

Sustainable Financing of Marine Protected Areas in Zanzibar

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Table of Contents:

1	INTRODUCTION.....	1
1.1	Background.....	1
1.2	Marine degradation and MPAs.....	2
1.3	Sustainable financing of MPAs.....	3
2	LEGAL AND INSTITUTIONAL FRAMEWORK.....	5
2.1	Legal framework.....	5
2.2	Institutions.....	7
3	COSTS AND REVENUES FOR ZANZIBAR MPAS.....	11
3.1	Menai Bay.....	11
3.2	Misali Island.....	23
3.3	Chumbe Island.....	38
3.4	Mnemba Island.....	49
3.5	Other coastal and marine PAs.....	54
4	OPTIONS FOR SUSTAINABLE FINANCING OF MPAS.....	70
4.1	Summary of key MPA characteristics.....	70
4.2	Managing and financing options.....	73
	REFERENCES.....	77
	ANNEX A: A CHARACTERIZATION OF MPAS IN ZANZIBAR.....	80
A1	Menai Bay Conservation Area (MBCA).....	80
A2	Misali Island Marine Conservation Area, Pemba.....	82
A3	Chumbe Island Coral Park.....	85
A4	Mnemba Island Marine Conservation Area.....	88
A5	Jozani Chwaka Bay National Park (proposed).....	90
A6	Kiwengwa Controlled Area.....	93
A7	Ngezi Forest Reserve, Pemba.....	95
	ANNEX B: PEOPLE CONSULTED.....	98

1 Introduction

This report provides an overview of the protected areas in Zanzibar, with particular focus on current revenues and costs of the management of Marine Protected Areas (MPA) and options for sustainable, long-term financing.

The report is a background document for the World Bank Tanzania Office. It is based on a two weeks mission to Zanzibar in March 2003.

This chapter provides a brief background and introduction to Zanzibar and the current MPA system, while chapter 2 describes the legal and institutional framework within which the MPA system is functioning. Chapter 3 provides a detailed description of the main features, and the costs and revenues of the MPAs in Zanzibar. A detailed characterization along the key dimensions of size and biographic information, legal status, institutional arrangements, management status, and socio-economics is provided in Annex A for the purpose of comparison and further background information.

Chapter 4 pulls out the key lessons from the case studies and suggests options for a sustainably financed MPA system in Zanzibar.

1.1 Background

Zanzibar consists of the two large islands of Unguja (usually called Zanzibar Island) and Pemba, plus several smaller ones, about 40 km off the coast of mainland Tanzania. Zanzibar Island is about 85 km long and between 20-30 km wide, with an area of 1500 km². Pemba Island is about 75 km long and between 15-20 km wide, with an area of 850 km². The islands are generally flat and low lying and surrounded by coasts of rocky inlets or sandy beaches, lagoons and mangroves, and coral reefs. The major difference between the two islands relates to their geological origin. Unguja consists of fossil coral while Pemba is referred to as a continental island and bears resemblance to the main continent of Africa both in terms of fauna and flora. Consequently, the soils of Pemba are much more fertile than those of Unguja.

The climatic condition of Unguja is highly influenced by the monsoon winds. The characteristic pattern of monsoon winds is that the north easterly winds blow from October to March and south easterly winds from March to early July. There are two rainy seasons, the short from October to December, and the long rains from March to early June. The rains are more reliable on the west of Unguja than the east where droughts sometimes occur.

The main economic activities for the people of Zanzibar are the growing of coconuts, spices (cloves) and to some extent bananas and citrus fruits, fishing and small-scale agriculture (esp. maize, cassava), and tourism. The population of Zanzibar is around 900.000, with around 150.000 settled in Zanzibar Town on the West coast, according to the most recent census.

Zanzibar is a separate state within the United Republic of Tanzania, governed by a Revolutionary Council and House of Representatives, whose members are elected or appointed. The president of Zanzibar is also the vice-president of Tanzania.

1.2 Marine degradation and MPAs

Environment, natural resources and tourism are considered “non-union” issues and therefore are dealt with by each government separately. Though the institutional setup, the laws governing coastal resource management and to some extent the practices are different in Zanzibar as compared with mainland Tanzania, many of the resource use conflicts along the coasts of the Western Indian Ocean are very similar¹:

- *Over-exploitation of resources*: Unregulated open access regimes have led to over-harvesting of marine resources and lower-than-optimal yields.
- *Destructive fishing practices*: Drag nets and poles (*kigumi*), beach seine (*juya*), poison, spearguns, explosives destroy corals etc reducing the overall productive capacity of the ecosystem
- *Modification/loss of ecosystems*: Particularly coral reefs and sea grass beds; linked to the two previous bullets.
- *Pollution*: Microbiological, e.g. domestic and agriculture

As part of the mix of measures to deal with these problems, Zanzibar has established several protected areas over the last few years to conserve marine resources for sustainable use for the people within and adjacent to the most threatened areas (see Table 1-1):

¹ As concluded in the Tanzania National Report for GEF by Francis *et al* (2002)

Table 1-1 Current MPAs/Conservation areas

MPA	Type ¹	Year established
Unguja (Zanzibar Island):		
Chumbe Island Coral Park (CHICOP)	Marine Sanctuary	1994
Menai Bay Conservation Area (MBCA)	Marine Conservation Area	1997
Jozani forest/Chwaka bay complex	National Park	Proposed ²
Mnemba Island Conservation Area	Marine Conservation Area	2002
Kiwengwa Controlled Area	Marine Controlled ³ Area	2000
Pemba Island:		
Misali Island Marine Conservation Area	Marine Conservation Area	1998
Ngezi forest (including coastal zone)	Forest reserve	1959 ⁴

1. According to Zanzibar terminology (with focus here on marine protection).
2. Jozani forest is already protected. The extension including Chwaka Bay is currently being considered as a national park
3. “Controlled Area” and “Conservation Area” appear to be legally equivalent terms, “controlled” being the old term used in the Fisheries Act of 1988, while “conservation” has been introduced in by-laws.
4. There are also other forest reserves in Zanzibar, but Jozani and Ngezi are of particular significance due to their close connection with the coastal zone, including mangrove areas.

Definition of Marine Protected Area (MPA): “Coastal and sea areas enjoying some level of legal protection nationally or locally, and that are especially dedicated to the conservation, protection and maintenance of biodiversity, and associated cultural resources” (Francis et al 2000:503). The same study lists four categories (or generations) of MPAs in Eastern Africa:

1. Small areas for single species or unique habitat protection (1st generation)
2. Large multiple use MPAs designed for coastal development as well as biodiversity protection (2nd generation)
3. MPAs managed by NGO or the private sector (3rd generation)
4. Community-based MPAs (“mpa’s”) (forthcoming 4th generation)

1.3 Sustainable financing of MPAs

Many MPAs internationally face financial constraints as Government funding is being reduced from already low levels, while at the same time pressure on natural areas and thus the costs of managing them, increases. This trend constitutes a great challenge for the management of protected areas: both efficiently to manage MPAs on low budgets and to design strategies that capture a larger share of the values of MPAs for the sustainable financing of MPA systems into the future.

Definition of sustainable financing: The capture of use and non-use values of an MPA system from a diverse set of international and national sources so that the average annual revenues meet the average annual recurrent costs over a period of 10 years plus an uncertainty premium to cover unanticipated expenditures or revenue shortfalls.

An additional challenge for MPAs in developing countries, which in many cases are supported through donor programs for start up and investments, is to find ways to sustain operations in the long-term once these funds are phased out. The MPAs in Tanzania and Zanzibar face similar problems.

Most of the protected areas in Zanzibar are relatively young, and the management approaches and sustainable financing strategies are all in the making. Further, the MPAs in Zanzibar differ in many important respects – providing a broad range of early experiences and lessons on which to build a future MPA system in Zanzibar.

2 Legal and Institutional Framework

Soon after the Zanzibar's revolution of 1964, all natural resources including fisheries were put under state ownership. Thereafter a highly centralized management system was instituted based on a regime of open access. It was not until 1988 when a fisheries act was legislated based on a Fisheries Policy of 1985. In 1993 the Minister responsible for Fisheries issued the Fisheries Principal Regulation that declared the use of certain fishing gear such as bottom seine nets, dynamite and poisons to be illegal (MANREC 2000).

Under the prevailing conditions of financial constraints, however, law enforcement progressively became difficult and harvesting of fisheries resources continued to be governed by the old regime of open access. Unregulated competition among fishermen led to rampant use of destructive fishing techniques in all waters of Zanzibar and the mainland.

This chapter provides a brief overview of the legal and institutional framework in Zanzibar within which the MPAs function.

2.1 Legal framework

Zanzibar's legal and institutional framework in the area of natural resource management in general and protected area management in particular, is currently in transition. The laws governing the management of protected areas are very new and institutional changes have either very recently been carried out or are under way. The main laws governing the use of natural resources and the environment are:

- The Environmental Management for Sustainable Management Act ("Environment Act"), 1996
- The Establishment of Zanzibar Nature Conservation Areas Management Unit Act, 1999
- The Fisheries Act, 1988
- The Forest Resources Management and Conservation Act, 1996

Of these, Part VII of the Environment Act forms the legal basis for the establishment of a **protected area system** in Zanzibar. The purposes of this system are (according to article 71):

- a) Preservation;
- b) Sustainable utilization by residents in and near the protected areas;
- c) Propagation of genetic resources for conservation in other areas;
- d) Education;
- e) Management of biological diversity;
- f) Scientific research; and
- g) Environmentally sound tourism and recreation.

In addition, the Act has sections on general environmental obligations, administration, planning, EIA, control and management of specific environmental threats, protected areas and biological diversity, and miscellaneous provisions. The Environment Act is thus a key piece of legislation governing (the future) management of the protected areas system in Zanzibar.

Both the Fisheries and Forestry Acts mentioned above have provisions for protection of habitats for conservation and sustainable use purposes. While these deal with specific sites, the Environment Act is aimed at governing the whole system of PAs.

Under the above-mentioned Acts, a range of legal orders and local by-laws has been established for the detailed operation and management of the different MPAs in Zanzibar. These may have provisions for revenue retention, rules for the use of the MPA etc. Some of the provisions regarding revenue retention and other issues are mentioned under each MPA in the next chapter.

Other laws may also have bearings on MPAs and conservation of marine resources in general. Of particular importance are the laws and regulations governing private investments in tourism hotels and activities, tax regulations, and the laws pertaining to the lease and use of land on islands and along the coast.

However, though the laws cover the important aspects of fisheries and natural resource regulation and environmental protection, the **enforcement** is weak. For instance, as mentioned in the introduction, the use of destructive fishing techniques is a huge problem in Zanzibar. These practices have been banned by the Fisheries Act since 1988, but are still pervasive.

In societies that have young and weak formal judicial systems, such as Zanzibar, the traditional customs and institutions often play a more important role of day-to-day regulation and enforcement. According to Zanzibar laws the entire sea is publicly owned, to which every individual has a user right. However, marine environments adjacent to any village are traditionally under the use interest and monitoring of that village.

Traditional, community-based systems may or may not be conducive to conserving natural resources. Particularly, when facing outside pressure from

markets and inside pressures from increased populations, such locally based systems may collapse into open access regimes.

A formal judicial system for MPAs, including the development of by-laws, usually works best if they are based as much as possible on the existing traditional systems to the extent these contribute to sustainable use of the marine resources.

2.2 Institutions

The main central government authority responsible for natural resources and the environment in Zanzibar is the **Ministry of Agriculture, Natural Resources, Environment and Cooperatives** (MANREC). The Ministry has developed an agricultural sector policy², which includes Fisheries as a sub sector. Further, a long-term planning document has been drawn up for the forestry sector, but not for fisheries.

Four separate Departments are located under the Ministry:

- Department of Fisheries and Marine Products (DFMP)
- Department of Commercial Crops, Fruits and Forests (DCCFF)³
- Department of Environment
- Department of Cooperatives

The two most important departments currently involved in the management of MPAs are DFMP, and to some extent DCCFF. The roles of these departments vary depending on the MPA in question, and are therefore described under the specific MPA case studies below. The current institutional setup for the management of MPAs is very ad hoc and temporary, as the new institutions promulgated in the recent laws are in the process of being set up.

Section 80 of the Environment Act establishes a **National Protected Areas Board** (NPAB) under MANREC as the central institution responsible for the national protected areas system in Zanzibar. NPAB has the following functions (according to section 81):

- Formulate, advise and coordinate the implementation of the policies of the government on protected areas;
- Recommend to the minister responsible for the national protected areas system those areas which are suitable for national protected areas status;
- Approve management plans for national protected areas;
- Designate the appropriate lead institution to manage a national protected area;

The NPAB has only very recently elected its members and convened its first meeting.

² MANREC (1999)

³ Formerly the Commission for Natural Resources

Section 87 of the same act establishes a **National Fund for Protected Areas Management** for the funding of the implementation of the functions of the NPAB. The fund comprises of various sources, including government allocations, donations, and fines for violations of the Act. It is worth noting that 87(2)(b) states that “the Fund shall comprise of all amounts collected from administrative measures [e.g. entrance fees and permits] imposed under sections 70-86 of this Act”. In other words, the revenues collected by individual MPAs would, once the fund is fully operational, be channeled through the Fund.

A semi-autonomous management authority under the NPAB, the **Zanzibar Nature Conservation Areas Management Unit (ZNCAMU)** was promulgated in a supplement to the Environment Act in 1999⁴. The main purpose of the Unit is “to conserve Zanzibar’s terrestrial, aquatic or marine ecosystems including their indigenous plants or animals through the establishment and management of nature conservation areas” (section 3).

The most important of the functions of the Unit is to (section 6) (the paragraphs on funding quoted in full):

- (a),(b) & (c): Manage nature conservation areas – in a way that benefits local communities and facilitate their active participation in management;
- (d): To support other conservation projects, especially those projects, which facilitate conservation by local communities;
- (e): Capacity building for conservation
- (f): “Generate and collect revenues such as entry fees and service charge from nature conservation areas managed by the Unit and to retain such proportion of such revenues for furthering the objectives of the Unit as the Minister shall by regulations permit after consultation with the Minister of Finance”
- (g): “To solicit and receive financial or other grants or donations by any lawful means for nature conservation in Zanzibar from any person or institution in accordance with approved annual and long term plans of the Unit and to retain such grants or donations for furthering the objectives of the Unit”.
- (h), (i): advise, promote awareness and educate the public locally and internationally

Under the same law there is a **Nature Conservation Development Fund** for “any excess revenues being collected or remitted to the Management Unit”.

The Management Unit is not yet operational, but separate units under the Departments of Fisheries and Commercial Crops, Fruits and Forestry, respectively, are in the process of being established.

The marine environment is affected by a range of activities, and coordination between MANREC and other Ministries is essential for sustainable development

⁴ Under the “Establishment of Zanzibar Nature Conservation Areas Management Unit Act, 1999”

of coastal areas and marine resources. The most important ministries are mentioned below.

Ministry of Trade, Industry, Marketing, and Tourism, and the Commission for Tourism, is an important stakeholder. Tourist development on Zanzibar is growing fast, and a recent Tourism Master Plan calls for more careful planning of the development of this sector (CHL 2002). One important concern is the impacts of hotel construction an operation, and tourism activities both on the terrestrial and marine environments eroding the base for a sustainable tourism industry.

The framework conditions for investments in tourism and for issues of collection and use of government revenues, are laid down by the **Ministry of Finance (MOF)**, and the various units under MOF:

- Zanzibar Revenue Authority (Zanzibar-specific taxes)
- Tanzania Revenue Authority (general Tanzanian taxes)
- Zanzibar Investment Promotion Authority (ZIPA)
- Zanzibar free economical zone: important for general FDI

The connection between the different tiers of government is coordinated and administered by the **Ministry of Regional Administration and Special Departments**:

- Regional administration
- District administration
- Local Government
 - Village leader (*sheha*)
 - Municipal/village councils
- Special departments: e.g. the Navy

Unguja is divided into three regions (Urban West, South, and North) and Pemba into two (North and South). Each of these regions has their own regional commissioner and an agricultural development officer dealing with natural resource issues. Each region is divided into two separate districts, which similarly has a district agricultural development officer and a subject matter specialist (SMS) in the areas of forestry, fisheries and environment. Below the district level is the village level (*shehia*), with the leader (*sheha*, appointed by the district commissioner), and municipal/village councils and committees on different issues.

Section 35 of the Environment Act restores local community's role in the management of natural resources close to them, but does not provide guidance on how to implement that aspiration. Paragraph 15 of the District and Town Council Act establishes at District level only a standing Committee responsible for protection of Environment and Social Welfare. The Act is silent at the local village level (Shehia level), where people needed for community participation in management of natural resources are.

According to the Government administrative structure, District authorities are best positioned to supervise conservation activities at community level. The Sheha is responsible for all matters including law enforcement in his area and reports directly to the District Commissioner.

3 Costs and revenues for Zanzibar MPAs

The following chapter describes the current management regimes for the MPAs in Zanzibar and takes a detailed look at issues of revenues and costs of management. A similar description is given for two protected forests with coastal zones (not strictly MPAs).

The case studies generally cover the following headings:

- Background and history
- Key features of the project
- Costs
- Funding sources and mechanisms
- Key issues regarding sustainable financing

Annex A provides an overview of the key characteristics of the different protected areas in Zanzibar for purpose of comparison and for a more detailed reference.

3.1 Menai Bay

Background and brief history

Menai Bay in the south west of Unguja is a traditional fishing ground and contains extensive areas of coral reefs, sea grass beds, mangrove forests and coral islands. The coastal and marine resources in this area remained relatively undisturbed until the early 1990s when the use of destructive fishing methods became prominent. The increasing demand for food in the cities of Dar es Salaam and Zanzibar is believed to be the major driving force behind the depletion of the fishing grounds and the increasing use of destructive methods (WWF 1996).

Following the high increase of fishermen (both resident and visiting) in the Bay, the traditional management of the area, which enabled resources to be harvested on a sustainable basis, virtually collapsed. The traditional system included temporary (seasonal) closure of fishing areas, and the control of fishing gear and visiting fishermen. The consequences of the collapse in this system were realized by the fishermen of the Fumba peninsula in 1992 and they formed a management

committee comprising representatives from four villages⁵. Over a period of three years the Departments of Fisheries and Environment worked closely together with the management committee identifying the problems and ways to resolve them. The management committee gained no formal or legal recognition but represented a valuable first step towards empowering communities to manage their own resources. For the first six months of implementation, the four villages raised their own funds to provide fuel for the patrols and volunteered personnel to different activities.

During this phase the Department of Fisheries approached WWF for possible cooperation/assistance to take the process forward. WWF built on the initial steps taken by the villagers of the Fumbe area and organized a workshop in 1995, which brought together all stakeholders to discuss resource management issues in the bay. A decline of marine resources was seen by the communities to be a major threat to their livelihood. The communities felt positively towards the initial management system in the Fumba area when they were involved in decision-making, and they wanted to extend the system to include the larger Menai Bay area.

WWF decided to support a three year project, and the first couple of years focused on baseline studies of the ecological and socio-economic status, survey of the boundaries and preparatory work for a potential protected area, education and awareness programs, and the setting up of a management unit to patrol and engage in the different activities.

Key features of the project

Menai Bay Conservation Area (MBCA) was declared in 1997 under the Fisheries Act of 1988, covering 470km² – the largest MPA in Zanzibar. The objective of MBCA is sustainable use, i.e. regulated fishing with non-destructive gears, tourism activities and sustainable mangrove harvesting – for the benefit of local communities. The Order does not specify any management or advisory committees.

Community participation in management

The management system of MBCA operates at three levels; village district and national levels. A unit consisting of around 15 staff seconded from the Department of Fisheries has the day-to-day management responsibility of the area. The unit is located in the Department of Fisheries in Zanzibar Town.

There is a temporary field office on the southern boarder of the bay consisting of two patrol officers. These are mainly patrolling the area, recording fish catch data but are also engaged in environmental education activities and training of local fishermen for patrolling. There are two patrol boats, one of which is a fairly new, there is radio communication with head office and GPS equipment. Three field offices are currently under construction: one new office at the southern site (Kizimkazi), one to the west (Unguje) of the bay and one in the North (Fumbe).

⁵ The villages of Fumba, Bweleo, Dimani and Nyamanzi.

Since the area is so large, the plan is to patrol and engage with communities from these three field stations.

There are around 16 villages in the whole Menai Bay area, 21 including mangrove-adjacent villages. The population is believed to be around 16-20,000 (MANREC 2000). MBCA has three administrative districts and two regions. The WWF has focused on the full community participation in all parts of resource management of MBCA, i.e. planning, implementation and evaluation. To involve local communities, village conservation committees (VCC) have been established in all villages. In each village there are ten democratically elected committee members responsible for all environmental affairs in the area. The committee works in close collaboration with the Shehas and a fisheries officer based in the village. The committees are comprised of both men and women of different ages irrespective of education and social status. The role and responsibilities of the VCC's are to:

- Articulate views and concerns of the village to the project team, management and steering committees,
- Ensure full village participation in project activities
- Ensure a means of communication between the villages and the project
- Provide community members to assist in project initiatives such as harvest monitoring, surveillance and education and awareness programs

Above the VCC level there is a district committee (DC) for each of the three Districts whose members include two representatives drawn from each village committee. The role and the functions of DC's are:

- To articulate views of VCC's to district authorities and the standing committee responsible for protection of environmental and social welfare
- Two members from each DC committee are elected to the management and steering committees respectively

In addition, there are specific committees dealing with the management of mangroves in some of the villages. Above the project management unit, there is a management committee and a high level steering committee.

Due to the large number of villages it is a challenging task to build a community-based institution capable of coherently supporting and managing conservation activities. Disputes between villages are common in the bay and often have long historical background. These differences may continue to inhibit the spirit of cooperation between neighboring villages. It is too early to tell if the structure of village committees and the involvement of villagers in different activities and self-policing, is a sustainable institutional arrangement.

Main activities

The main activities currently undertaken are:

- *Patrolling*: 2-3 days patrolling a week. When patrolling 4 people from local villages – different village each time – are picked up to take part. This is part of the training so that later the fishermen can be in charge of patrolling

their own areas. It is seen as difficult to arrest offenders, though the guards have the legal power to do so. There is sometimes assistance from the coast guard.

