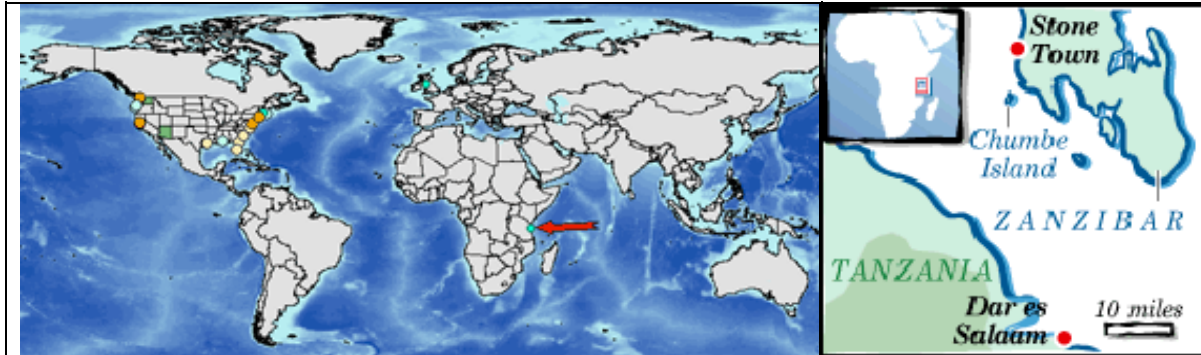


## Africa: Tanzania

### *Chumbe Island Coral Park: Helping save the coral reefs of Tanzania*

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#### Abstract

The Chumbe Island Coral Park is a privately established and managed island nature reserve formally recognized by the Zanzibar Government since 1994 and UNEP-WCMC since 1995. The park is located on and around a small formerly uninhabited coral island west of the larger island of Zanzibar off the coast of Tanzania. The park includes a 30-hectare marine reef sanctuary and a 22-hectare coral-rag forest reserve covering most of the island. Founded in 1992 to establish and manage the reserve, Chumbe Island Coral Park Ltd. (CHICOP) won management contracts and a lease from the Government of Zanzibar (GoZ) to create and manage the park, which has become both a successful ecotourism destination and an internationally recognized conservation success. Training by volunteers and employment of local fishermen as park rangers proved cost effective and facilitated direct partnership with local fishing communities. Chumbe is recognised and classified as a Class II protected area under IUCN's WDPA listings.

#### Project Overview

##### Agreement Mechanisms

Negotiations on the investment proposal that included the gazettement of the Marine Protected Area (MPA) started 1991 and in 1992 the reef to the west of Chumbe was declared closed by the Department of Fisheries. In 1993, the GoZ Commission for Lands and Environment (COLE) leased 2.44 ha of land on the island to CHICOP for a period of 33 years.

In 1994, an agreement was signed between the Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC) and CHICOP, declaring the reef to the west of Chumbe as the Chumbe Reef Sanctuary by virtue of section 6 (1) (e) of the 1988 Fisheries Act, Legal notice no. 99 on December 24, 1994. This made Chumbe Island Zanzibar's and Tanzania's first MPA (IUCN, 2001) and gave CHICOP responsibility for preserving, controlling and managing the Reef Sanctuary for an initial period of 10 years. This arrangement was reviewed and extended between MANREC and CHICOP on January 3, 2004, for a further period of ten years.

In 1995, an agreement was signed between the MANREC and CHICOP, which declared the terrestrial area of Chumbe Island, excluding the area leased to CHICOP, the Chumbe Forest Reserve in

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accordance with the provisions of Wood Cutting Decree Ch. 121 and which entrusted management to CHICOP for a period of 33 years. Both management contracts are renewable upon expiration.

A 1995-2005 Management Plan for the reserve was developed with wide stakeholder participation and extended and updated for 2006-2016. CHICOP issues quarterly and yearly progress reports on park management and business operations to the respective sectoral GoZ departments.

The Management Agreements provide for an Advisory Committee formed by GoZ representatives of the Departments of Environment, Fisheries, Forestry, leaders of four neighboring fishing villages and a representative of the Institute of Marine Sciences (IMS) of the University of Dar es Salaam. The Advisory Committee meets at least twice yearly. Meetings have been held according to schedule since 1995 to discuss the Management Plans, project progress and any issues. There have been no major disagreements on actions to take so far, though recommendations of the Advisory Committee are not binding for the CHICOP Management.

Since establishment, the Chumbe MPA has hosted numerous research projects for national and international students. Based on a Memorandum of Understanding with CHICOP signed in 2004, the IMS in Zanzibar and foreign academic institutions linked with the IMS co-operation programs conduct regular long-term research that is only possible in protected areas. Shorter-term studies have been carried out by a host of academic institutions involving several scientific institutions around the world.

