salaries, transport costs, housing, and maintenance.

Programmes for monitoring and research on threatened species have been supported by other funds. For some time now these programmes have either been funded through the UK partner of BirdLife International, the Royal Society for Protection of Birds (RSPB), or through University grants. The RSPB is Europe's largest voluntary conservation organisation and supports the operation of the BirdLife Seychelles office. With the creation of local capacity for producing and submitting project proposals within the BirdLife Seychelles office, Cousin is now in a

better position to attract funding. For example, BirdLife Seychelles is in the process of securing funds from a Government Trust Fund administered by IUCN, which would use Cousin as a pilot site for a seabird monitoring programme.

Cousin funds itself through revenues generated by educational tourism. All revenues earned from tourists are ploughed back into Reserve management. Project funds are accessed from overseas, although local resources are now becoming available.

2.3 Designation of Roles

Communication with government regarding any aspect of Cousin or its management is through the country office, BirdLife Seychelles. Representatives of twenty local organisations defined the role of BirdLife Seychelles, including management of Cousin in a fully participatory national workshop in 1997. The work programme of the organisation was set in a Logical Framework Analysis (LFA) model.

BirdLife Seychelles has entered into a series of regular meetings with representatives of the Ministry of Environment and Transport to discuss a range of issues, including Cousin. As much as possible, agreements and approaches are formalised in writing. Because of its stature as the local office of the world's largest NGO dealing with birds and their habitats, BirdLife Seychelles also has access to many other senior government officials.

BirdLife Seychelles is now in agreement with the Ministry of Environment and Transport that it will facilitate the creation of a forum, which will include NGOs and island managers/owners, to discuss a broad range of bird and habitat related issues. The first meeting of the forum will be held in May 1998, with BirdLife Seychelles acting as the Secretariat for it. The forum will assist in fine-tuning roles and enable a more participatory approach to conservation.

In the case of communities and grassroots organisations, BirdLife Seychelles has signed a Memorandum of Understanding (MOU) with the Wildlife Clubs of Seychelles, a school based organisation with 23 chapters and some 600 youth members in districts throughout Mahé and Praslin. The MOU covers the roles of the two organisations within a work programme. The first joint activity was a Workshop on Cousin for 21 Wildlife Club Leaders in late 1997.

Cousin's role in assisting national environment educational efforts will be augmented in the next two years. For example as part of Environment Week 1998 in June, BirdLife Seychelles will organise a tour of Cousin for local policy makers, decision-makers, and community leaders for the purpose of advocacy, sensitisation, and awareness building.

The Royal Society for Nature Conservation (RSNC) owns the neighbouring Aride Island Special Reserve. The Aride management committee still meets in the UK. However, as part of its work programme, BirdLife has commenced discussions with RSNC for joint management of Cousin with Aride to facilitate bird conservation activities and bring the management decisions to the Seychelles where ample capacity exists for this purpose..

Communication with government regarding any aspect of Cousin is through the country office, BirdLife Seychelles, whose work programme has been drafted by an LFA national workshop. The role of BirdLife with other organisations is dynamic and growing.

3. Influences on the Partnership

3.1. Pressure from the Management Authorities

Environment authorities have tended to take a "hands off" management approach to Cousin. One reason may be because of BirdLife International's position as an organisation of high repute that has approached management of the Cousin Island Special Reserve with scientific expertise and effective backstopping. The local manager and wardens of Cousin have also demonstrated an unparalleled achievement in keeping the island poacher-free.

The Environment authority's major preoccupation with beautification and cleanliness over the last several years has overtaken biodiversity conservation as a central activity. The visit to Cousin in 1996 by the late Minister of Foreign Affairs, Planning and Environment exemplified the misperception of the Reserve's value and function, as she disapproved of the low-key, research-oriented, non-interventionist management policy. Pressure to change policy and management practices was short-lived since it was demonstrated that the principal objective of the Special Reserve was protection of biodiversity above all other activities, and that Cousin had demonstrated unparalleled success in species and habitat restoration.

Additional pressure has been exerted lately because of a clash between recent forestry legislation and the long-term management policy on Cousin (in place since purchase of the island) of felling coconut palms to promote restoration of indigenous forest. Coconut palms have been a protected species since 1993. Coconut plantations

initiated over the last 200 years have been one of the greatest ecological disasters in Seychelles. The removal of coconut palms from Cousin is the principal cause of the successful reestablishment of native woodlands on the island and associated recovery of native flora and fauna (Diamond 1985). Despite this, the Manager of Cousin, who was unaware of the legislation, was cited in 1997 for removing mature coconut palms in the Reserve. It is now agreed that only seedlings will be removed.

Management authorities have historically taken a "hands-off" approach on Cousin, but recently there have been tensions with Environment authorities owing to differences in policy and style. The unequalled success of Cousin in conservation may act as a buffer against untoward pressures.

3.2. Pressure from the Surrounding Communities

Open access to resources leading to the "tragedy of the commons" underlies the continued exploitation of the environmental resources in the Seychelles. Many communities and persons still view the islands with a frontier mentality, i.e., environmental resources are boundless and can be used by anyone for any purpose. Because of this, compliance with environmental laws in Seychelles always has been poor. In addition, enforcement has been weak, complicated by a small island society "where everybody knows or is related to everyone else" (Shah 1997).

However, the push and pull by communities surrounding Cousin is low compared to other protected areas nearby. The main reason may be the size of the Reserve. Designation of such a tiny island with its small area of surrounding reefs (0.5 sq. km) probably did not deprive neighbouring fishers of their livelihoods. Another reason for low community pressure is the local management of the island. The manager and his wardens are all residents of nearby Praslin, the second most populous island in Seychelles. As a *Praslinois*, the Reserve Manager, and longest serving employee of BirdLife International, has managed to negotiate an extraordinary relationship with poachers who by and large avoid the island. Clashes with fishers are rare since they mostly prefer not to enter the boundaries of the Special Reserve. This is in contrast to the Aride Island Special Reserve where poaching remains at an all time high, so much so that the Aride management has requested funding for sophisticated surveillance and anti-poaching equipment. Effective protection of the fringing reef around Cousin by its wardens has been scientifically proven to have maintained a reef fish community of high diversity and biomass (Jenning *et al.* 1996). Nevertheless, as the population grows and development increases, the situation on Cousin may change. In particular, when neighbouring areas are depleted of their biodiversity resources, attention may be turned to Cousin and its seabird colonies, turtle nesting beaches, and well-stocked reefs.

The situation on Cousin is unique since the local wardens, all from neighbouring communities, have negotiated a comparatively "poacher-free" environment with their compatriots on Praslin. As the population grows however, demands may rise to exploit Cousin's resources.

3.3. Other Pressures

Seychelles is a small island developing state. The society tends to be parochial in outlook. Jealousy, pettiness, and personal opinions play a large role, sometimes even in policy matters. Cousin attracts its share of detractors because of its success as a first class protected area, run by Seychellois, and which funds itself through educational tourism. Hostility from a few individuals is apparent in meetings and in official discussions.

BirdLife Seychelles addresses other conservation issues as part of its work programme, including the Magpie Robin Recovery Programme. With a large BirdLife Seychelles GEF funded project coming on line soon, the attention to Cousin may be lessened. It may be necessary to recruit an administrative officer dedicated to backstopping Cousin in the near future.

Internal pressure from Cousin staff who are resisting change needs to be taken into account. New policies, both administrative and conservation, will be implemented to put Cousin more in line with international norms and standards. Many of these new policies have been discussed with staff, and several hard liners are already dragging their feet, unable to change with the times.

Multiple pressures including a heavy workload and hostility from others impinge on management of Cousin. These need to be tackled step by step to avoid management muddles.

4. Benefits and Incentives

4.1. Benefits to Other Stakeholders

The economic benefits of Cousin to surrounding communities and the private sector are impressive. Educational tourism to Cousin is serviced by three large travel agencies, and several other locally owned small to medium sized operators and charter boat businesses based on Praslin. Most employees of these businesses are Seychellois. Cousin is also a popular destination for international cruise ships. It is estimated that some US\$ 600,000 is generated from these activities through direct and indirect revenues. Unlike tourism in many

other developing countries, most of the proceeds flow to local businesses. In addition, all the staff employed on Cousin are from Praslin. A few live on Cousin with their spouses in free housing provided by the island management. All in all, the Cousin Island Special Reserve is an important source of income generation for the surrounding communities.

The direct economic benefits to the management authority are minimal, but the inclusion of Cousin in the tourism package of the Seychelles obviously has benefits to government through revenues raised from import duties, business taxes, and social security from businesses involved in tourism on Cousin.

Economic benefits derived from educational tourism on the Cousin Island Special Reserve are important and in large part flow directly and indirectly to locals. Benefits to the management authority are through government revenues.

4.2. Incentives for Participation in Management

The best incentive to manage Cousin is its outstanding biodiversity, a result of BirdLife management. There are few conservation examples in Seychelles where quantified indicators demonstrate a substantial change in environmental quality that is attributable wholly to management intervention. Cousin offers several examples: the transformation of the coconut plantation into what is believed to be an ancestral coastal forest, the 300% increase in population of the Seychelles warbler, the increase in numbers of nesting hawksbill turtles (Mortimer & Bresson 1994), and the significantly higher fish biomass on Cousin reefs compared to other marine protected areas in vicinity (Jenning *et al.* 1996).

The economic benefits to BirdLife are at present minimal, but as previously mentioned the island is financially self-sufficient. This therefore frees BirdLife funds for other conservation work. As an island containing an abundant and diverse biota, the benefits of Cousin to research are obvious. Groundbreaking research undertaken on Cousin has led to publications in the most prestigious scientific journals in the world including *Nature* and *Science*. Other benefits include Cousin's reputation as one of the region's great conservation success stories (Shah 1995).

The incentive to manage Cousin stems from the long-term management of the island by BirdLife thus transforming it into one of the most biodiverse of the granitic islands. Other benefits include its availability as a platform for scientific research and conservation.

5. Increasing Commitment to Partnership

Protected areas in the Seychelles are facing new challenges and pressures from all sides. In response to these threats, protected area managers are being asked to deal with a bewildering variety of issues and concerns. The weakness in national management capacity is an overriding concern, as has been the predominance of expatriate driven plans and programmes. Individual and isolated efforts by several protected areas agencies are hindered by the lack of a protected areas systems plan in Seychelles (Shah *et al.* 1997). BirdLife Seychelles is aware of these issues and is increasing management support for Cousin. Taking into consideration the objectives of the Caracas Action Plan which was developed at the IVth World Congress on National Parks and Protected Areas (IUCN 1993), the following measures are being introduced:

5.1. Integration into Planning Framework

The existing Cousin Island Special Reserve management plan is outdated. RSPB has secured funding for a high-level specialist to assist BirdLife Seychelles draft a new management plan and implement a workshop to facilitate participation by all stakeholders in the exercise. The process will begin during the last quarter of 1998. Alongside the management plan, a marketing study for Cousin will be launched. Again, a senior marketing specialist from RSPB is expected to arrive in Seychelles before the end of 1998. Among other things, Cousin's further potential as an educational tourism destination and as a field station for research will be investigated. Potential partners will be identified and integration with management plans for other protected areas will be pursued.

5.2. Expanding Support

Funding is now available for a new brochure and poster for Cousin. Signs should be erected by the next quarter. A major part of the BirdLife Seychelles work programme concerns education and advocacy, and Cousin will provide a focus for this work. In May 1998, a leading wildlife photographer will produce a data bank of pictures that will be stored on CDs in the BirdLife Seychelles office and used for this purpose. Several educational tours of Cousin by a cross section of society are planned, along with several joint programmes with the Wildlife Clubs, schools, and other organisations. By the end of 1998, a mobile display will be produced on BirdLife's work in Seychelles, including management of Cousin.

5.3. Strengthening Capacity to Manage

Additional funds will be needed to finance future maintenance of infrastructure, purchase of new equipment, refurbishment of the laboratory, and so forth. As a first step, BirdLife solicited a financial and accounting systems study, which is now complete. This will enable the introduction of a normalised and transparent accounting system, with associated checks and balances. In addition, a range of administrative procedures are being introduced to strengthen the capacity of BirdLife Seychelles to run the Reserve. Exchange of Rangers with other protected areas is a possibility for the future.

5.4. Expanding International Cooperation

As part of the Management Plan, a science and conservation action plan will be formulated. Collaboration with scientific institutions has already started. A productive partnership has been initiated with the University of Leicester for research on the Seychelles warbler. This work is ongoing, a computerised database for the species is being established at the BirdLife Seychelles office, and the University is producing a colour brochure and two colour posters. Further partnerships are being developed with international coral reef oriented organisations, such as Coral Cay Conservation and the Shoals of Capricorn Expedition, for the purpose of establishing baseline maps and monitoring stations. It is also envisaged that a geographical information system database will be established for the marine area in the Special Reserve with international assistance. The Government has provided support for funding to be allocated for a Seabird Monitoring Manual to be produced in 1999, which will involve all relevant local stakeholders, and possibly others in the region at a later date.

BirdLife is committed to supporting management for the Cousin Special Reserve. However it cannot do this in isolation. Government must demonstrate its continued support for this process and its trust in BirdLife as a competent management authority. Since there is a genuine institutional capacity problem in Seychelles, it would be obvious that organisations that have demonstrated ability to administer protected areas should be given the full mandate to do so, whilst government turns its attention to other areas with no current management. This is not to say that no scope exists for cooperation with government. Government collaboration would be particularly useful in facilitating joint training for all protected areas staff, including Cousin wardens, in initiating a systems plan for all protected areas, and for assisting in locating funding for projects.

Cousin Special Reserve is a unique protected area with a bright future especially if programmes, in partnership with others, are implemented as planned. Environmental authorities should continue support for this process and assist in securing project funding, joint staff training, and a protected area system plan.

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THE CHUMBE ISLAND CORAL PARK PROJECT: A CASE STUDY OF PRIVATE MARINE PROTECTED AREA MANAGEMENT

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1. Private Protected Areas - a Promising Conservation Management Model?

In spite of their considerable economic potential through tourism, the sustainable management of nature reserves by central government agencies has proven difficult in many African countries. This is because institutions are weak and revenues generated by tourism are normally not re-invested in management of the reserve and related services. In addition, government nature reserves often suffer from conflicting interests among different user groups, particularly traditional users and tourism.

Attempts are being made to overcome these problems by devolution of authority for wildlife conservation to local communities. While these are increasingly favoured by donor agencies and attract considerable funding, government agencies still find it difficult to actually transfer authority and funds to local levels, and local communities have limited management capabilities, particularly where there is no tradition of resource management (Scheinman & Mabrook 1996). As a consequence, privately managed protected areas are now beginning to be acknowledged as an alternative. Indeed, new environmental legislation in Zanzibar specifically allows for protected area management powers to be delegated to private entities.

A recent review of private wildlife conservation initiatives in selected African countries showed that more than half of all protected areas in South Africa are under private ownership and management. Namibia, Botswana, and Kenya also have a considerable number of private protected areas (Watkins *et al.* 1996). As the authors observed, "Countries which have had free-market economies for a long time and in which the purchase of freehold property is permitted, have attracted private individuals and corporate bodies to invest in conservation-oriented initiatives."

The study further concluded that "The private sector makes an invaluable contribution to biodiversity conservation", and that "Private protected areas provide a variety of important conservation and other services. These include providing safe havens, the breeding of endangered species in the wild for subsequent re-introduction, ecological tourism and sustainable use of wildlife." In some cases, the conservation role of private protected areas is crucial for the survival of particular endangered species. The overall conclusion of the study was that "There is much to learn from the private sector, particularly with respect to the economies of managing protected areas through sustainable use of wildlife resources, ecotourism and other enterprises."

Though endowed with a wealth of natural resources, which have a high conservation value, Tanzania so far has not attracted private investment in conservation. Two decades of socialist policies and large-scale expropriations of land, enterprises and private houses resulted in a near collapse of the economy and made the country highly dependent on donor funding. This was compounded by the fact that tourism was not encouraged until recently and the full revenue potential of conservation areas could not be realised. However, a change of international donor policies from the eighties have made economic realities and sustainability an issue, and Tanzania is now undergoing policy reforms towards a more liberalised economy. Private investment is encouraged in general and tourism is expected to become one of the leading economic sectors in the country, while ecotourism is the buzzword of the day.

Encouraged by the more liberal investment climate and the need for investment in marine protection in particular (and being a passionate diver, sailor and amateur marine biologist herself), the initiator of the Chumbe project decided to establish a small private marine park project where the profits from a tourism operation would sustain conservation management and environmental education for local people. Following a search of reefs all around Zanzibar over several months, Chumbe Island was selected as a likely candidate for a marine reserve as it was uninhabited, had a relatively undisturbed environment, and showed little evidence of extractive activities.