- *Environmental education*: Different types of awareness raising and education activities in the villages. Training of facilitators for environmental education Activities at least once a month.
- *Community development/alternative livelihoods*: Nurseries, beekeeping, tourism
- *Mangrove forest management*: Patrols, surveying, awareness raising and replanting. Work ongoing on the zoning of mangrove areas.
- *Work on a revenue collection scheme*: This scheme has aimed to make MBCA independent of donor funds by 2004. However, the scheme has been delayed in implementation (see below).
- *Adoption and implementation of a management plan for MBCA*: A management plan has been drafted (in Kiswahili) – but not yet adopted. There is concern that the plan does not have the necessary community support for implementation (see below).

There is no careful monitoring of fish catch and the ecological state of MBCA. However, there are indications – both from fishermen's catch and the number of boats that enter the area – that the number and sizes of fish have improved since the start of the project. The performance of the project was assessed in 2002 and some of the key points of this evaluation as pertaining to the financial sustainability of MBCA are mentioned below.

Costs

Investment costs

WWF initial investment for 1995-1998 was approximately Swiss Francs 150,000 or about US\$ 115,000 at the current exchange rate. Some of the key activities the first 3 years were:

- *Initiating the process*: workshop, community consultations etc
- *Setting up of project unit*: Including purchase of various types of equipment and stationery
- *Establishment of a field base*: Arrangement of field office, fuel storage, electricity etc
- *Enhancement of patrol and surveillance activities*: Purchase of outboard motors, radios, training etc
- *Biological, socio-economic studies and monitoring program*
- *Development of a management plan*
- *Environmental education program for Menai Bay*: Included the purchase of audiovisual equipment etc

A second wave of major capital investments were planned and started in the FY of 2001/02 relating to the construction of the three field stations. The total investment costs for this activity in FY 2002/03 was US\$ 75,000.

The project has currently most of the equipment needed for maintaining the basic level of operations:

Table 3-1 A selection of capital and equipment

4WD double cabin vehicle	Various audio equipment	Air conditioning
Motor cycles (4)	Color TV	Office furniture
Digital camera	Radio cassette	Stationery
PCs, printer, fax machine	Radio communication equipment	Out board engines (4)
Photocopies, phones	Projector & screen	Binoculars
GPS	Steel cabinet	Fiber boat

Current operating budget

The total budget for MBCA for FY 2002/03 is **TSH 82,076,460**, of which 73,558,080 is from the WWF and TSH 8,518,380 from the Government of Zanzibar. The table below provides a detailed breakdown of the operating costs for the WWF-CH part of the MCBA project for the current financial year.

Table 3-2 Activity Report July 2002-31.Jan 2003 (TSH). WWF Tanzania Program Office

Description	Exp. year to date	Revised budget
Salaries	2379254,96	5529600,00
WWF Staff Overtime allowance	7263,59	0,00
Workshop	516277,00	0,00
Daily paid workers	2141000,00	4059840,00
Evaluation fees	7672395,90	0,00
Menai staff fare	952630,00	600000,00
Menai staff exps out of T. PD	468355,25	1800000,00
Menai Hospitality	100000,00	0,00
Menai workshops & training	8098920,00	7600320,00
Menai repairs and maintenance	445600,00	720000,00
Menai office running utilities	1532900,00	1200000,00
Menai telephone/fax/e-mail	3611116,64	7954560,00
E-mail expenses	522990,00	0,00
Menai postage and shipping	14200,00	199680,00
Menai photocopying charges	261060,00	484800,00
Menai supplies	343250,00	2599680,00
Menai bank charges	38750,00	99840,00
Menai computer running costs	2150760,00	199680,00
Menai boat running	787900,00	0,00
Engine for boat	2646700,00	2189760,00
Fuel	1713680,00	3500160,00
Insurance	1459215,00	1187520,00
Boat maintenance	217890,00	4500480,00
Patrol sea time charges	754000,00	0,00
Menai patrol sea time	0,00	6000000,00
Menai field supplies	145000,00	1000320,00
Non capitalized cost of land (for office)	0,00	10000320,00
Field infrastructure	354000,00	0,00
Office equipment	2021490,00	0,00
Menai office equipment & AC	0,00	1999680,00
Menai Miscellaneous field equipm	2522000,00	0,00
Boat equipment	0,00	4999680,00
Menai PO management fee	2474597,88	5132160,00
TOTAL	46353196,22	73558080,00

In addition to the budget from WWF project, the Government of Tanzania funds seconded staff from the Department of Fisheries to manage the project:

Table 3-3 DFMP staff contribution to MBCA

No	Description	TSH/month	TSH/year
1	Manager	116000	1392000
1	Planning and administration	52800	633600
1	Fishing coordinator	53500	642000
1	Training coordinator	56300	675600
1	Driver	30900	370800
1	Cleaner	37825	453900
1	Cleaner (2)	31500	378000
1	Head patrol (at Kizimkazi)	54100	649200
1	Assistant environmental education coordinator (+ also Fish officer Central district)	64060	768720
1	West District Fish officer	31750	381000
1	South District Fish Officer	33580	402960
1	Mangrove coordinator	56300	675600
1	Environmental education coordinator	36350	436200
1	Research coordinator	54900	658800
14	TOTAL SALARIES	709865	8518380

Some of the project activities carried out since July 2001 are listed in the table below:

Table 3-4 Costs of sub-project activities July 2001 – March 2002

Activities	TSH
Beekeeping sub project	2,976,000
Bweleo Nursery sub-project	571,900
Turtle sub-project	1,574,500
Building office premises (consultancy fees)	952,000
Dolphin awareness sub-project	200,000
Report on mangroves	100,000
Marker buoys	405,000
TOTAL	6,779,400

Projected costs for the establishment of a proposed revenue collection system

Kadu (2001) makes an estimate of operating costs, which includes staff and infrastructure for a proposed revenue collection scheme based on the consolidated budget for FY 2002 in the proposed activities report for the year 2001-2003. The estimate of TSH 87,588,000 is around the same level as the current level of operating expenses (as mentioned above).

Table 3-5 Projected operating costs for MBCA for first year of revenue collection scheme

Item	Cost per annum (TSH)
Personal emoluments (breakdown in the table below)	46,080,000
Patrol sea time	1,000,000
Environmental education/awareness raising	1,080,000
Social security fund/leave	3,128,000
Committees meeting	2,800,000
Office supplies	1,600,000
Photocopying	1,000,000
Small supplies	800,000
Vehicle and craft running	20,900,000
Training and workshops	9,200,000
Grand total	87,588,000

Table 3-6 Projected staff salary breakdown for first year of revenue collection scheme

Headquarter Administration	No. of Staff	Salary/annum (TSH)
Manager	1	3,200,000
Assistant Manager	1	2,720,000
Ad/assistant	1	2,400,000
Secretary	1	800,000
Receptionist	1	640,000
Askari (guard)	2	1,600,000
Office attendant	1	560,000
Driver	1	800,000
Total adm	9	12,720,000
Headquarter technical staff		
Fisheries coordinator	1	1,600,000
Forest coordinator	1	1,600,000
Environmental Education Officer	1	1,600,000
Community Censer Coordinator	1	1,600,000
Marketing officer	1	1,600,000
Internal auditor	1	1,600,000
Research/development	2	3,200,000
Accountant	1	1,920,000
Accountant clerk	2	1,920,000
Booking officers	2	1,920,000
Total technical staff	13	18,240,000
Field staff:		
Kizimkazi station:		
Officer	1	1,600,000

Coxswain	1	800,000
Radio attendant	1	560,000
Askari (guard)	2	1,600,000
Revenue office	2	1,920,000
Tour guides	2	1,200,000
	9	7,680,000
Unguja Ukuu/Uzi Station:		
Revenue office	2	1,920,000
Radio attendant	1	560,000
	3	2,480,000
Kikungwi Station:		
Revenue office		1,920,000
Fumba/Bweleo Station:		
Revenue office	2	1,920,000
Radio attendant	1	560,000
	3	2,480,000
Mtende Station:		
Radio attendant	1	560,000
TOTAL SALARIES		46,080,000

Current operating costs vs “optimal level” of activity

It is difficult to know what the “optimal” budget and types of activities are for the management of an MPA – even more so for a complex MPA as MBCA. All projects tend to take up the resources available, no matter how large the budget. For MBCA the operating budget is clearly very low as compared with other MPAs.

When management staff were asked what they would do if they had more funds, three key issues came up:

- *Ecological baseline survey:* Generate more knowledge about the resource they are managing, as basis for zoning and the more efficient overall use of the area
- *Environmental education among villagers:* Step up the environmental education program and environmental awareness raising among the communities
- *Revenue collection:* Implement the revenue collection scheme

In addition, the number of patrols is currently limited at a likely “below-optimal” level at 2-3 days per week – trying to cover the whole bay in a day from the southern point of Kizimkazi.

Funding sources and mechanisms

Funding to date

Most or all of the funding for the project to date has come from the WWF. MBCA has also received the occasional donation from private trusts or persons. (e.g. US\$ 10,000 from the Erlenmeyer Foundation in 2000).

For the FY of 2002/2003 around 90% is funded by WWF, and 10% by the Government of Zanzibar, through its secondment of staff from DFMP. For the next financial year (2003-04) the Government of Zanzibar has allocated TSH 10,000,000 for MBCA over and above the current staff salaries.

WWF-UK withdrew their funding by the end of FY 2000, but decided to reinstate the funding for both FY 2001 and FY 2002. WWF-CH decided to support the project through FY2002/03.

The funds from WWF-UK for FY2001/02 of US\$ 75,000 was mostly spent on the construction of infrastructure at Kizimkazi and a rangers post on one of the islands, as mentioned in the cost section above. The financial support from WWF-CH will spent on running the project through the current financial year.

WWF is currently considering whether to continue their support to MBCA. The project is therefore in a transition phase where it its funding sources for next year are yet to be finalized.

Funding potential

Even without WWF's funds there is some potential for collecting revenues from tourists keeping the operation going, although probably for the first few years at a lower than optimal level of activity. The management of MBCA has started work on strategies for the sustainable financing of its operations. A tourism revenue collection scheme was drawn up in 2001 for MBCA (Kadu 2001), and planned for implementation in 2002 – though still delayed in implementation. Some of the reasons for this are hostility by local tour operators and disagreement with the WWF regarding the necessary degree of consultation with stakeholders for implementing a revenue collection scheme.

There is already some tourism infrastructure in the area. Presently there are restaurants and lodges such as Beach Villa, Dolphin View and Sea Villa at Kizimkazi-Mkunguni; Cabs and Kizidi Restaurants at Kizimkazi Dimbani in the south. In the central districts there is Nyemembe Sea Safari and in the west, there is Fumba Sea Safari and Adventures Affloat. Most of the activities, such as dolphin viewing, boat tours, camping on the islands, and provision of lunches to visitors are conducted by these in collaboration with international and local tour operators (Kadu 2001). The local tour operators charge around USD 30-50 for a dolphin watching trip, on which there is more than 50% chance to see the dolphins. It is estimated that around 12,000 tourists visited MBCA in 2002.

A by-law from 2001 declares the **fee structure** (see table below) and the principle of **revenue retention** for Menai Bay Conservation area: 70 percent of the revenue collected from the area shall be used for the management and 30 percent for the

development of community activities proposed by the District Committee. In other words, the by-law recognizes 100 percent revenue retention for MCBA.

Table 3-7 Fee structure for Menai Bay Conservation Area

A. Permit for entry	Tanzanian	Non-Tanzanian
1. Each person above the age of 16 years	TSH 1,000	US\$ 5
2. Between the age of 5 and 16 years	TSH 500	US\$ 2
3. Children below the age of 5 years	Free	Free
B. Permit for camping in the area for 3 months ("dago")		
1. Fisherman	TSH 5,000	NA
2. Fish monger	TSH 50,000	NA
3. Restaurant/shop keepers	TSH 5,000	NA
C. Filming	US\$ 100	US\$ 100
D. Research	US\$ 100	US\$ 100
E. Study Tour	US\$ 20	US\$ 20
F. Tourist boat	TSH 1,000	US\$ 5
G. Tourist car	TSH 1,000	US\$ 2
H. Fishing license per year (traps/shark nets + hand line)	TSH 3,000	NA

The proposed revenue collection scheme makes projections for revenue based on the fee structure above and costs, from 2001 until 2004.

Table 3-8 Revenue and cost projections for 2001-2004 (TSH '000)

Item	2001	2002	2003	2004
International visitor arrivals	8,400	12,000	15,000	18,000
Estimated tourism revenue from fees	42,888	57,280	69,280	81,280
30% for community development	-12,864	-17,184	-20,784	-24,380
Operating costs	-74,944	-87,588	-81,230	-81,230
Surplus (-deficit)	-44,928	-47,492	-32,734	-24,330

Source: Kadu (2001)

According to the projections in the table above, the revenue collection for 2001 and 2002 would have approximately covered half of the operating costs. The projected trend would make MBCA approaching financial sustainability some time around 2006-7.

Key issues regarding sustainable financing

Issues raised by recent evaluation

An evaluation of the MBCA project was carried out in June 2002⁶, to

- Assess whether MBCA project has achieved the objectives as set out in the Project Document
- Determine strengths and weaknesses in project implementation
- Recommend ways of improving cooperation among stakeholders
- Determine potential for expanding WWF involvement

Overall the evaluation was quite positive about the progress of the project, though several challenges remain. Some of the points from this evaluation, particularly as relevant to the financing, are mentioned below:

- The project has made preliminary steps to establish MBCA management structures and systems, in particular through the secondment of Fisheries Department staff to work on MBCA management issues. However, the evaluation team felt that these structures were set up as management systems for the WWF-supported project and not for the MBCA – a major issue of importance for the sustainability of the project..
- A draft management plan was prepared but did not have much support, perhaps due to lack of a fully participatory process..
- Lack of enabling legislation for the inclusion and full participation of local communities (through their committees) in the management of the bay.
- The evaluation team felt that there were several deficiencies in the proposed revenue collection scheme that need to be addressed before it is launched.
- The alternative livelihood activities have not been planned and implemented in a sustainable way. No overall strategy, proper training etc.
- Extremely cumbersome two-tier management structure (project steering and management committees) for a relatively small project.
- On prospects of financial sustainability, the team concluded:
 - For: Tourism revenue generation potential
 - Against: Lack of a comprehensive MBCA management plan owned by stakeholders, the lack of an MBCA institution firmly embedded in GoZ, the weakness of legal and institutional mechanisms for community participation in MBCA management, and the lack of long-term strategies for alternative livelihood initiatives, and for ensuring that MBCA tourism, vital for future sustainability, is developed responsibly

Other issues

In addition to the points raised by the evaluation team, can be added:

⁶ Malpas et al (2002)

- 100 percent revenue retention for MBCA can potentially constitute strong incentives for the raising of revenues and for the cost-effective use of funds. However, there is a concern that the optimal number of tourists (esp. for dolphin watching) may be exceeded.
- Stalemate in the prosecution of court cases related to contravention of fisheries legislation. This problem seems to be general for Zanzibar, and severely hampers communities' motivation to engage in conservation activities. This could ultimately jeopardize the potential tourism revenue.
- There is potential in the long term for raising more revenue from charging tourists a more diverse set of fees. For instance, scuba diving and dolphin watching are activities that potentially could be charged a higher fee.
- Menai Bay is not one of the priority areas of the Zanzibar Tourism Master Plan (which are the northern and the south eastern part of Unguja and northern and western zones in Pemba). This fact may hamper the tourist growth potential in the area, since infrastructure development may be delayed.

3.2 Misali Island

Background and brief history⁷

Misali is a small island (0,9km²) located approximately 10 km off the west coast of Pemba. The island is surrounded by a 9,4 km ring of coral growth of high biological diversity and a productive fishing ground. The forest on the island is a relatively undisturbed coral rag forest. The island's beaches (especially the western side) are important nesting sites for sea turtles

In the early 1990s the traditional users of Misali (an estimated 1640 fishermen from 29 different coastal communities around Pemba) were threatened with exclusion from their livelihood resource through the possible lease of the island to tourism investors. Further, there were problems with over-fishing and the use of destructive fishing methods on the reefs reducing the productivity of the area. The threat from tourism development prompted extensive lobbying of the government of Zanzibar, which agreed that the island would be proposed as a community managed eco-tourism site in which sustainable, controlled off-take would be allowed to continue (Abdullah et al 1999).

Conscious management of the Island started in 1996 when Misali Island Conservation Project (MICP) was established. This was a project of the Commission for Natural Resources supported by the Environment and Development Group (EDG) a UK based conservation consulting firm, with funds from the European Union. The aim of the project was to establish the island as a self-sustaining conservation area, with full the involvement of local communities.

The process culminated in the designation of Misali Island and its surrounding reefs as a protected conservation area in 1998. CARE Tanzania, a local branch of

⁷ Based on Abdullah et al (1999)

a NGO working worldwide, and the DCCFF have been operating the MICP since 1998 in close partnership with the local NGO Misali Island Conservation Association (MICA). MICA, consisting mainly of local fishermen, was established to influence, encourage and assist the communities to protect, develop and conserve Misali Island and to enhance the livelihoods of the communities using the island.

Key features of the project

The protected area includes both the coral rag forest and the marine area of approximately 21 km² surrounding the island – established through two separate legal orders under the Fisheries and the Forestry Acts, respectively.

Community involvement

The legal order establishes a Management Committee (MC), and Misali Island District Committees for the districts of Micheweni, Wete, Chake-Chake and Mkoani. The management committee appoints the manager of Misali. The formal establishment of the protected area allowed for the enforcement of controls on extraction by the Management Committee, made up of resource users, government and MICA representatives.

There is currently no general management plan for the project – only a five-page outline enclosed as a schedule to the legal order. This specifies that in addition to conserving the ecosystems and the productivity of the fisheries, an explicit goal is to involve the community directly in the management of the area. Fishermen and women participate in the management through a three-tier committee structure:

- Shehia (village) level,
- District level and
- Management Committees

The district committees send nine fishermen (the majority) to the fifteen-member Management Committee. The MC meets every six months and is the main decision-making organ of the protected area. It can nominate an individual, or organization to manage the protected area currently called the Misali Manager. Originally, the executive director of MICA was the Misali Manager. Currently, the acting manager is the Director of Conservation for DCCFF in Pemba.

The Village Conservation Committees (VCC) form the basis of MICA's structural set-up through which the community is taking part in the decision-making of MICA. The total number of village conservation committees established so far is 26 (the total membership being 589). The long-term plan of MICA is to have VCCs in all 36 project villages to gain wider participation of the community.

Management regulations

Both the terrestrial and marine areas are zoned, in a way that tries to merge the needs of the fishermen with long-term conservation objectives. The fishermen have been assigned a part of the island on the eastern side for camping temporarily, which was the traditional way, as nobody had been permanently settled there. The fishermen are allowed to collect dead wood from the area

around their camp for cooking and shelter building purposes. An estimated 1,067 fishermen who fish around Misali also camp from time to time on the island, staying for periods of 7-20 days per month. Misali also has some religious and spiritual significance for local communities (CARE 2002a).

The coastline on the western side of the island, in addition to the coral rag and (small patches of) mangrove forests, is fully protected. A special feature of the western coast is the importance of the beaches for turtle nesting, and a small islet for bird life. The reefs immediately off this coast are protected as a no-take core zone (1,4 km²), where only non-extractive activities are allowed (diving and snorkeling etc). The rest of the marine part of the protected area can be fished with the use of legal fishing gears.

Box x.x: Overview of fishing on Misali (based on a workshop presentation by Arielle Levine, UC Berkeley, as summarized in CARE (2002)):

Misali fishermen come from all over Pemba though most users are concentrated in the West and south with very few coming from outside Pemba. While the use of engines is beginning to increase, they are not common with Misali users, and fishing gear is still traditional. The importance of Misali and its use by a particular village is dependent on the proximity of the village to Misali, as well as the wind, weather and tides. Most of the commonly used gears are as follows:

- *Mishipi (hand-line)*: not very destructive, highly selective, used by many fishermen
- *Madema (fish traps)*: not very destructive, not as selective, catch primarily reef fish
- *Octopus gear*: Usually done with hand-spears (msumari) or sticks by both men and women in the shallow or intertidal zone, may also involve diving with or without masks. Highly selective, generally not very destructive
- *Nets*: has a higher catch, bycatch, and can be more destructive depending on the kind of net. Nets are on the increase in Misali and around Pemba (but are discouraged in Misali vicinity – except southeast – due to dive boats
- *Kigumi*: Involves the use of small-mesh nets whereby the water and reef are beaten with sticks. This is very destructive and mainly done by Wakojani who are generally despised by fishermen from other areas of Pemba.

Roles of stakeholders & activities

The roles of the three main stakeholders (DCCFF, MICA and CARE) are not entirely clear-cut, but can be summarized as follows.

CARE is the implementing agency for the donor funds supporting the project. CARE mobilizes and manages funds, provides technical support, advocates policy changes and implementation. In Misali CARE is particularly involved in community development activities in close cooperation with MICA. In order to help fishing communities diversify their income sources and reduce dependence on and thus pressure on the fisheries, the project launched a savings and credit scheme in five villages in Pemba in 2001. Based on a community revolving loan

fund model, support from CARE to the initial savings and credit groups through the provision of loans and technical support will be phased out after two loan cycles. The goal is that after this time the community groups will be able to continue the scheme independently. The credit scheme is backed up by training and capacity development in business and investments, and is at the core of the alternative income generating activities (see table below):

Table x.x Alternative income generating activities of MICP

Village	Income Generating Activities
Kojani	Bee-keeping, octopus trading, kerosene trading, pharmacy, selling of fishing gear, cosmetics and/or local perfume, handicrafts
Makoongwe	Bee-keeping, mushroom production, local poultry, fishing, kiosk
Tondooni	Bee-keeping, vegetable growing, fishing kiosk, local poultry, kerosene trading
Wesha	Bee-keeping, cattle, mushroom production, vegetable growing, fishing, tailoring, kiosks, tractor/milling, bicycle rental.
Michenzani	Mushroom production, local chicken raising, selling of used clothes, (Mitumba) tea room and kerosene trading

DCCFF is the Government institution currently having the acting manager of the MICP. DCCFF's role is to formulate policies, support the participatory management of Misali through MICA, and enforce policy implementation (law enforcement). DCCFF's competence is particularly in the area of forestry and mangrove management. Because of this, DCCFF works to some extent with the Department of Fisheries and Marine Products (DFMP). One of the activities **DFMP** is involved in is the monitoring of fish populations around Misali, both through official catch monitoring at landing sites and the surveys of the reefs (e.g. CARE 2002a, Machano et al 2002).