### The table below summarizes contractual arrangements, partners, duration and fees.

<i>Management Contract</i>	2 (marine sanctuary, forest reserve)
<i>Area</i>	118.4 acres (49.6 hectares)
<i>Resource</i>	Fringing coral reef & seagrass beds (30 hectares), coral-rag forest (19.6 hectares)
<i>Dates/duration</i>	1995 to 2015, 10 yr renewable (marine); 1993 to 2026, 33 yr (forest reserve)
<i>Fee/price</i>	None
<i>Location</i>	The whole of Chumbe Island & western fringing reef, Zanzibar/Tanzania
<i>Use</i>	Marine sanctuary, wildlife sanctuary, research, eco-tourism, and local environmental education
<i>Overall Authority</i>	Zanzibar Investment Promotion Agency (ZIPA) approved Investment proposal (mandatory)
<i>Grantor(s)</i>	Zanzibar Ministry of Agriculture, Livestock and Natural Resources
<i>Grantee(s)</i>	Chumbe Island Coral Park Ltd. (CHICOP)
<i>Lease</i>	1 (building site)
<i>Area</i>	5.9 acres (2.4 hectares)
<i>Resource</i>	Minimal disturbance building site following environmental principles, zero-emission sustainable technologies for energy, water provision & waste disposal
<i>Dates/duration</i>	33 yrs from 1993
<i>Fee/price</i>	Land lease US\$4,874/yr + fees, various licenses, taxes on commercial operations
<i>Location</i>	Chumbe Island, Zanzibar, Tanzania
<i>Use</i>	7 bungalows, Visitors' Center for environmental education, staff quarters
<i>Grantor(s)</i>	Zanzibar Ministry of Lands and Environment
<i>Grantee(s)</i>	Chumbe Island Coral Park Ltd. (CHICOP)

### Context

The legal structure of the park is complex. Zanzibar is comprised of two large islands (Unguja and Pemba) that form a semi-autonomous region within the United Republic of Tanzania. Zanzibar is autonomous concerning natural resource management and foreign direct investment (FDI). Thus all

contracts and agreements were negotiated with GoZ only. For foreign citizens and organizations (such as CHICOP Ltd.), land tenure in Tanzania (including Zanzibar) is generally only available for approved investment purposes through leaseholds. There are several small islands around Zanzibar, most of which were uninhabited until recently, that have now also been developed for (conventional) tourism.

The legal set-up and contractual agreements that facilitated the establishment of the Chumbe Island Coral Park project (land lease, gazettelement and management agreements for marine and terrestrial PAs), clearly define roles and functions of CHICOP Ltd and the several sectoral GoZ departments involved. CHICOP has full managerial and financial responsibility for Chumbe Island. The GoZ responsibilities are mainly public announcement of all legal and regulatory measures concerning the reserve and their enforcement (by Fisheries and Forestry officers, the Navy, Marine police, and courts of law).

### **Process & Issues**

#### **Decision-making and Implementation Process**

Disillusioned with limited impact and sustainability of official development assistance to Tanzania, the project initiator, a former aid worker, conservationist, and sailing and diving enthusiast, formed CHICOP with the ambition to create an MPA where profits from tourism would help support conservation and environmental education.

Chumbe Island was a good candidate for conservation because it was uninhabited, traditionally closed to fishing because of its location near the shipping channel between Zanzibar and mainland Tanzania, and therefore relatively well preserved. Yet the island had not been included in earlier proposals for MPAs in the country.

In 1991, the investor presented a business plan to the GoZ that would establish Chumbe Island as a privately managed MPA financed through ecotourism. After lengthy negotiations with seven GoZ departments, including a decisive meeting with the President, GoZ approved the project in 1993. Chumbe Island Coral Park Ltd. (CHICOP) was formed and registered in Zanzibar for the creation and management of the reserve.

The negotiation process involved meetings with adjacent fishing communities in 1991. Based on an agreement with villagers, CHICOP employed and trained former fishermen as park rangers, stationed rangers on the island, and provides a free environmental education program for local schools.

#### **The Chumbe Island Management Plans 1995-2016**

A management plan was developed in 1995 with the involvement of stakeholders (CHICOP staff, GoZ departments, local fishermen and dive companies). The management plan was endorsed by the Advisory Committee in 1995, and in 2006 revised and updated for another 10 years, again based on consultations with stakeholders.

#### **From investment plan to action**

Project activities from 1991-2008 are summarized below, including partners and funding sources:

- The gazetting of the Western reef and Chumbe Island as protected areas was negotiated from 1991 to 1994 between GoZ and CHICOP.
- Park rangers were employed and trained by expatriate volunteers from 1993, mostly for interaction with fishers, monitoring techniques and tourist guidance skills. Patrol boats and outboard engines were sponsored by GTZ-Small Projects Fund, International School Schloss Buchhof, Germany and EC-Microprojects Tanzania.
- With the help of volunteers and some support of GTZ-Small Projects Fund, baseline surveys and species lists on the island's flora and fauna were conducted from 1993.

