PRIVATE SECTOR MANAGEMENT OF MARINE PROTECTED AREAS - THE CHUMBE ISLAND CORAL PARK PROJECT IN ZANZIBAR, TANZANIA

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Abstract

Chumbe Island Coral Park (CHICOP), established in 1991 and possibly the first fully functioning MPA in Tanzania, provides an illustration of issues that arise with the installation of a privately created and managed protected area. Challenges caused by the legal and institutional environment for private investment in conservation resulted in much higher costs than originally anticipated. The management experiences of CHICOP, its problems and achievements in the legal and institutional environment of Zanzibar are described, and lessons learned are summarised. Management costs of the privately established and managed park are only a fraction of what is normally needed for donor-funded projects through government agencies. Particularly, the training of local fishermen as park rangers by volunteers proved to be cost effective and crucial to the success of the MPA, and is presented as an example of direct partnership with stakeholders. Out of necessity, cost control and income-generating activities are more developed and successful, thus creating much better prospects of sustainability. Risks for private investors remain high due to the generally unfavourable investment climate, the volatile tourism market and the lack of long-term security of tenure. Because of these risks, and the more noticeable conservation impact on the ground, a case is made for more donor support to direct resource users from both the informal and formal private sectors, including to privately managed MPAs.

Proceedings of the International Coral Reef Initiative (ICRI) Regional Workshop for the Indian Ocean, Maputo, Mozambique. 26-28 November, 2001. ICRI/ICRAN/UNEP/CORDIO. Pages xx-xx

Introduction

Chumbe Island Coral Park Ltd. (CHICOP) is a private marine conservation project established in 1991 for sustainable management of uninhabited Chumbe Island, a small coral island of 22 ha located 12 km southwest of Zanzibar town. Chumbe is covered by a semi-arid coastal forest and bordered, on its western shore, by a fringing coral reef of exceptional biodiversity.

While coastal communities depend on fishing and possess a wealth of traditional environmental knowledge (Tobisson et al. 1998), reef management is only beginning to be seen as a necessity (Scheinman and Mabrook, 1996). In the national language Kiswahili, corals are mostly referred to as 'mawe na miamba', stones and rocks. Formal education does also not yet provide environmental information on this important natural resource (Riedmiller 1991, Riedmiller and Cooksey 1995). As a result, decades of destructive fishing methods, such as blast fishing, coral smashing to chase fish into encircling fishing nets and beach-seining, have until recently met with little public and governmental concern (UNEP-RSRS, 1989; Horrill, 1992; Guard, 1997). Several marine parks designated along the coast in the early seventies remain on paper only (Jameson et.al. 1995).

In the early nineties, Chumbe Island offered ideal conditions for the establishment of a small totally protected MPA. Bordering the shipping channel between Zanzibar and the capital of Tanzania Dar es Salaam, its western fringing reef had for decades been off-limits for local fishers, as the traditional dugouts and outrigger boats would have obstructed the way of large vessels. In addition, a military base on the adjacent coast used the area around Chumbe for shooting range exercises. Yet the island had not been included in earlier proposals for MPAs in the country.

Based on the initiative and investment proposal of CHICOP, the island and part of the fringing coral reef were gazetted in 1994 as a protected area by the Government of Zanzibar that has semi-autonomous powers over its natural resources within the United Republic of Tanzania. CHICOP was given management rights and has developed a Visitors' Centre, nature trails and eco-bungalows. Ecotourism to Chumbe supports conservation area management and free island excursions for local schoolchildren. Project objectives are non-commercial, while operations follow commercial principles.

From 2000, running costs of MPA management are fully covered from proceeds of tourism operations.

Management Activities at Chumbe Island

CHICOP is managed as a small business-oriented, ecologically friendly conservation project, tightly linked with the local communities in the surrounding area. Management activities center around implementation of conservation within these constraints, and are outlined below. Limiting human impacts is one of the key goals at Chumbe. Permitted uses of the marine park include recreation (swimming, snorkeling, underwater photography), education and research. Extractive and destructive activities, such as fishing, anchorage and collection of specimens (even for research) are not allowed. Overnight capacity does not exceed around 5000 visitors/year. Day visitation to the park is limited, and regulated by the tides to avoid damage to the coral reef at low tide. All visitors join a guided snorkeling and walking visit to the Reef Sanctuary and the Forest Reserve before moving around on their own, and additional information is presented at the Visitors' Centre.