2. Introduction to the Protected Area

2.1. Background: Chumbe Island

Chumbe is a small coral island of about 16 ha situated close to the shipping channel to Dar es Salaam about 13 km southwest of Zanzibar town. Based on the efforts of Chumbe Island Coral Park Ltd. (CHICOP), a company created in 1992 for the establishment and management of the reserve, the Chumbe Reef Sanctuary was gazetted in December 1994 under provisions of the Zanzibar Fisheries Act 1988. It is now a fully managed conservation area.

The western shore of Chumbe is bordered by a fringing coral reef of exceptional biodiversity and beauty. The cover and species diversity of reef-building corals are among the highest in the region, and the reef has at least 90% of all coral species recorded from East Africa (Veron 1997). Over 370 species of fish have been recorded, including giant groupers (*Epinephelus lanceolatus*) of up to one metre long, which are rare on shallow reefs, and 16 species of butterflyfish. The latter are coral feeders that are believed to be good indicators of coral quality and diversity (Mildner-Fiebig 1995).

Most of Chumbe island is covered by an undisturbed coral rag forest that appears to be of high conservation value, has been little studied, and is rapidly diminishing elsewhere in Zanzibar and Tanzania (Beentje 1990). Bird surveys conducted by CHICOP in 1993 and 1994 have recorded 45 species, including several first records for Tanzania and Zanzibar, e.g., the Arctic skua (*Stercorarius parasiticus*) and pomarine skua (*S. pomarinus*) (Koehler & Koehler 1994). There is a variety of other species that are no longer seen on Zanzibar because of the predominance of the Indian house crow, a scavenger introduced approximately 100 years ago. The rich fish life attracted a large breeding population of the rare roseate terns (*Sterna dougalli*) in mid 1994, a much noted event in ornithological circles (Iles 1995).

The island has also become a refuge of the rare coconut crab (*Birgus latro*), which is abundant there, but threatened elsewhere in the Indian Ocean where it is widely eaten and used in fish traps. In late 1997, CHICOP in cooperation with the Commission of Natural Resources, started a sanctuary for the endangered and endemic Ader's duiker (*Cephalophus adersi*) in the Chumbe forest, as they could not be protected from poaching elsewhere in Zanzibar. WWF now supports this activity and the establishment of Chumbe as a refuge for animals that will be reintroduced to their former habitats when these are effectively managed.

2.2. Partnership Arrangements

The Government of Zanzibar approved the project as a tourism investment based on the provisions of the Zanzibar Investment Protection Act (1986), and gave CHICOP the lease of the project site on Chumbe Island. After commissioning ecological baseline surveys on the flora and fauna and thus establishing its conservation value, CHICOP negotiated the conservation of the island and the gazettelement of the Chumbe Reef Sanctuary as a protected area in 1994. CHICOP was given management contracts for the whole island and the reef sanctuary.

To develop good relations with stakeholders for conservation of the area, and assisted by the Institute of Marine Sciences (IMS) of the University of Dar es Salaam, an *Advisory Committee* was established that included representatives of the Ministry of Agriculture and Natural Resources, the Department of Environment (DOE), IMS, and leaders of neighbouring fishing villages. The Committee meets once or more per year to discuss the management plan, progress reports, and any problems developing during the year. The most recent meeting was held on Chumbe Island in November 1997 and chaired by the Principal Secretary of the Ministry of Agriculture, Livestock and Natural Resources. In addition, several joint programmes have been conducted with different Government departments (e.g., rat eradication done jointly with the Plant Protection Division in 1997, and excursions of school children to Chumbe Island organised through environmental school clubs under the Department of Environment).

Joint research programmes with the Institute of Marine Sciences are dealing with coral recruitment and transplantation, temperature and tidal current measurements, coral reef monitoring, fish population dynamics, and other topics. Research applications are normally channelled through IMS and follow research regulations prescribed in the CHICOP Management Plan 1995-2005, which give priority to studies deemed essential for conservation of the reef, forest, and notable species.

3. Mechanisms for Partnership

3.1 Reaching Agreement

Several years of pre-operational investment were needed to patiently and tenaciously explore legal possibilities for the protection of the island, campaign for this in a politico-administrative environment that did not support such initiatives, and negotiate an acceptable project design. Seven different Zanzibar Government departments with ambiguous and sometimes divergent policies were involved in the process.

As Zanzibar had no policy or legal framework for conservation areas until 1997, no agency charged with protected area management (still the case today), and no possibility to establish NGOs until 1995, CHICOP had to be presented as a tourism project. The process leading to establishment of the island and reef sanctuary is summarised below:

- From 1991 to 1995, with the decisive support of the Department of Environment, negotiations were held with concerned Government departments and three fishing villages adjacent to Chumbe Island
- In late 1992, the project was finally approved by the Zanzibar Investment Promotion Authority (ZIPA) and CHICOP was registered as a limited company for the management of the future reserve
- On site conservation measures were taken immediately after approval of the project in 1992, with the employment of park rangers and a resident marine biologist

- Negotiations for the gazettelement and the Management Agreements for the fringing reef and the forest took another two years - in the absence of legal provisions for conservation, a clause of the Zanzibar Fisheries Act 1988 provided the legal justification
- The reef sanctuary was gazetted by the Government of Zanzibar in 1994
- Building permits and purchase of the ruined former lighthouse keeper's house from the Port Authority were finally concluded in late 1995, and building operations started more than three years after approval of the investment.

CHICOP now holds:

- 33 years land lease of 2.5 ha of cleared land on Chumbe Island (the only development allowed on the island)
- Management contracts (10 years, six remaining) for the Chumbe Reef Sanctuary and the Chumbe Forest Sanctuary (33 years)
- A Management Plan 1995-2005 for the Nature Reserve
- A ruined building purchased from the Port Authority and now rehabilitated as Park Headquarters and Environmental Education Centre, as well as seven visitors' bungalows, all on Chumbe Island
- A landing site opposite Chumbe Island (land lease pending since four years).

3.2. Accessing Funds

The investment over the several years of negotiations, establishing the logistical and operational infrastructure, and running costs were funded entirely privately. Particular project components were financed by several small donor funds available for private initiatives. Though these small funds are sometimes very demanding and costly in terms of administration, they helped to increase the credibility of CHICOP as a conservation project.

However, these funds did not cover basic running costs of the reserve, which from 1994 have cost about US\$ 3,000/month for park rangers, administrative staff, boatsman, driver, watchmen, fuel and maintenance of engines, boats and car, office rent, and communications, etc. Professional staff attached to the project are volunteers, including the Project Director (working without pay for over seven years), two volunteers (working on the education programmes for over two years), and a building supervisor posted by the Aid agency GTZ-CIM. Most of the ecological research, ranger training, and conservation management on Chumbe Island has been done by volunteer scientists sponsored by volunteer agencies or paid a mere subsistence allowance by the project.

A recent economic analysis calculated the total investment up until the end of 1997, at costs adjusted to 1997 prices, to be US\$ 1,163,657 (Neckenig 1998). Approximately 60% of this supported conservation, education, and research. The remaining 40% covered the construction of tourism facilities (Soley 1997).

Donor funding altogether covered about a third of the project investment. The following project components were at least partly funded by donors:

- One building supervisor for the Park HQ funded for 2 years by GTZ-CIM (1996-98)
- Short-term experts provided in the fields of nature reserve management by the British Executive Service Overseas (BESO), and for advice in photovoltaic energy, water-proof cisterns, boat building, rat control, financial analysis, and building supervision by the German Senior Expert Service (SES) and the Irish Agency for Personal Services Overseas (APSO)
- One boat, snorkelling gear, and educational materials provided by EC-Microprojects Tanzania
- Building costs and equipment for the Environmental Education Centre funded partly by GTZ-EM, GTZ-CIM-Germany, and the Netherlands Embassy in Tanzania
- Establishment of rainwater catchment and greywater recycling system funded partly by the GTZ-German Appropriate Technology Exchange (GATE), Germany
- Establishment of forest nature trails funded by the GTZ-Tropical Forests Programme
- Establishment of marine trails funded by the Netherlands Embassy in Kenya
- One used ranger patrol boat donated by the International School Munich, Germany
- Establishment of an Ader's duiker sanctuary funded by WWF-Tanzania.

3.3. Designation of Roles

A management plan was produced in 1995 that included the definition of roles and responsibilities for CHICOP and government. The Government responsibilities outlined in the plan (and based on the previously signed Management Agreements) are mainly related to public announcement of all legal and regulatory measures concerning the reserve and their enforcement through the relevant organs (Fisheries officers, Navy, Marine police, Courts of Law), while CHICOP has full managerial and financial responsibility for Chumbe Island.

The management plan was endorsed by the Advisory Committee after two meetings on the 11th August 1995 and is now the basis for project operations.

4. Influences on the Partnership

When Chumbe was chosen in 1991, the island was uninhabited and seemed to face little immediate threat. The old lighthouse built during colonial rule in 1904 and other ruined historical buildings appeared abandoned. A lighthouse keeper was still on the payroll of the Harbours Authority but had not resided on the island for decades. Fishing was traditionally not allowed on its western side, as small boats would have obstructed vessels plying the shipping channel to Dar es Salaam, and also because the whole area surrounding the island was a military area where the army routinely conducted shooting range exercises from the adjacent Chukwani coast. In addition, few boatmen could afford an outboard engine to go to this most distant of the islets surrounding Zanzibar town. Therefore, conditions appeared favourable for the establishment of a protected area there, and because no traditional users would be displaced or needed to be incorporated or compensated.

With the advent of liberalisation in the early 1990's, things changed rapidly in Zanzibar. The booming tourism industry took possession of the most attractive sites and also created a rapidly growing demand for lobsters, kingfish, and other upmarket seafood, leading to their overexploitation. High prices made fishing an attractive occupation for urban youths who had little respect for traditional fishing grounds and the more conservative traditional fishing practices, and who could afford modern motors and fishing gear. Destructive fishing methods, such as dynamite and "kojani" or "kigumu" fishing (smashing corals to scare fishes into nets) became widespread in the region (Horill 1992, Guard 1997).

These changes increased the management challenges, particularly for a private initiative, which needed but could not count on the enforcement machinery of government. Though the reef sanctuary was gazetted by the Government of Zanzibar in 1994, and Management Agreements obliged Government to assist with enforcement, this was left entirely to the park rangers employed, trained and equipped by CHICOP.

4.1. Pressures From the Government

As mentioned above, the absence of legal provisions for conservation and a politico-administrative environment that did not encourage such initiatives, obliged CHICOP to present the project primarily as an investment in permanent tourism facilities. This had important financial implications.

The official investment policy in Zanzibar favours high investments in large tourism projects (for foreign investors the minimum is now US\$ 4 million). The Government of Zanzibar would lease land only to projects that erected permanent structures. To avoid land speculation, leaseholds of projects that fail to do so in a specified time are revoked.

In this context, the Chumbe Island project became a challenging case of a private investment in creating and managing a conservation area that combines the advantages of more efficient private management with the revenue potential this appears to have in the growing tourism market.

Even after approval by the Zanzibar Investment Authority, the innovative design of CHICOP has complicated project implementation to an extent that commercially-oriented investment would not have accepted. The negotiation of the preparatory steps, such as land lease, building permits, gazettelement and management agreements for the conservation area, as well as research permits for scientists and project staff, took several years to conclude, delays which the investor was not prepared to avoid by paying bribes. The very substantial bureaucratic delays have more than tripled implementation time from two to seven years and multiplied costs from an original estimate of about US\$ 250,000 in 1991, to an actual expenditure of more than four times that amount.

Up to the present, some Government departments regard CHICOP as just another tourism venture, while the activities and achievements on the conservation side are only beginning to receive official support and recognition within the country. Despite the fact that a very large part of the investment funds and time was spent in the conservation of Chumbe island and its establishment as a managed protected area, CHICOP enjoys no favoured status or exemption from the very substantial, and ever increasing costs of land rent, licenses, permits, fees and taxation. These now reach a minimum fixed amount of US\$ 10,000 per year (about a third of the operational costs).

4.2. Pressure From Shipping Traffic

The Chumbe Reef Sanctuary borders the shipping channel from Zanzibar to Dar es Salaam. Although this did not present any problem in the early nineties, the rapidly increasing tourism traffic has changed the situation. Some of the passenger ferries routinely cut corners on their final approach to Zanzibar harbour and enter the protected area. Their high-powered engine thrust drastically increases sedimentation on the reef, reducing visibility to zero and stressing the corals. Increased algal growth has been observed at times, and the effects of zero visibility on inexperienced snorkellers can be quite frightening and a safety risk.

Over the years, the rangers and resident marine biologist have regularly radioed the captain of one particularly notorious vessel, with some success. Project staff have several times approached the management of the shipping companies to raise awareness about the problem. However, this is an issue where a lasting solution would also require some support from the Government of Zanzibar.

4.3. Pressure From the Surrounding Communities: On-Site Management Experiences 1993-1997

CHICOP employed and trained fishers from adjacent villages as park rangers and stationed them on the island to guard against fishing activity in the protected reef area. From 1993, the rangers have made daily monitoring reports of the activities within the protected area. Data extracted from the rangers' daily monitoring reports demonstrate a clear decline in the total number of violations over time, particularly after 1995. This suggests success by the rangers in deterring illegal activity within the protected area. Riedmiller (1998) describes in detail the methods used by the rangers to deal with fishers in the protected area, the response of fishers to the rangers, and how these responses have changed over time.

Between 1993 and 1996, the Chumbe rangers have assisted over 110 vessels carrying between two and 20 fishers. The help given by the Chumbe rangers included: fixing broken sails, engines and the like; providing food, water and refuge from bad weather; providing use of the radio; and fixing leaking and sinking boats. No vessel is ever turned away by the Chumbe rangers who will go out of their way to provide assistance wherever possible. This attitude has been important in reducing tensions between the CHICOP management and neighbouring communities.

4.4. Other Challenges and Lessons Learned

4.4.1. Innovative Eco-Architecture and Logistical Difficulties of Developing an Island

Other challenges resulted from the very innovative architectural design of the Park HQ and the visitors' accommodation, as well as from the difficult logistics of developing an island. Energy and water supply and waste disposal on Chumbe Island are based on state-of-the-art methods for nature reserves. Solar panels and rainwater catchment provide energy and water. Waste and sewage disposal are particularly important in sensitive coral areas. The installation of compost toilets instead of flush toilets not only reduced the water consumption, but also avoided any sewage run-off into the sea. Greywater from showers is recycled through sand filters and garden irrigation. These systems were unknown to local builders and craftsmen, and there was little experience available on their functioning under tropical island conditions.

Chumbe is built of fossil coral rock and has no source of freshwater. Therefore, sand, water, and all other building materials had to be transported to the island, significantly increasing construction costs.

4.4.2. Tapping the Ecotourism Market for Revenue Generation

Based on the high values placed on unspoiled and pristine destinations in the tourism market, a feasibility study in 1991, updated in 1994, and a study on tourism in Zanzibar commissioned in 1995 by the International Finance Corporation assessed the economic viability of the Chumbe Island project to be good (Bentley & von Gunten 1995).

However, revenue expectations had also to be corrected. Here the lesson learned is that income from ecotourism is by no means automatic, even when tourism is booming as it is in Zanzibar. The principal reason for *this* is that all activities in conservation (e.g., Jozani forest, Menai Bay, Misali Island, etc.) are donor-funded, with *little* or no management costs passed on to visitors. As a consequence, most local nature destinations can be visited at very low cost by individual tourists and tour operators, making privately financed ventures like CHICOP not competitive.

From 1997, CHICOP started offering day excursions to the island for US\$ 50 per person, which includes boat transfers, guidance through the marine and forest trails by the park rangers, hire of snorkelling gear, a full meal, and drinks. However, few travel agents have shown interest in this, as they would only get commission when sending clients to Chumbe. It is more profitable for them to charge similar or higher rates and organise trips themselves to Prison and Bawe islands, for example, where there are no management costs.

CHICOP is facing unfair competition from unmanaged nature destinations and donor-funded projects subsidising conservation. After experimental operations over one year, the lesson learned is that local marketing of Chumbe Island has only a limited potential for generating the income needed to sustain a professionally managed reserve and to subsidise environmental education for local people.

A recent financial analysis by an independent consultant concluded that, with an optimistically estimated occupancy rate of 50%, CHICOP would have to charge an all-inclusive overnight rate of at least US\$ 350 per person to start turning a profit. Using the same rate, an occupancy of about 30% would be required to cover running costs (Neckerig 1998).