Box x.x The objectives of MICA are to:

- Safeguard the interests of fishermen fishing in the Misali area
- Conserve the natural environment and natural beauty of the island
- Promote awareness among the Misali Island community and Misali Island users of the importance of sustainable use of Misali Island and its natural resources
- Manage and conserve Misali Island and its natural resources in active cooperation with members of Misali Island Community
- Promote and develop sustainable tourism
- Raise funds and generate revenues for better management and conservation

MICA's involvement in the day-to-day operations seems mainly to be:

- Building awareness and education to schools, fishermen and the general community
- Supporting community development through tourism revenues: by 2002 nine community development projects had been supported with tourism revenues

- Capacity building for MICA staff and members
- Patrolling of protected area – as rangers
- Alternative income generation activities in collaboration with CARE
- Establishing village conservation committees: 23 committees have been established

The challenges of co-management

MICP has established a small rangers office and visitor's center on the island. There are six rangers employed under the project – all from MICA. Four of these are stationed on the island at any one time. The duties of the rangers are to patrol the area⁸, interact with fishermen on the island, welcome and charge visitors, rent out snorkeling gear to tourists, take tourists on guided walks or snorkels. There is currently a ranger based monitoring system jointly run by MICP and IMS – which supplements some of the other monitoring activities mentioned above. Presently, a main activity of the management is the installation of marker buoys for the core zone.

The visitor's center (which is a basic open shelter with a thatched roof) contains some information about MICP and marine life and coral reefs in general. A forest path for tourists has been cleared and some signs put up with information regarding sites. The rangers have three boats (one of which is in disrepair) with outboard engines for patrolling. There are some basic facilities for the rangers staying on the island. There are currently no plans of building accommodation for tourists on the island, though the facilities for day trips (e.g. including a café) may be improved in the near future.

Though MICA is not yet in the driver's seat of managing Misali, the collaboration between DFFCC and CARE seems to aim to capacitate MICA to take over a more prominent role in the management at a later stage. The level of involvement by MICA to date seems, however, to be significant enough to have provided the local communities with a sense of ownership.

However, a point was made in CARE (2002) that community management and the promotion of local ownership is easier in the management of "home grounds" (close to shore areas and villages) than for distant fisheries like Misali. For Misali, there does not seem to be a strong ownership of the reefs, but there is a sense of village boundaries and territories (CARE 2002). This means that the Government may need to play a more prominent role in the co-management of Misali to regulate "free access and free rider" problems, and work in the longer term to install a sense of common ownership among all users of Misali. Currently, the community, according to CARE (2002) is not organized well enough for full community management.

There are plans to strengthen the element of co-management in Misali through developing a participatory fisheries monitoring system (Obura and Wanyonyi 2002). This system may increase the sense of ownership among the communities

⁸ Currently only the core zone is patrolled

and can be used to inform sustainable harvest rules and help communities see the importance of conservation.

A workshop in the summer of 2002 brought together key stakeholders of the MICP and external resource persons and organizations to discuss the way forward for MICP. Some of the proposed steps for improving the existing project are mentioned below:

- Demarcate core zone and disseminate information about the core zone
- Strengthening of MICA's links with and representation of communities
- Develop participatory fisheries monitoring system for Misali fishery with fishermen and Department of Fisheries
- Consolidate/strengthen management processes currently in place and changing with incoming National Protected Areas Board
- Develop Misali Island Conservation Area Management Plan
- Strengthen management, decision-making and use of revenues
- Analysis of policy context for promotion of community home-grounds management

Costs

Due to the involvement of three separate institutions – all with their separate budgets – it is difficult to get a clear idea of the investment and recurrent costs pertaining to the management of the MICP. There may be overlaps and unclear responsibility between staff and activities.

Further, all three institutions are involved (though to a lesser extent) in the management of Ngezi forest – a protected forest in the northern part of Pemba under the same budgets. The Ngezi part of the expenditures to date is believed to be relatively low – though there are no specifications in the accounts or budgets.

MICP has 5 CARE staff working with 17 other staff from the partner side, of which 14 are from DCCFF and 3 from MICA. In addition, the communities are involved to various degrees in the activities and management committees under the project.

DFPCC's contribution to the project is mostly through the use of 14 staff t, and to some extent the involvement of staff from DFMP. In addition, the Government has made some contributions to the running costs of MICP (see under funding sources).

Breakdown of estimated running costs of MICP

The table below provides total, estimated expenditures for Misali and Ngezi since 2001:

Table 3-9 Annual expenditures for Misali and Ngezi 2001-2003 (TSH)

Expenditure	2001	2002	2003 (Jan&Feb)
<i>Staff benefit:</i>	21,600,000	36,000,000	7,000,000
Salaries			
Top-up for Gov't staff			
Other allowances			
<i>Office expenditure:</i>	18,000,000	30,000,000	6,000,000
Telephone			
Fuels			
Office supplies			
Maintenance			
Other expenses			
<i>Other project activities (average)</i>	58,500,000	86,400,000	10,000,000
All field activities and special tasks e.g. research			
TOTAL	98,100,000	152,400,000	23,000,000

The total, yearly costs of running MICP are difficult to estimate, due to the confusing set-up and accounting between the three institutions involved. If it is assumed that 80 percent of the project expenditures are spent on Misali, and 20 percent on Ngezi, the total expenditures for Misali in 2002 was around **TSH 120,000,000**.

Most of the project activities have until now been funded by donors through CARE. Some of these funds are channeled through MICA, which has its own audited accounts:

Table 3-10 Annual budget for MICA 2002/03

EXPENDITURE ITEM	Total (Tshs)	Total US \$
PERSONNEL*		
Executive Director	2 640 000,00	2 667
Financial Officer (Allowances Jan 02 - March 02)	2 280 000,00	2 303
Secretary (1)(Allowances Jan 02 - March 02)	1 680 000,00	1 697
Watchmen (2)	1 680 000,00	1 697
Field officer (1)	1 920 000,00	1 940
Sub – Total	10 200 000,00	10 304
OFFICE EQUIPMENTS		
Radio call ' 5' (handsets) 23 watts	1 250 000,00	1 263
Patrol Boat 2.5 tons (Fiber)	16 000 000,00	16 162
Motorecycle (2)	3 000 000,00	3 031
Sub – Total	20 250 000,00	20 456
OFFICE OPERATION		
Office supplies	840 000,00	848
Communications	1 800 000,00	1 818
Equipment repair	960 000,00	967
Miscellaneous	600 000,00	606
Sub – Total	4 200 000,00	4 239
CAPACITY BUILDING		
Training for staffs	3 000 000,00	3 031
Training for communities	4 000 000,00	4 040
MICA Office construction	3 000 000,00	3 031
Sub – Total	10 000 000,00	10 102
TRAVEL AND LODGING		
	1 200 000,00	1 212
Sub - Total	1 200 000,00	1 212
PARTICIPATORY COMMUNITY ACTIVITIES		
Community Rangers (6)**	3 360 000,00	3 394
Enterprise Activity	5 400 000,00	5 455
Community Awareness	3 600 000,00	3 637
Fuel (M/cycle 1+ M/car 1 + Boat)***	4 956 000,00	5 006
Maintanance (M/cycle1+M/car1+Boat1)***	1 800 000,00	1 818
Sub - Total	19 116 000,00	19 310
GRAND TOTAL	64 966 000,00	65 623

* Tshs 10,000/= increased for each MICA staff to cover for annual leave transport

** Rangers are for Misali Marine & forest patrol, monitoring (rat, turtle etc), fishermen camping at Misali, awareness, beach cleaning, tourist guide and revenue collection. In total they are six, one fully paid by MICA and remaining five are partly top up by MICA

*** Vehicle/Boat fuel & maintenance is under participatory community activities as most of fuel is used for marine patrol and trips to the villages for community awareness and enterprise activities

The budget for 2002/03 in the table above shows an increase in recurrent costs of around TSH 15 million as compared with 2002, when the investment cost items are taken out (e.g. purchase of boat, office construction etc). The audited expenditures for 2002 are given in the table below:

Table 3-11 MICA expenditures for FY 2002

Expenditures	Amount (TSH)
Salary and benefits	4,928,000
Enterprise activities	4,318,308
Community awareness	3,465,360
Operation cost	1,372,022
Vehicle fuel and maintenance	3,291,650
Equipment repair	453,000
Community rangers	2,040,000
Audit fee	500,000
Traveling costs	729,000
Misali community development	1,000,000
Depreciation 2002	1,907,600
TOTAL	24,004,940

The expenditures for FY 2001 were a little lower at **TSH 17,884,243**.

MICA collects revenue from visiting tourists (see below). Some of the community development projects undertaken through the use of these funds in 2001, are listed in the table below:

Table 3-12 Community development projects 2001

Place	Activity	Amount (TSH)
Ndagoni	Well bore	195,000
Michenzani	Cement and corrugated iron sheet	203,800
Wesha	Cement for dispensary	220,000
Kojani	Cement for Kojani Primary School	104,500
Mtambwe Kaskazini	Cement for mosque	104,500
Makoongwe	Cement for Makoongwe Primary School	104,500
Kangani Kuuu	Cement for Kuuu Nursery School	112,000
Furaha	Cement for Mosque doors	100,000
Tondooni	Fitting fro Tondooni mosque	14,250
Kisiwa Panza	Cement for mosque construction	100,000
TOTAL		1,258,550

Current operating costs vs “optimal level” of activity

Some important equipment and facilities for an efficient operation of MICP are missing, as indicated by management and rangers when asked about some of the immediate needs:

- Radio communication
- Protective gear (such as wet socks) and proper uniforms/clothes
- More fuel for patrols
- Another boat in good condition

The future plans for MICP are (in no particular order):

- Installation of marker buys: is currently in the process of being set up
- Capacity building for community and staff
- Preparation of management plan
- Improvements to the information center and additional tourism facilities
- Computer training for staff
- Purchase of another boat for patrolling
- Purchase of vehicles
- Purchase of two boat engines
- Purchase of generator
- Short course for staff in order to streamline working capabilities

Many of these items (especially the first four) are important for the effective management of Misali.

Funding sources and mechanisms

The funding for MICP has to date mainly come from the following donors:

- European Union groups technical assistance from October, 1996 to June 1998
- CARE Austria⁹
- Dulverton Trust (UK NGO) through CARE International in Tanzania technical assistance from July 1999 to May 2000.
- Ford Foundation from June 2000 to date
- Government of Austria¹³
- McKnight Foundation¹³
- MacArthur Foundation
- Kilimanjaro Climbers through CARE Tanzania technical assistance from July 1998 to June 1999
- CIDA Canada

In addition, the Government of Zanzibar has contributed to the running expenditures for MICP, over and above DCCFF staff salaries:

Table 3-13 Contributions from Government (TSH)

Year	1999	2000	2001	2002	2003
Amount	330,000	465,000	465,000	500,000	500,000

MICA's revenue sources

- Membership subscriptions
- 40 percent revenue retention of the Misali tourist revenue
- Grants and donations from international organizations
- Income generating programs and fund raising activities established by the organizations

As an example, MICA's revenues for FY 2002 from the audited accounts were:

⁹ Shared donor funds with Jozani Chwaka Bay conservation project

Table 3-14 Sources of revenue for MICA 2002

Source	Amount (TSH)
Grant from Ford 1 via CARE	451, 452
Grant from CARE – unrestricted	281,600
Grant from Ford 11 via CARE	4,400,000
Grant from McKnight via CARE	18,478,422
Disposal of Land Rover	1,500,000
Misali revenue (from tourists)	3,632,835
Members entrance and monthly fee	105,400
TOTAL	28,849,709

The legal order for Misali establishes a **Community Development Fund**, which will be managed by the Management Committee in accordance with the general management plan for the area. Eligible projects are those, which “tend to alleviate or eradicate poverty, or improve the health or education of any class of individuals within the community.” (Schedule 2 of the legal order). Any member of the community can apply for project funds. The funding for projects is approved by a majority of members on the District Committee in which the project will be established, and by a majority of the members of the Management Committee.

Fee structure and revenue retention

In addition to donor funds and Government contributions, MICP has since 1999 collected entrance fees from tourists. Though MICP management has not yet drawn up a detailed sustainable financing plan for the project, the importance of long term, Zanzibari sources of funds, has been recognized by the management (e.g. in CARE 2002).

100 percent of any revenue collected from tourists is retained, 60 percent of which is distributed to Misali Management Committee to cover the day-to-day expenditures, and 40 percent to MICA primarily for community development projects through the fund.

The main charge for Misali is US\$ 5 per day for all internationals entering the area for any purpose. This fee includes guided walks in the forest and to see turtle nests. Local residents pay TSH 2000 for entrance.

In addition there are charges for large (US\$ 20) and small (TSH 2000) boats anchoring, for filming (US\$ 200), research (US\$ 50 per week) and for the rental of snorkeling equipment (US\$ 2). The rangers on the island collect the revenue, issue receipts and record tourists in a visitors’ book.

Tourism revenues to date

MICP started collecting revenues from tourists in July 1999, and has to date collected close to **TSH 38 million**.

Table 3-15 Number of tourists and collected revenue (TSH) by month 1999-2002

		1999		2000		2001		2002	
		Tourist		Tourist		Tourist		Tourist	
Month	no	Revenues	no	Revenues	no	Revenues	no	Revenues	no
Jan			119	442600	153	718000	201	1056500	
Feb			81	445200	30	148000	336	1679200	
Mar			183	802800	60	314800	195	2903800	
Apr			60	271600	62	238000	114	5694400	
May			2	10000	7	23200	17	75000	
June			40	133200	12	47200	225	1021000	
July	65	108800	90	332600	86	426300	409	1999300	
Aug	104	361900	135	590200	289	1342500	361	1835300	
Sept	98	397400	148	696600	208	988100	308	1573400	
Oct	156	738600	205	1091200	267	1406300	262	1456000	
Nov	106	538400	118	620000	182	956900	514	2756000	
Dec	124	491000	148	519000	162	672100	231	2951600	
Total	653	2636100	1329	5955000	1518	7281400	2942	22049900	

Figure 3-1 Tourism revenue by month for 1999-2002.

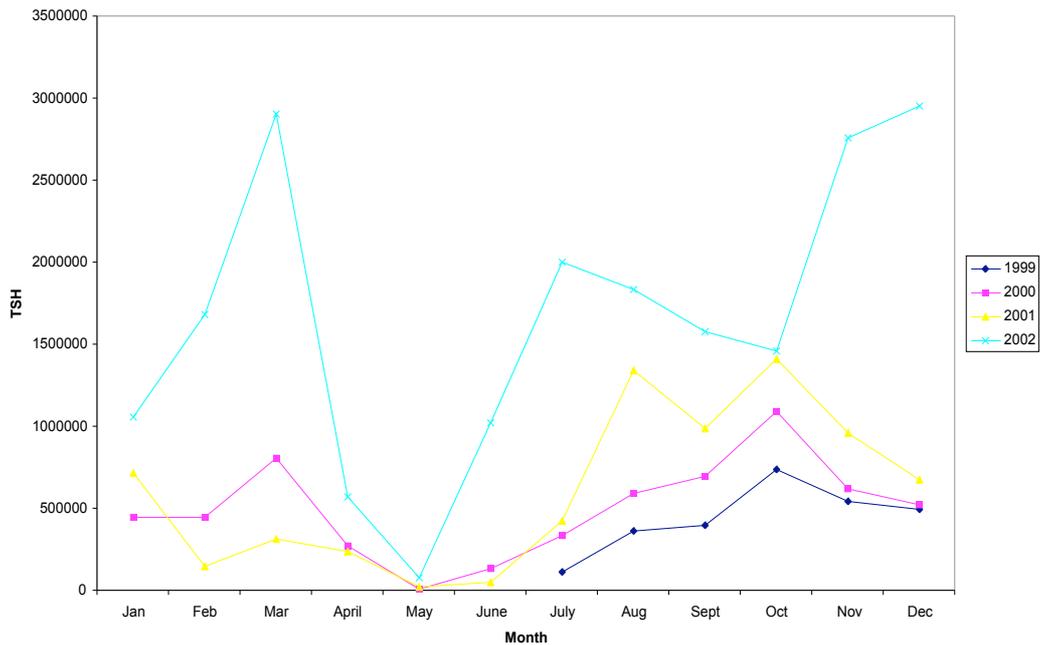
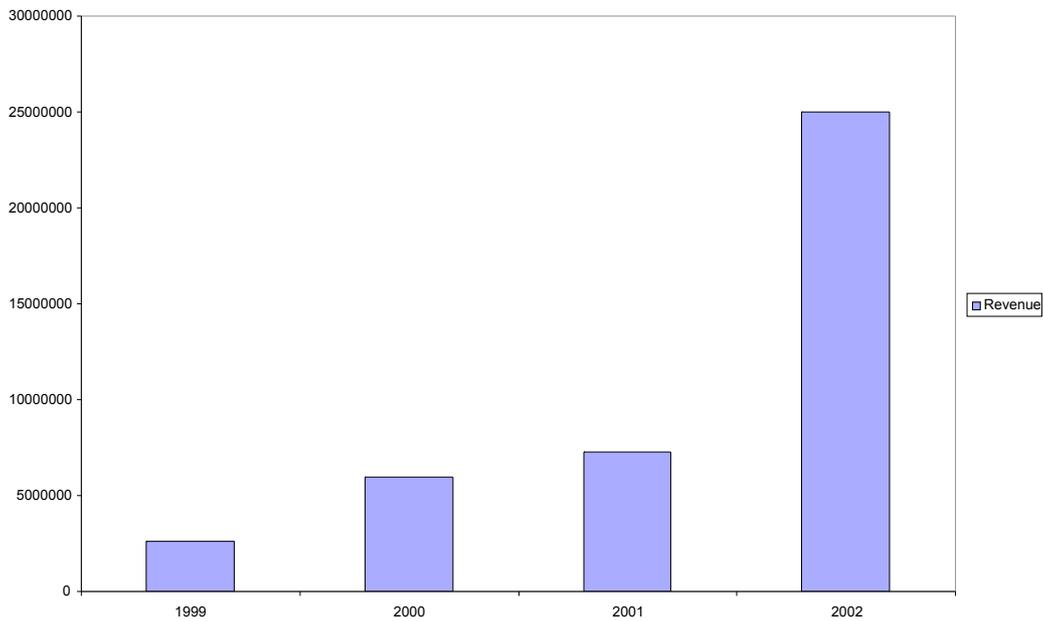


Figure 3-2 Tourist revenue collected by year 1999-2003 (TSH)



Misali had a very good year in 2002. According to the tourism Master Plan for Zanzibar, Pemba did not experience a reduced number of visitors in 2001 due to the civil disturbances in January and the September 11th 2001.

The revenue collected from tourists in 2002 was around 18 percent of the estimated costs for the same year.

Key issues regarding sustainable financing

It is too early to say whether the project is achieving its objectives, though there are indications that the management of the fisheries resources is improving and the size and amount of fish are increasing. However, there are also indications that the fishing pressure may still be too high (CARE 2002a,b) and that quotas or limited entry may have to supplement the current fishing gear restrictions.

The ongoing process of collaboration with MICA seems promising, though there are still conflicts with fishermen, some of whom do not understand the purpose of the no-take zone or think it is too big.

Some of the shortcomings of the present MICP management are discussed below.

- A workshop among stakeholders in 2002 concluded that MICA needs strengthening in the areas of community organization and financial sustainability. Further, it was seen as important that MICA concentrate on the core theme of conservation and fisheries management, rather than “sidetracking” into enterprise development.
- The workshop suggested trust funds as an idea for sustainability – could be discussed within the context of NPAB
- MICP is clearly more about fisheries than forestry, hence there is a clear need for DFMP to be more involved in the management. This point was also noted by the stakeholders.
- The criteria for disbursement of community development funds are seen as a bit unclear, by some villagers (CARE 2002). Further, it seems that there is not high awareness (especially among women) about sources and use of the revenues.
- There are indications, though this does not seem to be reflected in the tourist numbers, that some dive operators prefer other sites in Pemba due to the entrance fee to Misali. Pemba has many substitute sites of comparable quality to Misali. These substitutes, if not also covered in a future MPA system of Pemba, may limit Misali’s opportunity to capture user values through increased fees. This may be an important concern since Misali may want to increase its fees both to capture more revenue from tourists but also to limit visitor numbers and impacts on the reefs.

MICP is still financed by donor funds, and has not yet developed a strategy for achieving financial sustainability. The performance of MICP so far looks promising, but it is unlikely that tourist visits to Misali will be able in the short term to finance operating costs. In the longer term, MICP may be seen as a platform for the potential future expansion of marine protection in Pemba. Since MICA is currently active in most parts of Pemba, once Misali is functioning well, the conservation and development activities can be expanded to other important fishing grounds in Pemba. Careful development of tourism to such an MPA system has the potential to generate significant amounts of revenue and contribute to financial sustainability.

3.3 Chumbe Island

Background and brief history

Chumbe Island Coral Park Ltd. (CHICOP) was established in 1991 as a privately funded and managed reef and forest conservation project covering the whole of Chumbe Island (0,2 km²) and the 1 km fringing reef on its western side. Chumbe is located approximately 12 km south west of Zanzibar Town, 6 km from the nearest point on mainland Zanzibar.

The coral reef is acknowledged as one of the most pristine in the region, with 370 species of fish (Fiebig 1995) and over 200 species of reef-building corals. In addition, the coral communities in the sanctuary survived the bleaching event in 1998 relatively unscathed. The forest covering the island is one of the last pristine 'coral rag' forests in Zanzibar (Beentje 1990) and has now become a sanctuary for the highly endangered Aders' Duiker, which is being trans-located from Unguja where it is facing extinction from poaching and habitat destruction (Kingdon 1997). The island also has a large population of the potentially endangered Coconut crab and a large breeding population of Roseate terns classified as 'rare' (Iles 1995).

When the project was set up, the island and the reefs were in a good condition. The island and the surrounding waters had been used for military purposes (shooting range etc) and was (and still is) a main route for large ships from Dar es Salaam. These two factors had made the area relatively protected from extensive fishing.

The reef on the western side of the island was protected as a marine sanctuary in 1994 and the forest as a "closed forest". CHICOP entered into management agreements with the Government of Zanzibar for the management of both the island and the reef¹⁰. The project was based on a feasibility study from 1991, aiming to conserve the reefs and the coral rag forest and provide environmental education to local Zanzibaris through the collection of tourist revenues.