Enforcement of park regulations is by persuasion rather than force. Park Rangers are unarmed, and patrol the island to ensure that regulations prohibiting fishing and anchorage in the protected reef and guarding of the closed coral-rag forest habitat are observed. Their reports provide daily data from 1992, on the type, number and names of vessels involved, nature of the intended activity and the fishers' reaction to the rangers' intervention. Due to their committed work, there are now no major problems with infringements from fishers or other users, and the project is well accepted by the local communities (Carter et. al. 1997). This success confirms research findings that effective enforcement is one of the key ingredients of park success (Bruner et.al. 2001).

Baseline surveys and research and monitoring programs provide data on the marine and terrestrial ecology of Chumbe Island and adjacent areas. Research is coordinated with the Institute of Marine Sciences of the University of Dar es Salaam and regulated by the Chumbe Island Management Plan 1995-2005, and monitoring is included in the rangers' duties. The coral reef at Chumbe is one of the most pristine in the region, with 370 species of fish (Fiebig 1995) and over 200 species of scleractinian coral, at least 90% of all

recorded in East Africa (Veron, pers. comm. 1997). Findings also suggest that the coral communities in the sanctuary have survived the 1998 bleaching event relatively unscathed.

The Island is a pristine fossil coral island that has no fresh water supply other than seasonal rains. In order to protect the sensitive coral communities in the fringing Reef Sanctuary from sewerage runoff and pollution, CHICOP has employed ecologically sustainable architecture and operations for water and energy provision that have close to zero impact on the sensitive terrestrial and marine environment. Each building functions as a self-sufficient unit that generates its own water and energy, with rainwater catchment and filtration, solar water heating and photovoltaic electricity. Of particular relevance for coral reef impacts, compost toilets and beds, and grey water (water from showers, washbasins and kitchen) filtration through specialized plant beds are employed to remove phosphates and nitrates before water enters the eco-system, with remaining solid waste being removed from the island. Light pollution at night is avoided by not lighting walkways, nature trails and beaches, and a combination of charcoal stoves, kerosene and gas cookers is used for cooking.

Early Lessons in Establishment and Management of the MPA

When the project started in the early nineties, there was little public and political acceptance of the need for reef and fisheries management, and lobbying for support of conservation initiatives was needed. The understanding and support of local fishing communities became essential to the establishment and effective protection of the Chumbe MPA from exploitation, fishing and anchorage. The CHICOP management team relied on educating and convincing local fishers about the benefits they could gain from a small totally protected area, assuming that natural restocking of the adjacent reef areas would in few years help in this process.

During 1991, and with the decisive support of representatives of the Departments of Environment and Fisheries, meetings were held in several fishing villages to present the project to villagers and win their support. Few people felt affected by the closure of the reef, as it was traditionally off-limits already, however villagers made it quite clear that they expected to be given preference in employment opportunities over urban people. From late 1992, five local

fishermen, proposed by the villages and who were literate, good swimmers and experienced fishermen, were employed by CHICOP as rangers and stationed on the island. Volunteer marine scientists and educationists trained them on-the-job over several years. This informal training focused on the basics of coral reef ecology, the benefits of a totally closed area, the aims of the Chumbe project, and how to communicate this to their fellow fishers and villagers. The rangers were also trained to produce daily monitoring reports on any events and to help researchers with the baseline surveys. English language training and visitor guidance skills were added at a later stage.

Using local fishermen as park rangers has proved very successful. In spite of the violent nature of some of the fishing methods used in the area, the Chumbe park rangers do not carry arms and have no powers of enforcement. Traditional 'subsistence' fishers responded well to this approach, and soon also started seeing increased catches in the adjacent reefs, further building their acceptance of the project. The fact that the rangers work in two- to three-week shifts and continue to reside in the village and even fish during their off-time, probably also helped forge close bonds with villagers. Additionally, in the absence of marine rescue services in the country, local fishers welcomed the presence of fully equipped rangers on the formerly uninhabited island. The park rangers gave efficient help and may have saved several lives in numerous cases of emergencies, storms, engine failure, damage and loss of boats and lack of drinking water. More difficult was a spate of infringements by young ‘urban’ fishers from Zanzibar town, especially in 1994/95, which were only solved through mediation of an Advisory Committee that included representatives of the Departments of Fisheries, Forestry and Environment, the Institute of Marine Sciences and local fishing communities. Public support for the project has been boosted by the development of a Management Plan (1995-2000), supported by the British volunteer agency BESO and the German Tropical Forest Stamp Programme.

Organized educational activities are among the main activities at Chumbe Island. Excursions and snorkelling lessons for local schoolchildren are a unique opportunity for learning about the environment, particularly for girls who are not normally given that chance in the Islamic tradition of Zanzibar. Initial concerns about potential conflict between up-market tourism and island excursions

of local schoolchildren have proved unfounded, and some of our guests are even delighted to help the rangers organize the kids!