5. Benefits and Incentives

5.1. Benefits to Other Stakeholders

The Chumbe Island Coral Park project provides crucial conservation services to the population of Zanzibar including fishers, schoolchildren, and the population in general. Specifically:

- *The project has secured continued protection of valuable flora and fauna*, in the absence and/or inability of government agencies to do so: Zanzibar has no other effectively managed protected areas, and no institutions to manage them.
- *The sanctuary helps restocking of locally depleted fisheries and promotes recovery of degraded coral reef ecosystems*: Chumbe is located upstream of the most important fishing grounds opposite Zanzibar town and provides a protected breeding ground for fish, corals and other species which then spread out to replenish nearby overfished and degraded areas.
- *Chumbe Island contributes to biodiversity conservation and ecological restoration*, by effectively protecting a coral reef that supports at least 90% of the reef-building coral species recorded from East Africa, an undisturbed reef flora and fauna, breeding populations of rare migrant birds (e.g., the roseate tern), a large population of the threatened coconut crab, and a breeding population of the endangered Ader's duiker. Chumbe Island also offers a rat free safe haven for as yet unknown flora and fauna typical of intertidal reef flats and coral rag forests for study and conservation.
- *The project provides employment and training for local people in conservation area management*. Since 1992 five former fishers have been trained in marine park management and monitoring techniques for the reef and the forest. They have also learned English and the knowledge needed to guide both local and foreign visitors on the island. More park rangers can be trained by the project, to be posted to similar projects in the region.
- *The sanctuary helps create environmental awareness among fishers* of adjacent villages who have been convinced over the years by the park rangers, former fishers themselves, to understand the rationale of a marine protected area, to respect the boundaries of the Reef Sanctuary, and in exchange enjoy increased fish harvests in the vicinity. This has been particularly successful, as over the last two years infringements of the park regulations have become rare.
- *The project gives permanent help to local fishers in distress*. As there is no maritime rescue service available in Tanzania, the assistance given by the Chumbe rangers to fishers during rough weather, and when boats, engines, and sails need fixing, is crucial. They also provide radio communication from the island to anyone in need.
- *The project provides a direct source of income to local fishers*. Local fishers will also benefit directly by selling fish and other seafood to the island restaurant once tourism visits are more regular on the island.
- *The sanctuary contributes to capacity building of government staff* from different departments who have been involved in the Advisory Committee and dealt with important issues concerning the establishment and management of the reserve, particularly through the discussions preceding the approval of the Management Plan 1995-2005. During the recent rat eradication campaign, staff of the Plant Protection Division were trained in rodent control techniques in nature reserves, repeating the work on Misali Island, another island proposed for protection.
- *The project has created unique facilities for environmental education* for school-children and other visitors. Nature trails and educational materials (in Kiswahili and English) have been developed for the forest and reef. From 1994, several excursions of school children have been organised through the Department of Environment, based on the initiative of a VSO-volunteer responsible for environmental clubs in schools in cooperation with CHICOP.
- *The project cooperates with the Harbours Authority to keep the lighthouse functioning*. The rangers now act as lighthouse keepers and light the old AGA-gas-powered system (installed in 1926) whenever it goes out. Before this, the lighthouse rarely functioned. This service is particularly important for the traditional shipping traffic (dhows) which has no access to modern navigational aids.
- *The sanctuary provides valuable experience in the financially sustainable management of protected areas*. The project is yielding many insights useful for solving the problem of financial sustainability in the management of protected areas in Zanzibar and elsewhere, and the lessons learned will contribute to the development of a sustainable protected areas system in Zanzibar and the region.

In summary, Chumbe is offering services more typical of large donor-funded conservation projects that usually are not contemplated by private business.

5.2. Incentives for Private Investment in Establishment and Management of a Conservation Area

Though a private initiative, the intention has always been to run CHICOP as a non-profit venture and to reinvest any tourism-related profits in conservation area management and environmental education of local people. However, as investment costs have soared and the commercial viability is now at risk, it would be hard to find compelling reasons to encourage other potential investors to follow the example of CHICOP, particularly in the politico-administrative conditions prevailing in Tanzania/Zanzibar.

6. Increasing Commitment to Partnership

The Chumbe experience suggests that private management of marine protected areas is technically feasible and efficient, even when the enforcement machinery of the State is not available or is ineffective. The costs of private management are probably considerably lower and, a point often overlooked, the incentives to struggle for commercial survival much stronger, than would be the case with a donor-funded project.

Chumbe Island now provides an undisturbed breeding ground for endangered species in the coral rag forest and a pristine and diverse coral reef harbouring a rich fish population. This confirms the findings of Watkins *et al.* (1996) concerning the importance of the private sector contribution to biodiversity conservation, which is now also recognised by some Government departments and donor-funded conservation projects in Zanzibar. One recent example is the sanctuary established on Chumbe island, with WWF support, for the endangered Ader's duiker following the request of the Commission for Natural Resources and the CARE-Jozani-Chwaka Bay Conservation Project.

However, the experiences of the Chumbe Island project also suggest that the commercial viability of private conservation projects is at risk when cumbersome bureaucratic requirements increase costs for investment in general, and for innovative project designs in particular, and as long as unmanaged or donor-managed wilderness areas can be accessed by the tourism industry at very low cost (though still charging high prices). What the Chumbe project needs now is additional investment in professional marketing overseas to access the wealthy markets directly. It is hoped that the selection of CHICOP for presentation at the World Exhibition EXPO 2000 will provide world-wide publicity.

There are other more fundamental issues in Tanzania (and probably some other African countries) that discourage private involvement in conservation. Investment in this field is necessarily long-term and requires high security and a supportive legal and politico-administrative environment. The following conditions would need to be addressed to make the country more attractive for private investment in conservation:

- Land tenure in Tanzania and Zanzibar is only available on leasehold, in contrast to other African countries, such as South Africa, Namibia, Botswana, Kenya, that allow freehold and have attracted considerable private investment in protected areas (Watkins *et al.* 1996).
- While the above situation could be offset to a certain degree by legal provisions creating special incentives for investment in environment and conservation, such as long-term land lease and management rights, reduction of, or exemption from land rents, licenses, fees and taxes, these do not exist.
- In Zanzibar particularly, the legal framework does not enhance security of investment in conservation as private investments under the 1986 Zanzibar Investment Protection Act are affected by a particular weakness of this Act when it comes to the issue of expropriations and compensation.² Recent additional legislation, the Environmental Management for Sustainable Development Act 1996, in fact further weakens the provisions of the 1986 Investment Act against the expropriation of private property, as it specifically facilitates "extinguishing existing rights" in protected areas for the sake of conservation.
- Though the same Environmental Management Act (1996) provides for management powers to be delegated to private bodies, this may not encourage private commitment to conservation, as proceeds would have to be passed on to the planned Government management authority. In actual fact, the Act ignores a situation where the investment in conservation and the establishment of a protected area has been done by a body other than the State.
- Second-tier constraints³, such as the very cumbersome bureaucratic procedures and wide discretionary powers of civil servants for granting land leases and building permits, as well as residence, work, and research permits for expatriate staff, encourage corruption and increase costs of investment. In addition, the customary annual budget speeches announcing sometimes far-reaching changes of legislation affecting these conditions for foreign investment also increase investment costs and add to economic insecurity.
- Some long-term investors in conservation may wish to retire in the country of their project. Present immigration laws in Tanzania do not allow this, and foreigners have to renew their permits every year at considerable cost.
- Another disincentive for private investment is the present labour legislation and administration inherited from the socialist past, when the State saw its role in defending workers' rights against employers. For example,

² A legal analysis of this Act concludes that "it seems that the Act was drafted in ignorance or disregard of the controversy at the international level over the issue of compensation for nationalised property. One indication of this is the looseness in the use of certain important terms and the consistent inconsistency... the investor can only appeal ... against the amount of compensation granted but not against the decision of Government to acquire or nationalize his property (p.349-350)" (Peter 1988).

³ In a recent analysis of the investment climate in African countries, Rauth (1997) concludes that, in spite of major policy reforms towards liberalisation of the economy, second-tier constraints remain which "become overwhelming and pose a critical threat to continued formal private sector development". As a heritage of socialist or state-driven economic policies in the past, "most African countries still use control oriented approaches that have resulted in rule-driven bureaucracies with little service mentality. Institutional practices have been designed with the assumption that the private sector is the antagonist and procedures and regulations are formulated under the assumption that the private sector is guilty until proven innocent. This approach has resulted in particularly cumbersome regulations. In addition, the controls have given government officials wide discretionary powers which have encouraged corruption. Although taxes have been simplified and lowered, they remain numerous, ambiguous and complex. In Tanzania, officials at one prominent business organisation estimate that 80% of all businesses must cheat to survive - and tax liabilities can represent as much as 60% of gross revenue." Rauth concludes that "the combination of the ambiguous environment and high taxes created a hothouse for corruption. Business people need to pay bribes to survive and remain competitive. Not surprisingly, civil servants perceive business people as corrupt, which leads them to erect more controls and more stringent regulatory processes, resulting in even longer delays. In reaction, businesses resort to bribes to accelerate the process. As a result, a vicious circle of increasing delays (and) corruption is created for formal sector enterprises."

in Zanzibar it is difficult to sack employees because of theft and embezzlement, even when caught red-handed.

- Finally, capital recovery from investment in conservation is typically dependent on one single sector of the economy - tourism. The tourism industry is particularly volatile and sensitive to political turmoil (often associated with election periods), adverse weather conditions (*el Niño*) and perceived security and health risks (cholera epidemics, etc.). In 1997 and early 1998, East Africa as a whole had more than its fair share of all of this, with an immediate, and sometimes drastic decline in tourism arrivals.

6.1 Desirable Short- and Mid-Term Support From the Zanzibar Government Authorities

There is little doubt that the above issues present a big challenge indeed if the aim is to make Tanzania and Zanzibar more attractive for private investment in general, and private commitment to conservation in particular. It would probably take many years of sometimes painful political decisions and determined action (confronting vested interests) to reform the present legal, institutional, and regulatory environment for investment.

However, the Zanzibar Government could take certain short-term measures within the present legal and regulatory framework that would greatly help safeguard the financial viability of CHICOP as a conservation project and facilitate the task of project management. These are:

- *Granting CHICOP the status of a non-commercial organisation* by the Ministry of Finance, with the concomitant (at least partial) exemption from land rents, licenses, fees, and taxes. Examples of the latter include the annual "Marine activities license" of US\$ 1,000 demanded by the Department of Tourism for allowing visitors to snorkel at Chumbe. In addition, CHICOP has to pay US\$ 5,000/year for the land rent of the small developed plot on the island. Taxation is also excessive for a small project like CHICOP. Expatriate staff have to pay income tax over US\$ 500 assumed income per month, while project activities depend heavily on short-term services of volunteer professionals who work for free or for subsistence only.
- *Extension of the duration of the Reef Management Agreement*, from the remaining six years to ideally the 33-year duration of the land lease agreement, by the Ministry of Agriculture, Livestock and Natural Resources. This would substantially increase investment security and allow CHICOP to extend the capital pay back period over a longer, more realistic period.
- *More sympathetic treatment concerning residence, research and work permits* for project staff and volunteers by ZIPA and the Immigration and Labour Departments. At present, it takes a minimum of three to four months to process permits. These are expensive and sometimes refused without clear reasons. In addition, applicants have to wait outside the country and are typically sent to Kenya at CHICOP's expense.

Perhaps the Chumbe Island Project is ten years before its time for this part of the world. Certainly, environmental problems and degradation are not felt severely enough at the political level for conservation to be perceived as a necessity and a priority. Also, donor money was still abundant and easily available at the onset of the CHICOP project so that partnership with the private sector was not seen as a valuable option. However, it is extremely encouraging to note that the fishers that have become park rangers, who were best placed to feel the direct effects of increasing environmental degradation and had no access to donor money, are now the staunchest conservationists on Chumbe. They proudly and very competently show visitors around the reef and forest. Without them, their enthusiasm, commitment, and untiring vigilance, Chumbe Island would not have become the fascinating conservation area it is today, and the project initiator would have been demoralised by the many obstacles encountered over the years and probably would have stopped the project somewhere halfway.

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A CASE STUDY OF COLLABORATIVE MANAGEMENT OF MARINE PROTECTED AREAS IN PARTNERSHIP WITH COMMUNITIES

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1. Introduction to the Protected Area

This case study concerns collaborative management of coral reefs and fisheries that was facilitated by the Tanga Coastal Zone Conservation and Development Programme. These plans were formulated by the villagers and local government officers for two villages, Kigombe and Kipumbwi, in the Tanga Region of northeastern Tanzania.

1.1. Background

The area covered by the Kigombe agreement includes a poorly developed fringe of mangroves, 14 coral reefs, extensive seagrass beds, and sand flats. There are 35 km of coastline, with six coral reefs on the edge of the continental shelf (outer patch reefs), five adjacent to the coast (coastal reefs), and four between the coast and continental shelf (inner patch reefs). Using the ratio of live:dead coral, four of the 15 reefs were found to be in good condition, four were in a moderate state, five were in poor condition, one was in very poor condition and had been badly damaged by dynamite, and one was too deep to be surveyed. Fish density was low or very low on all reefs but one (south Karange). Coral diversity is about average for Tanga region.

The Kigombe area is especially important for crab plovers *Dromas ardeola*, having more than 1% of the world's population. Crab plovers have been estimated to have a total world population of less than 50,000 (Shurcliff, pers. comm.). The Kigombe area has up to 750 crab plovers in a distance of approximately 20 km. This figure compares favourably with other important sites (e.g., Mafia Island, Tanzania), and is much higher than any for Kenya or South Africa.

The Kipumbwi agreement covers an area that has a Mangrove Reserve in the estuary of the Mto Msangazi, 16 coral reefs, extensive seagrass beds, and sand flats. There are six outer patch reefs, four inner patch reefs, and six coastal reefs. One reef was found to be in very good condition, four were in good condition, and the rest were in a moderate to poor state. Fish densities were generally low, being relatively high on only three reefs. With the exception of Nyamvi (a deep outer reef), outer reefs invariably produced the highest number of species caught. Coral diversity on the outer patch reefs is high, with Mwamba Dambwe having 40 genera, the highest figure recorded for any reef in the Tanga region.

Both management action plans address declining income from fisheries, which was the major concern of villagers. This concern is reflected by the overall objective of the plans: *Increased income from higher fish catches*. Each plan also recognised the need to increase reef fish stocks. This is expected to be achieved through conservation measures and reduction of fishing pressure on reef stocks. This in turn will be achieved through diversification of fishing activities and reduction in the numbers of fishers. Key result areas are:

1. Reduction of illegal fishing (enforcement of existing regulations).
2. Reduction of legal but destructive techniques.
3. Closure of reef(s).
4. Trials of fish attracting devices.
5. Reduction in fishing pressure through control of the numbers of visiting fishers.

The objective, purpose, and all results have objectively verifiable indicators built into the management plans.

1.2. Partnership Arrangements

The management action plans define the roles and responsibilities of villagers and government personnel for each activity and the time frame in which they are to be achieved (Annex 1). To date, there is no formal agreement between government and local communities but the management action plans represent the agreed strategy of the communities and District, Regional and Central Government. In both the implementation of activities and the monitoring programme, emphasis is placed on the communities through a representative elected by the management committees. The committees are the Kamati ya Doria (Patrol) at Kigombe and the Kamati Ulinzi na Usalama (defence and security) at Kipumbwi. A study conducted by the Tanga Programme has shown that these committees are representative of the stakeholder groups (Gorman *et al.* 1996). These committees have been given the overall responsibility for the implementation of the agreed actions. District personnel (Natural Resources Officer, Fisheries Officer, and Community Development staff) and Programme

staff provide technical assistance to the village committees, follow up on governmental issues affecting implementation (such as encroachment by trawlers and legislation), and provide the link between the communities and central government.

2. Mechanisms for Partnership

2.1. Reaching Agreement

The process of management plan development started with a series of workshops where villagers and government personnel together identified critical issues, their perceived causes, and possible solutions to resolve them. At the same time, participatory socioeconomic and coral reef surveys and a study of existing traditional management systems (Scheinman & Mabrook 1996) were undertaken.

The villagers then formed village committees to deal with fisheries related issues. At the last of the meetings that involved a large number of users, they expressed concern about the amount of time they were spending to develop the plan. Their solution was to give the management committees the mandate to continue development of the plans on condition that the final action plan be presented to a meeting of users for approval.

Minutes of all meetings including attendance were recorded. An average of 91 villagers attended meetings of users. Of these, 9% were female and 91% were male, representing approximately 91% of resident registered fishers. Attendance of committee members at the subsequent meetings was fairly consistent, averaging 28 people (all members of the fisheries committees plus others from other committees). Participants at committee meetings included 25% female and 75% male. District staff attendance averaged five people per meeting. A separate study conducted by the Tanga Programme showed that most villagers were aware of and supported the action plans (Gorman *et al.* 1996).

After the villagers reached agreement on the plans, these were taken to other villages that shared the reefs and fisheries resources covered by the plans for a further round of discussions. The village governments and key resource users of these neighbouring villages suggested and discussed modifications to the plans. These were adopted if agreed and taken back to the original villages for final approval by the users. The plans then passed through a lengthy approval process at the village and District government level before passing to the central Fisheries Division for final approval and endorsement.