- Forest and marine nature trails were developed from 1993 with information materials in English and Kiswahili, sponsored by the Netherlands Embassy in Kenya and the Special Tropical Forest Stamp Program of the German Postal Service.
- An Advisory Committee was established in 1995, with representatives of the Departments of Fisheries, Forestry and Environment, the IMS and village leaders of neighboring fishing villages.
- Rats (*Rattus rattus*) were eradicated in 1997, with the help of an expert from Cork University, Ireland, supported by the Irish volunteer organization APSO and ZENECA, the company producing the rodenticide used.
- A sanctuary for the highly endangered Ader's duiker (*Cephalophus adersi*) was established in 1997 in co-operation with the Commission of Natural Resources of Zanzibar, the Zoo Munich-Hellabrunn, Flora and Fauna International (UK), the WWF-Tanzania and the Chicago Zoological Society.
- The ruined lighthouse keeper's house was rehabilitated as the park headquarters and visitors' centre in 1997-98 with support from GTZ-CIM and the Netherlands Embassy in Tanzania.
- Seven visitors' bungalows ('Eco-bungalows') and the visitors' centre were constructed in 1994-1998 with state-of-the-art eco-architecture (rainwater catchments, grey water recycling, composting toilets, and photovoltaic power generation).
- As part of the Chumbe Environmental Education Program, teacher training seminars and island excursions are offered to local schools, in its early phases supported by the US National Fish and Wildlife Foundation (NFWF), the Southern African Development Community Environmental Education Program (SADC-EE), the International Coral Reef Action Network (ICRAN) and others. Since mid-2008, around 3,000 schoolchildren and 550 teachers have visited the island under this program.

### Lands and Resources

Chumbe Island is situated 12 km Southwest of Stonetown, Unguja, Zanzibar and 6 km from the nearest point on the Unguja coast. Latitude/Longitude: 6 16' S; 39 10' E. The Chumbe MPA closely borders the Menai Bay Conservation Area, fished mostly by traditional users. The island is roughly oval in outline with its long axis running roughly north-south, approximately 1.1km long and 300m wide at its widest point. The total terrestrial area is approximately 22ha. The highest point is only about 5m above the high tide level. A key reason for CHICOP's early establishment, investment proposal and campaigning to gazette the Chumbe MPA was the observation of high biodiversity value in both the reef and forest habitat.

The Chumbe Reef Sanctuary has 4 key habitats: pelagic, coral reef, coastal shallows and intertidal areas. Baseline surveys identified coral species from 55 genera and over 200 species and at least 432 fish species. During surveys, one new species of coral was found in Chumbe (*Oulophyllia chumbensis*) awaiting description<sup>1</sup>. Compared to other MPAs (without no-take-areas, NTAs), Chumbe has a six times greater biomass of commercially important fish species observed in the Sanctuary. This effect of protection in an NTA is unusually high, as revealed in an international review of 89 other MPAs (with NTAs) where such comparisons revealed a maximum biomass increase of three times greater in NTAs (Halpern, 2003). The most abundant of the commercially important fish include species that have been found to be travelling out of the NTA to nearby fishing grounds.<sup>2</sup>

The Chumbe Forest Reserve has three key habitat areas, mangrove pools, short scrub and a relatively tall (6m) dense coastal thicket covering the majority of the island. It is an example of an undisturbed 'coral rag' forest, which is becoming increasingly rare in the region and indeed throughout the Western Indian Ocean. Fauna include rare and endangered species, e.g. possibly the world's largest known population of Coconut crab (*Birgus latro*), listed as Data Deficient in the IUCN Red List. To date 93 species of birds have been recorded. Attracted by abundant fish in the reef sanctuary, large colonies of the regionally

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<sup>1</sup> Veron, pers.comm.1997

<sup>2</sup> Tyler, E.H.M. (2006) Coral reef monitoring in Chumbe Island Coral Park: A manual prepared for Chumbe Island Coral Park. Version 1.1., Zanzibar

endangered Roseate Tern (*Sterna dougalli*) bred on the islets of the MPA in 1994 and 2006. After successful rat (*Rattus rattus*) eradication in 1997, Aders duiker mini-antelopes (*Cephalophus adersi*) were translocated to the island for breeding in 1999/2000. The Ader's duiker is a Critically Endangered (CR)<sup>3</sup> species of mini-antelope and the Zanzibar population is believed to be the last remaining viable population.

### Historical Monuments

Three historical buildings found on Chumbe Island were preserved:

- A lighthouse built by the British in 1904 and powered from 1926 to this day by an AGA gas system.
- A lighthouse keeper's house, also constructed by the British at this time, now transformed into the Visitors' Centre.
- A small mosque of Indian architecture, dating from around 1906 and built by the Zanzibar Indian Community for the first lighthouse keepers based on the island.

### Threats

Permitted uses in the MPA include recreation (swimming, snorkeling, underwater photography), education and research. Extractive and destructive activities, such as fishing, anchorage, specimen collection (even for research) are not allowed. The Forest Reserve is also closed for any extraction. Access is only along nature trails in the southern part of the island. The north is impenetrable and closed to visitors.

Due to the island's status, relatively small size of the park, the committed work of the park rangers and the Environmental Education programs, enforcement has not been a major problem throughout project history, except for an episode during Zanzibar's first multiparty election in 1994-95, when the park status was challenged by a group of fishers from a Zanzibar town. A meeting of all parties in the Prime Minister's office and the establishment of the Advisory Committee helped overcome this particular political threat.