Key features of project

The years from 1991-1998 were mostly spent setting up the project and finalizing the capital investment. From 1998 CHICOP started tourism operations taking paying visitors (day excursions and overnight stay) to the island. Some of the project activities from 1991-1999 were¹¹:

- Baseline surveys and species lists on the island's flora and fauna (from 1992, ongoing);
- Negotiations to get the Chumbe Reef Sanctuary gazetted (up to 1994);
- Production of the Management Plan (1995);

¹⁰ The management agreement for the marine sanctuary is valid for 10 years (until 2004), and the forest agreement for 33 years.

¹¹ Based on Riedmiller (2000)

- Employment and training of park rangers (from 1992);
- Patrolling of the reefs
- Establishment of forest and marine nature trails (from 1993);
- Procurement and production of educational material (from 1993);
- Eradication of rats (1997);
- Establishment of a sanctuary for the endangered Ader's duiker relocated from Jozani forest (from 1997, ongoing);
- Rehabilitation of the lighthouse keeper's house as Park HQ/Visitors' Center;
- Construction of seven visitors' 'eco-bungalows' (1995–1997).
- Free excursions to the island offered to local school children during the off-season.

The management agreement for the reef sanctuary establishes an Advisory Committee with representatives from the Government, villages and resource people to advise CHICOP on the management of the area. This Committee is supposed to meet at least once a year, and there does not seem to be any other mechanism for the direct involvement of the fishermen's villages on Unguja.

The day-to-day management of the island and the reefs is the responsibility of CHICOP, and there are rangers paid by CHICOP stationed on the island. There is only one no-take zone, which the rangers patrol regularly. The rangers have only persuading powers in response to the incursion of fishermen. According to the log held by the rangers of number of incursions, these have gone down from as many as 45 incidents per month in 1994 to around 5-10 in 2002 (Riedmiller 2002). There is currently also a program monitoring the growing population of Ader's duikers.

In addition, there are tourist personnel stationed on the island tending to tourists' and visiting researchers' needs. The main activities for tourists are guided snorkels and forest walks, and beach recreation. There is also research conducted on the reefs and in the forest by local and international researchers. For example, there is currently a research project assessing whether the marine sanctuary is functioning well as a breeding ground for fish replenishing nearby fishing areas.

CHICOP has been operating an extensive environmental education program over the last few years. The first phase from October 1999 to March 2000 had school excursions co-ordinated with the Marine Education Awareness and Biodiversity Programme. The initiative involved the participation of teachers from three schools, staff from the Department of Fisheries, the Institute of Marine Science (IMS), the SOS school and the staff of Chumbe Island. In 2000, a total of 226 secondary students were taken to the island. Phase 2 of the school excursions started in August 2001, and there are plans that in 2003 all 35 secondary schools in Zanzibar will be covered under this phase. CHICOP has commissioned a qualified teacher trainer as the school coordinator, to help develop the excursions into a more systematic practical one-day course on coral reef ecology and conservation for Form I and II of Secondary Education.

Costs

*Investment costs*¹²

The original feasibility study of 1991 provided for an investment of little more than US \$200,000 in order to establish the park and to construct a visitor's center and 10 guest bungalows (see table below). Revenue for running the park was to be generated through diving, snorkeling, glass-bottomed boat trips, nature trails, accommodation, and restaurant services. Payback of the investment was expected to start after three years with an internal rate of return of 27%.

Table x.x Projected investment costs from Feasibility Study 1991

ITEM	Cost in US\$
Buildings	86.000
Equipment (car, boats, diving)	89.000
Furnishings an Fittings	14.000
Landscaping	5.000
Contingencies 10%	19.400
TOTAL	213.400

However, CHICOP experienced some delays in negotiating the official gazettement of the island as a protected area, management contracts, land lease, licenses and building, research, work and residence permits. Thus, the total investment costs by 31.12.1997 was around five times that, at costs adjusted to 1997 prices of **US\$ 1.163.657** (Soley 1997). In addition, a substantial amount of volunteer work, often at senior levels, has gone into the investments at Chumbe.

Operating costs

CHICOP started bringing in visitors in the summer of 1998. The annual costs of keeping its operations running since 1998 (including MPA management costs) are summarized in the table below:

Table x.x Operating costs for CHICOP FY 1998-2002 (TSH)

Year	FY 1998/99	FY 1999/00	FY 2000/01	FY 2001/02
Operating costs	109,739,440	168,768,474	132,908,106	139,429,628

Source: Figures from Manager of CHICOP, Eleanor Carter

The operating costs have been categorized differently over the years, so a breakdown into sub-categories would not be comparable over time. A cost breakdown for the last financial year is provided below.

¹² Based on Riedmiller (2000)

Table x.x Breakdown of operating costs FY 2001/02(TSH)

Items	Amount (TSH)
SALARIES	26 354 918
MEDICAL	405 850
GUEST COST	14 368 520
BAR	3 359 601
MAINTENANCE	8 187 508
OFFICE	26 714 506
BOAT	5 054 400
CAR 1	1 982 800
CAR 2	1 247 879
PROGRAMS	5 192 786
STAFF FOOD	5 716 020
GUEST TRANSFERS	7 543 800
MARKETING	953 726
LEGAL FEES (hotel levy and sales tax)	14 884 807
OUTSTANDING PAY	1 500 000
DEPRECIATION	22 070 821
LESS CAPITAL EXP	4 093 754,00
LESS OUTST. 2001	2 014 560,00
TOTAL COSTS	139 429 628,00

These costs include both costs related to the running of the tourism facilities and the costs related to the management of the MPA and the protected forest. An attempt at assigning percentages to MPA and non-MPA related costs is provided below.

Costs directly related to MPA management

Since CHICOP both provides a private good (tourism services) and a public good (environmental education and conservation of biodiversity and fish stocks), it is of interest to get an idea of the respective costs involved in providing these goods.

According to Soley (1997), by mid 1997 conservation costs accounted for 52% of the investment realized so far, while 9% had been spent on educational programs (nature trails and information materials). The remaining 39% were used for building the tourism infrastructure (visitors' center and seven eco-bungalows).

Table x.x Summary distribution of costs on MPA and non-MPA related expenditures by mid 1997(US\$)

Total expenditure (US\$)	447.542
Conservation (set-up and running)	52%
Education (set-up)	9%
Non-MPA related costs	39%

The manager of CHICOP further made an estimate of cost assigned as MPA related – education and conservation specific – for the financial year 2000/01 (see table below, including notes).

Table x.x Estimated share of costs related to conservation and education activities in FY 2000/01

Cost category	Share (percent)	Note
Education direct	1,8	A
Conservation direct	3,4	B
MPA staffing cost	2,6	C
MPA staffing provision	0,7	D
MPA staffing international	4,2	E
Office administration	4,1	F
Transport	0,4	G
Boat	0,9	H
TOTAL	18,2	

A) This is the actual % of yearly expenditure that went on direct educational trips / goods / services etc

B) This is the actual % of yearly expenditure that went to direct conservation related activities (primarily research, sitting allowances, meetings etc)

C) This is a breakdown of salary cost of locally employed staff directly related to the MPA management as opposed to the tourism component of the project, i.e. the rangers. The rangers constitute 18% of the Chumbe personnel. Therefore this is a calculation of 18% of the local salary of the total yearly expenditure.

D) This is the staffing provision (i.e. food) for the MPA related staff (rangers) i.e. 18% of the staff food costs of total yearly expenditure

E) This is MPA related international staff costs ; 4 international staff

F) Calculated using an estimate that of all office / admin related expenses approximately 35% are direct MPA related expenditure (ink, computer, paper, production of reports, telephone etc). Therefore this is 35% of the office costs of the total yearly expenditure

G) This relates to car transport. Estimated that approximately only 10% of car usage can be attributed to MPA related activities as opposed to the tourism component of the project. Therefore this is 10% of the car related expenditure of the total yearly expenditure

H) This relates to boat costs. Estimated that approximately 20% of boat usage can be attributed to MPA activity as opposed to tourism related. Therefore this is 20% of boat costs of the total yearly expenditure.

The estimates above show that around 18 percent of the annual costs for CHICOP were directly related to managing an MPA and a protected forest. These are costs that are related to the provision of a public good. However, some of the MPA

costs most likely increase the value of the island as a tourism destination – benefits that CHICOP can harvest.

For 2003, CHICOP has a budget for phase 2 of its environmental education program of US\$ 22.600.

Taxes & fees

As a private tourist operator CHICOP is subject to corporate taxation. These payments are just transfers from CHICOP to the Government of Zanzibar and should not be regarded as a cost of managing the MPA. However, the number and level of taxes are nevertheless important to consider in a strategy aiming to involve the private sector in management of MPAs.

Currently CHICOP pays the following taxes and fees:

- Hotel Levy on all revenue is 15% of the total; plus Stamp duty 1.5%. Sales tax on all sales revenue (restaurant, transfers etc) is an additional 10% of the total; plus stamp duty 1.5% (these taxes were included in the cost table above under “legal fees”):
- ZSS (Zanzibar Social Security fund), which is listed in the salary expenditure in the cost table. This is a compulsory pension plan from the government. All employees pay 5% of their wages into it each month. On top of that CHICOP, as a company, must add 10% of the value of their wages on top of that as a contribution (this comes to about US\$3,000 additional cost).
- Income tax on staff (which is also recorded in the salaries section of the expenditure table), which varies depending on pay scale and is deducted from the personnel.
- Leases and licenses: Each year the land lease charge is US\$ 4,900. The hotel license is US\$400, boutique license US\$ 200, permits for international workers (US\$ 120 each).
- All of supplies and goods purchases are charged 20% VAT, which, as CHICOP are not VAT registered because the company is considered too small, cannot be claimed back.
- Corporate tax: There is currently a dispute between CHICOP and the tax authorities regarding this tax. CHICOP claims to be not-for-profit, while the tax authorities insist on payment of something between 30 and 50% of the entire years profits. CHICOP’s argument is that the company plough all the money earned back into the project for the non-commercial components of the project, while the tax authorities claim the CHICOP is a private company like any other tourist operator.
- Tax on visitor payments below full rates: There is currently also a tax dispute between CHICOP and the Government on the payment of income tax from visitors not paying the full price (e.g. researchers, volunteers and others who are given lower prices).

Funding sources and mechanisms

Of the estimated overall investment of US\$ 1,163 million, approximately 35,7% (US\$ 415,191) was funded by various grants from donors, while 64,3% (US\$ 747,809) was funded by private sources (Neckenig 1998). In addition, CHICOP continues to receive donor support for its environmental education program.

Once CHICOP started its tourist operation in 1998, most of the running costs of the operation have been funded through tourism revenues. CHICOP generally sell two types of packages:

- Overnight stays with all activities, accommodation and board included: Prices have varied from US\$ 100-200.
- Day trips including snorkels, forest walk, lunch etc: Prices around US\$ 50-70

These packages are sold to tourists through overseas' agents and to some extent through agents in Stone Town. The source markets for Chumbe visitors are provided in the table below:

Table x.x Source markets of paying guests 1998-2002

Country, Region	Share
United Kingdom	40%
Other Europe	30%
North America	18%
Africa (mostly SA, Tanzanian residents)	10%
Other	2%

The revenue collected through the sale of these packages as well as drinks and other revenues are provided in the table below:

Table x.x Tourism revenue since the opening in 1998 to 2002

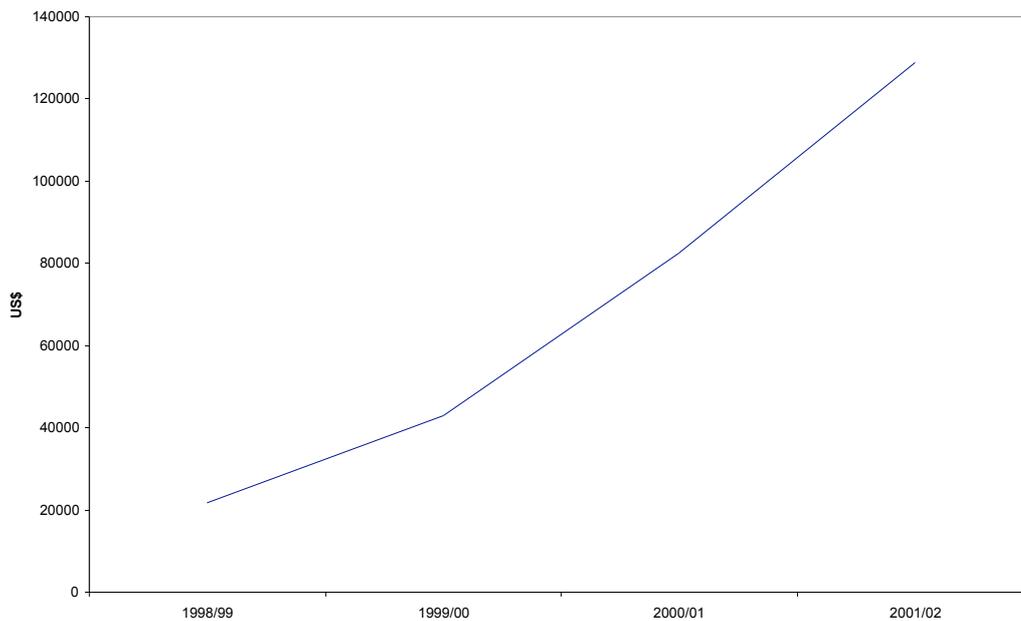
FINANCIAL YEAR	Occupancy (physical)	TSH	RATE	USD EQUIV
1998 –1999	13%	14,360,999 660		21,759.09
1999 – 2000	28%	33,952,578 792		42,858.05
2000 – 2001	34%	69,095,840 837		82,551.78
2001 – 2002	29%	119,350,059 926		128,893.32

Notes:

Physical occupancy includes all visitors, paying guests and other categories, e.g. students, researchers, representatives of donor and conservation agencies, press and TV crews and travel agents on complimentary or cost price rates and visitors on promotional rates.

All financial reports for CHICOP are submitted in currency TSHs as CHICOP is a Tanzanian registered company

Figure x.x Revenue from tourism 1998-2002



At the current rate of revenue collection, CHICOP is struggling to meet its operating costs, or capital payback, at around US\$ 139,000 in FY 2001/02.

The revenue figures reflect steady growth, though occupancy rates remain far below potential. The owner believes this progress is due to the persistent marketing of Chumbe, both in conservation circles and in the affluent eco-tourism markets. This was done in stages, by first building up the profile in the conservation world with the non-commercial conservation and education programs, winning prestigious international environmental awards and increasing presence and ranking on the Internet, and then by using this image as a genuine conservation project and eco-lodge for the eco-tourism market.

Therefore, in the early years CHICOP had to give more free and promotional rates, but could increase income considerably over the last year by increasing the rate of fully paying guests, despite of the downturn of tourism due to local and international events. The volatility in the tourism markets over the last few years demonstrate the vulnerability of a conservation project only relying on tourism revenues. In particular, the bloody post-election violence of January 2001 in Zanzibar that made headlines in BBC and CNN, resulted in an immediate wave of cancellations worth about US\$ 35,000.

Recently, (May 2003) the British Government has issued a travel warning again for Tanzania among six other African countries, and suspended all flights to Kenya that is an important stopover for guests to Chumbe. This comes on top of a travel warning for Zanzibar specifically at the beginning of this year. So, Zanzibar will most probably continue to suffer a further slump of tourism arrivals, particularly of the more affluent guests, while backpackers are less deterred.

Break-even analysis

Due to the delays in the investments at Chumbe, the costs increased, and CHICOP commissioned a study in early 1998 to find a commercially viable price structure for the reserve. The finding was that a net, all-inclusive overnight price (excluding agents' commission) of US\$200 per person and an occupancy rate of at least 41% were needed to reach the break-even-point for running costs without capital payback. The grant component of the project costs had not been included. A table summing up this result is provided below.

Table x.x Financial analysis 1998 (Projection)

Estimate of Income and Expenditure in 1998 (in USD)						
1. Income						
1.1 Net Price p. pers. / night (all inclusive)	100	170	200	250	300	350
1.2 Less Taxes*)						
20,00% VAT on Accommodation	16,67	28,33	33,33	41,67	50,00	58,33
20,00% VAT on Meals, Bev., Serv.						
total tax =						
1.3 Price p. pers. after tax	83,33	141,67	166,67	208,33	250,00	291,67
1.4 Less Consumables (from 1997 figures)	7,95	7,95	7,95	7,95	7,95	7,95
1.5 Proceeds per overnight stay	75,38	133,72	158,72	200,38	242,05	283,72
*) first six months: a levy of 15% and 10% respectively and 1.5% stamp duty, thereafter 20% VAT						
1.6 Proceeds from day visits in 1998	22.500	22.500	22.500	22.500	22.500	22.500
Less 20% VAT	3.750	3.750	3.750	3.750	3.750	3.750
1.7 Proceeds from day visits in 1998 after tax	18.750	18.750	18.750	18.750	18.750	18.750
2. Expend.						
2.1 Cost of Operation as per group 6 of acc.						
2.2 Cost of Capital Assets as per group 7						
2.3 Total groups of accounts 6 and 7						
Less Proceeds expected from day visits as per 1.6	171.647	171.647	171.647	171.647	171.647	171.647
2.4 Cost to be covered from proceeds from overnight stays	18.750	18.750	18.750	18.750	18.750	18.750
2.5 Number of overnight stays necessary to cover costs as per 2.4	152.897	152.897	152.897	152.897	152.897	152.897
2.6 BREAK-EVEN-POINT expressed in percentage of full capacity (Full capacity 13 beds/180 nights = 2340 Overnight stays)	2.028	1.143	963	763	632	539
	87%	49%	41%	33%	27%	23%

Key issues regarding sustainable financing

CHICOP is an innovative project gaining acclaim internationally among tourism and conservation circles for its achievements¹³. The reef is undoubtedly in excellent condition serving as an aquarium and laboratory for visitors and researchers of all kinds – and protecting an important part of the Zanzibar heritage. The tourism numbers and impacts are low and well within the carrying capacity of the fragile island environment. Further, the coral rag forest is becoming an important habitat for an endemic species of Zanzibar (the Ader's duiker).

Despite these initial successes, the project's long-term viability is threatened due to several factors:

- Conflicts with fishermen, who are not allowed to fish in the area or use the island as temporary base for going south to other fishing grounds.
- Conflicts with Government regarding the payment of various taxes and fees, and the issue of revenue sharing.
- Apparent conflicts between Government Departments about the use of Chumbe
- Unpredictable change in tourism demand because of external events; political instability in Zanzibar, September 11th 2001, the Iraq war eroding the income base sustaining the operation.

CHICOP will have to urgently address these challenges in the near future, with the Government and local communities, to sustain its operations.

A solution to these challenges should be based on the considerable international experience of private management of MPAs and public-private partnerships in other areas that traditionally were Government domains. For instance, it is clear that the management of an MPA by a private operator generates both private and public goods/services. Such a company should be paying taxes or share revenue for the commercial operation, but be reimbursed for the costs of providing the public good. Further, the Government should regulate the company so that right level of the public good is provided (e.g. clear environmental regulations), and that there is no monopoly power or other suboptimal market effects. In such a situation, the government should in turn use the revenue/taxes to compensate local citizens who are negatively affected by the project.

However, this prescribed solution may not work in Zanzibar for various reasons: Tax revenue is very scarce and it is difficult for Government to take a long term view regarding the management of natural resources, when there are obvious present needs and tax revenue shortfalls. Unsustainable tourism development that generates a lot of tax revenue may be all too tempting. In this situation, a pragmatic approach may have to be chosen which involve stronger elements of

¹³ The project has received several awards, e.g. the Green Hotelier and Restaurateur Award 2001, UNEP Global 500 Award for Environmental Achievement.

local community involvement, and a better relationship and agreement on role and sand revenue sharing between Government and CHICOP.

3.4 Mnemba Island

Background and brief history

Mnemba Island is another interesting case of an MPA managed by a private company, though more in collaboration with local communities. Mnemba Island is a small island north east of Unguja surrounded by a coral atoll. The atoll was traditionally (and still is) a productive fishing ground and in recent years a popular diving and snorkeling destination. The island was leased in 1992 to a private company¹⁴ for the establishment of a tourist operation. The lease agreement put certain environmental obligations on the developer, such as the responsibility for environmental protection in and around the island. Further, a controlled area for the island was declared under the Fisheries Act. The Order states that “no person shall engage in or do any fishing activity in that area or water”. Further, it was declared that swimming, diving and snorkeling would be allowed upon payment of a fee.

A compensation agreement was signed between the Ministry of Information, Culture and tourism on behalf of the North region local authorities, requiring the developer to provide the local Authorities with compensation in kind¹⁵. The island was originally uninhabited, but used as temporary camping grounds for fishermen. In addition, the villages of Matemwe, Kijiri and Pwani Mchangani on mainland Zanzibar had traditionally used the whole the atoll for fishing. The compensation agreement required the fishermen to:

- Abstain from normal fishing activities at a distance of 200 meters from the Highest water-level mark, towards the continental shelf
- Only anchor at the site in the case of emergency

The developer set up a high-end tourist facility on the island charging tourists several hundred dollars per night.

According to staff at the Department of Fisheries, a conflict between the private company and the local communities over the use of the fishing grounds and the island developed over some years. The conflict was not solved and the private company sold its operation to the South African Conservation Corporation Africa (CCA) in the late 1990s.

A new phase of conflict resolution and local consultation

CCA decided to consult with the local communities to try and solve the conflict, to provide a basis for continuing the tourist operation on the island. As a result of

¹⁴ The Archer’s Zanzibar Limited leased 10.74 hectares (the whole island) in 1992 for 33 years for US\$ 5,370 per year.

¹⁵ The compensation was to provide local Authorities with four local built boats worth not less than TSH160,000 (one with an outboard engine), three room-shed, each room 9m² with roof of corrugated iron sheets and cement floors.

this consultation process an Advisory Committee for Mnemba was established in 1999, consisting of 18 members from Departments of Fisheries, Forestry, Environment, Commission for Tourism, ZIPA, CCA, IMS, district government, Shehia and villagers. The committee is chaired by the District Government, and the secretariat sits with the DFMP.

The following functions and responsibilities for the committee were agreed:

- In collaboration MANREC and CCA initiate an effective surveillance and patrol system, environmental education program and advise on the better ways of utilization and management of the area
- To ensure that there is close communication and collaboration between CCA, Villages and other concerned institutions
- To monitor and evaluate implementation of all CCA activities planned and aimed to help community development
- To make thorough supervision and follow-up on implementation of all resolutions of a previous seminar
- To give advice and relevant guidance on conservation matters to the community (village) committees

The committee is planned to meet twice a year, and has recently convened its first meeting.