Lessons Learned:

1. Participatory resource assessments, done jointly with government and village resource users, have been influential in changing attitudes and building better relationships between villagers and government officers. The resource assessments were the start of participatory dialogues.
2. It is important to verify resource users' perceptions of resources; independent observations were made for coral reefs off both villages.
3. Village resource users have displayed considerable knowledge and awareness of the state of their coastal resources, but they often lack suitable alternatives for harmful practices.
4. Focusing on a small number of priority issues is very important in gaining the support of the village and in concentrating on the critical actions to address them. Setting clear objectives for village action plans is critical for ensuring that everyone knows what they are trying to achieve and in focusing activities to reach them.

2.2. Accessing Funds

Funding sources are presently not fully developed. The policy of the Tanga Programme is to use existing mechanisms wherever possible, while continuing to test new approaches. Revenue from fisheries is raised from licences and fish catch levies. The former is a flat charge assessed at the start of each calendar year. The latter is a tax imposed by village and District governments on catches landed at designated landing stations. Existing revenue collection is very poor, raising only 50% of the possible amount, and in some cases the cost of collection exceeds the revenue realised. Corruption is a major causal factor. This has led to the suggestion that revenue collection be privatised to reduce costs and ensure consistent revenue. Under this system a private company would pay the village governments a fixed sum at the beginning of each month. Tanga Municipality, has stated that they are willing to test this next year. Another recommendation is that a retention scheme is established in which a proportion of fisheries revenue (e.g., 50%) is retained by local government for fisheries management.

It is estimated that there is sufficient revenue from fisheries in two out of the three Tanga Districts to fund management fully. Patrols currently constitute the main fisheries management cost. The Tanga Programme has been testing ways and means to reduce these costs, but it is estimated that it will still cost about TSh. 3 million (US\$ 4,500) to run one patrol unit per year. This figure includes depreciation and transport. Eight patrol units (two in Tanga, and three each in Muheza and Pangani Districts) are required to police Tanga Region adequately, giving a total cost of TSh. 24 million per annum (US\$ 36,000). Other likely costs are payments for village personnel, such as some committee members who, as management activities expand, are working nearly full-time on management issues.

2.3. Designation of Roles

Mechanisms for working with other partners, such as NGOs, central government, and the private sector, are still being tested. NGOs with a conservation focus have not yet developed in the region. The village committees may be a starting point for their development. Regular village feedback meetings for stakeholders have proved very useful in participatory monitoring of progress and in sharing ideas and experiences to solve problems. Representatives from the private sector are invited to attend these meetings when they have an interest in the area. There is also an annual regional workshop for all stakeholders, including, representatives from central, regional, and district government, private sector, communities, and NGOs. A more specialised annual technical workshop is held to discuss issues requiring central government support and action.

Lessons Learned:

1. As women are considered among the poorest people in coastal villages, they must be targeted for active roles. Specific strategies are needed for targeting women and ensuring their participation.
2. Ongoing monitoring and regular evaluations (i.e., every six months) are needed to check how well anticipated impacts match reality. Modifications are needed to actions that do not lead to the desired outcomes.
3. Regular feedback meetings have proved very useful in participatory monitoring of progress and in sharing ideas and experiences to solve problems.

3. Influences on the Partnership

3.1. Pressure From the Management Authorities

National management authorities exert little direct pressure at present. The Tanga Programme has not received any directives or pressures from central government. However, the central government can show a lack of support in certain areas by not following up on issues (e.g., trawler encroachments). There have been five incursions of trawlers into shallow waters where they specifically are prohibited from fishing. Each of these has been reported to the central Division of Fisheries, but no action seems to have been taken.

The reef closures may result in pressure from central government agencies to establish marine parks. Although the establishment of collaboratively managed marine protected areas (MPAs) is an objective of the Tanga Programme, the establishment of marine parks could lead to administrative conflicts. This is because the programme is promoting greater control of community established MPAs by local agencies, whereas marine parks are administered more by central government.

3.2. Pressure From the Surrounding Communities

The process of negotiation for the formulation and acceptance of management plans has resulted in little pressure to date from users from other villages. The exceptions to this are those using destructive fishing methods (such as dynamite and certain types of nets). They have tried to sabotage management efforts through political means and by direct contravention of the regulations prescribed in the management agreements. A major factor in reducing political interference is the fact that minutes of all meetings were recorded, verified, and signed by the concerned parties. This, coupled with official letters of agreement, has enabled the Tanga Programme to disprove all the negative allegations to date.

3.3. Other Pressures

There is an example of pressure exerted by one user group in the pilot village Kipumbwi. Although a small minority group amongst the fishers, the seine net users have not fully accepted the management plan as they have been adversely affected by regulations that increase the minimum mesh size to 2.5 inches. Although the Tanga Programme has tried to initiate a net exchange scheme, and agreements have been formulated, they have not been signed. Resolution of this will be attempted in the next few months.

Lessons Learned:

1. It is still too early to comment on the type of pressures that may be brought to bear if management becomes successful.

4. Benefits and Incentives

4.1. Benefits to Other Stakeholders

Other communities perceive raised fish catches and greater apparent abundance of fishes as the two main benefits of management. They also feel that they have increased influence over the resources in their areas. However, their expectations are often very high, especially in terms of what government and government personnel can do. The private sector is presently poorly developed in the region, but has three main interests: fisheries, tourism, and mariculture (seaweed farming). The main benefit of management for the former two interests has been the stopping of dynamite fishing, which has reduced habitat for commercial fisheries and destroyed the scenic value of reefs for tourism. The main benefit for mariculture to date has been a reduction in the number and severity of conflicts between seaweed growers and seine net fishers. The main benefits to the

management authorities include Improved knowledge of resource status, revenue collection, mechanisms for conflict resolution (including fewer conflicts), enforcement of laws, and regulations. As far as village and District governments are concerned, improved enforcement and revenue collection and better conflict resolution are perceived as the major benefits from management.

4.2. Incentives for Participation in Management

Critical factors that have promoted the involvement of local and indigenous communities have been:

- clear and secure system of access to resources
- exchange visits to and from other communities
- the direct efforts of the facilitating agency
- flexibility of the management process
- effective facilitation, funds, legal advice, and appropriate technical support
- direct stimulus provided by the Tanga Programme, participatory surveys, and attention to gender issues and concerns
- dynamite fishing reduced and eliminated in some areas
- culprits arrested, tried, and punished
- improved security in the community and fewer thefts in the village
- raised fish catches and income
- less delay in implementing activities.

Anecdotal information from communities indicates that the reduction of destructive fishing, improved fish catch, and prosecution of arrested persons seem to be the major benefits and incentives for management of their areas.

5. Increasing Commitment to Partnership

The management plans of both villages have been implemented fully for less than a year only, and the communities are still learning what their likely implementation problems are and how to resolve them. However, even at this early stage, there appear to be a number of likely incentives that will ensure community commitment to implementation of the plans. The major one is whether management is successful in achieving the objectives. Early indications are that there has been an increase in fish catches and related income. Problems could arise if these increases are reversed for any reason. This would make it all too easy for groups that have been disadvantaged by management (e.g., dynamite fishers) to disrupt the management processes.

Another likely incentive will be direct employment and training opportunities. These will increase confidence in the communities of the government's seriousness in continuing with the support and management process. Although support for, and participation in, management is high, there seems to be a tendency to entrust the bulk of day to day management to the more committed committee members. The creation of employment opportunities and career paths for these village para-professionals is also likely to prove an incentive for continued village participation.

The third major incentive is the development of successful alternatives for unsustainable activities. This is important for the reduction of conflicts within and between communities. If successful alternatives to the more destructive fishing techniques were available, these could be offered to their practitioners as viable alternatives. Experience of one fish collector in Dar es Salaam has shown that dynamite fishers would rather collect fish than use explosives, and that they only revert to dynamiting when there is no collecting to be done. A further impact of the successful development of alternatives could be the reduction of overall fishing pressure in the area. However, this is by no means a certain outcome as it can be argued that if fish catches rise, the fishing industry will once again become attractive as a source of income. The real challenge in the development of alternatives is for the economic growth they support to exceed population growth. This is a long term scenario and there will be many difficulties in trying to achieve this goal. At present, it would require major development in communication infrastructure, markets, and the finance sector coupled with reduced population growth.

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Annex 1. Sample of village-based management action plan

RESULTS AND ACTIONS	WHO*	DOES WHAT	WHEN	OUTPUTS	ASSUMPTIONS
<p>1. Illegal fishing reduced</p> <p>1.1 Village militia trained</p> <p>1.2 Patrols in management area to enforce existing fisheries regulations concerning fishing techniques and harvest of juvenile fishes - includes inspection of gears and catches</p> <p>1.3 Licence all vessels and fishers using area</p> <p>1.4 Check that all vessels and fishers have a valid licence</p>	<p>DMT</p> <p>DFS</p> <p>VM</p> <p>MP</p> <p>DFS</p> <p>DFS</p>	<p>Trains village militia</p> <p>Legal support required</p> <p>Conduct patrols, detain suspects</p> <p>Conduct patrols, arrest suspects</p>	<p>2nd ¼ '97</p> <p>2nd ¼ '97</p> <p>1st ½ '97</p> <p>1st ½ '97</p>	<p>Trained villagers</p> <p>All fishers and vessels licensed</p>	<p>Approved by District government</p> <p>Fishers cooperate, sufficient District staff and funds</p>
<p>2. Legal but destructive activities reduced</p> <p>2.1 Seine net trials</p> <p>2.1.1 Identify information required to assess feasibility of exchanging small mesh nets for larger mesh nets</p> <p>2.1.2 Collect information identified in 2.1.1</p> <p>2.1.3 Evaluate feasibility of net exchange</p> <p>2.1.4 Initiate trial</p> <p>2.1.5 Monitor impact</p> <p>2.1.6 Participatory evaluation of trial using criteria identified in Activity 1 and formulate action plan</p> <p>2.2 Trawlers</p> <p>2.2.1 Record numbers, position, activities (e.g., dumping of fish), and impact of fishing in area</p> <p>2.2.2 Participatory monitoring and evaluation</p> <p>2.2.3 Report information and recommend actions to District Council and Director of Fisheries</p>	<p>PT&FC</p> <p>DO</p> <p>PT</p> <p>DO, Users</p> <p>PT</p> <p>Users</p> <p>Users, VMC, DFS</p> <p>PT</p> <p>Users, VMC, DFS</p> <p>PT</p> <p>VMC, DFS</p> <p>PT</p> <p>VMC, DFS</p> <p>PT</p> <p>DNRO, DFO</p>	<p>District Officers collect data</p> <p>Provide technical advice</p> <p>Evaluate information</p> <p>Advice, facilitation of process</p> <p>Record, collate & analyse data</p> <p>Technical support</p> <p>Evaluate analysis</p> <p>Technical advice, facilitation</p> <p>Record and compile information</p> <p>Technical support</p> <p>Evaluate analysis</p> <p>Technical advice, facilitation</p>	<p>1st ¼ '97</p> <p>2nd ¼ '97</p> <p>Phase II</p> <p>Phase II</p> <p>Phase II</p> <p>Phase II</p> <p>Phase II</p> <p>Phase II</p> <p>Phase II</p> <p>Phase II</p>	<p>Report</p> <p>Data recorded</p> <p>Recommendations for implementation</p> <p>Reduced number small mesh nets</p> <p>Data</p> <p>Analysis produced; Action plan</p> <p>Information; analysis</p> <p>Management recommendations</p> <p>Legislative support</p>	<p>Sufficient expertise</p> <p>Funds available</p> <p>Information collected</p> <p>Exchange economically feasible; funds available to exchange sufficient nets, users cooperate</p> <p>Users cooperate; data collected</p> <p>Analysis completed</p> <p>Information collected</p> <p>Analysis completed</p> <p>Some form of legislation required</p>

PROBLEMS	WHO	DOES WHAT	WHEN	OUTPUTS	ASSUMPTIONS
<p>3. One reef closed to extractive use</p> <p>3.1 Analyse different options for reef closure, i.e., short term vs long term closure and which to close</p> <p>3.2 Gain formal agreement of those village governments and users that use the reef selected for closure</p> <p>3.3 Gain agreement of District Technical Officers, District Finance and Planning Committee, and District Council</p> <p>3.4 Seek agreement of Director of Fisheries and legal gazettement of closure under the Fisheries Regulations 1994</p>	<p>Users, VMC, DOs</p> <p>VMC, DFS</p> <p>DNRO, DFO, DC</p> <p>DNRO, DFO, District Councils</p>	<p>Analyse options; identify management actions</p> <p>Present analysis to other villages</p>	<p>4th ¼ '96</p> <p>4th ¼ '96</p> <p>1st ½ '97</p> <p>1st ½ '97</p>	<p>Reef to be closed identified; closure period agreed</p> <p>Letters of agreement</p> <p>Agreement minuted</p> <p>Gazettement of closed areas</p>	<p>Majority of users support reef closure</p> <p>majority of users in other villages support closure</p> <p>District government support for reef closures</p> <p>Director of Fisheries supports case for closure</p>
<p>4. Trial of fish aggregating devices initiated</p> <p>4.1 Identify appropriate aggregating devices through participatory analysis of options</p> <p>4.2 Users to identify and agree areas of use, use rights, maintenance and monitoring of effectiveness</p> <p>4.3 Implement trial</p> <p>4.4 Monitor impact of trial</p> <p>4.5 Evaluate trial and identify future management actions</p>	<p>Users, VMC, DO</p> <p>PT</p> <p>FC</p> <p>Users, VMC, DO</p> <p>PT, FC</p> <p>Users</p> <p>Users, VMC, DFS</p> <p>Users, VMC, DFS</p> <p>PT</p>	<p>Analysis of different options</p> <p>Technical advice, facilitation</p> <p>Preliminary analysis, advice</p> <p>Analyse options, identify rights and management options</p> <p>Technical advice, facilitation</p> <p>Construct and deploy devices</p> <p>Collect and analyse data</p> <p>Evaluate data, formulate actions</p> <p>Technical advice, facilitation</p>	<p>2nd ¼ '97</p> <p>2nd ¼ '97</p> <p>2nd ½ '97</p> <p>2nd ½ '97</p> <p>2nd ½ '98</p>	<p>Type(s) of device(s) identified</p> <p>Report and action plan</p> <p>Devices in use</p> <p>Data and analyses</p> <p>Plan of proposed action</p>	<p>Consultants preliminary analysis favours use of aggregating devices</p> <p>Agreement reached between user groups and individuals</p> <p>Funds available</p> <p>Sufficient data collected</p>
<p>5. Fishing pressure decreased by decrease in number of visiting fishers</p> <p>5.1 Record number of visiting vessels using management area, types of gear used, areas fished, catch, value of catch</p> <p>5.2 Above information analysed to produce recommendations for management of visiting fishermen (i.e., number of vessels)</p> <p>5.3 Report and recommend actions to District Council and Director of Fisheries</p>	<p>VMC, DFS</p> <p>VMC, DFS</p> <p>PT</p> <p>DNRO, DFO</p>	<p>Analysis</p> <p>Technical support, facilitation</p>	<p>1st ¼ '97</p> <p>1st ¼ '97</p> <p>mid '98</p>	<p>Information compiled</p> <p>Recommendations and action plan</p> <p>Legislative support</p>	<p>Cooperation of visiting fishers</p> <p>Sufficient information collected for valid analysis</p> <p>Legislative support required</p>

* DC = District Coordinator; DFO = District Fisheries Officer; DFS = District Fisheries Staff; DMT = District Militia Trainer; DNRO = District Natural Resources Officer; DO = District Officer; FC = Fisheries Consultants; MP = Marine Police; PT = Programme Team; VM = Village Militia; VMC = Village Management Committees

BAZARUTO PROJECT: A BRIEF OVERVIEW MAY 1998

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1. Introduction

The Bazaruto Archipelago comprises five tropical islands: Bazaruto, Benguerua, Magaruque, Santa Carolina and Bangué, and is located in Inhambane Province off the South Coast of Mozambique. The archipelago is one of the country's most valuable marine areas, is rich in resources, and is among its most vulnerable and fragile ecosystems.

The wide range of distinct marine and terrestrial habitats and resources in the archipelago contribute significantly to provide local income and social and economic benefits to an estimated 3.000 local inhabitants.

The aim of the Bazaruto Project is to utilise the resources of the archipelago sustainably for the long term benefit of the local communities, the region, and the country. The major forms of utilisation are:

- tourism (in particular ecotourism)
- artisanal forms of resource use (that, if well managed and controlled, have a vital and complementary role to play in the conservation and sustainable use of the resources on the archipelago).

Taking into consideration the archipelago's environmental sensitivity, the Bazaruto Project implements a range of field activities to achieve its aim, including:

- returning to traditional and sustainable resource use practices
- socioeconomic development
- environmental awareness
- law enforcement
- resource co-management approaches whilst at the same time building the capacity for governmental and local management of natural resources.

