

**Applications Session**

Learning from concrete successes of sustainably financing protected areas

**Workshop 1**

Building a Complex Portfolio to Sustainably Finance Marine Protected Area Networks

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**Private sector investment in Marine Protected Areas -  
Experiences of the Chumbe Island Coral Park in  
Zanzibar/Tanzania**

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**Abstract**

Chumbe Island Coral Park (CHICOP) illustrates issues that arise with the establishment of a private marine protected area. Though the legal and institutional environment for private investment in conservation in Zanzibar/Tanzania required much higher investment than originally anticipated, establishment and management of the park cost only a fraction of what is commonly budgeted for donor-funded projects through government agencies. Out of necessity, cost control and income-generating activities of private operations are more developed, thus creating better prospects for sustainability. Training local fishermen as park rangers by volunteers proved to be particularly cost effective and crucial to the success of the MPA and facilitates direct partnership with local stakeholders.

Risks for private investors remain high though due to the generally unfavourable investment climate, the lack of long-term security of tenure, competition from over-funded donor projects and the volatile tourism market. Due to these risks, and the more noticeable conservation impact on the ground, a case is made for more donor support to partnerships of direct resource users from both the informal and formal private sectors, including to privately managed MPAs.<sup>1</sup>

**1. The Chumbe Island Coral Park Project**

Chumbe Island Coral Park Ltd. (CHICOP) is a private marine conservation project established in 1991 for the sustainable management of uninhabited Chumbe Island, a small coral island of 22 ha. located 8 miles 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.

In the early nineties, Chumbe Island offered ideal conditions for a small, completely 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

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<sup>1</sup> Shortened and updated version of a paper presented to the ICRI-UNEP-CORDIO Regional Workshop for the Indian Ocean, November 26-28, 2001, Maputo, Mozambique

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 as part of an investment proposal of the owner of CHICOP, the island and part of the fringing coral reef were gazetted in 1994 as a protected area by the semi-autonomous Government of Zanzibar that has full control over its natural resources within the United Republic of Tanzania. As agreed in the investment plan, CHICOP was given management rights and has turned Chumbe into a MPA, developing nature trails, a visitors' centre and seven eco-bungalows. Revenues from ecotourism support conservation area management and an Environmental Education Program for local schoolchildren and their teachers. Project objectives are non-commercial, while operations follow commercial principles. From 2000, recurrent management costs are covered from the proceeds of ecotourism.

### ***Strict enforcement through Park rangers***

Park rangers 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. The Chumbe Rangers carry no arms and rely on persuading fishers. They monitor any event or infringement, and their reports provide daily data from 1992, on the type, number and names of vessels involved, the nature of the intended activity and the fishers' reaction to the rangers' intervention. They also record observations on any major change in the coral reef, such as storm damage or coral bleaching. 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 on the effectiveness of parks in protecting tropical biodiversity that included 93 protected areas in 22 tropical countries where enforcement was found to be one of the key ingredients of park success (Bruner et.al. 2001).

### ***Research and monitoring***

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 a Memorandum of Understanding.

### ***Sanctuary for endangered species***

As a result of successful management, the coral reef has become 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. com. 1997). Findings also suggest that the coral communities in the sanctuary have survived the 1998 bleaching event relatively unscathed. The forest covering the island is one of the last pristine 'coral rag' forests in Zanzibar (Beentje 1990), particularly after successful rat (*Rattus rattus*) eradication in 1997. The Forest Reserve has now become a sanctuary for the highly endangered endemic Aders' duiker (*Cephalophus adersi*) that is facing imminent extinction from poaching and habitat destruction in its original range in Zanzibar (Kingdon 1997). Three breeding pairs of duikers were translocated to the island in 2000 with support of the Zoo Munich-Hellabrunn, the Chicago Zoological Society, Flora and Fauna International (UK) and the WWF-Tanzania. The island also has probably the world's largest population of the rare Coconut crabs (*Birgus latro*) recorded as 'data deficient' in the IUCN Red data book. Attracted by the abundant fish in the reef sanctuary, the rare Roseate terns (*Sterna dougalli*) bred on Chumbe Island in 1994 (Iles 1995).

### ***Eco-Architecture and Eco-Technology***

Chumbe 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. Composting toilets and vegetative grey water filtration avoid any runoff of sewage into the sea.

### ***Limiting human impact with visitors' management and guidance***

Permitted uses of the marine park include recreation (swimming, snorkeling, underwater photography), education and research. Extractive and destructive activities, such as fishing, anchorage, collection of specimen (even for research) are not allowed. Overnight capacity does not exceed around 5000 visitors per year. No further construction of overnight facilities is planned. Day visitation to the park is also limited and regulated by the tides to avoid any damage to the coral reef by boats crossing over in low waters. All visitors join a guided snorkeling and walking visit to the Reef Sanctuary and the Forest Reserve before moving around on their own. The former lighthouse keepers' house has been carefully restored and converted into a visitors' centre that also includes a classroom for local schoolchildren.