Further, a management committee was established in 1999 to oversee the day-to-day management of Mnemba. The management committee consists of members from the community, Dep. of Fisheries, District Authority, CCA. "Community" means the villages of Kijini, Matemwe, Nungwi and Pwani Mchangani close to Mnemba on the Zanzibar mainland.

The roles of the management committee are:

- Making decisions on all management issues for the area
- Establishing closed fishing seasons or fishing zones or limitations of fish to be caught and fishing gears to be used
- Ensuring no destruction of the marine ecosystems
- Reviewing fees imposed and source of revenue and make changes or impose a new fee to be paid for any activity undertaken within the area
- Consult with the Advisory Committee
- Consult with the investor, community or other stakeholders
- Prepare operational work plans
- Prepare management report to Permanent Secretary, MANREC

The committee is planned to meet quarterly.

Key features of the planned project

In November 2002 the consultation process about the future management of the Mnemba Atoll was formalized through a legal Order declaring the Mnemba Island

Marine Conservation Area, including the whole atoll under protection. The area is zoned, with one small no-take zone (“house-reef”), and a larger multiple-use zone, where non-destructive fishing is allowed. The order specifies the roles and functions of the management and advisory committees (as stated above), and prescribes fees and fines for legal and illegal activities.

The day-to-day management of the MPA is currently undertaken by CCA, with the intension of gradually transferring more of the responsibility to the local community under the supervision of the management committee. The Department of Fisheries is currently in the process of appointing a site manager, who will be assisted by a local patrol team. CCA has recently donated an old boat and TSH 3 million for repairs and a new engine – a boat that will be used for patrolling by the local community. CCA has been requested to prepare a management plan for the area.

The main components of the planned management program are:

- Active enforcement of regulations through community patrolling
- Tourist revenue collection
- Environmental education programs
- Training and capacity building (initially for patrolling)
- Alternative livelihood strategies focusing on producing goods for tourists (e.g. vegetable growing, handicrafts and fish)
- Some research

Costs and revenues

The facilitation of the consultation between villagers and CCA was funded by the Department of Fisheries (mainly through the use of staff). The initial process engaging stakeholders, and preparing legal order is believed to have been relatively low-cost.

The local community, the DFMP and the developer have agreed on a strategy to fund the management of the area. The Order establishes a **Community Development Fund** for the Shehias of the four villages.

The fund will consist of:

- Fees collected from tourists
- Voluntary donations by tourists or others
- Fines from violations of regulations

The fund will be used for the management of the area, including costs for Advisory and Management Committee meetings, patrols and administration activities, and various development activities within the community. The money will be disbursed in a manner approved by the Management Committee.

The Order declares the following fee structure for the conservation area (see table):

Table 3-16 Fee structure for Mnemba Island Marine Conservation Area

Activity	Fee (US \$)
Water sport	1 for a trip
Filming for commercial purposes	200 for Tanzanians for the stay 500 for any group for the stay
Study tour or research activities	20 for Tanzanians for one day 30 for non-Tanzanians for one day 50 for any group for one day

In November 2002, the DFMP started collecting the fees from tourists, especially the US\$ 1 per trip¹⁶. A number of tourist operators (dive centers) collect US\$ 1 from every visitor and provides the tourists with receipts. The boat skipper is requested to produce such receipts for all visitors on board his vessel in case of a random patrol check. DFMP has assigned one person to collect the revenue from the dive operators every month. Currently nine operators collect revenue on behalf of DFMP, and a total of US\$ 3200 has been collected from November 2002 to mid-March 2003 (see table below). It is believed¹⁷ that around 300 tourists may visit the atoll per day in the high season, i.e. yielding a potential of US\$ 9000 in fees for a good tourist month.

The revenues collected have since January 2003 been deposited in an account for the Community Development Fund.

Table 3-17 Tourism entrance fees collected for the first 5 months Nov '02 – Mar '03

Month	Revenue (TSH)	Costs of scheme (TSH)	Balance (TSH)
November '02	112,150	87,300	24,850
December '02	270,000	125,200	144,800
January '03	567,140	138,000	429,140
February '03	1,931,896	150,280	1,781,616
March '04 (>13.)	304,550	16,250	288,300
TOTAL	3,185,736	517,030	2,668,706

The revenue collection scheme has only just started, but there are plans of gradually improving the scheme. An entrance ticket for tourists explaining that the money will be used for conservation and improving the standard of living for local communities has been printed. The plan is for tourist operators to sell these tickets and receive some commission.

The management of the conservation area is in an early phase, and not yet fully operational with the community in the driver's seat. So far, the costs of collecting the tourist fees (third column in the table) are about 15% of the total collected. DFMP has drawn up a budget of operating costs for the first six months of 2003:

¹⁶ Letter from MANREC to tourism operators November 2002.

¹⁷ According to Mr Juma Haji Khamis, responsible for the revenue collection in the Department of Fisheries

Table 3-18 Operational budget for Jan-June 2003

Budget Activities Jan-June 2003 (TSH)	Amount (TSH)
1. Administration/setting up account (January)	23,000
2. Patrolling <ul style="list-style-type: none"> • Fuel per month April-June: 3 x 300,000/mth • Boatmen wages April-June: 3 x 45,000/mth • Patrol instructors April: 2 x 20,000 • Boatmen lunch (April-June): 1000/day = 240,000 	1,585,000
3. Revenue collection <ul style="list-style-type: none"> • Fuel for car or motorcycle: around 15,000/mth • Lunch for collectors April-June: 8000/mth 	114,150
4. Stationery <ul style="list-style-type: none"> • Legal notice: 30,000 • Photocopy paper: 18,000 • Counter books: 7,500 • Box files: 10,000 • Stamp & stamp pad: 20,000 	77,500
5. Meetings <ul style="list-style-type: none"> • <i>Management Committee:</i> <ul style="list-style-type: none"> ○ Sitting allowances Jan-March: 10 x 10.000/mth ○ Refreshments Jan-March: 10,000/mth ○ Contingency March: 50,000 • <i>Advisory Committee</i> <ul style="list-style-type: none"> ○ Sitting allowances March: 15 x 10.000 ○ Refreshments March: 15,000 ○ Contingency: 50.000 ○ Photocopy: 40,000 	735,000
TOTAL	2,521,450

In addition to the costs in the table above, CCA is clearly incurring costs through its close involvement in the management of the protected area. In addition, CCA is tapping a large portion of tourists' willingness to pay to visit Mnemba through its hotel operation. These costs and revenue elements would need to be taken into account to complete the picture.

Key issues for the sustainable financing

The process of resurrecting the management of Mnemba conservation area based on cooperation with local communities seems very promising. However, according to DFMP staff there is still some conflict among the villagers (especially the village of Matemwe), which seems still not to be content with the idea a conservation area.

Based on this operating budget, and given a similar collection rate of tourism revenue for the next few months as for the first five months, the current level of management can clearly be financed fully through tourism revenues. However, the Community Development Fund should have spare funds for local projects to build support among the local communities.

There is currently no specific percentage of the collected funds earmarked for development projects. The consequence of this may be that the management costs take up all the revenues. It will be crucial for the long term financing and viability

of the project that the Community Development Fund is used for the clear benefit of local communities, so that these see the link between the conservation area and the improvement of livelihoods.

However, there is clearly a large potential for the generation of more revenues from tourists, though there is a need for a strategy to manage the visitor numbers below the carrying capacity of the area both for fishing and tourism activities. The carrying capacity is not only ecological, but there is a congestion limit many tourists are very aware of. If no such strategy is developed, the atoll will be (further) degraded, and tourists will go elsewhere.

The current fee of US\$ 1 for a visit to the atoll seem, compared with such fees elsewhere, too low. Tourists have paid a substantial amount for flights and hotels etc to be able to dive the reefs of Mnemba, and would most likely be willing to pay much more than US\$ 1 – especially if they are informed about how the money is being used. Increasing the fee should go hand in hand with improved management of the area.

Further, it may be sensible too take another look at the distribution of all the revenues from Mnemba, especially the revenues collected by the operator on Mnemba itself, in order to perhaps share these more evenly for the benefit of local communities and the management of the MPA.

3.5 Other coastal and marine PAs

3.5.1 Jozani Chwaka Bay Conservation Project

Background and brief history

Chwaka Bay and the adjoining Jozani Forest are among the most ecologically diverse ecosystems in Zanzibar, containing several endemic species – the Red Colobus monkey being the most well known. Chwaka Bay constitutes a complex interaction of different ecosystems, which include coral reefs, mangroves, sea grass beds, algal mats, and beaches. The area was traditionally a productive fishing ground, and the Chwaka mangrove forest an important source of building material and wood for local people. The mangrove forest is the largest single mangrove in Zanzibar (Mohammed 1999).

The bay is connected to the Jozani Forest, which is one of the few remaining forests of its kind in Zanzibar. Its significance as a protected area has been recognized since the late 1940s when the colonial government purchased 194 ha of the forest. The forest harbors several endemic species and is important for recreation and research.

Exploitation of the resources by local communities due to economic and socio-political circumstances, lead to natural resource degradation in and around the area. Jozani – Chwaka Bay Conservation Project (JCBCP) was initiated in April 1995 by the Ministry of Agriculture in cooperation with the Government of Austria, and CARE as the implementing agency. The project aims to work with the local communities to achieve a successful integrated conservation and development project.

Key features of the project

Jozani Forest has for some years had the status as a forest reserve. In recent years the JCBCP partners have worked to extend the area of protection including Chwaka Bay. The Government of Zanzibar has just recently closed a public review period for its proposal to create Jozani Chwaka Bay National Park, and it is likely that the park will be established in the very near future.

Chwaka Bay has to date been managed more or less separately through various integrated coastal management initiatives (Khatib 1996). With the creation of the National Park the bay area and the forest will for the first time be managed in a coordinated and holistic way. The project is currently in a transition phase from being focused on forest management to also including coastal activities in the bay area. The importance of the conservation of this area for global biodiversity was acknowledged through the involvement of the Global Environment Facility (GEF) (and UNDP) from 2000 to 2003.

The forest has been managed since 1996 as an integrated conservation and development project. A core zone of the forest containing the most important biodiversity is fully protected, while community forests have been planted around the core zone to work as buffer areas. The core zone is used for eco-tourism, research and recreation activities. At the entrance of Jozani forest, a combined visitor's center and field office have been constructed. There is staff catering to tourists, patrolling the forest and conducting other management activities.

There are eight villages around the forest area, which have been dependent on the resources from the forest and the bay. These communities are involved in the management of the area at several levels, through village conservation and management committees. A community based organization, Jozani Environmental Conservation Association (JECA) has been formed "to serve and facilitate active participation of communities in the natural resource management for the sustainable development of the Jozani and Chwaka Bay area" (JECA 2003). JECA is particularly involved in environmental education and alternative income generating activities, in close collaboration with CARE and DCCFF staff.

DCCFF has entered into resource use management agreements with the local communities, and in the longer term the aim is for these communities to have legal powers to manage their local resources.

To take the pressures off the reserve and to provide alternative livelihoods for these communities, an extensive program of alternative income generating activities have been carried out over some years. These activities include the manufacture of handicrafts for tourists, mushroom growing, beekeeping etc. The promotion of alternative income generating activities is backed by an innovative savings and credit scheme.

This scheme which was initially established in August 1999 and which was re-designed in April 2001 due to some initial problems with loan recovery, is operating successfully in the Jozani area. 352 members are participating in the program in 16 groups in the eight original project villages around Jozani Forest. Fifty-one percent of the members (181) are women, and the participants, most of whom initially were worried that they would not be able to save any money to be

eligible for a matching loan, have so far managed to save a total of TSh 11,941,000. The program has so far completed one loan cycle where repayment was near 100 percent.

Some of the key activities carried out under the project over the last year are (UNDP 2002):

- Establishment of resource use management agreements with local communities
- Ongoing operation of a tree nursery
- Work related to the Establishment of the national park
- Full implementation of a tourism revenue retention program and establishment of a community development fund
- Completion of a biodiversity inventory
- Mangrove management planning
- Non-intrusive ecological monitoring research from Ader's duiker
- Ethnobotanical specimen collection and facility improvement
- Fuel wood consumption survey
- Preparations for duiker symposium
- Infrastructure development
- Training and conservation education
- Livelihood security activities

The future plan for the project include the following activities (UNDP 2002):

- Demarcation of Park Boundary
- Construction of fire tower
- Revision of park management plan – including tourism plan
- Conduct dialogue with community on land purchase around monkey viewing site
- Carry out hydrological survey for Jozani.
- Preparation of tourism and park management plan
- Follow up on establishment of resources conflict resolution board.
- Graduation of savings and credit groups
- Capacity building on handicraft production, quality control and marketing
- Conduct final evaluation
- Develop two new project proposals to finalize work already in progress.

Costs

JCBCP is managed through the collaboration between DCCFF and CARE, both of which have separate budgeting and accounting procedures and structures. This institutional set-up makes it somewhat difficult to estimate the total costs of the operation. The costs for CARE and DCCFF are provided in the tables below. CARE's accounts handle the whole GEF project, while the costs incurred by DCCFF mostly are salaries for staff working on the project.

Table x.x CARE operating costs for Jozani 1999-2002 (US\$)

Item	Total (3 yrs)	Annual average
Personnel	245170	81723
Running costs	113205	37735
Staff travel	32563	10854
Income Generating Activities	48743	16248
Community based natural resources	17623	5874
Monitoring	8712	2904
Project evaluation	11201	3734
Computer workstation	14773	4924
Field equipment	31626	10542
Boundary demarcation	1353	451
Subgrant to partners (DCCFF & JECA)	175231	58410
Audit	3500	1167
Workshops and courses	44651	14884
Overseas training	31824	10608
Consultants	79885	26628
Infrastructure development	78126	26042
Biodiversity inventory	42794	14265
Motorcycle purchase	4161	1387
Motor vehicle purchase	7287	2429
CARE mgmt costs	43191	14397
TOTAL	1035619	345206

The average budget for CARE over the last three years is around US\$ 345,206, while the total for the period is US\$ 1,04 million.

Table x.x DCCFF in kind contribution to JCBCP for FY 2002

Staff	Number	Amount per year (TSH)
Management	3	3,000,000
Administration	5	2,400,000
Field officers:		
Enterprise – training	12	9,060,000
• Saving & Credit		
• Mushroom		
• Beekeeping		
• On farm		
• Handicraft		
Conservation education	2	
Biodiversity	4	
Community	4	
Wider area	3	
Sub-total	13	8,040,000
Staff proposed National Park:		
Administration status & reception	2	
Tour guides	6	
Ecologist	1	
Forest guide	10	
Sub-total	19	53,040,000
Garage	3	1,800,000
Driver	6	3,000,000
Total Staff	61	80,340,000
Other costs (office costs, electricity, phone bills)		3,240,000
TOTAL		83,580,000

Adding the contributions from DCCFF to the annual average for CARE gives a rough estimate of the management costs of the JCBCP at around **US\$ 430,000 in 2002**.

Funding sources and mechanisms

The first phase of JFCBP from 1995 was mainly funded by the Government of Austria through CARE Austria, though part-funded by various donations and grants from other donors such as Ford Foundation and McKnight.

A major breakthrough for the funding of the project, and a confirmation of the importance of the biodiversity in the area, was the involvement of the Global Environment Facility (and UNDP) for three years from 2000 (see table below).

Table x.x GEF project funds and cofinancing for JFCBP from 2000-2003 (US\$)

FUNDING SOURCE		INSTITUTION NAME (ACRONYM, IF ANY)	PROPOSED FINANCING (IN PRODOC)
A. GEF FUNDING			0.748
B. CO-FINANCING	UNDP (TRAC)		
	UN AGENCY		
	GOVERNMENT (CASH)		
	GOVERNMENT (IN-KIND)	Government of Zanzibar	0.300
	BILATERAL DONORS	Government of Austria: Government of Zanzibar (in kind)	0.260 0.100
	MULTILATERAL DONORS		
	REGIONAL BANKS		
	NON-GOVERNMENTAL ORG.	CARE Austria	0.040
	PRIVATE SECTOR		
	OTHER	Ford Foundation	0.130
TOTAL COFINANCING			0.430 + (0.40 in kind)
TOTAL FUNDING (A+B)			1.178 (+ 0.40 in kind)

The total budget for the period is US\$ 1,178,000, of which US\$ 750,000 is funded by the GEF, US\$ 300,000 by the Austrians, US\$ 130,000 by the Ford Foundation. This amount corresponds (roughly) to the CARE expenditures for the last three years presented in the table above.

In addition to these donor funds, tourism entrance fees for Jozani Forest have been collected since 1996 based on a simple set of entrance fees (see table below).

Table x.x Entrance fee structure for JFCBP

Visitor	Amount
Non-resident	US\$ 8
Residents and University visitors	US\$ 4
Citizens	TSH 1000
Primary/secondary schools	Free of charge

The entrance fee includes a mangrove boardwalk and a guided walk in the forest.

The revenue collected from international visitors (in particular) has increased steadily since the mid-1990s, though lower in 2000 and 2001 (see table and figure below). In 2002 nearly 20,000 visited Jozani forest and a record US\$ 106,427 was collected.

Table x.x Tourism revenue collected for JFCBP 1996-2002

	1995	1996	1997	1998	1999	2000	2001	2002
No of tourists	6,191	12,793	17,360	14,885	13,901	13,476	12,725	19,205
Revenue (US\$)		42,398	48,765	55,971	103,592	79,361	79,464	106,427

Figure x.x Number of tourists and tourism fees 1995-2003



A by-law establishes **revenue retention** for the JFCBP, and a Community Development Fund. Communities have agreed that the fund should be managed by JECA. All the nine villages around the project area will receive equal share for implementing community development programs having impact on the majority of the population.

The by-law states that the Forest Authority shall retain 30 percent of the collections made on behalf of the Government. Further, 14 percent goes directly to the treasury. The remaining 56 percent of the revenue is divided between

- Community development including compensation to the farmers for crop damage done by the Red Colubus monkey (40 percent)
- Forest resources management (60 percent)

A total of TSH 6,294,745 has been disbursed to community development projects and farmers' compensation by June 2002 (see table below).

Table x.x Disbursement of tourism revenue for community development and farmers' compensation by June 2002

Village	Funds for community development (TSH)	Community project funded	Farmers' compensation (TSH)	Total amount of money disbursed (TSH)
Charawe	206,300	Water system	1,571,933	1,778,233
Ukongoroni	206,300	Installation of water system	643,063	849,363
Bwejuu	206,300	Construction of Doctor's houses	643,063	849,363
Michamvi	206,300	Construction of Doctor's houses	428,709	635,009
Cheju	206,300	Digging of well	214,354	420,654
Chwaka	206,300	Nursery school	571,612	777,912
Pete	206,300	Trenching of water system	214,354	420,654
Unguja Ukuu	206,300	Not started	142,903	349,203
Zanzibar town	0	-	214,354	214,354
Total	1,650,400		4,644,347	6,294,745

Key issues regarding sustainable financing

JCBCP is the only protected area in Zanzibar supported by GEF, i.e. recognizing the area for having globally important biodiversity. The involvement of GEF and other donors means that JCBCP is well funded and can work along an ambitious path towards conservation and development of the area. However, these sources of funds are may be phased out in the future, leaving the current budget too high to be financed through tourism revenues or, realistically, through government support. However, since the area provides a global good, there are compelling reasons why international donors should fund a large share of the project. Even so, the JCBCP clearly lacks a fall-back strategy for the sustainable financing of level of operations if donor funds are scaled down.

3.5.2 Ngezi Forest

Background and brief history

The Ngezi Forest reserve is located on the northwestern corner of Pemba Island. It is the only large patch of tropical forest on Pemba that once covered the entire island. Ngezi Forest, with an area of 14.4 km², is also one of the few areas that maintain populations of indigenous and endemic forest and animal species, many of which are in danger of extinction. The protected area has a long coastline, and extensive mangrove areas are protected. Ngezi attained status of forest reserve in 1959, but had no real protection until the 1990s.

The forest contains considerable number of timber species and mangroves, which is important to the traditional life of the people living around it and in other parts

of Pemba. It provided the energy (fuel wood) for a large part of the population, and was a major source of building material. At present there is an increasing demand for wood produce and products in the area. This increased demand exerts an enormous pressure on the remaining forest.

Main features of the project

The management of Ngezi forest is in its infancy – for various reasons, one of which seems to be lack of funds. Recently, CARE has involved itself in the funding and cooperation with DCCFF on managing the Ngezi reserve in cooperation with the communities. MICA is gradually being more and more involved in the activities around Ngezi.

Ngezi forest reserve and its surrounding area consist of the two shehias of Konde and Makangale that further have subdivided into 10 villages. The population around the forest is estimated at 22602 (DCCFF 2000), mostly sustaining life through fishing, farming (cassava, sweet potatoes and fruits), and some live stock.

The goal is to manage the reserve through broad community participation. There is currently one conservation committee in each village. The functions of the committees are to¹⁸:

- Ensure that all the boundaries of the reserved forest including the core and buffer zones are well known by the villagers.
- Patrol in the forest areas and adjacent villages.
- Keep all records of the conservation forest and adjacent areas, records of patrol, offenders and penalties imposed records of all permits issued fines, income and expenditures.
- Keep receipt book and ensure that all payments are marked in the receipt book and numbers of every receipt are put in an income and expenditure ledger book.
- Open an account and ensure the proper running of the account.
- Inspect various areas at least once a month.
- Lay down proper procedure of issuance of various permits so that permits issued goes hand in hand with needs and conservation.
- Organize meetings to evaluate success and problems on conservation.
- Ensure that, laws and all other by –laws are strictly adhered to.
- Arrange for trees planting in affected areas and all other areas the committee may direct.
- Establish and maintain a special fund on conservation.
- Establish and maintain a program on the use of the villages natural resources.
- Maintain proper collection of villages' income and its expenditures.

¹⁸ Draft by-laws from October 2002. Unclear whether these have been adopted yet.

A recent draft of by-laws for the area specifies a whole range of regulations for the sustainable harvest of wood and marine products in the buffer and core zones of the forest and the marine area. Enforcement through fines is the responsibility mainly of the village committees.

The day-to-day management of the forest is currently headed by a DCCFF manager supported by four forest guards based at a small combined visitor's center and field office at the gate of the forest reserve. Two guards are based at the field office at any one time. The main tasks of the guards are patrolling, welcoming and guiding visitors, tree planting, and assist in environmental education in the villages. The guards are assisted in the patrolling by ten villagers.