2. Bazaruto Archipelago

2.1. Background Information

The Bazaruto Archipelago is situated about 20 km off the southern Mozambique coast between Vilanculos and Inhassoro, in Inhambane Province. The archipelago comprises five tropical islands: Bazaruto (12,000 ha), Benguerua (2,500 ha), Magaruque (600 ha), Santa Carolina (500 ha), and Bangué (5 ha) in an area of approximately 600 sq. km of sea.

The islands are spread roughly north-south between 21°27'-22°03'S and 35°19'-35°32'E. The climate is moderately humid, with an annual precipitation ranging between 466 and 1,928 mm and averaging 978 mm. The water-storing capacity of the archipelago is low. Freshwater lakes are found on Bazaruto and Benguerua, and ground water is stored principally within the narrow dune system.

The archipelago incorporates a wide range of distinct terrestrial and marine habitats including coastal sand dunes, pioneer dune vegetation, and sandy or rocky beaches. The fragile Islands are composed of beach rock and sand dunes, highly dynamic, and naturally susceptible to wind and wave erosion.

The presence of mainland fauna and flora, such as crocodiles, red duiker, red squirrels, samango monkeys, four-toed elephant shrews, night apes, and snakes are all evidence of the continental origin of the archipelago.

Over 180 species of birds have been recorded in the archipelago. The islands are an important stopover for many different migrant bird species. About 45 species of reptiles and amphibians have also been recorded on the archipelago. Crocodiles still breed in several lakes on Benguerua and Bazaruto.

Marine habitats include magnificent coral reefs, mangroves, and seagrass beds, and support the largest remaining population of the endangered dugong (*Dugong dugon*) along the East African coast. Leatherback, loggerhead, green, and hawksbill turtles nest on the Island beaches, and olive ridley turtles occur offshore. Spinner, bottlenose, common, and humpback dolphins are abundant, and a number of whale species occur, including humpback whales that pass by the islands on their migrations north and south along the coast.

Over 2,000 individual species of fish have been recorded from the area and a remarkable 80% of all marine fish families of the Indo-Pacific region are thought to occur in the waters surrounding the archipelago.

The species of high economic value for islanders include demersal and pelagic fishes, sand oysters (*Pinctada imbricata*), corals, lobsters, squids, sea cucumbers, and shells.

Experts have suggested that the archipelago has potential for establishment as a Wetland of International Importance under the Ramsar Convention.

2.2. Population

According to 1995 demographic information, the archipelago supports an estimated population of 2,697 people in 580 families, as follows:

- Bazaruto 1,751 people, 348 families
- Benguerua 765 people, 170 families
- Magaruque 181 people, 62 families
- Santa Carolina 27 people
- Bangué occasionally supports a temporary fishing camp.

The people are Tsonga, whose distribution extends southward from the Save River. While islanders speak the Xitsonga language, their own distinct dialect, most also speak Chitswa, the language of the Inhambane province on the mainland. Chitswa is an important medium of communication because of the contact and mobility between the islands and mainland.

2.3. Social Context

The archipelago currently has limited infrastructure and opportunities for social and economic development.

Until 1992, there were three schools in the archipelago, two on Bazaruto and one on Benguerua. Now, only the Bazaruto Primary School is operational, providing education for the first four years of primary education to approximately 70 children.

There is a single government run health clinic on Bazaruto. But this cannot meet the demands of the local population due to a lack of medicines and of a permanent health worker. To solve the health problems, the island population use traditional healers (*curandeiros*) and medicinal plants, about which they have a lot of experience.

2.4. Tourism

The Bazaruto Archipelago has for long been recognised as the area of highest tourism potential in Mozambique. Since the early 1950s, a local trader and successful entrepreneur, Joaquim Alves, laid firm foundations for tourism in the region.

Today there are six tourism concessions:

- Bazaruto Lodge and Sabal Company on Bazaruto Island
- Benguela Lodge and Marlin Lodge on Benguerua Island
- Hotel Magaruque on Magaruque Island
- Hotel Santa Carolina on Santa Carolina Island.

Other relevant developments include:

- a camp site at Zenguelemo Point on Bazaruto Island
- a crocodile farm attached to Benguela Lodge on Benguerua Island.

3. Bazaruto National Park

The Bazaruto National Park (BNP) is the only marine national park in Mozambique. It comprises the three southern islands only, Benguerua, Magaruque, and Bangué, and the contiguous 5 km sea area. The BNP was proclaimed by Ministerial Gazette no 46/71, while Bazaruto and Santa Carolina Islands were declared "Surveillance Zones."

However, a proposal has been submitted for expansion of the park to incorporate the two northern Islands, Bazaruto and Santa Carolina, and a greatly enlarged marine environment. The proposed expanded BNP would encompass an area of 2,000 sq. km. This area would be reinforced by legislation that has been drafted and is being revised. The BNP is administrated by the National Directorate for Forestry and Wildlife (DNFFB), incorporated in the Ministry for Agriculture and Fisheries.

3.1. Bazaruto Projects

Despite the creation of the BNP in 1971, there was no effective presence until 1989, when the first Warden was appointed by DNFFB. The Bazaruto Project, which was designed to address this problem of BNP management capacity, has entered into its third phase. A summary of these three project phases follows:

Phase 1 (1989-1990): Preparation of a master plan for long term conservation and development of the archipelago, financed by WWF - International.

Phase 2 (1990-1994): Implementation of the master plan, financed by WWF - South Africa, with support from the Southern African Nature Foundation, the Endangered Wildlife Trust and others.

The implementation of this second phase resulted in a several community projects and the appointment of the "Guardas de Fauna" or fauna guards, known as "Mungonzice" in Chitswa language, which means "Educators."

Since 1990, the Endangered Wildlife Trust has funded these *Guardas* to inform and educate local people about conservation through promoting practices that are sustainable and discouraging those that could be environmentally destructive. Despite their name, the *Guardas* do not act as law enforcement officers, but educators. There are a total of nine *Guardas de Fauna* and four *Fiscais* (law enforcement officers) on the islands.

The specific duties of the *Guardas* include:

- promoting the sustainable use of the resources
- encouraging the practice of traditional methods of using resources
- patrolling beaches and terrestrial areas, and collecting and burning litter
- monitoring and preventing people fishing in the protected areas.

Phase 3 (1995-1998): Multiple Resource Use Project (MRUP) funded by the European Union and managed by WWF (International) and DNFFB, with administrative and logistical support by the Endangered Wildlife Trust.

An Interim period (July 1997 - June 1998) to allow the continuation of the tasks not finished by the last phase and design of the next phase is being funded by WWF (International).

The goal of phase 3 is: *Ecological and social integrity of the greater Bazaruto National Park is maintained by integrated resource use.*

The project comprises a range of field activities and related actions aimed at conserving the Bazaruto Archipelago under the following objectives:

- The extension of Bazaruto National Park is gazetted
- Arrangements for co-management of BNP by islanders, DNFFB, and other stakeholders are established and functioning
- Integrated Resource Management and monitoring by communities and DNFFB effectively established
- Socioeconomic conditions of islanders are improved
- Ecological and socioeconomic research and training programmes implemented.

4. Socioeconomic Environment of the Bazaruto Archipelago

4.1. Economy

The local economy is based on:

- tourism industry (lodges)
- BNP activities
- artisanal fishing and exploitation of marine resources
- small-scale agriculture and domestic livestock
- boat construction and transport services.

4.2. Tourism in the Bazaruto National Park/Multiple Resource Use Project

The conservation of the Bazaruto Archipelago is integrally linked to the successful development of sustainable tourism in the area. Though tourism is usually perceived as having greatest economic value for local people, in Bazaruto tourism and artisanal fishing need to be complementary industries. The financial success of both the tourism and artisanal fishing industries on the islands is crucial to the conservation of the Bazaruto Archipelago in the long term.

The principle that islanders should derive benefits from tourism to compensate for their loss of land and fishing areas has generally been supported by the management of the lodges in the archipelago. Informal agreements

were established between the lodges and the BNP for tourists and tourism developments to make small donations to local conservation efforts and socioeconomic development in the archipelago.

These donations are an exchange for the use of the natural resources. This is seen as an important first step towards making established conservation projects sustainable and financially beneficial to the island community and BNP itself. To date, contributions from lodges have supported the following projects:

- rebuilding of the school at Sitone, Bazaruto Island
- building of three schools and one clinic on Bazaruto and Benguerua Islands.

Other benefits from tourism include:

- employment of more community guards
- protection of certain coral reefs set aside for snorkelling and diving
- protection of the crocodile nests and the bank of freshwater lakes.

However, the tourism enterprises within the archipelago are not yet in a position to make contributions to conservation and the island communities. There is also no legal mechanism within Mozambique legislation that allows financial benefits from tourism operators to be paid directly to local communities.

4.3. Artisanal Fishing, Exploitation of Marine Resources, and Dependence of the Islanders on Marine Resources

Resource harvest used to be controlled through a system of traditional knowledge. Each resource is collected during a fixed season, and closed periods are defined by the marine administration services of Vilanculos and Inhassoro. This is the State authority responsible for licensing artisanal fishing activities and the exploitation of marine resources within the archipelago. There is also a system to allow the use of reed baskets for harvesting sand oyster. Taboos for woman, like the one prohibiting fishing by pregnant women, are local ways for regulating collection of marine resources.

The islanders harvest a wide range of marine resources using various techniques that have been developed over time:

- Seine netting
- stake nets (*gamboas*)
- line fishing
- gill nets
- sand oyster harvesting (*Pinctada imbricata*, locally known as *mapalo*)
- sea cucumbers (*Holothuria scabra* locally known as *magajojo*)
- crabs.

Artisanal fishing is the main economic activity, absorbing more than 70% of the local community. There are approximately 50 fishing camps, at least 37 in Bazaruto, 11 in Benguerua and one in Magaruque, which usually use family labour.

Although the fishery uses unsophisticated technology, it meets the demands of the islanders, hotels, and crocodile farm. The remaining catch is dried and sold on the mainland.

Despite big efforts in law enforcement, there is still uncontrolled fishing by mainlanders especially, and semi-industrial and industrial fishing. Inappropriate technologies, such as gill nets for shark fishing and over-harvesting, have had an impact on the stocks of certain species of high economic value, in particular lobster and sea cucumbers, and on the survival of threatened species, such as turtles, dolphins, and dugongs.

4.4. Agriculture and Domestic Livestock

Agriculture is predominantly practised by women as both small-scale and subsistence activities. The main crops are sweet potatoes, cassava, millet, beans, pumpkin, and water melon. Every year, new areas of natural vegetation are cut and burned to provide ash for enrichment of the infertile soils. This slash and burn agriculture, which happens principally on sand dunes, together with heavy cutting of trees for wood fuel and construction material, have been the principal causes of deforestation, consequent erosion, and loss of soil nutrients on the Islands.

In addition to produce derived from the farm system, peasant farmers depend on a wide variety of natural resources for their livelihood. Natural habitats such as dune forests, mangroves, and edaphic grasslands provide many additional goods and services, including both plant and animal resources. Plant resources are used for house building, boat construction, wine-brewing, food, and medicine.

Domestic livestock, especially goats and sheep, are an alternative in times of severe hunger, and act as a form of savings against emergencies. For the islanders, livestock is a form of inheritance to be handed down from

generation to generation. Burning is also used by shepherds to increase the palatability of the mainly sour grasslands, and by palm wine tappers.

5. Steps Taken

The following is an outline of activities implemented through the Bazaruto Project to achieve sustainable use and conservation of resources in the archipelago:

- established healthy relationships with local communities and gaining their trust
- initiated The Association of Resource Users: BATA
- established functional communications with administrative and political structures, community leaders, and tourist operators
- recruited, trained, and supervised a group of community guards, chosen by the community itself, to work in extension activities that promote conservation and sustainable use of resources
- established a team of scouts to assure law enforcement within the archipelago
- protected turtle and crocodile eggs and young using the islanders themselves, and introduced a marine turtle and crocodile conservation programme to encourage enterprise and ownership among islanders
- implemented permaculture and vegetable gardening projects on the islands, to encourage people to maximise food production from smaller, more productive agricultural plots rather than practising slash and burn agriculture
- established protection of certain reefs by consensus
- provided material assistance and conservation education input for the school on Bazaruto
- initiated research activities, monitoring, and the inventory of resources in the region
- established a local mechanism and informal consensus with tourism operators to channel revenues to local communities.

6. Lessons Learned

The following conservation issues in Bazaruto Archipelago still need to be overcome:

- Legislation submitted to support extension of the BNP to include all five islands in the park is important, but has not yet been approved.
- A number of different institutions play a key role in managing the archipelago. However, lack of institutional coordination is a serious impediment to sustainable use of the archipelago's natural resources.
- Following independence, traditional management systems have been broken down by disruption, instability and in-migration. As a consequence, the archipelago is treated as an open access area by the islanders and mainlanders, and its resources are used opportunistically.
- Tourism provides few benefits to the islanders. There are no legal mechanisms for returning tourism revenues to the local community. The work force is predominantly drawn from the mainland. Concessions are granted without community consultation, often leading to conflicts of interest.
- The Park is dependent on donor financing and there are inadequate state subsidies for both capital and operational costs.

7. Summary and Conclusion

To control resource use and potential development, guarantee resource custody by the island communities, and retain income generated by the activities in the Park, it is imperative to have supportive legislation formulated and approved as soon as possible. Without this, it will not be possible to achieve the goals of the Bazaruto Project and the long term sustainability of natural resources in the archipelago.

Although progress is hampered by certain constraints, there has been some notable progress. The main obstacles to progress are:

- Legislation for the proposed new boundaries of the BNP and the management plan to guide the development of the Park over the next five years have not yet been declared and approved.
- Operational structures supporting co-management of natural resources by government and the local communities have not yet been established. Islanders seem to prefer working as individuals, due to disrupted and disorganised management systems, instability, in-migration of mainlanders, and for commercial reasons. However, collaboration is being promoted by the Bazaruto Project, and will take long and continuous work before anything substantive develops.

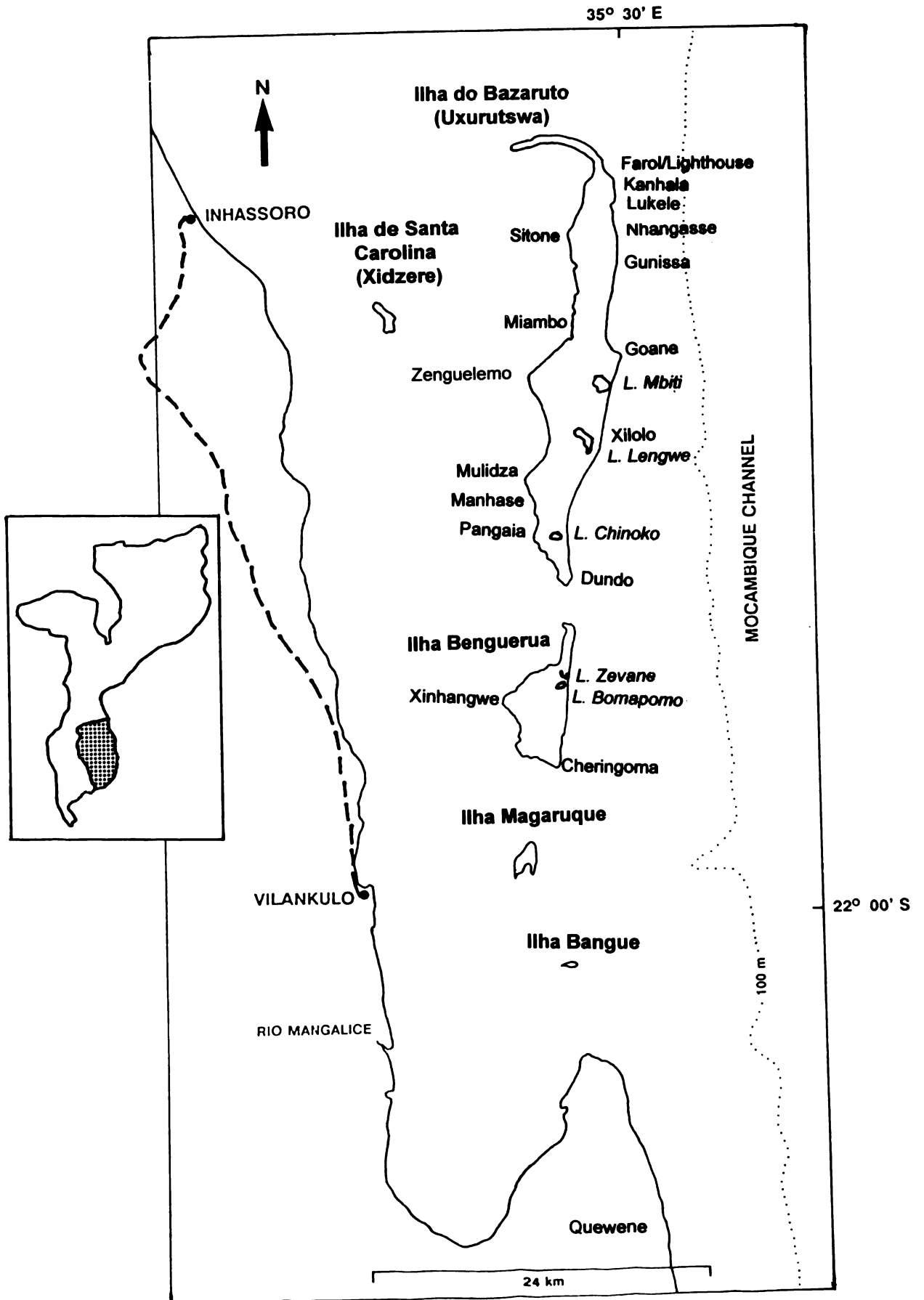
Some notable achievements of the Bazaruto Project, include:

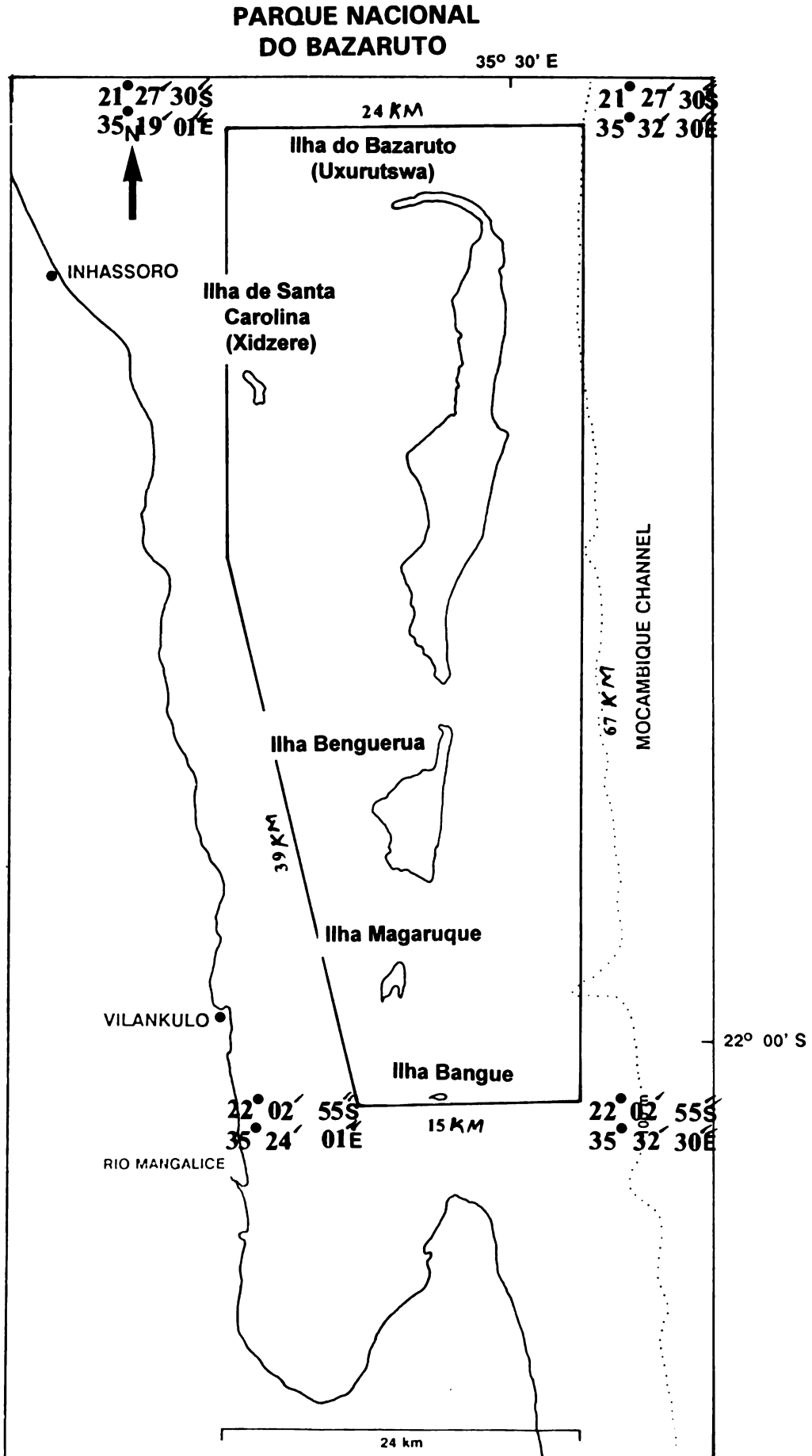
- Resource use groups formed as part of the co-management strategy (BATA, fisheries, agriculture, and *mapalo* users).
- Improved relationship with local, provincial, national administrations.

- Islanders have benefited by improvement of their living conditions through a credit based system for fishing nets, tools, boat building, seeds, and revenues from hotel operations that are transmitted directly to the islanders. If communities realise benefits before being driven to participate in conservation activities, they will better understand the importance of the Bazaruto Archipelago as a special area for wise and sustainable use of natural resources that generates direct benefits for them.
- Environmental education in schools, island communities, and for visitors.
- Extensive ecological monitoring programmes, research, and training.
- Local capacity building of Mozambican technicians.
- Production of the Management Plan to guide the development of the Park over the next five years.
- Incorporation of costs and benefits to islanders in the Management Plan and in the Park declaration. These benefits include:
 - financial benefits derived from tourism activities
 - institutions to ensure sustainable marine resource use
 - social services and structures developed
 - alternative sources of income to be developed
 - legal framework to prevent open access to resources
 - improved agricultural practices
 - reduced harvest of marine resources.

There are certain restrictions that come at a cost to local communities:

- the management plan prescriptions and zoning of terrestrial, coastal and marine areas restricts access to resources
- restrictions on grazing and cultivation limit access to parts of the islands
- tourism has its social and economic impacts
- social and cultural links with mainlanders are jeopardised.





COMMENT ON PARTICIPATION BY THE TOURISM SECTOR IN MARINE PROTECTED AREAS MANAGEMENT IN TANZANIA⁴

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These comments represent the perspective of the tourism sector regarding partnership possibilities with government for management of marine protected areas (MPAs). While many of these issues were discussed during the workshop, they also reflect the direct experience of one private sector venture attempting to collaborate with management authorities in the Mafia Island Marine Park (MIMP), Tanzania. Drawing on the Kinasi experience on Mafia Island, examples of the type of actions the private sector is able to implement are also included.

1. BACKGROUND: THE WORKING ENVIRONMENT

1.1. Taxes

The tourism sector is already paying its way through taxes: The tax base is very high in Tanzania, with about 30 taxes, licenses, and cesses. Tourism operators are therefore already paying their way in cash terms. To carry more cash costs would be very difficult under these conditions in Tanzania as the tax burden leaves little margin for profit. Furthermore, the tax problem is increasing due to uncontrolled district taxes, which do not require Ministry of Finance approval and are having a very deleterious effect on both economic policy and performance.

There is no evidence of how taxes are spent: It is not obvious that these taxes are being reinvested on Mafia Island. At the same time government staff have little relevant technical training or experience. In trying to cope, they frequently hinder progress of even philanthropic ventures.

1.2. Corruption

Corruption is a problem in terms of leakage and, more importantly, in constraining action: This issue cannot be ignored or underrated, because it is a real problem in some situations, and will have to be addressed. It takes the form of obstruction at the junior levels. These obstructions persist even though personnel are directed by very senior government officials to facilitate implementation of activities.

1.3. Partnerships

Present reliance on philanthropy for partnerships is naïve and unsustainable: On the basis of tax revenues collected and government's assigned duties and responsibilities, it should be able to do a great deal more to conserve the natural, cultural, and economic heritage of the nation. Government has certain executive or legal powers that, if not implemented, can obstruct progress and frustrate private sector contribution to the partnership. Thus, from a private sector perspective of partnership, everything can stall or fall apart when government cannot or does not implement its role.

If partnership activities are dependent on government performance, the whole process can stall: Partnerships will need to get around the dependence on all players (especially government) to act equally before a project can proceed. Total delegation with very clear roles and responsibilities may be one way around this obstacle. Another may be to work with local village or district government, rather than with central government authorities that are more remote from the area and the direct contact with communities. The tourism sector cannot contribute to management of the MIMP until the area is managed truly collaboratively with communities and the warden answers to a local management body. The Mafia stakeholders should be able to decide the staff makeup, the budget, etc., and the goal and management approach need to be revisited. For the tourism sector to contribute financially or in kind, it needs to be substantively involved in the planning and management decisions.

Community contribution to partnership needs to be linked to tangible products: A big question is: what are the local people going to contribute to protect their resource? Would they be willing to have a fish tax? This is doubtful unless taxes were seen to feed back into management of the system. So here we have a situation where the management authority cannot do its bit, despite heavy taxes on the private sector and cumbersome bureaucracies, and the community will not or is not able to contribute anything. So, we fall back on the tourism

⁴ Acknowledging that the tourism sector did not have the opportunity to contribute through a dedicated working group, these brief comments are presented as an attempt to rectify the oversight. While we recognise that some of the points raised may be contentious, these sensitive issues need to be addressed and resolved if the tourism sector can be expected to contribute to the costs of MPA management (Eds.).

industry to carry the partnership, an industry that is getting increasingly disenchanted at being pressured for funds all the time.

Partnerships need to be based on contracts and full accountability for defined responsibility: For partnerships to work, they have to be equal in terms of responsibility and decision-making, although not necessarily financially, and there need to be consequences for non-performance. For example, as in a real contract the role of the defaulting partner should be nullified so that the activity can move forward anyway. Perhaps the best mechanism to achieve accountability is through an oversight committee or similar management board that comprises one member each from Government, the tourism sector, the affected villages, and NGOs.

1.4. The Influence of Conservation Goals on Partnerships

Unless tourism is a major objective of the MPA, the tourism sector is unlikely to drawn into partnership: For example, the MIMP was not created for tourism; it was created to protect a marine and some terrestrial resources for the artisanal fisheries and sustainable resource use of the people living on Mafia. But this goal has not been properly emphasized nor is it well understood by all the stakeholders and policy makers. Tourism is an incidental economic activity to this primary goal and of much lower value than the value of fish, octopus, lobster, limestone, sea cucumber, etc. being extracted, and the plant, soil, and water resources. If tourism is not one of the primary goals, and the sector is not substantively involved in management planning and decisions, its interests may not be adequately served by the MPA. Consequently, the incentives for partnership will be low, and the tourism sector can hardly be expected to contribute financially.

Payments and contributions in kind to partnerships should be proportional to the benefits received: Although this is often expected, the tourism sector is rarely able to pay fully for the necessary protection and management required, and certainly never when the government does the employing, managing, and handling of money. For example, Mafia Island presently gets about 1,000 visitors a year. This does not provide much of a budget for the MIMP, but add to it a tax on the other resources used (mangroves, coral stone, fish, lobster, sea cucumbers, octopus) and there would be more than enough *provided these taxes go to management of the MIMP and maintenance of its infrastructure*, rather than to central government.

2. PRIVATE SECTOR CONTRIBUTION: A CASE STUDY OF MAFIA ISLAND MARINE PARK

Kinasi is a private tourism enterprise that is working at the threshold of profitability on Mafia Island, without government support, and with little spare funds. Despite this, *Kinasi* has initiated a number of ongoing activities that contribute to the park and its adjacent communities:

1. *Nature trail:* a professionally developed nature trail with an informative leaflet and a trained guide who also handles excursions to Chole island and other destinations and bird-watching.
2. *Commercial projects:* *Kinasi* is involved in the following projects, most of which are in early stages of development:
 - Bee-keeping and honey production in 4 villages, to expand to all 10
 - Crab potting; later crab farming
 - Oyster farming
 - Aquaria specimen farming (mainly invertebrates)
 - Fish fillets and smoking
 - The "Mafia Book" a detailed guidebook and general interest book on Mafia to promote the island and generate a contribution to community activities in the MIMP
 - Handicrafts, including furniture, clay pots, and matting products
 - Agroforestry and composting techniques.
3. *Employment and operational policies:* Enlightened policies put cash into the local economy; e.g., employment of local people (*Kinasi* puts TShs 2.5 million - about US\$ 4,150 - into the local economy each month), local *jahazis* are used as dive boats and are maintained by local artisans, and local *jahazis* are hired when needed to help with diving and snorkelling (boating activities will be handed over completely to local people eventually, even though it will reduce profits, but they still need to learn to turn up on time in all weather and irrespective of funerals, feasts, and marriages). Fuel, beer, and soft drinks are all bought from local suppliers, as much local produce as is available is purchased, as many local building materials as possible are used. New seeds and varieties for people to plant (e.g. passion fruit, cos lettuce, etc.) are imported and original land owners continue to obtain coconuts and cashews from the *Kinasi* land. There is complete handling and digestion of sewage and waste waters on the property.
4. *Skills training:* Four people are being trained up to Dive Master level and all staff are in language and job skills training. *Kinasi* is currently working on a joint-venture agreement for a game fishing boat with a local islander by funding its repair, equipping, and maintenance for three years while the owner trains, learns, and gradually takes over as skipper. At this point the owner will work for *Kinasi* on contract.

5. *Mafia Island Tourism Association (MITA)*: This is a voluntary society aimed at working jointly on community development activities, regulation of tourism activities, and development of common policies (such as those in 3 above). For example, MITA has self-imposed regulations on size and sex of crabs and lobsters and maintains radio contact on diving and snorkelling.
6. *Mooring*s: Kinasi is in the process of installing these with the MIMP warden, and will also maintain them. But it took three years to get this activity going. Old gas cylinders are being used for mooring buoys because people steal anything that can be used by them or converted for water storage. So there still a long way to go in developing partnerships!
7. *Water well*: Kinasi is assisting through organisation and joint funding of a village water supply in Utende.
8. *Community enhancement*: Kinasi has had a project submitted to government for the last five years to develop Utende in line with the laid-down development plan; but there has been no movement on the government side. The project involves moving squatters to allocated land, construction of a market, clinic, and pre-school, and a competition for the best/most improved market garden with free supply of seedlings from the Kinasi nursery.
9. *Airport building*: Kinasi is planning to do up the Kilindoni airport building.
10. *Archaeology and other scientific activities*: Kinasi sponsors the archaeological work of Dr. Felix Chami on Mafia's stone age sites, provided space for the volunteer research organisation FRONTIER to use Kinasi property as a base camp for six years free of any commitment or charge, and sponsored Mafia's first comprehensive bird census and checklist. A second phase of this bird work and training of local staff will take place in late 1998. Kinasi are also in the process of collecting all the oral history of Mafia as part of the Mafia Book project. Kinasi has established and continues to expand the reference library on Mafia, with many books and published articles.
11. *Promotion*: Kinasi has done a great deal to promote Mafia Island and are now establishing a web site to increase international exposure to the island and MIMP. The Mafia Book will also help with promotion, and the MIMP will be invited to include information.

3. CONCLUSION

At present, the involvement of the private sector in all the MPAs the author is aware of is based on voluntary, informal arrangements. This is not good enough: partnerships should be formally and contractually defined from the start, with laid-down responsibilities, both physical and financial. A true partnership is 1/3 government, 1/3 local people, and 1/3 tourism industry, with clear, agreed roles and responsibilities and equal voting rights irrespective of the source of funds. Decisions would be made through a body similar in function to a Company Board of Directors. Parties not performing would be voted out and their tasks taken over by one of the other parties. For example, if the concerned authority does not do the patrolling, the budget is withdrawn and allocated to local operators.

WORKSHOP OUTPUT

SUMMARY OF WORKSHOP OUTPUTS: MANAGEMENT OF THE KISITE MARINE NATIONAL PARK AND MPUNGUTI MARINE NATIONAL RESERVE COMPLEX: PARTNERSHIP ARRANGEMENTS

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1. Introduction

The workshop struggled to generate clear, specific guidelines for developing and implementing partnerships for management of marine protected areas (MPAs). Workshop participants included ecologists, economists, sociologists, protected area managers, tourism sector officials, tour operators, representatives from coastal communities, both government and non-government people from five countries of the region, and international experts. That this collected expertise and experience could not list specific mechanisms for implementing partnerships and sharing the costs of MPA management sent a clear message of how little advanced this process is in the region, and perhaps globally.

However, the workshop did show clearly that two approaches to partnership have had some success in the region: total delegation of management responsibility to a second party, and collaborative management but with communities taking the lead role.