Policy, Legal and Institutional Context: Opportunities and Limitations

In the last decade, Zanzibar has undergone an economic and political liberalization, resulting in tourism becoming the leading sector of the economy with average annual growth rates of above 10%. Chumbe Island presented a unique opportunity for establishing a small totally protected area, though marine conservation was at that time a low political priority. Therefore, in 1992, a private company, Chumbe Island Coral Park Ltd. (CHICOP) was registered for the establishment of a privately managed MPA in Chumbe, and obtained the lease of a plot on Chumbe Island. Based on the CHICOP investment proposal through the 1986 Zanzibar Investment Act that invited private investment in tourism and the 1988 Zanzibar Fisheries Act, the Chumbe MPA was gazetted in 1994 and management agreements were signed between CHICOP and the Ministry of Agriculture, Livestock and Natural Resources.

However, the policy and legal framework in Zanzibar are not consistent in their support for private initiatives in conservation. The official tourism policy in Zanzibar emphasizes eco-tourism, but this has not yet been fully translated into a legal and regulatory framework for environmentally friendly investment in the sector. Investment and building regulations give preference to multi-million dollar concrete buildings and infrastructure, and discourage small and medium-sized low-input projects and building designs. For example, non-permanent tented camps and palm-thatched roofs popular in game parks in Kenya and mainland Tanzania are not allowed in Zanzibar. Investment security is limited by the fact that land tenure in Tanzania and Zanzibar is only available on leasehold, in contrast to other African countries, such as South Africa, Namibia, Botswana and Kenya, which allow freehold and have attracted considerable private investment in protected areas (Watkins et al., 1996). Even land leases issued under the 1986 Investment Protection Act can be revoked by the State with relative ease, thus further weakening long-term security of tenure. Compensatory incentives, such as long-term land lease and management rights, tax

exemptions or reduced rates for land rents, licenses and fees are not readily granted.

The 1996 Zanzibar Environmental Protection Act provides some incentives for private investment in conservation and environmentally friendly technology, such as tax incentives and the option that management of protected areas can be entrusted to private entities. However, the Act has other provisions that weaken contractual security and increase long-term risks to private investment in conservation. Further, the Act has not been implemented, and its institutional setup and regulations are yet to be established and formulated.

Many other constraints hamper private investment in conservation. Cumbersome bureaucratic requirements, ambiguous regulations and wide discretionary powers of civil servants, particularly concerning investment approval, land lease, building permits, immigration and labour laws and regulations, taxes, fees and licenses promote corruption and delay operations (Rauth 1997), thus increasing investment insecurity and costs, and creating obstacles particularly for small and medium investments and for innovative and environmentally friendly project designs. Non-governmental initiatives in conservation were not encouraged until recently when legislation for the registration of NGOs was enacted in 1995. Important provisions concerning government intervention and supervision are still under public debate.

Finances, marketing and sustainability

The original feasibility study of 1991 provided for an investment of US $200,000 in order to establish the park, a visitors' centre and 10 guest bungalows. In 1998 this figure increased to US $1 million due to delays in negotiating the official gazettement of the protected area and the several management contracts, land lease, licenses and building, research, work and residence permits. Funds were provided mainly by the project initiator, and a variety of donors that covered several small non-commercial project components (GTZ-GATE, GTZ-EM, the German Tropical Forest Stamp Program, EC-Microprojects, the International School Schloss Buchhof, Munich, the Netherlands Embassies in Kenya and Tanzania, WWF-Tanzania, the Zoo Munich among others). The increased investment costs obliged CHICOP to target the higher end of the tourism market, with the

estimate that an overnight price of US$200 per person and an occupancy rate of 41% were needed to reach the break-even-point for running costs (Neckenig 1998). Costs were also raised by the logistical requirements of building on an island and the high cost of environmentally friendly technology. For example, a compost toilet costs about five times the price of a flush toilet. Additionally, much of the eco-technology on the market today has not been tested under tropical and developing country conditions, requiring costly adjustments. As far as possible, technical equipment that was simple, locally appropriate, low cost and easy to maintain under Third World conditions was used over new and sophisticated equipment. The technology choice of going local and to the informal markets also provides employment and income to local people rather than to foreign companies, further strengthening support for the project locally.