DCCFF has been working with CARE and MICA to identify viable alternative income generating activities in order to improve household livelihoods as well as to reduce dependency upon forest products by these same communities. One of the proposed income generating activities is the promotion of nature-based tourism activities in the area.

Ngezi nature trails have been improved by replacing old signs with new ones and adding information explaining the life in the ponds, symbiotic life of two types of ferns and placing resting benches along the nature trails. Some interesting trees along the nature trails have also been identified and marked to better inform the tourists. There is a new hiking trail within Ngezi forest to provide tourists with more opportunities to see attractive features in the forest. It is a 5-km self-guided hiking trail which passes through all vegetation communities, cultural and spiritual areas, and areas of historical importance.

Following a discovery that several large tourist hotels were being planned within and around Ngezi Forest reserve CARE supported a study on viable tourism areas around Pemba. The study yielded information, which will be useful in policy development for designating specific zones where hotels may be built and others where they may not. Another study was conducted to identify possible tourist attraction sites in and around Ngezi. The information collected from the sites will also be used in the establishment of a tourism plan for Ngezi.

The management of Ngezi is at an early stage and faces considerable challenges. In addition to the complexities of managing a forest from an ecological point of view (e.g. one serious problem is the spread of a type of exotic tree species), there is increasing pressure on the few alternative wood sources provided and potential resource use conflicts present.

Some of the future plan of the Ngezi management is:

- Increased participation of the surrounding community in the management.
- Staff and community capacity building in the management of the reserve.
- Enhancement of eco-tourism activities in and around Ngezi
- Conservation education to the community in schools and villages.
- Eradication of *maesopsis eminii* (an exotic tree species) to retreat the status of Ngezi.

- Establishment of appropriate income generating activities.
- Purchase of fire fighting tools /equipments
- Office construction

Costs

Complete accounts for Ngezi have not been made available. Further, both MICA and CARE have recently started to get involved in the Ngezi project – under the same budgets as for Misali. Some of the current operating expenditures for Ngezi have been made available from the staff (see the tables below):

Table 3-19 Expenditure for Ngezi Forest Reserve Jan- Des 2002

ITEM	DESCRIPTION	TOTAL
Purchase of		
Diesel lts 300x12months	3000lts @650	1,950,000
Petrol lts 200x12 months	2400lts @680	1,632,000
Purchase of motor cycle spare parts	For station in charge Ngezi	53,000
Purchase of coconut thatches	For Ngezi information center	56,000
Purchase of rope	For Ngezi information center	10,000
Maintenance of staff house	For Ngezi station in -charge	98,780
TOTAL		3,799,780

Table 3-20 Expenditure for Ngezi Forest Reserve 2001

ITEM	DESCRIPTION	TOTAL
Purchase of		2,340,000
Diesel lts 300x 12 months	3600lts at TSH 650	
Petrol lts 250x12 months	3000lts at TSH 680	2,040,000
Purchase of rope and thatches	For maintenance of Ngezi information center	56,000
TOTAL		4,436,000

In addition to these come salaries for DCCFF staff and other Gov't expenses, and costs incurred through the activities of CARE and MICA. The Government of Zanzibar contributed TSH 14 million to the Ngezi for both 2001 and 2002. An overall cost estimate for Ngezi for 2002, assuming that 20 percent of the estimated expenditures of MICA and CARE go to Ngezi, is around **TSH 30,000,000**. This amount is less than 10 percent of the budget for Jozani Chwaka bay.

The management of Ngezi is presently maintained at a very low level of activities due to limited funds. The field office lacks basic equipment and facilities (such as a motor vehicle, electricity etc). Some of the important tasks the management would like to carry out if they had more funds are:

- More environmental education in the villages
- Develop a plan for the development of the area

Further, there is limited knowledge of the ecology and biological diversity of the forest – essential knowledge for the improved management.

The manager has summarized the current shortcomings and needs in an “ideal situation” budget for 2003-04 (see table below). Currently, there are no funds to cover most of the items in this budget.

Table 3-21 Budget breakdown Jul. 2003 - June 2004

Item	Description	Budget
Office construction	The office should have six rooms and store /toilets	35,000,000
Installation of water /electricity	For office and staff house	25,000,000
Purchase of office furniture and equipments	Chairs, tables cupboard refrigerator etc	1,500,000
Purchasing of car and Motor bike	1 Double cabin car 3 Motor Bike	35,000,000
Purchase of Station tools and equipment for office	TV , Video , Computer sate , Telephone , Radio call , Camera (dig.) and Moving camera 1, Binocular 2 , Generator etc	7,500,000
Running cost for Ngezi staff employment	Salary for sixteen (16) staff	12,660,000
Purchase of fiber boat engine	Carrying capacity of six passenger	10,000,000
Purchase of protective clothing	30 pairs of over roll coats, rain coats, 30 piece uniforms 30 pairs of gun boots	1,200,000
Purchase of fire fighting tools and first aid kit	One set each	1,000,000
Work shops seminar for villagers and officers	Ten work shops per year	2,500,000
Study visits for staff and community	To mainland , Kenya, and Uganda	25,000,000
Short courses for Ngezi staff: ten staff	-Ecotourism -Conservation education -Training of trainers -Accountants courses etc	12,000,000
Long courses four staff (4)	2 staff on natural resource management, 2 in tourism management	40,000,000
Cost of office supplies	Spare parts, office maintenance	13,000,000
Cross visits	Visits between villages	2,700,000
Purchase of fuel		
Diesel lts 600x 12 months	7200lts at 650	
Petrol lts 350 x12 months	4200 lts at 680	
Engine oil lts 20x 12 months	240 lts at 1600	
Break fluid	24tins at 2500	
Grease	24 kg at 2500	8,040,000
TOTAL		232,100,000

Revenue sources and mechanisms

Ngezi management currently operates on a very low budget partly funded by the Government, and partly by donors and tourist revenues (see tables below).

Table 3-22 Government contribution to Ngezi Forest Reserve 1999 to March 2003

1999	2000	2001	2002	2003	TOTAL
10,994,490	12,235,824	14,010,496	14,081,356	3,498,690	54,820,856

Table 3-23 Revenue collected at Ngezi Forest Reserve from Jan 1999 to March 2003

1999	2000	2001	2002	2003	TOTAL
850,000	750,000	900,000	940,000	270,000	3,710,000

Very few tourists visit Ngezi, and the revenue collected is low, at TSH 940.000 in 2002. The forest is some way (on a bad road) from the nearest town, has few apparent attractions to the general tourist – except for the chance of spotting monkeys and some beautiful beaches. There are currently no facilities for tourists – apart from one dive center further north along the coast¹⁹.

The legislation regarding revenue retention for MPAs is different from forest reserves. Generally, a larger part of the collected revenue for protected forests goes to the Government treasury. For Ngezi, only 30 percent of the revenue is retained for a revolving fund to finance the daily activities of the DCCFF, while 70 percent goes to the treasury. From the revenue retained, there is no money specifically earmarked for community development activities. Retained revenues are spent on the following activities:

- Enhancement of the forest guarding
- Purchase of fuel
- Purchase of spare parts and maintenance of vehicles
- Staff house renovation
- Renovation of the information center

Currently Ngezi has the following fee structure:

Table 3-24 Fee structure for Ngezi

Non-resident	TSH 4,000
Resident	TSH 2,000
School children/students	Free
Guide service	Included in entrance fee

Key issues regarding sustainable financing

Ngezi is currently a long way from being in a situation where a minimum level of management can be sustained through secure and long term funding. The tourism potential is huge, not so much because of the forest, but because of the beautiful

¹⁹ Which is mostly accessed by boat from Mombasa.

beaches and coral reefs in the area. Forest recreation can be an ad-on activity, but will never be the main attraction. Even so, conservation of Ngezi forest and the marine areas of the north of Pemba may be sustainably financed through the careful planning and development of tourism facilities along the coast.

3.5.3 Kiwengwa Controlled Area

Kiwengwa is a village on the east coast of Zanzibar, which traditionally had very productive fishing grounds. Due to lack of proper management destructive fishing techniques have been used for quite some time reducing the productivity of the area. Statistics indicate that the catch has declined from 55,53 tons in 1993 to 26,69 tons in 1997²⁰. In addition there has been sand mining and waste disposal along the beach from hotels and local communities.

Meetings between the Commission for Natural Resource and the Kiwengwa village were held in the late 1990s to discuss solutions to the problems. The recommendations from a meeting in 1998 lead to the development of a draft management plan for the proposed Kiwengwa controlled area. The Department of Fisheries funded this exercise. A management committee responsible for the day-to-day management (in collaboration with Commission for Natural Resources) was formed consisting of members of the village, and chaired by the Sheha.

The goal of the management plan is to achieve sustainable fisheries and to protect and maintain marine ecosystems supporting fisheries. The plan has the following objectives:

- To halt all forms of destructive fishing techniques
- To halt all other activities that lead to degradation of marine ecosystems

The Kiwengwa Controlled Area was declared in 2000 by an Order under the Fisheries Act. This order establishes formally the controlled area, rules for use and the responsibilities and the set-up of the management committee.

The management plan proposes a budget for the implementation of the plan for the first three years (see table below). In addition to suggested resources from the government, the plan suggests raising revenues through:

- Establishing specific catch auctioning site whereby the village auctioneer will deduct certain per cent of the amount of money fetched by fishermen in the auction
- Keeping donation boxes at the village entry points, tourist hotels and other appropriate places

There is currently no by-laws specifying entry fees, revenue sharing etc.

²⁰ Management Committee of Kiwengwa (1999)

Table 3-25 Proposed budget to implement management plan for Kiwengwa

Area	Duration (years)	Costs (US \$)
Law enforcement	2	15,181
Community awareness	3	14,888
Administration	3	10,000
TOTAL		40,070

According to staff at the Department of Fisheries the initial process leading up to the establishment of the controlled area was promising. However, the controlled area is now close to an open access regime due to a complex set of problems that have not yet been resolved.

One of the problems encountered was user conflict with villages immediately to the north and to the south of the controlled area (especially the village of Pwani Mchangani). Villagers of Pwani Mchangani are said to use drag-nets and spear guns, which are destructive for reefs. It was seen by Department of Fisheries staff as a weakness that the adjacent villages had not been included in the management committee for the controlled area. Further, it seems that tourism operators have not been consulted or included in the process or plan for the management of the area.

An additional problem, and reason for the temporary collapse of the management of the area, was seen to be political interference and advocacy of the belief that everybody should be allowed to fish wherever they like.

Due to these problems, and the problems of raising the necessary revenue to implement the management plan, the management is currently more or less dormant. The Department of Fisheries does not have specific allocations for re-starting the management process, but may be able to use some general environmental education funds for Kiwengwa.

4 Options for sustainable financing of MPAs

4.1 Summary of key MPA characteristics

Chapter 4 provided a rather detailed overview of seven protected areas, five of which are “pure” MPAs. This subchapter summarizes some of the key characteristics. The protected areas in Zanzibar are very different along several important dimensions:

- Size & geophysical factors: reefs, sea grass beds, level of biodiversity etc
- Management objectives and approaches
- Level of government, private sector, community or NGO/CBO involvement
- Number of affected villages and other stakeholders
- Level and complexity of user conflicts (e.g. tourism and fishing intensity)
- Fisheries management
- Level of operating costs
- Level of revenue collected from tourism
- Level of support from donors

The tables below summarize some of the key characteristics of the MPAs in Zanzibar, starting with institutional arrangements and management.

Table 4-1 Institutional and management characteristics

Name of MPA	Level of management	Major objectives	Management responsibility	Fisheries Management
Chumbe	High	Conservation & education	Private company	Fishing Prohibited
Menai Bay	Medium/low	Conservation & Sustainable use	Dep. of Fisheries	Only ban on destructive fishing
Jozani/Chwaka ¹	Medium/high	Conservation	Dep, of Forestry + CBO	NA
Mnemba	Medium/low	Sustainable use	Private company + community	Zoned and regulated
Kiwengwa	Low	Sustainable use	Community	Only ban on destructive fishing
Misali	Medium/high	Conservation & sustainable use	Dep of Forestry + CBO	Zoned and regulated
Ngezi	Medium/low	Conservation	Dep of Forestry + CBO	NA

Notes:

1. Currently only the management at Jozani Forest is operational as part of the proposed National Park

The column “level of management” is a subjective and crude assessment of how active current management is working towards management objectives. The table shows a striking variety for all MPAs.

The two tables below provide the operating costs and sources of revenue for all Zanzibar’s protected areas. Since most of the MPAs are young, the operations have not matured to provide a stable year-to-year level of costs of operation. There are still many necessary capital investments (on top of replacing depreciated capital) that need to be carried out and that may inflate the operating costs figures.

Table x.x Estimated operating costs of MPAs per km²

MPA	Size (km²)	Operating Budget (US\$)	Costs/km² (US\$)	Comment
Menai Bay	470	85,000	181	
Misali	22	120,000	5454	
Chumbe	1	21,600	21,600	Estimated MPA share
Mnemba	12	5,000	417	Estimated size. Costs of tourist operator unknown
Jozani/Chwaka	50	430,000	8600	Currently mostly Jozani
Ngezi	14,4	30,000	2083	Rough estimate
Kiwengwa	17,5	13356	763	Proposed annual budget

Box x.x: Estimates of MPA costs worldwide

There is hardly any published information on the running costs of MPAs globally, and no estimates of what it would cost to expand MPA systems. Balmford et al (2003) and Gravestock (2002) aimed to fill this gap by conducting a global survey of the costs and income requirements of MPAs, as a basis for making an estimate of how much it would cost to expand the existing MPA systems worldwide in order to protect the “optimal”(in some sense) portion of the world seas. Though their survey covers MPAs all over the world (and therefore is very broad), the results may provide an interesting benchmark for the Tanzanian case. The current MPA system in Tanzania is very young and small in size, and a much larger share should probably be protected for the benefit of sustainable fisheries, tourism and biodiversity conservation.

Current annual expenditure for the surveyed MPAs was found to vary enormously, with medians of USD 775/km²/year and USD 98,000/year. The authors state that the responses they got may have biased the estimates upwards (towards well-funded MPAs). The estimates of start-up costs for MPAs are even more uncertain at a median of seven times annual total required costs.

Only around 15 % of the sampled MPAs thought they had sufficient funding for effective conservation (Balmford p2). On average, current income met around one half of the estimated total amount required annually for both developed and developing country MPAs.

Gravestock (2002:p58-59) finds that for a cluster of MPAs bearing the closest resemblance to Tanzanian MPAs, the average income is USD 0,46/km²/year, while the average funding requirement was found to be USD 1,48/km²/year (THIS MAY BE INCONSISTENT WITH BALMFORD 2003! Hectares vs km²??)

Due to large variations in results Balmford et al goes on to develop a model for MPA costs that can be used for purposes of generating estimates for MPA expansions. Variation of costs per area was explored in relation to the following key variables (results in brackets):

- Approximate number of people living within 50 km (costs independent)
- Inhabited land (negative correlation)
- Per capita GDP (positive correlation)
- Purchasing Power Parity (negative correlation)
- Size of the MPA area (strong negative correlation)

Costs may not be directly comparable, since some MPAs are heavily involved in development activities, while others are more concentrated on core management activities such as patrolling etc. Particularly the costs per km² show enormous difference between e.g. Chumbe at US\$ 21600 and Menai Bay at US\$ 181. There are obvious economics of scale of MPA management in general, and again the estimates may not be directly comparable but can be used as a very rough indication of the cost intensity. It is also very difficult to estimate what the “right” level of operating costs should be for individual or systems of MPAs. Very few international studies have been carried out trying to map the costs of managing MPAs around the world. A summary of one such study is provided in the box below.

The table below provides crude estimates of the percentage distribution of funds by source for all MPAs in Zanzibar.

Table x.x Source of funds by estimated percentage distribution 2002/2003

MPA	Gov't	Inter'l donors	Tourism revenue	Comment
Menai Bay	10	90	0	
Misali	1	84	15	
Chumbe	0	10	90	Some initial investments funded by donors + parts of education program.
Mnemba	15	0	85	100% of CCA's costs covered by tourism revenue
Jozani/Chwaka	5	70	25	
Ngezi	10	89	1	Once CARE gets more involved
Kiwengwa	0	0	0	No funds

Funds come from three main sources; Government, international donors or tourism revenues (park fees). There is also here a striking difference between the MPAs.

4.2 Managing and financing options

This section provides some management and sustainable financing options under the MPA system currently in the process of being established in Zanzibar.

The available options are, in summary:

- Current system, or status quo
- Collaborative agreements between Government and NGOs, local communities or private sector entities
- Delegation and decentralization of all responsibilities to local level (either Government, private sector or civil society) within and overall national framework
- Fragmented, community-based management
- Any hybrid of the above options

Supporting factors:

- **Precedent for local revenue retention/financial autonomy:** International experience demonstrates that when the revenues raised in protected areas are returned to the national treasury, there is little incentive to implement revenue raising programs²¹. Zanzibar has bylaws establishing a high degree of retention for the revenue raised in MPAs²².

²¹ See e.g. James (1999): "In the African region, the parastatals agencies managing PAs spent 15 times more on conservation than did government funded agencies". A survey of Tasmania, Australia indicated that 86% of the public felt park fees were good if income is returned directly to the parks, but only 36% if income is retained by the state government treasury (ANZECC 2000)

²² This is not the case with terrestrial PAs.

- **Ecosystems interlinked:** The islands of Zanzibar are relatively small and the MPAs are ecologically connected. This is an argument not only for a marine protected area system, but also to integrate terrestrial protected areas.
- **Government has established NPAB:** The NPAB is a body, which aims to oversee and coordinate a system of MPAs in Zanzibar. The NPAB and the laws establishing it are new, but the framework is in place for some degree.
- **Projected strong growth in tourism** – however also a threat to the resource base. A largely untapped source of revenue for the current MPAs in Zanzibar, and may in the long-term generate substantial revenues for an expanding MPA system.

Challenges:

- **Cross-subsidization vs local revenue retention:** Local revenue retention is important for the success of the financing of MPAs. If pursuing a systems approach to MPA management, there may be little difference (in practice) for local communities to give money away to a national MPA system (in the case of cross-subsidization) or to the government coffer – i.e. if the local/decentralized management knows that any “surplus” revenue generated will be distributed to other sites, there will be a clear tendency for the costs always to be at least equal to the revenue for each locally managed MPA.
- **Lack of coordination and holistic planning:** Particularly in the closely interlinked areas of tourism and resource conservation/regulation (fisheries, forestry). The major threats to conservation in most countries lie outside the protected areas system. Unless the linkages between protected area management and external factors are identified and addressed, fundamental conservation issues are difficult to resolve.
- **Hurdles for private sector involvement:** “In spite of major policy reforms towards liberalization 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’.”
- **Still insufficient local (and central) capacity to manage MPAs and tourism development**

Importance of local revenue retention: James (1999) “Protected area budgets average \$157 per km² per year in the developing countries, and \$2,058 per km² in the developed countries, according to a recent study by WCMC. On average, the developing countries’ budgets are less than one third adequate to meet their stated conservation objectives. One way to address this problem is to allow management agencies to retain the revenues raised in protected areas; where this has been tried, budgets are many times higher than in agencies that depend solely on government allocations. Such financially autonomous agencies have taken advantage of a range of revenue raising mechanisms. However, implementing such a program requires institutional change at the level of the agency’s statutory authority, its corporate culture, and in the attitudes of resource users. Though resistance to change can occur at any of these levels, the experience of successful agencies indicates that conservation funding can be improved significantly”.

Additional Observations

When considering various management options (and their respective financing options) it is crucial to take the informal and social customs into account, not only the formal institutions (e.g. the rule of law). Building on these informal institutional mechanisms are often more important than the formal ones in designing effective MPA management systems].

Remember (esp. for Zanzibar and Pemba) when considering raising tourism revenues that sites that have close substitutes can be expected to be more affected (in terms of reduced number of tourists, i.e. leakage) by a price (entrance fee) increase than sites without good substitutes. Further, even if tourism demand is relatively inelastic so that a price rise will increase total revenue, there may be substantial loss of local business, employment etc etc due to the reduced number of tourists. In addition, there is some evidence that the higher the WTP of tourists the less they are likely to spend locally (ie pre-organized; extremes being backpackers vs high end divers).

The potential for tourism revenue financing MPAs in Zanzibar: According to the Tourism Master Plan (CHL Consulting Group (2002)) Zanzibar received a total of some 76,000 foreign tourists on international flights in 2001 (which was a bad year), some estimated 15,000 foreign visitors (including expats) on internal flights and 30,000 domestic visitors from the mainland. This gives an estimated total of about 121,000 in 2001, plus just below 5,000 cruise ship visitors.

Visitors numbers are expected to show a substantial recovery in the coming years, once travel internationally picks up after the Iraq war. The Master Plan predicts an average target growth between 2003 and 2012 of around six percent per annum for most visitor groups. This will yield a near doubling of the number of international tourists by 2012 (220,000). Similarly, the number of bed nights is expected to grow from the 522,000 in 2001 to 1,185,000 by 2012.

These figures can be used with assumptions of main tourist activities and willingness to pay for visiting MPAs (or for conservation of reefs as a proxy), to estimate the potential tourist revenue for the MPAs in Zanzibar.

A series of studies summarized in Westmacott et al (2000) provides some estimates of tourism activities and willingness to pay in Zanzibar. Comparing Zanzibar to other locations in the Indian Ocean, reef-based tourism was considered of medium, but growing importance for Zanzibar. Tourists in Zanzibar were found to spend around 40% of their vacation time diving and snorkeling. A contingent valuation survey that was carried out among divers in Zanzibar found that divers were willing to pay USD 22 in 1999 (USD 30 in 1996) to maintain reefs in the same state (as before coral bleaching). Further, the willingness to pay to support conservation was found to be around 2-3% of the total vacation expenditure, information which is relevant for the MPAs and the setting of user fees.

A back of the envelope calculation would suggest that if 40% of visitors engage in reef-based activities and their average WTP to support conservation during their stay is USD 22, an estimate of potential user-fee revenue in 2001 is around USD 700,000. This is likely to be a very conservative estimate – since the average of 5 days holiday per tourist would yield a low figure of only USD 4,4 per day (for the 40% who do reef-based activities only). Assuming the same growth in WTP (and prices) as in visitor numbers an estimate of potential tourist revenue for reef conservation in Zanzibar in 2012, would be USD 3,700,000 (220,000*0,4*42).