Since 1993, CHICOP has employed professional conservation coordinators to train the park rangers and oversee all research and monitoring programs. Baseline surveys, research reports and monitoring data are available on most flora and fauna of the park. The park rangers have monitored the park since 1992 and provide continuous data on infringements. The conservation status and threats are thus well documented.

### Environmental Threats

During the 1998 El Nino coral bleaching event the MPA lost ca 30% of its *Acropora* species, however, recovery and new growth became prevalent within two years<sup>4</sup>, restoring the former coverage of the 'reef canopy'. Since 2003, active intervention has been required to control Crown-of-thorn (COT) starfish and *Diadema* sea urchin outbreaks. The sources of the COT and *Diadema* outbreaks are unclear. They affected, and continue to affect, all surrounding coral reefs between the Zanzibar and Tanzanian mainlands. The systematic removal of the COT effectively brought the outbreak to a halt in the MPA<sup>5</sup>, while the *Diadema* population is being controlled regularly.

Recent research has established that the Chumbe MPA is among the most resilient reefs in the Western Indian Ocean region and likely to be less affected by environmental stress, temperature changes and

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<sup>3</sup> Listed in the IUCN Red List as CR A4 acd.

<sup>4</sup> Daniels, C., 2004, Conservation Co-ordinator Marine Science Report, Update report for DFMR, October 2004, Chumbe Island Coral Park Ltd

<sup>5</sup> Lanshammar F, Muhando C, 2008. Ecological effects of the crown-of-thorns starfish removal programme on Chumbe Island Coral Park, Zanzibar, Tanzania, paper presented to 11th ICRS, Florida, 7-11 July, 2008

other causes of coral mortality linked to climate change.<sup>6</sup> Based on these findings, a related study concluded that the management status of MPAs in the region needs to be reprioritized based on areas that are both likely to survive climate change related thermal stress and have biodiversity. Chumbe ranks among the highest performers in all these categories.<sup>7</sup>

Environmental impacts of tourism operations are also controlled and monitored. All buildings on the island (seven visitor bungalows, the Visitors' Centre and staff quarters) were constructed according to state-of-the-art eco-architecture (rainwater catchment, grey water filtration, composting toilets, and photovoltaic power generation), in order to minimize any environmental impact. Most systems have worked well throughout. However, as visitor numbers increased, the grey water vegetative filtration system could not cope with the nutrient-rich kitchen water anymore. With professional help of specialists recruited by the volunteer agencies BESO and SES, the system was modified several times over the last three years and will now undergo a decisive testing during the coming season. A recent study calculating the phosphorus budget of the ecotourism operations on Chumbe Island recommended that compost from the composting toilets and wood ash of the staff kitchen have reached a saturation point and should in the future be removed from the island in order to avoid nutrient leakage into the coral reef. These measures are now implemented.<sup>8</sup>

### Organizational and Partner Capacity

Marine conservation was a new field for GoZ in the early 1990s, and the relevant policies, legislation and institutions were yet to be created. Therefore, capacity to assist CHICOP in the development of the park was limited. All necessary resources and expertise were mobilized by CHICOP from 1991 up to the present.

Decisive for project success were the 50 professional volunteers, biologists, technicians and educators from several countries who joined CHICOP for periods between one month and three years since 1993. They conducted baseline surveys on the ecology of Chumbe Island, trained the rangers, the administrative and hospitality staff, developed the education program, installed technical equipment and helped manage the increasingly complex project.

The cooperation of GoZ officials with CHICOP, in initial negotiations on the investment proposal, management agreements and plans, in the Advisory Committee and numerous on-site activities helped build capacity and raise conservation awareness and understanding of the legal and institutional requirements. This was decisive for political support for CHICOP and indirectly influenced GoZ policy making.

### Legal Framework

- The Zanzibar Investment Act 1986 sets conditions for FDI. The Zanzibar Investment Promotion Agency (ZIPA) is the overarching body responsible for implementing the legislation. ZIPA approved the CHICOP Investment proposal in 1993.
- Land is only available for leasehold based on approved investment plans and for a maximum of 33 years. Leases are governed by the Land Tenure Act 1992 and issued by the GoZ Department

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<sup>6</sup> Joseph Maina, Ventijn Venus, Timothy R. McClanahan, Mebrahtu Ateweberhan, Modelling susceptibility of coral reefs to environmental stress using remote sensing data and GIS models, *Ecological Modelling* 212 (2008) 180-199, Science Direct, Elsevier [www.sciencedirect.com](http://www.sciencedirect.com)

<sup>7</sup> McClanahan et.al. 2007b, Effects of climate and seawater temperature variation on coral bleaching and mortality. *Ecol. Monogr.* 77, 503-525

<sup>8</sup> Lindstroem, 2007, A phosphorus budget for the eco-tourist resort of Chumbe Island Coral Park, Zanzibar. MSc Thesis 2007, No. 153, Swedish University of Agricultural Sciences, Dept of Soil Sciences.

of Land and Registration. Regulations issued in 2006 govern the control of environmental damages, water use and waste disposal on leased land. CHICOP leased a small plot for development on Chumbe Island.