2. Approaches for Partnership

Examples from Seychelles and Zanzibar clearly show that total delegation of MPA management authority (to an NGO in the former case and the private sector in the latter) can and does work, and is an appropriate formula when government funds or capacity are limiting. There are some specific conditions to facilitate this:

- **Security of tenure:** Arrangements that require private sources of funds, whether NGO or private sector, require long-term security of tenure if they are to attract serious investment and, indeed, are to be viable.
- **Roles and responsibilities:** The roles and responsibilities of all partners need to be agreed and clearly defined in the management contract to maintain transparency and understanding of partnership responsibilities.
- **Staff and revenues:** The delegated management authority should have total responsibility for hiring, training, firing, and supervision of MPA staff, and for revenue collection and disbursement.
- **Conservation policy:** Government should never relinquish control of conservation policy in cases of delegation, and should retain the final say for activities requiring species introductions and eradication, habitat restoration and enhancement, and other manipulative interventions.
- **Enforcement and prosecution:** Government should always provide essential support for enforcement activities, including prosecutions, when called to do so.

Collaborative management with the major caretaker responsibility assigned to community groups is the second form of partnership that is being tested in the region, especially Tanzania (e.g., Tanga on the mainland and Menai Bay and Misali Island in Zanzibar). These are pilot projects for which the government has agreed in principle that management should be led and implemented by communities. The same general conditions above apply for community-based management, but there are a range of additional principles that need to be compiled and disseminated throughout the region. The lessons from Tanga provide some useful interim measures to guide community-based MPA establishment and management.

The workshop further recognised that participation is an essential first step in developing effective partnership, and that participation comes in a variety of forms. *Interactive participation* is an appropriate model for this region. In this form, people participate in joint analysis, development of action plans, and formation of local institutions. Participation is seen as a right, not merely as a means to achieve project goals. The process involves participatory methods that yield the perspectives of different community groups, structured learning processes, and problem solving approaches. As groups take control of local decisions and determine how available resources are used, they develop a stake in maintaining structures or practices. Interactive participation provides a useful entry point for management partnerships in the Kisite Marine National Park and Mpunguti Marine National Reserve (KMNP) complex.

An additional clear message of the workshop was that there should be an *issue-based management approach* to establishing partnerships. In this approach, the relevant partners are identified and invited to participate in the resolution of specific management issues where these have been identified. Examples from the Kisite area

include conflicts among boat operators, specific requests for assistance (such as from the Wasini Women's Group), and control of destructive fisheries. The issue-based approach was used to formulate the logical framework presented on the following pages.

Community-Based Establishment and Management of MPAs in Tanga, Tanzania

An essential first step in this process was to get the government extension workers and communities working effectively together. This process of building mutual trust took 18 months, and could not be rushed. Once a working relationship had been established and the communities understood that they would secure access rights to resources if they took on an active management role, they demonstrated a willingness and capacity to invest time and effort into dealing with difficult issues of enforcement and management. This concept of user or access rights in return for management responsibility provides a strong incentive for partnership in MPA management in this region, and is a powerful and appropriate approach.

The Tanga case demonstrates that a sense of substantive interaction by all partners is important to nurture. This in turn helps develop a sense of ownership, especially in communities concerned with collaborative management of MPAs, but presumably would apply to other stakeholders as well. This sense of ownership provides the incentive to take on board fully the assigned management or compliance activities and commitments, and facilitates their evolution into a fully fledged partnership. A few actions that assist the sense of stakeholder ownership, include:

- involve the stakeholders in all stages of MPA planning and, if management is to be delegated, facilitate plan development by the stakeholders themselves wherever possible
- involve the stakeholders in final review and approval of the MPA management plan (including location of zones and boundaries), if they don't actually define these themselves
- have clear definitions of stakeholder and management authority roles and responsibilities, and establish these through formal agreements
- place stakeholders at the forefront of public activities related to the MPA (planning workshops, meetings with donors and other institutions and media events)
- in the case of community-based management, integrate the MPA into the village institutional structure, using existing committees and customs as much as possible, and aim to reinforce these - at all costs avoid developing parallel structures
- training villagers as "specialists" in a variety of skills so that they can train or advise a larger number of villagers is effective in getting villagers on board and saves time and money for cash-strapped management authorities
- use simple methods and start small - once something is found to work it should be simplified to the critical elements only so that it can be easily understood and taken up by villagers without being excessively (and unnecessarily) demanding of their time, e.g., action plans and monitoring indicators should be simple and straightforward.

3. Partnership Opportunities for Management of the KMNP Complex

The workshop also determined that the credibility of Kenya Wildlife Service (KWS) and its effectiveness to function and develop management partnerships suffer from two major setbacks. The first is the long time delays in delivering funds promised for community projects. This is perceived by the community groups as failure by KWS to fulfil its promises.

Underlying this, the second setback, is an inadequate understanding by communities of the procedures and delays dogging KWS access to these funds, and of when they realistically can expect to receive them. Greater understanding of the constraints facing KWS in securing release of the funds, the benefits provided by the KMNP complex, and the services provided by KWS would help generate community sympathy and support for KWS and dispel the current suspicion and disillusionment.

It is clear that different communities and different sectors of communities have differing opinions of the benefits of the KMNP complex. While some are supportive, others would prefer to have no MPA in the area. KWS will need to engender greater support for the KMNP complex among all stakeholders before management partnerships become a reality. By focusing on a sympathetic and supportive community that has strong links with the KMNP complex, such as Mkwiro, KWS will be able to develop and test partnership options and demonstrate the benefits of these to surrounding communities. This piloting approach will help to stimulate greater participation by the sceptical communities in the partnership approach. ***The new KWS policy with its emphasis on partnerships provides a powerful opportunity for fresh discussions with stakeholders and should be the entry point for future dialogue.***

The workshop identified regular communication leading to understanding (rather than for informing or consultation) as the key to developing effective stakeholder participation and partnership for management of the KMNP complex. To establish good partnership relations with the KMNP stakeholders, it was recommended that KWS implement a series of activities relating to seven specific result areas under two objectives. These are designed to remove the obstacles to communication between KWS and KMNP stakeholders and initiate the process of management partnerships. The objectives are listed below and the related activities are elaborated in the following logical framework and accompanying work plan.

3.1. Objectives

- Understanding of KMNP goals, functions, benefits and management partnership opportunities achieved through improved communication between KWS and stakeholders.
- Approaches and mechanisms for partnership developed through participation of all stakeholders, field-tested, and refined.

These objectives will be addressed through a series of issue-based management activities listed in the logical framework below and its related work plan. The activities are focused on three subsets of stakeholders and on one entire pilot community:

- boat owners, including both large scale tour operators and small boat operators
- fishers
- Wasini women's group
- Mkwiro village (all stakeholders).

3.2. Logical Framework for Kisite Pilot Study in Partnerships for Management of MPAs (Version 05/06/98)

Objective 1: Understanding of KMNP goals, functions, benefits and management partnership opportunities achieved through improved communication between KWS and stakeholders

RESULT 1.1	IMPACT INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Existing KWS obligations to fishers & small boat owners cleared & way opened for management partnerships	Past problems resolved, trust rebuilt, & dialogue for partnerships begun before 09/98	Receipts for cash disbursements Minutes of meetings	Funds will be approved & are available Bureaucratic hurdles surmountable
ACTIVITY	COMPLIANCE INDICATORS	MEANS OF VERIFICATION	ADDITIONAL ASSUMPTIONS
1.1.1 RAD coast to raise issue of delayed payments of Wildlife Development Fund with Director & encourage meeting with WDF partners to streamline procedures	WDF partners meeting held Streamlined procedures for cash disbursement agreed	Minutes of meeting	COBRA partners willing to meet & agree on streamlining procedures
1.1.2 Director of KWS visits Shimoni/Wasini to explain delays & realistic schedule for future activities, including cash transfer to boat owners	Visit by Director KWS Reasons for delay understood Boat owners updated	Minutes/record of Director's visit Informal interviews with fishers & boat owners	Director willing to visit Stakeholders willing to meet Director
1.1.3 Deliver outstanding cash to fishers	Cash delivered to fishers	Receipts for cash delivery	
1.1.4 Deliver outstanding cash to boat owners	Cash delivered	Receipts for cash delivery	
RESULT 1.2	IMPACT INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Existing KWS obligations to Wasini Women's Group cleared	Boardwalk used by tourists & proceeds invested in village projects (late 1999)	Boardwalk, ticket receipts Women's Group records/accounts, project outputs	Boardwalk plan feasible Funds forthcoming from KWS Wetlands project
ACTIVITY	COMPLIANCE INDICATORS	MEANS OF VERIFICATION	ADDITIONAL ASSUMPTIONS
1.2.1 Communicate process to Wasini Women's Group & set realistic schedule of activities	Women advised of process & schedule; dialogue started	Records of meetings	
1.2.2 Complete draft proposal for mangrove board walk through participatory process	Draft proposal completed through dialogue with women	Draft proposal	
1.2.3 Finalise <i>Part Development Plan</i> with District Physical Planner & Lands Surveyor	Plan completed	<i>Part Development Plan</i>	
1.2.4 Negotiate lease for mangroves with Forestry Department	Lease obtained	Lease agreement	Forestry willing to agree lease for mangrove area
1.2.5 Finalise proposal & get all necessary approvals	Proposal completed	Final proposal	
1.2.6 Secure funds for mangrove board walk from KWS Wetlands Training & Conservation Project	Funds secured	Records of funds transfer	
1.2.7 Commence implementation/construction	Construction commenced	Site visit	

RESULT 1.3	IMPACT INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
KWS capacity to provide assistance to stakeholders assessed, prioritised, & communicated	Clear understanding & agreement among stakeholders of KWS capabilities Realistic requests for KWS assistance	Minutes of meetings with stakeholders Records of requests for assistance & of assistance provided	KWS willing to undertake assessments Stakeholders willing & able to collaborate
ACTIVITY	COMPLIANCE INDICATORS	MEANS OF VERIFICATION	ADDITIONAL ASSUMPTIONS
1.3.1 Assess the social, technical & financial assistance that KWS is able to provide to KMNP stakeholders, and options for improving the contribution of KWS to KMNP stakeholders in exchange for partnership in management actions	Assessment completed by KWS	Assessment report	
1.3.2 Implement intensive training in participatory processes, facilitation, animation techniques to key KWS staff in KMNP, coast HQ & Partnership officers	Training completed KWS staff (at least 3) effectively facilitate stakeholder meetings	Record of training Minutes of meetings/ attendance records	
1.3.3 Investigate the feasibility & means of establishing a KMNP conservation trust fund	Feasibility assessed, means defined	Feasibility report	KWS & stakeholder support for trust fund forthcoming
1.3.4 Discuss findings in stakeholder forum(s) - avoid promises & keep options realistic	Options acceptable to stakeholders	Minutes of stakeholder meetings	Stakeholders willing to participate
RESULT 1.4	IMPACT INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Benefits of KMNP assessed, discussed with stakeholders, & improved where possible.	Raised awareness/ appreciation of KMNP benefits Stakeholders participate in safeguarding benefits	Informal interviews with stakeholders Stakeholder records of activities	KMNP has demonstrable benefits KWS & stakeholders willing & able to participate & enter into management partnerships
ACTIVITY	COMPLIANCE INDICATORS	MEANS OF VERIFICATION	ADDITIONAL ASSUMPTIONS
1.4.1 Collect, collate & interpret results of relevant studies to identify benefits of KMNP for different users & identify gaps & opportunities for additional assessment	Benefits of KMNP synthesised from reports	Synthesis of benefits report	Reports accessible
1.4.2 Send copies of all relevant reports to KMNP	Copies of reports delivered to KMNP office	Reports	
1.4.3 Undertake economic analysis of tourism & fishery benefits of & financing/partnership mechanisms for the KMNP complex	Analysis completed	Consultant's report	
1.4.4 Implement a series of meetings with stakeholders to: <ul style="list-style-type: none"> review & discuss KMNP goals & objectives discuss KMNP benefits & means to improve these in exchange for management responsibilities 	Meetings held, KMNP goals & objectives reviewed, management partnership issues discussed; & options agreed & implemented	Minutes of stakeholder meetings Partnership agreements	Viable partnership options exist

1.4.5 Explore options for community-based monitoring of fishery data (catches, gear, socioeconomic impact), & design & implement programme (link to KMFRI & Tanga Programme)	Monitoring protocol formulated & agreed by communities Community monitoring fishery data	Monitoring protocol	
1.4.6 Report back to user groups annually (oral & written) through stakeholder meetings	Annual feedback meetings	Monitoring records Report of feedback meeting	

Objective 2: Approaches & mechanisms for partnership developed through participation of all stakeholders, field-tested & refined

Stakeholders working effectively together & supportive of each others activities to address specific management issues, & that benefit both conservation & boat owners	No further complaints about other stakeholders at public meetings or to KWS Small boat owners functional & providing quality service	Minutes of meetings Inspection of boats/operations; interviews with boat owners	Stakeholders willing to collaborate KWS willing/able to mediate among stakeholders
2.1.1 Convene meeting(s) of tour & small boat owners to explore need, options & means for regular forums & conflict resolution	Meeting(s) convened	Minutes of meeting(s)	
2.1.2 Evaluate & draw on experience of Watamu MNP as possible means to help small boat owners	Applicability of Watamu MNP formula assessed, applied	Report, record of activities	
2.1.3 Identify & agree specific activities (including training) for KWS support to boat owners & reciprocal actions for boat owners to assist KWS with management of the KMNP complex, including self-monitoring actions	Specific actions identified & agreed	Minutes of meetings Report of specific actions	
2.1.4 Draw up formal agreement for partnership between KWS & boat owners that clearly defines roles & responsibilities	Agreement reached	Partnership agreement	
2.1.5 Implement specific assistance to small boat operators identified in partnership agreement (e.g., assistance with boat licensing, insurance, pricing of tourist services, & training in safety at sea, codes of conduct, visitor handling, guide services) (Activity 2.1.4)	Partnership activities implemented by KWS	Record of activities	
2.1.6 Boat owners implement activities identified in partnership agreement (Activity 2.1.4)	Partnership activities implemented by boat owners	Records of activities	

Summary of Workshop Outputs: Management of the Kisite Marine National Park and Mpunguti Marine National Reserve Complex: Partnership Arrangements

RESULT 2.2	IMPACT INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Issue-based management activities defined & implemented in partnership with pilot community (Mkwiro village) to safeguard mutual benefits (conservation & community livelihoods)	Stakeholders implementing & monitoring management activities for the benefit of both conservation and community livelihoods	Records of community activities Site visits	KWS willing to delegate management actions & responsibility to Mkwiro Mkwiro villagers willing & able to participate
ACTIVITY	COMPLIANCE INDICATORS	MEANS OF VERIFICATION	ADDITIONAL ASSUMPTIONS
2.2.1 Through participatory approach identify project & partnership opportunities linked to the KMNP complex (Mkwiro village), including community-based monitoring & special training needs for villagers to implement specific related tasks	Series of village meetings completed Monitoring roles & actions agreed Special training needs identified Partnership options identified	Minutes of meetings Agreed monitoring roles & actions Lists of training needs Report of options	
2.2.2 Record, discuss, distribute minutes of all meetings	Minutes produced, discussed & agreed with villagers	Minutes of meetings	
2.2.3 Formulate work plan & define roles & responsibilities using participatory approach, define monitoring & evaluation methods & indicators	Work plans & roles defined, agreed	Work plan with defined roles	
2.2.4 Formulate, agree, sign partnership agreement	Partnership agreements signed Training completed	Partnership agreement(s) Records of training	
2.2.5 Implement training for specific management activities identified in Activity 2.2.1	Work plan/monitoring begun	Progress & monitoring reports	
2.2.6 Implement work plan & monitoring	Approaches evaluated & refined, discussed with villagers	Revised approaches Minutes of village meetings	
2.2.7 Evaluate & refine methods & approaches & feed back information to villagers.			
RESULT 2.3	IMPACT INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Activities monitored & evaluated, approaches refined	KMNP management partnerships effective & functioning Reduced demand on KWS resources to manage KMNP	Reduced conflicts (see results 1.1, 1.2, 2.1); stakeholders implement management activities (see results 1.4, 2.1, 2.2) See results 1.3, 1.4, 2.1 KWS budgets, work sheets	
ACTIVITY	COMPLIANCE INDICATORS	MEANS OF VERIFICATION	ADDITIONAL ASSUMPTIONS
2.3.1 Establish project technical steering committee (TSC) to maintain & advise on implementation	Technical Steering Committee formed & operating	Terms of reference for TSC; minutes of TSC meetings	
2.3.2 Agree monitoring methods, indicators, timing	Work plan, indicators defined	Work plan with agreed indicators	
2.3.3 Implement regular M&E	Quarterly/semi-annual evaluation missions by TSC Approaches evaluated & refined	Mission reports Recommended refinements & documented responses	
2.3.4 Prepare & circulate semi-annual newsletter to WIO network	Newsletter circulated	Newsletter, circulation list	