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Annex A: A characterization of MPAs in Zanzibar

A summary characterization of MPAs in Zanzibar (Unguja and Pemba Islands) is provided below.

A1 Menai Bay Conservation Area (MBCA)

Basics:	
Management Status:	Multiple use marine conservation area In addition, community mangrove conservation
Size (marine & terrestrial):	470km ²
Biographic description:	Bay in the SW of Zanzibar, traditional fishing ground containing coral reefs, sea grass beds, several small islands (Vundwe, Miwi, Uzi, Pungume, Kwale, Ukanga), mangrove forests
Legal status:	
When was the MPA legally established?	9th August 1997
What legislative instruments created the MPA and govern its management?	MPA established under the Zanzibar Fisheries Act of 1988 section 7(1), legal supplement (part II) to the Zanzibar Govt Gazette Vol CVI No.5755.
Do these legislative instruments include management regulations	Yes – by-law includes somewhat stricter regulations than the Fisheries Act.
Institutional arrangements:	
What agency or organization is responsible for the day-to-day management of the MPA? If more than one, note the role of each	WWF project entity under the Department of Fisheries with seconded staff from the Department. Unit not set up as an integral part of the department (e.g. no common budget and financial structure).
What other agencies or organizations have active roles in management? What are these roles?	WWF is overseeing and supporting the project – though the project is in a transitional phase under which WWF is considering further support. Steering and Management Committees have been formed. Village Conservation Committees have been formed in all 17 participating villages. Further Village Committees for mangrove conservation initiatives in four more villages.
What Ministry or branch of Government has overall authority over management?	Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)
If management responsibility has been delegated to a non-governmental entity, what mechanisms or instruments were used to do so?	Unclear what legal responsibility has been delegated to WWF and which mechanism/instrument has been used to do so.

Do any mechanisms exist for regular stakeholder consultation and input? If so, what are these?	Does not seem well developed. WWF evaluation pointed out that there had been lack of stakeholder consultation during both the drafting of the general management plan and the draft revenue collection information system.
Do the existing management arrangements appear to be reasonably efficient?	Not yet. Some patrolling (2-3 three times a week) from park office in Kizimkazi. Three park offices (south, west and east) under construction.
Management:	
Are there stated management objectives? What are they?	Yes; the WWT/Department of Fisheries original project document states: “To conserve in perpetuity the biological diversity, ecological processes and productivity of the MBCA and associated ecosystems within for local people”. The draft Management Plan states (translated from Kiswahili): “To control the illegal harvest and use of fish, forest and land resources within the Bay, by using special patrols with cooperation from citizens and other Government agencies”.
Is there a management plan? Include citation.	Yes, a draft in Kiswahili (summarized in English in WWF (2002)).
What are the major activities carried out within the MPA?	Dolphin watching Snorkeling and SCUBA diving on the reefs Beach recreation, boat trips to the islands Marine research Fishing, and other harvesting Mangrove harvesting Some illegal fishing (drag nets etc)
What, if any, conflicts exist between these activities?	Conflict between illegal (destructive) fishing and long-term conservation of the productivity of the area. Outsider incursion (often using illegal gear) exacerbates this conflict. Potential conflict between fishing and snorkeling/diving Potential conflict between dolphin watching and distress to the dolphin population
Does the MPA have active management? If not, skip the rest of the questions in this section	Yes – though not yet fully operational
How is the MPA funded?	Through WWF funding mainly Government of Zanzibar funds 14 staff seconded from the Dep of Fisheries. USD 10.000 set aside from Government budget to MBCA (on top of staff salaries) for FY 2003/04. Collection of tourism revenues not yet started - legally established USD 5 entrance fee for internationals. Some 12000 tourists estimated to visit Menai each year.
Briefly list existing management programs	Environmental education programs in local communities Alternative livelihood strategies (e.g. beekeeping) Training of fishermen for patrol activities Enforcement of regulations, e.g. patrolling Recreational program organized by tour operators in the immediate area and from Stone Town and elsewhere (snorkeling, diving, island trips etc) Some limited research
What staff positions currently exist?	App 16 staff; Manager, adm, fishing coordinator, training coordinator, head patrol, env education coordinator (x2), district officers (x2), mangrove coordinator, research coordinator, driver, cleaner (x2), boat men.
If regulations are in place, are they actively enforced? If so, by whom?	Not yet optimally enforced, due to limited funds. Some boat patrolling, including local fishermen, though offenders are often let off (due to weak courts, corruption?) Some Coast Guard enforcement.

What are the major types of regulation?	Sustainable uses allowed; <ul style="list-style-type: none"> No illegal fishing methods (beach seine, spear gun, explosive or poison fishing). Fishermen must have a valid license. Fishing camps ("dago") on the islands only allowed at prescribed times upon payment of (small) fees Recreational activities allowed upon payment of fees (USD 5 for internationals)
Is zoning used as a tool for management? If so, describe zones	Not yet; not sufficient ecological information for zoning
Does any management program address livelihood issues of local communities? If so, describe	Yes, alternative livelihood strategies (e.g. beekeeping etc). In addition, when revenue collection is in place it is legally established that 70% shall cover management of the area, 30% for the development of community activities as proposed by District Committees.
Socio-economic:	
Are there any communities within or adjacent to the MPA's boundaries? If so, name and give rough estimate of population size	17 villages around the bay. More than 20 including villages adjacent to mangrove forest.
Are persons from these communities or elsewhere dependent on resources in the MPA for their livelihoods? If so, note the level of dependency and relative number of persons involved (e.g. portion of the population moderately dependent)	The villages around the bay are primarily dependent on fishing for their livelihoods. Some farming. Depending on the seasons, outsiders from all over Zanzibar have traditionally fished in the bay. Increased pressure due to more efficient gear, commercial value of catch etc. High portion of adjacent communities are dependent on the marine resources of Menai Bay.
If so, list resources and related occupation (coral reefs: fishers, dive operators)?	Coral reefs: Fishers, tourist operators Mangroves:
What are the major socio-economic activities of the areas surrounding the area, in order of importance?	Fishing Tourism Other activities (mangrove harvesting, farming etc)
How important are activities dependent on MPA resources relative to other activities, e.g. farming?	Fishing is primary activity
Roughly what portion of the population of adjacent communities can be considered living in poverty, or at risk?	High portion

References: Various project documents, Menai Project Staff

A2 Misali Island Marine Conservation Area, Pemba

Basics:	
Management Status:	Multiple use MPA and protected forest
Size (marine & terrestrial):	22km ² (core zone of 1,4, and island of 0,9)
Biographic description:	Coral island on the W coast of Pemba; fringing reefs, patches and bommies; sandy beaches of importance for turtle nesting, small mangrove forest; coral rag forest of unknown ecological value, rich bird life. High marine biodiversity.

Legal status:	
When was the MPA legally established?	22. May 1998
What legislative instruments created the MPA and govern its management?	MPA established under Sections 7(1) and 32 of the Fisheries Act, No. 8 of 1988. Forest protection under Forest Resources and Management Act, No. 10 of 1996.
Do these legislative instruments include management regulations	Yes
Institutional arrangements:	
What agency or organization is responsible for the day-to-day management of the MPA? If more than one, note the role of each	Entity under the Department of Commercial Crops, Fruits and Forests in Wete, Pemba. 6 rangers permanently stationed on the island. A management committee is established (Misali Island Marine Conservation Area Management Committee).
What other agencies or organizations have active roles in management? What are these roles?	The Govt entity is actively supported by CARE Tanzania and Misali Island Conservation Association (MICA), a community based organization. Some involvement from Department of Fisheries.
What Ministry or branch of Government has overall authority over management?	Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)
If management responsibility has been delegated to a non-governmental entity, what mechanisms or instruments were used to do so?	Unclear which legally mandated responsibilities have been delegated to CARE and MICA and which instrument has been used.
Do any mechanisms exist for regular stakeholder consultation and input? If so, what are these?	Seems to be well developed, especially through the active involvement of MICA and this organization's work in all 36 villages on Pemba.
Do the existing management arrangements appear to be reasonably efficient?	Not yet; several important tasks remain to be done (e.g. installation of buoys, radio communication, preparation of management plan, training of staff etc).
Management:	
Are there stated management objectives? What are they?	Yes; the General Management Plan (a 5-page document) attached to the legal order establishing the conservation area, states: <ol style="list-style-type: none"> To conserve the ecosystems of the Misali Island Marine Conservation Area To maintain the productivity of fisheries in the Area at existing levels To develop tourism use of the Area and thereby generate revenues and other benefits from tourism To involve the community directly in management of the Area and sharing the benefits of such management
Is there a management plan? Include citation.	No, only a 5-page outline of a GMP (see above)
What are the major activities carried out within the MPA?	Fishing (both use of legal and illegal gear) Tourism activities: <ul style="list-style-type: none"> Forest and beach walks, turtle nest spotting, bird watching Snorkeling, swimming, diving Fishing camps on the island
What, if any, conflicts exist between these activities?	Conflict between illegal (destructive) fishing and long term conservation of the productivity of the area. Outsider incursion (even from Kenya) (often using illegal gears) may exacerbate this conflict. Potential conflict between fishing and snorkeling/diving, though current core zone may make this conflict small. Some conflict between fishermen and the management of the core zone (lack of understanding of the need for the no-take

	zone)
Does the MPA have active management? If not, skip the rest of the questions in this section	Yes
How is the MPA funded?	<ul style="list-style-type: none"> Mainly through international donors, notably CARE Austria, Gov't of Austria, Ford Foundation, MacArthur Foundation, CIDA and others (no GEF funds as for Jozani). Some tourism revenue generated (for the last four years), of which 60% goes to cover management activities and 40% to MICA. Entrance fee of 5 USD for internationals. Govt of Zanzibar funds some staff, offices, electricity etc within the compounds of the DCCFF of Wete, Pemba.
Briefly list existing management programs	<p>Enforcement of regulations, e.g. patrolling of the forest, (turtle) beaches and the reefs</p> <p>Environmental and fish stock monitoring</p> <p>Environmental education programs in local communities</p> <p>Training and capacity building</p> <p>Savings and credits schemes</p> <p>Alternative income generating activities (e.g. bee keeping) – similar with what CARE is doing in Jozani.</p> <p>Recreational program: forest and (turtle) beach walk, boat transport and gear hire for snorkeling</p>
What staff positions currently exist?	14 Govt staff (of which 8 staff on Misali Management are 6 guards, manager, asst. manager), 3 MICA, 5 CARE staff.
If regulations are in place, are they actively enforced? If so, by whom?	Actively enforced by 6 permanent park guards.
What are the major types of regulation?	<p>Destructive fishing activities prohibited (spear guns, explosives, poison, compressed air apparatus, drag nets).</p> <p>Anchoring outside designated spots not allowed</p> <p>Erection of permanent constructions of habitation on the island for the purpose of fishing prohibited. Temporary camping by fishermen on the island is allowed.</p> <p>Tourism activities allowed upon payment of fees (notably USD 5 for internationals)</p> <p>No cutting, harvesting or extraction is allowed in the forest, except for the collection of firewood by fishermen camping on the island (who have a valid permit). No interference with wildlife (egg collection etc)</p>
Is zoning used as a tool for management? If so, describe zones	<p>Yes, no-take core zone protecting turtle nesting beach, the reefs off the coast of this beach, and a small islet of importance for migratory birds. Diving and snorkeling allowed in the core zone.</p> <p>The rest of the marine conservation area allows fishing with non-destructive gears.</p> <p>The island is divided into a non-extractive use zone (including the mangrove forest, two small islets, turtle nesting beach) for tourism and scientific purposes, and low impact use zone for fishermen's camp.</p> <p>Fines for breaking theses regulations.</p>
Does any management programs address livelihood issues of local communities? If so, describe	<p>Yes, MICA involved in community development programs together with CARE. 100% revenue retention, of which 40% earmarked for development activities for MICA.</p> <p>Community Development Fund established under the order (unclear how this relates to MICA's activities).</p> <p>Some indication of spillover effects and increased catch from</p>

	the conservation area.
Socio-economic:	
Are there any communities within or adjacent to the MPA's boundaries? If so, name and give rough estimate of population size	Only the rangers (4 at any one weekly shift) and fishermen (temporarily) live on the island. 12 main villages on mainland Pemba use Misali waters for fishing regularly.
Are persons from these communities or elsewhere dependent on resources in the MPA for their livelihoods? If so, note the level of dependency and relative number of persons involved (e.g. portion of the population moderately dependent)	All 36 villages on Pemba are known to occasionally fish in the area (depending on the seasons, monsoons etc)
If so, list resources and related occupation (coral reefs: fishers, dive operators)?	
What are the major socio-economic activities of the areas surrounding the area, in order of importance?	Fishing
How important are activities dependent on MPA resources relative to other activities, e.g. farming?	Fishing is primary activity
Roughly what portion of the population of adjacent communities can be considered living in poverty, or at risk?	High

Reference: Various project docs, staff interviews

A3 Chumbe Island Coral Park

Basics:	
Management Status:	Reef sanctuary and protected forest
Size (marine & terrestrial):	Island covers ca 16,25 ha (0,1625 km ²), and app. 1km long fringing reef to the W
Biographic description:	Coral island with coral rag forest, and fringing reef from the NW tip to the SE tip of the island. Located app. 12km SSW of Stone Town, 6km from the nearest point on the Unguja coast (Chukwani). Reef in pristine state. High biological diversity, esp. hard coral and fish. Forest contains endangered coconut crab, ZNZ endemic Ader's duiker (from Jozani).
Legal status:	
When was the MPA legally established?	6 th October 1992, gazetted in 1994
What legislative instruments created the MPA and govern its management?	MPA established under the Zanzibar Fisheries Act of 1988 section 6(1)(e). Closed Forest established in accordance with the provisions of the wood cutting decree, Chapter 121 of the laws of Zanzibar. Management governed by two agreements between Chumbe Island Coral Island Company Ltd (CHICOP) and Ministry of Agriculture, Livestock and Natural Resources: <ul style="list-style-type: none"> • Marine sanctuary agreement dated 3. January 1994 - valid for 10 years • Closed forest agreement dated 22. July 1994 – valid for 33 years In addition, there is an investment agreement between CHICOP

	and Zanzibar Investment Promotion Authority (ZIPA), and a land lease agreement for the 2,44 ha land used for management and tourism facilities.
Do these legislative instruments include management regulations	Yes
Institutional arrangements:	
What agency or organization is responsible for the day-to-day management of the MPA? If more than one, note the role of each	CHICOP, though Government of Zanzibar has a joint obligation for ensuring that no fishing or extractive use shall be permitted.
What other agencies or organizations have active roles in management? What are these roles?	Advisory Committee with members of the Fisheries Department, Dep of Environment, IMS and representatives of the village governments in the area. The agreement states that meetings should be held at least once a year. Claims that CHICOP does not take the initiative to call these meetings. Forest monitored jointly by CHICOP, Department of Environment and Sub Commission for Forestry
What Ministry or branch of Government has overall authority over management?	Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)
If management responsibility has been delegated to a non-governmental entity, what mechanisms or instruments were used to do so?	See legislative instruments above
Do any mechanisms exist for regular stakeholder consultation and input? If so, what are these?	In the management agreement for the marine sanctuary, the advisory committee is the main mechanism. However, the advisory committee appears to be dormant
Do the existing management arrangements appear to be reasonably efficient?	Yes, achieving the management objectives. However, the approach to stakeholder involvement (esp. local communities, but also Government agencies) leaves a lot to be desired, and may threaten the existence of the sanctuary.
Management:	
Are there stated management objectives? What are they?	Yes; the Management Plan states: <ol style="list-style-type: none"> 1. Conservation: To protect and therefore conserve the natural ecosystems and indigenous species (and also historical monuments) present on both Chumbe Island itself and within the reef sanctuary, and to promote the use of Chumbe, as appropriate, as a refuge for rare species native to Zanzibar. 2. Education/research: To encourage the use of Chumbe as a base for environmental education (for a wide audience), provide opportunities for learning and also for appropriate scientific research. The aim of this education is to encourage a raised level of awareness of the natural environment and the benefits of conservation. This should include the demonstration of the benefits of sustainable development using environmentally sound technology.
Is there a management plan? Include citation.	Yes, "Chumbe Island Coral Park, Marine Park & Forest Reserve Zanzibar/Tanzania. Management Plan 1995-2005", Flanking Program for Tropical Ecology
What are the major activities carried out within the MPA?	Snorkeling on the reef by tourists (currently diving is only allowed for research purposes) Beach recreation, occasional dolphin spotting Forest walks, bird watching Marine research & environmental education Establishment of a sustainable Ader's duiker population on the island

	Fishing outside the sanctuary
What, if any, conflicts exist between these activities?	Conflicts between fishing and management objectives. Claims from fishermen that effective boundary being patrolled has been extended beyond the formally gazetted area by CHICOP (including two small islets). Fishermen cannot seek refuge from storms on the island, or stay for a few hours en route to other fishing areas. Claims that fishermen in distress are chased off the island. Counterclaims from CHICOP that the management often assists fishermen in trouble. Conflict between the Govt and CHICOP reg. taxes (per head for researchers and teachers to the island) and land lease issues (claims by CHICOP that land lease is ten times higher than comparable land).
Does the MPA have active management? If not, skip the rest of the questions in this section	Yes
How is the MPA funded?	Mainly through tourism revenues. Some donor support and research grants (check annual accountants). No entrance fees to Government. CHICOP uses mostly two types of “packages”: <ul style="list-style-type: none"> • Day trips (includes transport, lunch, snorkeling, day banda, forest walks) for USD 70. • Overnight stays (full board): USD 200 (all activities included). • Special (low) prices for researchers Some agents given commission, discounts for groups.
Briefly list existing management programs	Environmental education program focusing on training teachers from Zanzibar Town, not so much local communities. Visitor center with information about the project, terrestrial and marine ecology Enforcement of regulations, e.g. patrolling Recreational program (snorkeling, guided forest walks) Research programs including international and Tanzanian researchers
What staff positions currently exist?	Rangers and tourism staff
If regulations are in place, are they actively enforced? If so, by whom?	CHICOP patrols the area, only “persuading” powers vis a vis fishermen. No active Government/Coast Guard enforcement.
What are the major types of regulation?	Only non-consumptive and non-exploitative activities permitted (i.e. no fishing or wood collection allowed, no specimen collection etc)
Is zoning used as a tool for management? If so, describe zones	Just one, no-take zone
Does any management programs address livelihood issues of local communities? If so, describe	No. Only some two people from the adjacent communities are hired as part of the management staff. Good indications that there are indirect benefits through increased size of fish + number of fish (indicated through fishermen + ecological research)
Socio-economic:	
Are there any communities within or adjacent to the MPA’s boundaries? If so, name and give rough estimate of population size	Nobody (except for tourists and some management staff) live on the island. There are three villages adjacent on the Zanzibar mainland: Chokwani, Nyamanzi, Dimani. Exact population size unknown, but believed to be around 3000 (check census).
Are persons from these communities or elsewhere dependent on resources in the MPA for their livelihoods? If so,	The people of these three villages depend on the resources from the areas around Chumbe. In addition, some people from Stown Town use the area for fishing.

note the level of dependency and relative number of persons involved (e.g. portion of the population moderately dependent)	
If so, list resources and related occupation (coral reefs: fishers, dive operators)?	
What are the major socio-economic activities of the areas surrounding the area, in order of importance?	Fishing Farming (+ some livestock) Sea weed farming for women
How important are dependent on MPA resources relative to other activities, e.g. farming?	Fishing is main activity
Roughly what portion of the population of adjacent communities can be considered living in poverty, or at risk?	High portion (95%)

References: Department of Fisheries staff, CHICOP. Various management agreements, management plan, other docs.