- Fisheries in Zanzibar are governed through the 1988 Fisheries Act, and it was in reference to this law that the Chumbe MPA was gazetted as a closed fishing area (NTA) under the GoZ Department of Fisheries.
- The Chumbe Forest Reserve was established in accordance with the Wood Cutting Decree Ch. 121. The GoZ Department of Forestry entrusted management to CHICOP for a period of 33 years.
- Monitoring and enforcement are entirely based on CHICOP's own resources and systems. Independent researchers provide important additional data. As agreed in the Management Agreements, CHICOP reports on a regular basis to the sectoral GoZ departments and the Advisory Committee. The Agreements contain a clause that allows for revocation in case of serious contravention by the company.
- The 1996 Environmental Management for Sustainable Development Act is the most relevant act related to overall biodiversity goals and protected area networking. Part VII of the act outlines plans for a National Protected Areas system in Zanzibar within which existing sanctuaries and protected areas will be eligible for inclusion. It outlines plans for a National Protected Areas Board as a consultative authority to provide policy guidance. The board draws 11 members including the Principal Secretaries of all relevant ministries associated with natural resources, environment, tourism and finance, with additional members drawn from selected experts in resource management, community development and environmental affairs. Under a 1999 supplement to the Environment Act, a Zanzibar Nature Conservation Areas Management Unit is to be set up to coordinate the networking of protected areas.

### **Legal issues affecting private investment in conservation**

- All land leases in Tanzania and both management contracts for the protected area are renewable upon expiration. However, like any land lease or agreement in Tanzania, CHICOP has no legal assurances that the lease and management contracts will be renewed after expiration. Land leased to a foreign investor has to be developed within a set period. Leases can be revoked in case of contravention.
- Investment protection under the Zanzibar Investment Act of 1986 provides limited protection only against expropriation by GoZ, as the law regulates procedures for negotiating for compensation, but has no provisions for challenging expropriation as such.
- The Environmental Management and Protection Act 1996 (enacted after CHICOP had been established), contains a clause that may in a worst-case scenario weaken the contractual setup of CHICOP, as it allows for cancellation of existing contracts and leases 'for environmental reasons'. However, there has so far been limited political will to implement the law, and the respective institutions have not been created yet.

### **Socio-economic Considerations**

- All around Tanzania and Zanzibar, coral reefs and coral islands suffer from overexploitation and destruction by unsustainable and destructive fishing methods, in particular dynamite fishing and beach seining. Other threats are coral mining, pollution by coastal development and intensive agriculture, and last but not least, the effects of climate change: coral bleaching and acidification of seawater. Formerly unexploited marine organisms, such as sea cucumbers and sea horses, shells and shark fins are now harvested and exported to distant Asian markets.

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- Forests are disappearing at a fast rate, providing land for settlement and agriculture and being cleared for firewood and charcoal (remaining the most important sources of domestic fuel in rural and urban areas). Endangered and protected species, such as sea turtles, duikers, large mammals and a myriad of unexplored indigenous flora and fauna lose their habitat or are hunted or collected for food.
- Since the 1990s, the liberalization of the Tanzanian economy has opened coasts and beaches for investment in tourism. This also contributes to the deterioration of coral reefs and coastal forests. In the absence of garbage disposal systems, plastic bags, containers and packing materials litter streets and beaches.
- Environmental awareness by the general public and GoZ action lag far behind the pace of environmental deterioration, particularly concerning coral reefs. As a result, decades of destructive fishing methods (dynamiting, smashing corals and beach-seining) have been met with little public and governmental concern.

### Outreach

In summary, CHICOP has:

- Held village meetings since 1991, before and during implementation to discuss the progress and issues with local people, especially fishermen.
- Asked fishing villages in 1991 to propose candidates for park rangers.
- Given local people preference in employment opportunities for most jobs, though this requires substantial on-the-job training and close assistance. With 42 staff and only 7 rooms, CHICOP employs 300% more staff per room than the international average for Eco-lodges.<sup>9</sup>
- Developed Management Plans 1995-2005 and 2006-2016 that involved consultation with a wide range of stakeholders (GoZ, villagers, private sector, and IMS).
- Established an Advisory Committee with GoZ, University and village representatives in 1994, to discuss the Management Plans and other project development issues.
- Offered a marine rescue service since 1993 to help local fishermen in distress (there is no marine rescue service in Tanzania). Ranger reports show that since 1994, over 1,000 fishermen (and 160 vessels) have been assisted or rescued by the Chumbe rangers.
- Created an Environmental Education Program for local fishermen and schoolchildren that has (through mid-2008) covered around 3,000 schoolchildren and 550 teachers.
- Helped restock depleted fisheries and degraded coral reefs. Located upstream of major fishing grounds, the sanctuary provides protected breeding areas for fish and corals that recolonize the overfished and degraded areas opposite a Zanzibar town.<sup>10</sup>
- Created a market for local produce, handicraft and services. All buildings were constructed with local natural renewable materials and technologies, thus benefiting local artisans and primary producers. CHICOP also buys food supplies directly from fishers and farmers in local markets. Some services, e.g. guest transport, are outsourced to local people.