By necessity, the project has been run with cost-efficient management to stay afloat despite project delays, increased costs, the fluctuating occupancy rate and the continuing burden of government taxes, licenses and fees. Present minimum operational costs are around US$ 150,000 per year. Since 2000, the third year of operations, this is fully covered from tourism proceeds despite major fluctuations of the occupancy rate due to the volatile tourism market. Compared to donor-funded conservation projects, the total annual operational costs of CHICOP roughly equals the cost of one technical advisor alone. Measures of strict cost control include:

- Mobilising donor support for equipment and activities.
- Recruiting volunteers for professional assistance through professional volunteer agencies and individual contacts, particularly now over the Internet.
- Co-operation with local and international NGOs for activities such educational school excursions.
- Co-operation with zoos and international conservation organisations for the establishment of protected species sanctuaries.
- Outsourcing research and species monitoring to university-supported degree students.
- Keeping some non-key staff on part-time or flexible employment schedule to respond to peak seasons.

Marketing is a critical component for succeeding in the highly competitive environment of tourism. Conventional marketing methods, such as advertising in the media and participation in travel fairs, are too costly for small projects and also not effective in targeting the ecotourism niche market. Therefore, CHICOP opted for a different strategy that included gaining recognition by the international conservation community, winning international environmental awards and targeted marketing over the Internet. Chumbe Island and CHICOP are now recognized through a number of international conservation organizations' linkages, including the World Conservation Monitoring Center (WCMC), the International Coral Reef Initiative (ICRI), and has presented papers at international conferences run by ICRI, IUCN, WWF and the EU. Environmental awards have proved to be a powerful promotional tool that attracts media coverage, with CHICOP being selected as a Worldwide Project for the EXPO 2000 World Exhibition in Hanover, Germany, and winning the 1999 British Airways Tourism for Tomorrow Southern Regional and Global Award, the 2000 UNEP Global500 Award, and the 2001 Environmental Award of the International Hotel and Restaurant Association (IH&RA) among others. CHICOP's internet site (http://www.chumbeisland.com) stresses the conservation orientation of the project and features on over 1.000 listings and links on other relevant web sites.

Private Sector Involvement in Marine Conservation

Tourism operators that have a strong interest in coral reefs can become partners in their conservation and sustainable management. Marine tourists are increasingly environmentally aware, and demand and acknowledge such commitment, particularly when a country markets itself as a nature destination. The importance of this trend is underlined by the fact that tourism operators have taken a pro-active role in coral reef conservation in Tanzania since the mid-1990s, starting with public campaigns against dynamite fishing, in partnership with other stakeholders.

The growing contributions from the private sector are based on the following issues:

- Marine tourism increases economic value of coral reefs and feelings of ownership.

- The marine tourism market may attract new local investors with little previous knowledge of and interest in marine resources and coral reefs, and thus increase political support for conservation.
- Both tourism and fisheries depend directly on the same resource, thus have strong incentives for effective communication and direct participation on issues related to their management and conservation on-site.
- Small private management bodies can have a comparative advantage over central authorities where interaction with local communities and resource users is concerned (such as in training, employment and education), by virtue of their small size and mutual dependence.
- The long-term investment and planning horizon necessary for the private sector is similar to that required for resource protection, economic productivity, capacity building and environmental awareness.
- Last but not least, private management has stronger incentives to keep overheads down and generate income than government-controlled and externally funded management bodies.

To facilitate the above investments, the private sector needs a number of factors to be in place to provide a supportive environment. Beyond an appropriate commercial and investment climate, those directly related to conservation include:

- The direct users of coral reefs, including traditional and non-traditional fishers and tourism operators be included in policy and management decisions as serious stakeholders.
- The acknowledgement that most fishing, including artisanal fishing, is also profit-oriented, and doesn't necessarily occur in greater balance with the environment than tourism operations.
- The acknowledgement that Government, donor agencies and NGOs are stakeholders with institutional interests and may not act as impartial mediators or actors in resource use conflicts.
- The acknowledgement that, as shown by the Chumbe case, private investment in conservation can involve a high commercial risk.
- An attractive investment policy is crucial in supporting private investment, in particular with respect to governance, security of

tenure, contractual and legal framework, financial services, and incentives concerning land rent, taxes, fees and licenses. Additionally, second-tier constraints created by ambiguous regulations and wide discretionary powers of civil servants have to be removed, particularly concerning land leases, building permits, immigration and labour laws and regulations (Rauth 1997). Importantly, the investment climate for conservation would be improved by official acknowledgment that making profits from conservation is not morally wrong, but a condition of sustainability.