3.3. Work Plan for Development of Partnerships for Management of the Kisite MNP and Mpunguti MNR

Objective 1: Understanding of KMNP goals, functions, benefits & management partnership opportunities achieved through improved communication between KWS & stakeholders

ACTIVITY	TIMING (QUARTER/YEAR)			RESPONSIBILITY	COST
	4/97-99	1/98-99	2/98-99		
RESULT 1.1: Existing KWS obligations to fishers & small boat owners cleared & way opened for management partnerships					
1.1.1 RAD coast to raise issue of delayed payments of Wildlife Development Fund with Director & encourage meeting with WDF partners to streamline procedures	X			RAD Coast	
1.1.2 Director of KWS visits Shimoni/Wasini to explain delays & realistic schedule for future activities, including transfer of funds to boat owners		X		Director KWS	
1.1.3 Deliver outstanding cash to fishers	X			RPC/Tourism Officer KMNP	
1.1.4 Deliver outstanding cash to boat owners		X		RPC/Tourism Officer KMNP	
RESULT 1.2: Existing KWS obligations to Wasini Women's Group cleared					
1.2.1 Communicate process to Wasini Women's Group & set realistic schedule of activities	X			RPC/Tourism Officer KMNP/ Area partnership Officer APO	
1.2.2 Complete draft proposal for mangrove board walk through participatory process		X		RPC/Tourism Officer KMNP	
1.2.3 Finalise Part Development Plan with District Physical Planner & Lands Surveyor		X		RPC/Tourism Officer KMNP	
1.2.4 Negotiate lease for mangroves with Forestry Department		X		RPC/Tourism Officer KMNP	
1.2.5 Finalise proposal & get all necessary approvals		X		RPC/Tourism Officer KMNP	
1.2.6 Secure funds for mangrove board walk from KWS Wetlands Training & Conservation Project			X	RAD/RBC/Tourism Officer KMNP	
1.2.7 Commence implementation/construction			X	Tourism Officer KMNP/ Wasini Women's Group	

RESULT 1.3: KWS capacity to provide assistance to stakeholders assessed & communicated									
1.3.1 Assess the social, technical & financial assistance that KWS is able to provide to KMNP stakeholders, and options for improving the contribution of KWS to KMNP stakeholders in exchange for partnership in management actions	X							RAD/RPC/Tourism KMNP	Officer
1.3.2 Implement intensive training in participatory processes, facilitation & animation techniques to key KWS staff in KMNP, coast HQ & Partnership Officers	X							Consultant trainers (IUCN to identify trainers)	
1.3.3 Investigate the feasibility & means of establishing a KMNP conservation trust fund	X							RPC	
1.3.4 Discuss findings in stakeholder forum(s) - avoid promises & keep options realistic			X					RPC/Tourism Officer KMNP	
RESULT 1.4: Benefits of KMNP assessed, discussed with stakeholders, & improved where possible									
1.4.1 Collect, collate & interpret results of relevant studies to identify benefits of KMNP for different users & identify gaps & opportunities for additional assessment	X							RBC Coast	
1.4.2 Send copies of all relevant reports to KMNP	X							RBC Coast	
1.4.3 Undertake economic analysis of tourism & fishery benefits of & financing/partnership opportunities for the KMNP complex	X							Consultant resource economist	
1.4.4 Implement a series of meetings with stakeholders to review & discuss KMNP goals & objectives, & KMNP benefits & means to improve these in exchange for management responsibilities			X					Tourism Officer KMNP/RBC/ RPC/RTC	
1.4.5 Explore options for community-based monitoring of fishery data (catches, gear, socioeconomic impact), & design & implement programme (link to KMFRI & Tanga Programme)								RBC/KMNP staff	
1.4.6 Report back to user groups annually (oral & written) through stakeholder meetings								RPC	

Objective 2: Approaches & mechanisms for partnership developed through participation of all stakeholders, field-tested & refined

	TIMING (QUARTER/YEAR)			RESPONSIBILITY	COST
	4/97-98	1/98-99	2/98-99		
RESULT 2.1: Stakeholders working effectively together & supportive of each others activities to address specific management issues, & that benefit both conservation & boat owners					
2.1.1 Convene meeting(s) of tour & small boat owners to explore need, options & means for regular forums & conflict resolution	X	X		Tourism Officer KMNP/APO	
2.1.2 Evaluate & draw on experience of Watamu MNP as possible means to help small boat owners	X			Tourism Officer KMNP/TO Watamu	
2.1.3 Identify specific activities (including training) for KWS support to boat owners & reciprocal actions for boat owners to assist KWS with management of the KMNP complex, including self-monitoring actions	X		X	Tourism Officer KMNP/APO	
2.1.4 Draw up formal agreement for collaboration between KWS & boat owners that clearly defines roles & responsibilities			X	RPC/Tourism Officer KMNP	
2.1.5 Implement specific assistance to small boat owners identified in partnership agreement (e.g., assistance with boat licensing, insurance, pricing of tourist services, & training in safety at sea, codes of conduct, visitor handling, guide services) (2.1.4)			X	RPC/Tourism Officer KMNP	
2.1.6 Boat owners implement activities identified in partnership agreement (2.1.4)			X	Boat owners	

Summary of Workshop Outputs: Management of the Kisite Marine National Park and Mpunguti Marine National Reserve Complex: Partnership Arrangements

IMPACTIVITY	RESPONSIBILITY	SUSJ
RESULT 2.2: Issue-base management activities defined & implemented in partnership with pilot community (Mkwiro village) to safeguard mutual benefits (conservation & community livelihoods)		
2.2.1 Through participatory approach identify project & partnership opportunities linked to the KMNP complex (Mkwiro village), including community-based monitoring & special training needs for villagers to implement specific related tasks	X X X	Tourism Officer KMNP/APO
2.2.2 Record, discuss, distribute minutes of all meetings	X	Tourism Officer KMNP/APO
2.2.3 Formulate work plan & define roles & responsibilities using participatory approach, define monitoring & evaluation methods & indicators	X	Tourism Officer KMNP/APO
2.2.4 Formulate, agree, sign partnership agreement	X	RPC
2.2.5 Implement training for specific management activities identified in Activity 2.2.1	X	Tourism Officer KMNP
2.2.6 Implement work plan & monitoring	X	Tourism Officer KMNP/ Mkwiro comm.
2.2.7 Evaluate & refine methods & approaches & feed back information to villagers.	X	Tourism Officer KMNP
RESULT 2.3: Activities monitored & evaluated, approaches refined		
2.3.1 Establish project technical steering committee (TSC) to maintain & advise on implementation	X	KWS (Coast)-IUCN
2.3.2 Agree monitoring methods, indicators, timing	X	TSC
2.3.3 Implement regular M&E	X	TSC
2.3.4 Prepare & circulate semi-annual newsletter to WIO network	X	IUCN/KWS

ANNEXES

ANNEX 1: WORKSHOP AGENDA

May 11	
0900 - 1030	Welcoming session and workshop opening
	Welcome and introduction of Guest of Honour (Mr Ben Kavu, Regional Assistant Director, KWS Coast)
	Address by Guest of Honour & Opening of the workshop (Dr David Western, Director KWS)
	WCPA and Marine Protected Areas (Mr Lota Melamari, Vice Chair WCPA)
	Overview & Objectives of workshop (Dr Rodney Salm, Coordinator, Marine and Coastal Activities, IUCN EARO)
1030 - 1100:	Coffee break
1100 - 1300:	Chair: Mr Ben Kavu Rapporteur: Dr Nyawira Muthiga Introduction to marine protected areas (Dr Magnus Ngoile, Institute of Marine Sciences) Partnerships with the private sector (Mr Ricky Taylor, KwaZulu Natal Nature Conservation Service) Partnerships with communities (Dr Grazia Borini-Feyerabend, Collaborative Management Working Group)
1300 - 1400:	Lunch
1400 - 1630	National reports: Chair: Mr Lota Melamari Rapporteur: Mr John Muturi
1400 - 1430	Kenya (Dr Nyawira Muthiga, KWS)
1430 - 1500	Seychelles (Mr John Collie, Seychelles Marine Park Authority)
1500 - 1530	Mozambique (Ms Maria Imelda Sousa, Ministry of Agriculture and Fisheries)
1530 - 1600	Tea/Coffee
1600 - 1630	Tanzania mainland (Mr Chikambi Rumisha, Fisheries Department) Zanzibar (Mr Makame S. Nassor, Commission for Natural Resources)
1630 - 1730:	Preparatory meeting for Day 2: Introduction to Kisite Marine National Park (Jane Kaleha, KWS) Case Study on Benefits of Kisite Marine National Park for stakeholders (Ms Delphine Malleret-King) Programme and guiding principles for working groups Designation of working groups
1800 - 1930:	Cocktail drinks
1930:	Dinner

May 12	
0700 - 1600:	Excursion
	Excursion to Kisite MNP with KWS rangers, snorkelling over coral reef, tour of other MNP features Lunch on Wasini Island Expected outputs of the excursion: Incentives, obstacles and opportunities for partnership with tour operators and communities for MPA management Draft approaches for generating benefits and incentives for collaborative management of MPAs
1430 - 1600:	Kisite MNP group study: working group discussions with stakeholders (boat operators, Wasini Womens Group, fishers)
1800:	Working groups report back major findings at Hotel
2000:	<i>Dinner</i>
May 13	
0830-1000:	Case Studies of MPA management by non-government agencies: Chair: Dr Grazia Borrini-Feyerabend Rapporteur: MrChikambi Rumisha Cousin Island, Seychelles - managed by International NGO (BirdLife), Dr Nirmal J. Shah Chumbe Island, Zanzibar - managed by private sector (CHICOP), Sibylle Riedmiller
1000 - 1030:	<i>Coffee break</i>
1030 - 1230:	Case studies continue: Tanga, Tanzania - managed by community, (Tanga Coastal Zone Conservation & Development Programme/IUCN), Dr Chris Horrill Bazaruto Project, Mozambique - NGO supported Collaborative management (WWF/Endangered Wildlife Trust), Antonio Reina Chair's summary of main issues
1230 - 1330:	<i>Lunch</i>
1330 - 1600	Synthesis <i>Chair: Dr Magnus Ngoile</i> <i>Rapporteur: Nyawira Muthiga</i> Working groups discuss different issues raised during stakeholder discussions (50 mins) Working groups discuss different issues raised in the national and case study papers (50 mins) Working groups synthesise different issues and means to address them and prepare to report back (50 mins)
1600-1630:	<i>Coffee break</i>
1630 - 1730:	Working Groups report back, discussions and recapitulation
1730 - 1745 :	Workshop Evaluation
May 14	IUCN and KWS process workshop outputs

ANNEX 2: WORKSHOP EVALUATION

Participants were requested to evaluate the workshop content and logistics using the table below. Twenty-eight evaluation forms were completed and returned to the Secretariat. The great majority of participants rated the workshop good to excellent in achieving its objectives and considered the discussion groups relevant to their work, and the results were also rated good to excellent. Workshop logistics were rated good to excellent by the overwhelming majority of the Participants.

The results have been compiled in the following table:

Workshop content	Poor/Fair	Good/Excellent
Did the workshop achieve Objective # 1? <i>Approaches to MPA management, stakeholder collaboration and financing mechanisms shared and examined.</i>	18%	82%
Did the workshop achieve Objective # 2? <i>An approach formulated for achieving sustainability of MPAs through partnership between the management authority, tourism sector and communities for their management.</i>	36%	64%
Working Group Discussions and facilitation	3%	97%
Workshop's relevance to your work	10%	90%
Are you pleased with the results?	11%	89%
Workshop Logistics		
Workshop venue and facilities	7%	93%
Accommodation		100%
Food	22%	78%
Excursion day arrangements	4%	96%

Additional comments

Participants were requested to make additional comment and expand on issues felt they merited this. These comments are summarised below:

1. Workshop content

- financial mechanisms were not covered adequately
- there was not enough emphasis on economics issues, nor down to earth real costs of conservation
- the case studies could have been more detailed in terms of partnership approaches
- regional experiences sharing was excellent
- workshop facilitation was excellent
- workshop time management was good
- comparison of parks/reserves in other countries with Kisite in some cases were not of much help due to the difference in socioeconomics, cultural background, and "age" of parks to offer very good examples.

Comment and response

IUCN and KWS will try to address economic issues through a detailed analysis at the Kisite MNP (see workplan in previous section). IUCN will also examine budget allocations to determine whether a similar analysis could be extended to other sites (e.g. St Anne MNP, Tanga Community Reserve, Chumbe Island) The reports of these studies will be distributed to all participants.

2. Workshop Logistics

- Travel arrangements were excellent
- Telephone prices at hotel were very expensive
- During the excursion, utilisation of local community boat services was poor, utilisation of local community food services was excellent
- Excursion should have dealt with more community representatives.

Comments and Response

During the excursion, a deliberate decision was made to combine the services of a large operation (boat) and a community owned operation (restaurant).

3. Participants' commitments to follow-up:

- The workshop has provided a real learning opportunity which is of direct application to my work.
- I will arrange meetings with my colleagues to brief them on the workshop, and also request KWS/IUCN to arrange some more workshops regarding marine protected areas.
- Try and get KwaZulu-Natal more involved in the WIO Regional Seas Programme- we are part of the ecosystem but feel very left out at times.
- Liaise with Secretariat.
- Maintain contact with briefs on progress.
- Write to new contacts.
- Follow up with individuals on research projects.
- Keep in contact to know what were the following actions.
- Ensure that I get the proceedings and network with fellow managers.
- Try to put into practice the recommendations reached.
- Enlighten the locals on conservation of MPAs.
- Incorporate what I have learned in the upcoming book on Collaborative Management of Natural Resources; pass on copies of past publications; and keep in touch with some people.
- Test the feasibility of establishing legally recognised community groups.
- Get information from management of Kisite MPA on improving socioeconomic benefit to stakeholders.
- Have a local working group to ensure that outputs are carried through. Later reconvene this group to assess progress/refine/change approaches.
- Assess results of workshop recommendations after the time frame has expired (after 3 years).

Comment and Response

Please keep IUCN EARO informed of follow-up activities so that we can incorporate these into the network newsletter. We all need to benefit from each others' successes and failures, therefore send them all in.

IUCN is trying to raise funds for additional MPA workshops on specific themes and to develop a regional programme. Please write letters asking for IUCN support for these. It will help our fund raising efforts.

ANNEX 3: LIST OF PARTICIPANTS

Participant	Position	Organization	Address	Telephone/Fax/E-Mail	Country
ABUU-BAKAR Ahmed	Boat Captain & Secretary	Kisite Boat Operators	P.O.Box 19, Shimoni	Tel: 52288 Wasini Island	Kenya
AMBOGA Gideon	Tourism Officer	Kenya Wildlife Service	P.O.Box 82144, Mombasa	Tel: ++ 254 11 312744/5 Fax: 222774	Kenya
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CHURCH Julie	Project Executant	Cons. & Dev. of Kiunga Marine Reserve Project, WWF-EARPO	P.O.Box 99 Lamu or Box 15551, Nairobi	Tel: ++ 254 121 33456 ++ 254 2 332833/963 Fax: ++ 254 121 33456 ++ 254 2 332878 E-Mail: aauction@iconnet.co.ke	Kenya
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HUGHES Soibhan	Acting Manager	Wasini Island Restaurant and Kisite Dhow Tours	P.O. Box 281, Ukunda	Tel: ++ 254 127 2331/3055/52289 Fax: 3154	Kenya
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KALEHA Janet	Tourism Officer	Kenya Wildlife Service Kisite	P.O. Box 55, Ukunda	Tel: Shimoni 3	Kenya
KAVU Ben	Regional Director	Kenya Wildlife Service Coast	P.O. Box 82144, Mombasa	Tel: ++ 254 11 312744/5 or 222612 Fax: 222774	Kenya
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ANNEX 3: LIST OF PARTICIPANTS

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MASILA Alfred	Area Partnership Officer	Kenya Wildlife Service	P.O.Box 82, Lamu	Tel: ++ 254 121 33080	Kenya
MUTHIGA Nyawira	Regional Biodiversity Coordinator	Kenya Wildlife Service Coast	P.O.Box 82144, Mombasa	Tel: ++ 254 11 312744/45 Fax: ++ 254 11 227774 E-Mail: nmuthiga@africaonline.co.ke	Kenya
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SALM Rodney	Coordinator, Marine/Coastal Programme Coordinator	IUCN - The World Conservation Union, Eastern Africa Regional Office	P.O. Box 68200, Nairobi	Tel: ++ 254 2 890605-12 Fax: 890615/890407 E-Mail: rodney.salm@iucn.unon.org	Kenya
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WHITE Ken		Coral Reef Conservation Project		E-Mail: Keneththw@ozemail.com.au	

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