### Funding

The total investment into the development of the reserve was ca. 1.2 million USD. (50% from the project initiator, 25% small donor grants for non-commercial project components, - i.e. baseline surveys, visitor

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<sup>9</sup> International Finance Corporation, 2004, Ecolodges: Exploring Opportunities for Sustainable Business, Wash/DC

<sup>10</sup> Fish tagging, habitat surveys and interviews with local fishermen on and around Chumbe gave indirect evidence of spill-over (net emigration of adult fish) from the MPA. 94% of fishermen interviewed believed that fish inside the park travel out and are caught (Tyler, 2006: 179). Fish tagged on Chumbe were recaptured up to 4 km away, although based upon comparative data from other NTA's, it is believed that whilst spill-over does occur, it is likely to be limited in magnitude and spatial extent.

center, ranger training, nature trails, education program -, and 25% professional work contributed by over 50 volunteers over several years). A financial analysis<sup>11</sup> revealed that by mid-1997 conservation costs accounted for 52% of the investment realized so far, while 9% had been spent on educational infrastructure (nature trails and information materials). The remaining 39% were used for building the tourism infrastructure (Visitors' Centre and seven eco-bungalows).

Commercial operations started in 1998, with occupancy rates gradually increasing from 15% to 86% from 1998 to 2007. This is comparable to performances of ecolodges worldwide, most of which took a minimum of 5 years to find their market.<sup>12</sup> The revenue generated from small-scale but high value ecotourism now fully funds the park management and conservation and education programs since the year 2000-2001 (a minimum occupancy rate of 30-40% is required for this to occur). About one-third of the operational budget of Chumbe is spent on conservation management staff and education programs. Capital payback is only recently starting.

Revenue generation has steadily increased to around US\$500,000 USD / year. Of this:

- ca 30% is spent on taxes, licenses, leases and associated permits for operations.
- ca 40% is spent on general operations, salaries of administrative and hospitality staff, running the eco-lodge, out-sourcing services locally, administration, marketing etc.
- ca 30% is spent on staff for conservation and education services and their operations (i.e., the education programs, research, monitoring, community liaison and associated initiatives).

### Conclusions

#### Opportunities

CHICOP used a unique window of opportunity in the early 1990s, when Zanzibar opened up to the outside world, and policies, legislation and institutions for both FDI and conservation were still being developed. Though these are in place now, 18 years later, the challenge may be limited political will, mainly due to a massive increase of FDI in the tourism sector, the higher income expected from large-scale corporate and mass tourism, and from generous donor support for marine conservation to government.

In summary:

- **Technically and operationally**, CHICOP is well established concerning both park management and tourism operations. Prospects would be favorable for using similar arrangements for suitable sites around the country, in the region and elsewhere in the world.
- **Financially**, CHICOP is also stable, with an occupancy rate (>80%) that has for several years been about the double the minimum required to fund park management (30-40%). This could also encourage similar investments in the country, region and beyond.
- **Politically**, CHICOP is now well accepted in Zanzibar and internationally. The outreach and education programs contributed to that. Decisive was the international recognition and the many prestigious awards won for the conservation work and ecotourism services.
- **Long-term prospects** of CHICOP depend on political stability in Zanzibar and favorable GoZ decisions on extension of management agreements and the land lease. Improvement of security of tenure would require changes in certain legal provisions and judicial reform. Conservation policy development and legal and institutional development in Tanzania are commonly financed by donors according to the predominant international paradigms. Therefore, donor attitudes towards private involvement in conservation matter considerably. For example, in 1993, it was

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<sup>11</sup> Neill Soley, 1997, Chumbe Island Coral Park, Analysis of Costs, Paper presented at the Workshop on Revenue from Nature Conservation Areas in Zanzibar, 15-16 July 1997, Zanzibar

<sup>12</sup> International Finance Corporation, 2004, Ecolodges: Exploring Opportunities for Sustainable Business, Wash/DC

due to the intervention of a donor representative that the duration of the MPA Management Agreement of CHICOP was reduced from the planned 33 years to (renewable) 10 years, which increased investment risks considerably for the company.

### **Opportunities for private investment in marine conservation in general**

The following are some very preliminary observations, mainly based on conditions in Tanzania. Africa is a huge and incredibly diverse continent and conditions may differ vastly between countries.

#### **Favorable Conditions:**

- Many countries still have abundant sparsely populated wilderness areas available, and population pressures are lower than in Asia, for example, even in coastal and marine areas.
- Along the coasts, resource exploitation is rather by traditional small-scale means for subsistence, therefore at comparatively low levels of intensity, though locally destructive.
- The local economy is mostly informal and very small volume by international standards. Therefore eventual compensations to local users would be much lower than in more advanced economies.
- The cultural tradition of 'clientelism'<sup>13</sup> implies that local people generally welcome co-operation with outside partners that offer secure basic subsistence.
- Clientelism and donor-dependency<sup>14</sup> also determine the relations between governments and outside partners. Therefore, donors are relatively influential in policy and decision making. Policy-making and planning processes as well as implementation are often donor-funded.