A4 Mnemba Island Marine Conservation Area

Basics:	
Management Status:	Multiple use Marine Protected Area
Size (marine & terrestrial):	Size of atoll unknown (estimated at app 10km ²). Island 10.74 hectares
Biographic description:	Small island surrounded by coral atoll located NE off Zanzibar coast.
Legal status:	
When was the MPA legally established?	Some formal protection from 1. July 1992 (L.N. No 18. of 1992); This order was repealed and a new order declared a marine conservation area 1. November 2002
What legislative instruments created the MPA and govern its management?	Established under sections 7(1) and 32 of the Fisheries Act No. 8 of 1988. (Legal supplement (Part II) to the Zanzibar Government Gazette No. CXI 5974 of 22nd November 2002)
Do these legislative instruments include management regulations	Yes
Institutional arrangements:	
What agency or organization is responsible for the day-to-day management of the MPA? If more than one, note the role of each	The private company, Conservation Cooperation Africa (CCA), currently leasing the island for running of up-market tourist establishment – in close cooperation with local communities. Plan in the near future to appoint a site manager assisted by a local patrol team to be responsible for day-to-day management.
What other agencies or organizations have active roles in management? What are these roles?	Management Committee, which meets quarterly. Its mandate established by the legal order. Members include community, Dep of Fisheries, District Authority, CCA. High level advisory committee, which meets twice a year (recently convened).
What Ministry or branch of Government has overall authority over management?	Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)
If management responsibility has been delegated to a non-governmental entity, what mechanisms or instruments were	The land lease agreement CCA has with the Govt of Zanzibar specifies certain environmental obligations. Unclear whether a management agreement has been established between CCA and Govt, or if the Government intends to take over management of

used to do so?	the MPA – when the infrastructure is in place.
Do any mechanisms exist for regular stakeholder consultation and input? If so, what are these?	The management committee is the mechanism for stakeholder input, though does not seem to involve the full range of stakeholders (e.g. other tourism operators than CCA, Dep of Environment etc)
Do the existing management arrangements appear to be reasonably efficient?	Not yet. Revenue collection from tourists started from November 2002, but the daily management of the MPA is currently not up and running.
Management:	
Are there stated management objectives? What are they?	No
Is there a management plan? Include citation.	No. CCA has been requested to prepare a management plan.
What are the major activities carried out within the MPA?	Tourism activities; especially snorkeling and diving Fishing (both using legal and illegal gear)
What, if any, conflicts exist between these activities?	Conflict between diving/snorkeling and fishing (in general, but especially use of destructive gear) Lack of understanding for the MPA from some villagers (esp. Matemwe village).
Does the MPA have active management? If not, skip the rest of the questions in this section	Not yet, but in the process of being properly set up
How is the MPA funded?	Start up phase funded through the use of Department of Fisheries staff. Tourist revenue has been collected since November 2002 for a Community Development Fund, some of which will fund management costs. 1 USD per day trip for internationals. CCA has donated an old boat for patrolling and provided a credit of THS 3 million for repair and purchase of new engine.
Briefly list existing management programs	Non yet, but plans for: <ul style="list-style-type: none"> • Active enforcement of regulations, e.g. community patrolling of the MPA • Environmental education programs in local communities • Training and capacity building (initially for patrolling) • Alternative livelihood strategies (e.g. vegetable growing, handicrafts and marine products for tourists) • Some research
What staff positions currently exist?	App. four staff from Dep of Fisheries, CCA staff, local community
If regulations are in place, are they actively enforced? If so, by whom?	Not yet actively enforced (CHECK THIS)
What are the major types of regulation?	Use of destructive fishing gear prohibited. Pollution prohibited. Recreational (non-destructive) uses allowed upon payment of a fee (USD 1 per trip for foreigners).
Is zoning used as a tool for management? If so, describe zones	Yes; no fishing or mooring on the house reef (“special area”). Fishing using non-destructive geared allowed for the rest of the atoll.
Does any management programs address livelihood issues of local communities? If so, describe	Legally established Community Development Fund made up of tourism fees (notably 1 USD per trip), voluntary donations, and fines. The Fund will be used for management and various development activities within the community (no specific % set – decided by the Management Committee). Some plans for alternative income generating activities (especially handicraft production, vegetable growing for tourists).
Socio-economic:	
Are there any communities	Only tourists live on the island (unclear if the fishermen are

within or adjacent to the MPA's boundaries? If so, name and give rough estimate of population size	allowed to seek shelter or stay for a shorter period of time) Four villages are situated on mainland Zanzibar close to Mnemba: <ul style="list-style-type: none"> • Nungwi • Kijini • Matemwe • Pwani Mchangani (which is also adjacent to Kiwengwa Controlled Area)
Are persons from these communities or elsewhere dependent on resources in the MPA for their livelihoods? If so, note the level of dependency and relative number of persons involved (e.g. portion of the population moderately dependent)	High dependency on MPA resources (various marine products)
If so, list resources and related occupation (coral reefs: fishers, dive operators)?	
What are the major socio-economic activities of the areas surrounding the area, in order of importance?	Fishing Some farming and livestock
How important are activities dependent on MPA resources relative to other activities, e.g. farming?	Fishing is primary activity
Roughly what portion of the population of adjacent communities can be considered living in poverty, or at risk?	High

Reference: By laws, various correspondence, interviews with Dep of Fisheries staff

A5 Jozani Chwaka Bay National Park (proposed)

Basics:	
Management Status:	National Park (proposed)
Size (marine & terrestrial):	App 5000.00ha (50 km ²)
Biographic description:	Jozani rain forest & Chwaka Bay (mangrove forest and marine area) in the SE of Zanzibar. Contains globally important biological diversity, a range of endemic species (e.g. notably the Red Colubus Monkey)
Legal status:	
When was the MPA legally established?	Not yet (public review of Govt notice of intent closed 20. March 2003)
What legislative instruments created the MPA and govern its management?	NP (proposed) established under section 75(1) of Environmental Act and Sustainable Development of Zanzibar and matters related thereto Act no 2 of 1996. Jozani Forest is already protected under the Forest Reserve Decree, Cap. 120, under the forest Resources Management and Conservation Act NO. 10 of 1996.
Do these legislative instruments include management regulations	By-law with management regulations not yet in place.
Institutional arrangements:	
What agency or organization is responsible for the day-to-day	Entity under the Department of Commercial Crops, Fruits and Forests, MANREC, actively supported in implementation by

management of the MPA? If more than one, note the role of each	CARE Tanzania (an international NGO with a Tanzanian country office). CARE and entity are not integrated and have separate budgets etc.
What other agencies or organizations have active roles in management? What are these roles?	Jozani Environmental Conservation Association (JECA), a community-based organization is actively involved in the management (of Jozani Forest). Steering and Management Committees have been formed
What Ministry or branch of Government has overall authority over management?	Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)
If management responsibility has been delegated to a non-governmental entity, what mechanisms or instruments were used to do so?	Unclear which legally mandated responsibilities have been delegated to CARE and which instrument has been used.
Do any mechanisms exist for regular stakeholder consultation and input? If so, what are these?	Seems to be well developed. Unclear which mechanisms are used
Do the existing management arrangements appear to be reasonably efficient?	Yes, though project is in an early phase and face several challenges which will put current management to test
Management:	
Are there stated management objectives? What are they?	Yes; Govt. Notice of Intent to create Jozani and Chwaka Bay National Park: <ul style="list-style-type: none"> a. To promote research for better management and utilization of natural resources b. To improve conservation status of Zanzibar's biodiversity c. To minimize threats to biological diversity mainly associated with illegal forest harvesting, stone, gravel extraction, and poaching d. To promote conservation and development linkage between Jozani Chwaka National Park and adjacent communities e. To enhance genuine community participation in biodiversity conservation f. To improve management of biological diversity that include water catchments g. To facilitate and encourage development of environmentally friendly that will be of benefit to the communities h. To contribute to the United Republic of Tanzania's efforts to set aside more protected areas as part of implementation of Conservation of Biodiversity Convention i. To improve conservation of rare and endemic species
Is there a management plan? Include citation.	Yes, <ol style="list-style-type: none"> 1. Abdullah, H. S and M. Kitwana (1997) Jozani-Chwaka Bay Conservation Area Management Plan. Zanzibar Forestry Technical Paper No. 96 2. Makame et al (2002) Management Plan for the Chwaka Bay mangrove Ecosystem 2003-2007
What are the major activities carried out within the MPA?	Before protection, (unsustainable) harvesting of forest products. Now, community forests as part of buffer zones. Tourism in Jozani Forest (forest walk, monkey and bird watching, mangrove board walk) Tourism in Chwaka Bay (snorkeling, diving, beach tourism) Mangrove harvesting and fishing in the bay Some illegal fishing (drag nets etc) in the bay
What, if any, conflicts exist	Conflict between illegal (destructive) fishing and mangrove

between these activities?	harvest and long-term conservation of the productivity of the area. Potential conflict between fishing and snorkeling/diving in the Bay Conflict between forest harvest and conservation objectives (though some sustainable uses probably are not in conflict with tourism in the forest)
Does the MPA have active management? If not, skip the rest of the questions in this section	Yes, for Jozani forest. The management of Chwaka Bay not yet well developed (TRUE?)
How is the MPA funded?	<ul style="list-style-type: none"> • Mainly through international donors, notably GEF, Austrian Government, various conservation trusts and private donations. Donor funds channeled through CARE. • Significant tourism revenue generated, which mostly flows to the communities. Covers some management costs + some general DCCFF budget support (in addition to community development activities). Entrance fee of 8 USD for internationals. • Govt of Zanzibar funds some staff, offices, electricity etc within the compounds of the DCCFF. • USD 10.000 set aside from Government budget to Jozani (on top of staff salaries) for FY 2003/04.
Briefly list existing management programs	Environmental education programs in local communities Training and capacity building Savings and credits scheme Alternative livelihood strategies (e.g. community forestry, beekeeping, various tourism products, chalk) Enforcement of regulations, e.g. patrolling of the forest Recreational program organized (mangrove boardwalk, forest walk) Some research
What staff positions currently exist?	CARE + Govt (Check this)
If regulations are in place, are they actively enforced? If so, by whom?	Actively enforced for Jozani, not yet effectively for Chwaka bay (check this).
What are the major types of regulation?	The Jozani forest is fully protected and can only be used for (low impact) tourism, education and research. International tourists have to pay USD 8 for entrance (includes forest and mangrove walks) Regulation wrt to Chwaka bay mangrove forests will include three different zones. Unclear if the NP also includes the marine area (and associated regulations) of Chwaka bay (check this).
Is zoning used as a tool for management? If so, describe zones	Not yet; Zoning system is being considered. Currently, community forests around the boundaries of the Jozani forest constitute a "buffer zone". Zoning will be used for the mangroves around Chwaka Bay..
Does any management programmes address livelihood issues of local communities? If so, describe	Yes, livelihood issues are at the core of the management program since the local people are not allowed in the Jozani forest, and there mangrove harvest activities will be scaled down to sustainable levels. A Forest Development Fund has been legally established. 56% out of the total revenue collection fund shall be exclusively used for development of the area.
Socio-economic:	
Are there any communities within or adjacent to the MPA's	8 villages situated adjacent to Jozani forest. About 6765 people (according to the census) are dependent on

boundaries? If so, name and give rough estimate of population size	exploitation of the mangrove system.
Are persons from these communities or elsewhere dependent on resources in the MPA for their livelihoods? If so, note the level of dependency and relative number of persons involved (e.g. portion of the population moderately dependent)	Yes
If so, list resources and related occupation (coral reefs: fishers, dive operators)?	
What are the major socio-economic activities of the areas surrounding the area, in order of importance?	
How important are activities dependent on MPA resources relative to other activities, e.g. farming?	
Roughly what portion of the population of adjacent communities can be considered living in poverty, or at risk?	High portion

References: Various project documents, draft evaluation report (get hold of this), interviews with project staff

A6 Kiwengwa Controlled Area

Basics:	
Management Status:	Multiple use MPA
Size (marine & terrestrial):	App 17.5 km ²
Biographic description:	Just off Kiwengwa village NE Coast of Zanzibar. Fringing reef, algal and sea grass beds. Once a productive fishing ground, catch fell from 55,53 tons in 1993 to 26,69 tons in 1997.
Legal status:	
When was the MPA legally established?	30 th June 2000
What legislative instruments created the MPA and govern its management?	Declaration of Kiwengwa Controlled Area under section 7(1) of the Fisheries Act No. 8 of 1988.
Do these legislative instruments include management regulations	Yes
Institutional arrangements:	
What agency or organization is responsible for the day-to-day management of the MPA? If more than one, note the role of each	KCA Management Committee, with members from Kiwengwa village, Commission of Tourism, District Development Fisheries officer. Chaired by village leader (the Sheha).
What other agencies or organizations have active roles in management? What are these roles?	None. No donor involvement.
What Ministry or branch of Government has overall authority over management?	Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)

If management responsibility has been delegated to a non-governmental entity, what mechanisms or instruments were used to do so?	
Do any mechanisms exist for regular stakeholder consultation and input? If so, what are these?	The KCA Management Committee is the mechanism for stakeholder consultation. A problem that the villages immediately north (Pwani Mchangani) and south (Pognwe) of the controlled area have not been included.
Do the existing management arrangements appear to be reasonably efficient?	No – the KCA management regime collapsed due to <ul style="list-style-type: none"> • Lack of funds for implementation of draft management plan • Conflicts with adjacent villages and outsiders • Political interference The area is now more or less back to open access regime
Management:	
Are there stated management objectives? What are they?	Yes; Overall goal is to have sustainable fisheries and to protect and maintain the marine ecosystems supporting fisheries within the controlled area. Specific objectives <ol style="list-style-type: none"> To halt all forms of destructive fishing within the controlled area To halt all other activities that will lead to degradation of marine ecosystems supporting fisheries
Is there a management plan? Include citation.	Yes; Proposed Management Plan for Kiwengwa Controlled Area 1999
What are the major activities carried out within the MPA?	Various fishing activities Some illegal fishing (drag nets etc) Sea weed farming (among women) Some beach tourism, swimming and wind surfing Some sand mining for hotels from the beach
What, if any, conflicts exist between these activities?	Conflict between illegal (destructive) fishing and long term conservation of the productivity of the area. Particularly a conflict between the villagers of Pwani Mchangani and Kiwengwa because of the former's use of illegal fishing gears (dragnets and beach seines). Potential conflict between fishing and snorkeling/diving
Does the MPA have active management? If not, skip the rest of the questions in this section	No
How is the MPA funded?	The start-up process including stakeholder meetings and preparation of a proposed management plan funded by the Department of Fisheries. The funds for implementation of the management plan have not been obtained. Some general budget allocations for Dep of Fisheries for environmental education, which can be used for Kiwengwa. No legally (or otherwise) established funding mechanism for management activities.
Briefly list existing management programs	
What staff positions currently exist?	
If regulations are in place, are they actively enforced? If so, by whom?	
What are the major types of regulation?	
Is zoning used as a tool for	

management? If so, describe zones	
Does any management programs address livelihood issues of local communities? If so, describe	The Declaration of the Controlled Area does not mention other development activities (than the joint management of the common property resource), or establish any Community Development Fund.
Socio-economic:	
Are there any communities within or adjacent to the MPA's boundaries? If so, name and give rough estimate of population size	Mainly three villages, Kiwengwa, Mwani Mchangani and Pongwe.
Are persons from these communities or elsewhere dependent on resources in the MPA for their livelihoods? If so, note the level of dependency and relative number of persons involved (e.g. portion of the population moderately dependent)	Some outsiders
If so, list resources and related occupation (coral reefs: fishers, dive operators)?	
What are the major socio-economic activities of the areas surrounding the area, in order of importance?	Fishing Seaweed farming Some agriculture, coral rag soil not very fertile in this area.
How important are activities dependent on MPA resources relative to other activities, e.g. farming?	Fishing is primary activity
Roughly what portion of the population of adjacent communities can be considered living in poverty, or at risk?	High

Reference: Department of Fisheries staff

A7 Ngezi Forest Reserve, Pemba

Basics:	
Management Status:	Forest reserve
Size (marine & terrestrial):	App 1440 hectares (14,4 km ²)
Biographic description:	Ngezi forest located NW Pemba. One of the last remaining patches of indigenous forests in Pemba (and Zanzibar). Potential global significance because of the mix of East African and Asian species. Endemic species (even a population of Red Colubus Monkeys). Limited ecological knowledge about the area. Some coastal stretch (including mangroves).
Legal status:	
When was the MPA legally established?	1959
What legislative instruments created the MPA and govern its management?	Reserve established under the Forest Reserves Decree, Cap 120, under the Forest Resources Management and Conservation Act NO 10 of 1996. A recent by-law in place.
Do these legislative instruments include management regulations	Yes
Institutional arrangements:	
What agency or organization is	Entity under the Department of Commercial Crops, Fruits and

responsible for the day-to-day management of the MPA? If more than one, note the role of each	Forests, MANREC. As for Misali, CARE and MICA are involved in implementation.
What other agencies or organizations have active roles in management? What are these roles?	Management committee. Village community committees
What Ministry or branch of Government has overall authority over management?	Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)
If management responsibility has been delegated to a non-governmental entity, what mechanisms or instruments were used to do so?	Unclear which legally mandated responsibilities have been delegated to CARE & MICA and which instrument has been used.
Do any mechanisms exist for regular stakeholder consultation and input? If so, what are these?	Through village committees and MICA
Do the existing management arrangements appear to be reasonably efficient?	Not yet – limited funds for necessary activities
Management:	
Are there stated management objectives? What are they?	Yes, in by-law. CARE project document states the following goal for the Ngezi Conservation Project: “To improve the livelihood of 10 villages surrounding Ngezi Forest, while enhancing the conservation of biological resources”.
Is there a management plan? Include citation.	No
What are the major activities carried out within the MPA?	(Previously) harvesting of forest products Tourism activities: forest walks, beach tourism Some mangrove harvesting
What, if any, conflicts exist between these activities?	Main conflict between forest harvesting (esp. for building materials) and conservation objectives.
Does the MPA have active management? If not, skip the rest of the questions in this section	Yes
How is the MPA funded?	<ul style="list-style-type: none"> • Mainly through international donors, jointly through CARE’s involvement in Jozani. • Very marginal tourism revenue generated, of which only 30% is retained, while 70% goes to the Govt (which appears to be because of the Forest Legislation). • Govt of Zanzibar funds some staff
Briefly list existing management programs	Similar activities as for Jozani, but limited scale. Start-up phase Environmental education programs in local communities Training and capacity building Alternative livelihood strategies (eg community forestry, beekeeping, Enforcement of regulations, e.g .patrolling of the forest Recreational program organized (forest walk, beach trips) Some research
What staff positions currently exist?	4 rangers, 1 manager from DCCFF
If regulations are in place, are they actively enforced? If so, by whom?	Enforced by park wardens
What are the major types of	The Ngezi forest is fully protected and can only be used for

regulation?	(low impact) tourism, education and research.
Is zoning used as a tool for management? If so, describe zones	Some zoning.
Does any management programs address livelihood issues of local communities? If so, describe	Yes, livelihood issues are at the core of the management program since the local people are not allowed to use Ngezi forest
Socio-economic:	
Are there any communities within or adjacent to the MPA's boundaries? If so, name and give rough estimate of population size	Yes, about 20000
Are persons from these communities or elsewhere dependent on resources in the MPA for their livelihoods? If so, note the level of dependency and relative number of persons involved (e.g. portion of the population moderately dependent)	Dependent on forest resources for building and cooking
If so, list resources and related occupation (coral reefs: fishers, dive operators)?	
What are the major socio-economic activities of the areas surrounding the area, in order of importance?	Agriculture and fishing
How important are activities dependent on MPA resources relative to other activities, e.g. farming?	Very important
Roughly what portion of the population of adjacent communities can be considered living in poverty, or at risk?	High

Annex B: People consulted

List of people consulted during World Bank mission Zanzibar 15. –28. March 2003

Name	Position
<i>Menai Bay Conservation Area</i>	
<i>Site visit 18. March and meetings 17-28. March in Stone Town</i>	
Mr Issa A Suleiman	Fisheries Officer, Department of Fisheries
Mr Juma H Ame	Environmental education officer, Dep of Fisheries
Mr Daudi H Pandy	Planning and administrative officer, Dep of Fisheries
Mr Salim Amar	Conservation Officer, Dep of Fisheries
Mr Ameir Himid	Mangrove Coordinator, Dep of Fisheries
Ms Mwaka Abdalla	Fisheries Coordinator
Mr Mohammed Suleiman	Training and research coordinator, Dep of Fisheries
Mr Mussa A. Jumbe	Chief Fisheries officer
Mr Mzee Simai Haji	Assistant Skipper
Mr Anas O. Massoud	Manager, Menai Bay
Mr Sihaba Haji Vuai	Fisheries Law and Licencing officer
Mr Haji Shummari	Chief coxswain, Kizimkazi
Mr Shaabani Foum	Tourism Operator 1, Kizimkazi
Mr Issa Khalfan Issa	Tourism Operator 2, Kizimkazi
<i>Chumbe Island Coral Park</i>	
<i>Site visit 16. March 2003 and follow-up meetings 15.-18. March 2003</i>	
Ms Sybille Riedmiller	Managing Director, Chumbe Island
Ms Lizzie Taylor	PhD student, Oxford University
Ms Eleanor Carter	Operational Manager
Site Manager, Chumbe?	
Park guard/tourist guide	
Mr Ian	Research Assistant
Ms Francesca Marty	Tourism and Marketing Manager
Mr Issa A Suleiman	Fisheries Planning Officer, Department of Fisheries
Mr Sihaba Haji Vuai	Fisheries Law and Licensing officer
Tourist 1	
Tourist 2	
<i>Jozani Forest – Chwaka Bay</i>	
<i>Site visit to Jozani forest 19. March, meetings in ST 17.-28. March 2003</i>	
Mr Yussuf Kombo	Forestry and Rubber Development Officer
Mr Sheha I. Hamdani	Conservation Officer
Mr George Mkoma	CARE Tanzania, Head of Jozani/Chwaka Bay project
Mr Ali J Shaibu	Accountant Jozani/Chwaka Bay Project (CARE)
Mr Mwinjuma M. Saleh	Manager Jozani/Chwaka Bay Project (GoZ)
Mr Rashid Khamis Ali	Chief Officer (and Ag Director), Dep of CCFF
Ms Josephine Marealle-Ulimwengu	Deputy Director of Programmes, CARE Tanzania
Mr Thabit Masoud	CARE Zanzibar Area Coordinator
Mr Mkange	Chairman of Jozani Environmental Conservation Association (JECA)

Mr Saleh Kombo	Manager JECA
Mr Ilyas Khamis	Secretary JECA
Mr Makame Kituwane	Planning Officer, DCCFF
Mr Ali	Tourist guide
Mr Joshi Kombo	Driver on the project (1)
Mr Kamis Salum-Kuku	Driver on the project (2)
Manager	Tourist handicraft shop, Jozani
Assistant	Tourist handicraft shop, Jozani

***Misali Island Conservation Site visits 25.-27. March 2003
Area and Ngezi Forest, Pemba***

Mr Ali Abdalla Mbarouk	Director Misali Island Conservation Association (MICA)
Mr Amour Bakar Omar	Asst. Area Coordinator, CARE Tanzania
Mr Mbarouk Salum Ali	Acting Manager of Misali, Director of Conservation, & Director of Conservation, DCCFF, Ministry of Agriculture, Nat Res, Env & Coop
Mr Said Juma Ali	Chief Officer, Department of Commercial Crops, Fruits and Forestry
Mr Ali Khamis Thani	Conservation Education (Islamic Ethic)
Mr Suleiman Khamis Ali	Manager, Ngezi
Mr Masoud Suleiman H.	Ngezi Development Officer
Mr Hamoud Salim Abdalla	Community Enterprises and Ecotourism Development Officer
Mr Shaib Abdalla Moh'd	Trainer, Savings and Credit – Enterprises Section
Mr Mussa Hamad Mussa	Head of Department, Fisheries
Mr Salim Moh'd Said	Staff, Ngezi Forest
Mr Suleiman Salim Shukuru	Accountant, CARE
Mr Abdalla Nassor Hemed	Accountant, DCCFF
Mr Khamis Ali Khatib	Accountant, DCCFF
Mr Moh'd Rashid Amour	Accountant, Misali
Mr Mbarouk Mussa Omar	Accountant, MICA
Mr Khamis Said Hamad	On site park guard, Misali Island
Mr Juma Haji Juma	On site park guard, Misali Island
Mr Moh'd Said Suleiman	On site park guard, Misali Island
Mr Shaib Khamis Uleid	On site park guard, Misali Island

General

Mr Ali Khamis Makarani	Deputy Permanent Secretary, Ministry of Agriculture, Natural Resources, Environment and Cooperatives
Mr Saleh Sadiq Osman	Director, Department of Fisheries
Mr Bakari Assaid	Secretary, National Protected Area Board (NPAB) of Zanzibar
Mr Shehahamdan	Member of the Secretariat, NPAB
Mr Jan Erik Studsrød	Norwegian Embassy, Dar