Two final issues that may support the growth of private sector investment in MPAs are environmental certification and insurance. The concept of international environmental certification has grown in recent years, recognizing that this raises marketing value in tourism source markets and consumer societies. This gives strong incentives to owners and operators to adopt ecological principles in building designs and recreational activities. The most serious threats to economic sustainability of privately managed conservation projects are their dependence on volatile international tourism for income generation. An international insurance scheme that buffers privately managed and other sustainable parks against severe income loss from visitor fluctuations could reduce such risks.

Conclusions

The not uncommon perception of the private sector as being located outside and antagonistic to a sometimes romanticised 'local community' is not helpful for understanding stakeholder interests in coral reef management. Though traditional fisheries and the harvesting of reef resources may belong to the informal sector of the economy in many countries, these are still economic activities that are sometimes highly commercialized and linked to distant, even international, markets. Ignoring this reality does not help in the identification of genuine stakeholders.

Viable partnerships for the management of a particular marine area are more likely when local communities, traditional fishers and tourism operators are acknowledged as belonging to the (formal and informal) private sector that responds to similar economic incentives. Small-scale fishers, shell collectors and seaweed farmers who depend on reef resources for their survival may have more common

interests with local tourism and dive operators than with central government agencies and foreign-funded NGOs.

In order to safeguard the sustainability of their economic activities, tourism operators, fishers and other resource users have a potential interest in coral reef management. Involving them in conservation projects and park management is likely to raise their awareness in this respect. Outside support would still be required, particularly where threats to coral reefs originate from distant areas, such as logging, siltation and large-scale infrastructure developments (World Bank, 1999).

It is suggested that the international conservation and donor community would improve the impact of their investment in coral reef conservation if project designs focused more on direct resource users and stakeholders in a particular area, who have long-term economic incentives to co-operate. This may include support to private management, particularly where small highly protected MPAs are created. These have the potential of providing fish refuges, larval sources and suitable settlement areas, by which adjacent fishing areas may eventually be replenished with marine species through reproduction or migration. Such well-managed small MPAs may become the core of large, multiple use managed and free access areas.

Support to private initiatives may help alleviate the commercial risks of long-term investment in conservation and integrate a wider range of stakeholders in coastal zone management, which would improve local political support to MPAs. Last but not least, donor support for policy reforms that improve security of tenure and the investment climate in general may also encourage private investment in better environmental practices and conservation.

References

Bruner, A.G et.al. (2001), Effectiveness of Parks in Protecting Tropical Biodiversity, Science, Vol.291, 5 January 2001

Carter, E., Nyange, O., and Y. Said (1997), "Management Experiences of the Chumbe Reef Sanctuary 1992-1996", Paper presented at the National Coral Reef Conference, Zanzibar, 2-4 December.

Fiebig, S. (1995), "Fish Species List and Management Report on the Chumbe Reef Sanctuary".

Guard, M. (1997), "Dynamite Fishing in Southern Tanzania", Miombo 17, Wildlife Conserv. Soc. of Tanzania, Dar es Salaam

Horrill, C. (1992), "Status and Issues Affecting the Marine Resources Around Fumba Peninsula", COLE-Zanzibar Environmental Study Series, No. 12.

Jameson, S.C., McManus, J.W., and M.D. Spalding (1995), "State of the Reefs, Regional and Global Perspectives", An International Coral Reef Initiative Executive Secretariat Background Paper.

Neckenig, H (1998), "Chumbe Island Coral Park, A Viability Study", CHICOP, Zanzibar.

Rauth, R. (1997), "Bureaucracy Killing Business in Africa", Financial Times, April 23-29.

Riedmiller, S. (1991), "Environmental Education in Zanzibar: Proposals for Action", Dept. of Environment, Finnida, Zanzibar

Riedmiller, S. and B. Cooksey (1995), "Science Teaching in Government Secondary Schools in Mainland Tanzania - A Situational Analysis", Consultancy Report, GTZ - University of Dar es Salaam

Scheinman, D. & A. Mabrook (1996), "The Traditional Management of Coastal Resources", Tanga Coastal Zone Conservation and Development Programme, Tanga, Tanzania.

Tobisson E., Andersson J., Ngazi Z., Rydberg L., and U. Cederloef (1998), "Tides, Monsoons and Seabed: Local Knowledge and Practice in Chwaka Bay, Zanzibar", AMBIO, Vol.27, No.8.

UNEP-RSRS, (1989), "Coastal and Marine Environmental Problems of the United Republic of Tanzania", UNEP Regional Seas Reports and Studies, No.106.

Watkins, C.W., Barrett, M., and J.R. Paine (1996), "Private Protected Areas, A Preliminary Study of Private Initiatives to Conserve Biodiversity in Selected African Countries", World Conservation Monitoring Centre (WCMC), Cambridge.