#### **Major Obstacles:**

- Governance problems and institutional weaknesses, e.g. of legal systems, limit security of tenure and of contractual arrangements. Governance is particularly weak in the Fisheries sector/
- Illegal, unreported and unsustainable (IUU) fisheries exploitation in Africa's oceans is occurring on a massive scale, leading to collapsed fisheries, the loss of critical ecosystems and the extinction of marine wildlife. The market value of fish caught illegally in Africa by (often foreign) commercial fishing companies could be as much as US\$ 1 billion every year. The economic and social consequences for coastal communities are a major concern throughout the continent.
- Local communities commonly lack organization and representation. NGOs are often private enterprises of a few people (often related to government officials) set up to benefit from abundant donor aid available. Encouraged by lax supervision of donors, many provide few services if any and lack transparency and accountability.
- The informality of relations between government and people implies that government power and capacity for enforcement is limited.<sup>15</sup> This is particularly true for mobile fishers and people in relatively remote locations.
- Donor paradigms and socialist traditions in many countries create a perceived dichotomy between 'local communities' and 'private sector', assuming that the former are always 'poor and exploited' by the latter, and that the private sector is always 'large corporate' and located outside of local communities. This rather ideological view ignores economically attractive options for sustainable resource management for the benefit of both, and thus potentials for win-win arrangements.
- Many governments in Africa are highly donor-dependent, have weak institutions and low absorption capacity, which results in over-funding and spending pressures. This creates powerful incentives for state-run conservation as the more 'profitable' approach for both, government and

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<sup>13</sup> Chabral, Patrick & Daloz, Jean-Pascal (1999), *Africa Works – Disorder as Political Instrument*, The International African Institute, James Currey, Oxford/UK & Indiana University Press, Bloomington/USA

<sup>14</sup> Chabral & Daloz (1999)

<sup>15</sup> Chabral & Daloz (1999)

aid agencies. Lack of transparency and accountability to local people in and around parks reduces possible benefits from this bonanza and alienates them, not to mention sustainability, which is undermined, in spite of all good intentions and declarations to the contrary.

### Scale

With political will, the Chumbe model could well have been extended to more areas and operate at a larger scale, and CHICOP would have been prepared to give technical assistance to similar initiatives. For example, appropriate conditions could have been set by GoZ for the development of several formerly uninhabited islands off Zanzibar (Bawe and Changuu islands) and by the Government of Tanzania for mainland Tanzania. However, some islands were leased recently by GoZ to 'politically connected' tourism companies not particularly known for environmental concerns.

The challenge of influencing GoZ policy making and decisions on issues affecting marine conservation and tourism investment is beyond the capacity of single investors. Large international organizations, like The Nature Conservancy and Conservation International would probably be in a much more powerful position to engage the government. However, even where the political and legal framework may be favorable for private investment in marine conservation, there may still be important limitations for large-scale protection of marine areas. Formal organizational levels are low in many rural coastal communities and therefore, interactions with local resource users extremely time-consuming. Confidence-building measures and personal relationships are decisive for success for work with local people. This limits the scale of effective agreements for co-operative marine resource management and conservation on the ground.

### Complementation

CHICOP is fully compatible with national and regional conservation and management strategies. However, as most strategies and projects are developed by government within donor-funded projects, there is a certain tendency to keep the private sector, and actually most other stakeholders, out of the equation. This is not only because of the 'ideological biases' mentioned above, but also a result of cumbersome bureaucratic requirements, high spending pressure under tight schedules, while genuine stakeholder involvement requires flexibility and is extremely time-consuming.

Tanzania is signatory to the Convention on Biological Diversity, and of the Nairobi Convention of 1985 (The Convention for the protection, management and development of the marine & coastal environment of the East African region). Both highlight the importance of MPA establishment.

At the World Parks Congress in Durban in September 2003, Tanzania also announced the intention to increase protection of its seas to 10% by 2012 and 20% by 2025. This includes the development of MPAs, and a potential strategy for meeting this commitment has been outlined in a Blueprint 2050 document, where expansion of MPA systems and networks is recommended, along with a supportive legislative environment for MPA establishment and management.

Tanzania is beneficiary of several major aid projects in support of integrated coastal zone management, including marine conservation, e.g.:

- The US\$ 61 million 6-year World Bank-GEF-funded Marine and Coastal Environmental Management Project (MACEMP) that has three components: Component 1: - Sound Management of EEZ including governance, harmonization of governance regimes of mainland and Zanzibar and establishing appropriate and acceptable institutional mechanisms for managing the economically and ecologically important resources of the EEZ; Component 2 - MPA establishment and networking of MPAs; and Component 3 - Coastal District Planning and Co-Management Capacity Building. Zanzibar receives 40% of the MACEMP budget.

- MACEMP is complemented further by multi-million US\$ projects, e.g. the IDA supported Tanzania Social Action Fund (TASAF, supporting village level social projects in coastal areas also), Local Government Reform Program (LGRP) doing the same at district level, the two WWF-Projects RUMAKI (Rufiji-Mafia-Kilwa Coastal Zone Management, funded by Japan) and a similar project in Mtwara (funded by DANIDA) and several others. Further regional support available to Tanzania is the GEF-funded South West Indian Ocean Fisheries Project (SWIOFP), the Targeted Research Project on Coral Reef Management, and the Regional Program for the Sustainable Management of the Coastal Zones of the Indian Ocean Countries (ReCoMap), funded by the EU with ca 27 million US\$.
- Norway has chosen the fisheries sector as one of the priority areas for future support, with several hundreds of millions of US\$ committed to the government. This is in addition to General Budget Support Tanzania receives from 14 donors in Tanzania, and together with the Highly Indebted Poor Countries initiative (HIPC) relief, this contributes 20 per cent of public expenditure and includes the Natural Resources sector.

Altogether, around 40% of the government budget is donor-funded. There are major concerns about the use of this support, based on recent press reports and parliamentary enquiries, about a series of massive irregularities that involved payment of hundreds of millions US\$ of government funds, particularly from the national bank and the state electricity company, to briefcase companies apparently owned by top politicians and senior government officials. Some of these cases are now being investigated, a prime minister resigned and the cabinet was reshuffled in February 2008, but legal action is yet to be taken. There is a general perception that the use of donor funds by the government is not transparent. For example, MACEMP operations started in 2005, but there is little information available on activities so far. Press reports mention major delays in project implementation. Networking of MPAs is an objective, and the private sector is mentioned as a stakeholder in the project documents, but CHICOP is yet to be contacted for co-operation or co-ordination.

### Lessons Learned

Altogether, CHICOP achieved its objectives as outlined in the investment proposal and management plans, though the pace and costs of implementation were underestimated by about 300% at the outset. However, there is little that project managers could or should have done differently. The pace of implementation and many bureaucratic hurdles created by GoZ were mainly determined by CHICOP's refusal to pay bribes. This decision delayed operations and increased investment costs considerably.

In summary, the lessons were:

- Private management of a marine protected area can be effective and economically viable, even in a challenging political climate.
- The park has benefited local communities by generating income, employment, a market for local produce, developing new work skills, demonstrating sustainable resource management, and restocking commercial fish species in adjacent areas (spill-over).
- Private management has strong incentives to achieve tangible conservation goals on the ground, co-operate with local resource users, generate income, be cost-effective and keep overheads down.
- To avoid user conflicts, it is easier to preserve a resource that is not being used to a major extent for subsistence or other economic endeavors by local communities.
- Extensive work with GoZ agencies in establishing the park has enhanced the understanding of environmental issues among local and national authorities.

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- Long-term secure tenure, together with a favorable political, legal and institutional environment, would be needed to attract more private conservation investment in the developing world.
- Ambiguous regulations and wide discretionary powers of civil servants in the area of land leases, building permits, business licenses, immigration and labor laws encourage corruption and are thus hurdles to doing business by drastically delaying developments and increasing costs.
- Investment in conservation and in environmentally sound technologies, as well as the employment of additional staff for park management and environmental education programs, raises costs considerably, making it difficult to compete with other tourist destinations. Favorable tax treatment could encourage such investments, but is not granted in Tanzania.

### Recommendations

CHICOP is a success story and can be replicated elsewhere, where conditions are favorable. The lessons learned mentioned above provide guidance. The following are very basic recommendations only.

Start small-scale and expand gradually. Low levels of formal organization among coastal communities and fisher folk make interactions with local resource users extremely time-consuming. Confidence-building measures and personal relationships based on powerful cultural norms are sometimes more important for success than formal contracts. Successful 'alternative income generating' (AIG) activities are yet to be found, and require understanding of local cultures and economies and a lot of experimentation.<sup>16</sup>

The key for more involvement of the private sector in marine conservation is a paradigm shift in the donor community and international NGOs (IUCN, WWF) involved in conservation, who play a, not always acknowledged, influential role in policy formation and implementation. Private investments in marine conservation need to gain acceptance as a feasible and attractive option for effective and sustainable conservation on the ground, for the benefits of both, nature and local people. Where governments, including park authorities, are not responsive to local concerns, local alliances between the informal and formal sectors of the economy, fishers and tourism operators in particular, can create effective win-win arrangements.

There is need for proactive stewardship that highlights the comparative advantages of private management of marine resources. This includes the acknowledgement that tourism operators, fisheries and other users often operate in the same area, compete for uses, and thus have strong incentives for direct negotiations on issues related to user rights, management and eventually conservation on-site. Localized private management has a comparative advantage over central authorities and finds it easier to deal with local communities for enforcement, training, employment and education, by virtue of their small size and mutual dependence. Private management agencies can operate more flexibly and efficiently than government as they are less affected by party politics, and also not bound by restrictive government civil service and budgetary regulations and cumbersome bureaucratic procedures. Last but not least, private management has stronger incentives to keep overheads down and generate income than governmental and externally funded management bodies.

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<sup>16</sup> Ireland (2004), *Alternative Sustainable Livelihoods for Coastal Communities – A Review of Experiences and Guide to Best Practice*, IUCN

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### See also

Biodiversity Conservation and Eco-Tourism (Chumbe Island, Tanzania), UNESCO Environment and development in coastal regions and small islands. This web site contains links to videos, papers, discussion threads, and other resources on Chumbe from 2000-2001.