## **2. Project finances, cost control, marketing and sustainability**

The overall investment from 1991 was ca. 1.2 Million US\$. About two thirds were financed by the project initiator (conservationist and former manager of donor-funded aid projects). A variety of donors supported several non-commercial project components with small grants, for construction of the Visitors' Center, biological baseline surveys, nature trails, translocation of Aders' duikers to the island sanctuary and the park rangers' patrol boats. Altogether ca. US\$ 233.000 were contributed by subsidiaries of the German aid agency GTZ, the German Tropical Forest Stamp Program, EC-Microprojects, the Netherlands Embassies in Kenya and Tanzania, the WWF-Tanzania, the International School Schloss Buchhof Munich among others. About 60% the total investment was spent in setting up the conservation area, park management and education facilities, while 40% was used for the tourism infrastructure, mainly the seven eco-bungalows (Soley 1997).

### ***Increased costs due to delays and red tape***

The original feasibility study of 1991 provided for an investment of little over US \$200,000 for establishing the park, visitors' centre and 10 guest bungalows. However, unexpectedly three years were spent in negotiating the official gazettelement of the protected area, the several management contracts, land lease, licenses and building, research, work and residence permits. Thus, the feasibility study had to be updated in 1994 for more realistic cost estimates, resulting in more than five times the original investment.

### ***Going up-market due to higher investment***

Commercial operations started in 1998. The increased investment costs obliged CHICOP to revise the price structure for tourist operations and to target the higher end market. Overnight rates had to be doubled. An economic analysis in 1998 (Neckenig 1998) concluded that a net, all-inclusive overnight price of US\$200 per person and an occupancy rate of 41% were needed to cover recurrent costs. The grant component of the project costs had not been included here.

### ***Costly logistics, sophisticated eco-technology***

The logistical requirements of building on an island, the innovative technology for water and energy provision and the commitment to minimise degradation of the island environment also increased costs. A compost toilet, for example, which operates without producing any sewerage, costs about five times the price of a flush toilet. Though much of the eco-technology on the market today appears simple and unsophisticated by industrial country standards, devices have often not been tested under tropical and developing country conditions and needed costly adjustment, maintenance and replacement. Water, sand, timber for building operations and firewood for cooking staff meals are purchased and transported to the island at a high cost.

## ***Strict control of operational costs and overheads***

By necessity, the Chumbe team kept the project afloat with very cost-efficient management despite project delays, increased costs, the fluctuating occupancy rate and the increasing burden of government licenses, fees and taxes. Measures of strict cost control include:

- **Recruiting volunteers for professional assistance** in baseline surveys, ranger and staff training, development of nature trails & information materials, rat eradication, building design, installation and maintenance of technical equipment, marketing, management assistance and financial analysis among numerous other tasks. One particularly noteworthy co-operation was with the University of Braunschweig (Germany) for the state-of-the-art eco-architectural designs, where a Dean of Faculty volunteered to assist CHICOP throughout the building process. Several professional volunteer agencies (e.g. German SES, British BESO and Frontiers, Irish APSO) also provided short-term consultants. Volunteers from all over the world continue to apply for work with CHICOP mainly over the Internet. Limiting factors are the difficulties in getting residence and work permits.
- **Co-operation with local and international NGOs** for some activities, e.g. the Environmental Education Program and school excursions to Chumbe Island, supported by the Italian Fondo per la Terra, the SADC-Environmental Education program, WWF-Tanzania and the US-National Fish and Wildlife Foundation (NFWF).
- **Co-operation with zoos and international conservation organisations** for the establishment of protected species sanctuaries, e.g. the Aders' duikers' translocation program, supported by the Zoo Munich Hellabrunn, Bavarian TV, Flora & Fauna International, WWF-Tanzania, and the Chicago Zoological Society.
- **Outsourcing research and species monitoring** to university-supported degree students, e.g. Aders' duiker tracking and monitoring program, Coconut crab population study, the spill-over of fish from the sanctuary etc. Processing research permits from the respective authorities is sometimes a bottleneck.
- **Keeping non-key staff on part-time or flexible employment** schedule to respond to peak seasons. Limiting factors include the rigid labour legislation and the high investment needed in staff training.
- **Procurement from informal markets.** The lesson learned here was that technical equipment need to be simple, appropriate, low cost to purchase and easy to maintain under Third World conditions. This may mean outdated equipment by international standards. It was cost-effective in some cases to acquire secondhand equipment that was still operational and had a life span that could be extended by local technicians. New and sophisticated equipment breaks down easily with tropical temperatures, power fluctuations and blackouts, unskilled users and lack of maintenance staff and spare parts. Tanzanian labour costs are relatively low and spare parts expensive to import for sophisticated gear. Low cost alternatives are available on local informal (street) markets, and roadside fitters and technicians are very creative in fixing things that are considered scrap elsewhere.

The private sector has an important cost advantage here compared to donor supported projects that are commonly bound by regulations to import the latest and more sophisticated equipment. The technology choice of going local and to the informal markets has an added advantage of providing employment and income to local people.

## ***Aggressive marketing***

Another lesson learned is the need for aggressive marketing. 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.

- **International Environmental Awards.** Actively applying for and winning international environmental awards proved to be the single most powerful promotional tool that attracted massive media coverage, travel writers and television documentaries. The total monetary value of the media coverage Chumbe received for environmental awards has been estimated to be up to US\$ 10 million. This is what CHICOP would have had to pay for all the publicity at normal advertisement rates.

Particular publicity was gained through the 1999 British Airways Tourism for Tomorrow Global Award that resulted in Chumbe being featured in a UK based holiday television program and the production of over 30 high profile newspaper and magazine articles around the world. Other marketing highlights were the selection of Chumbe as a Worldwide Project for the EXPO2000 World Exhibition in Hannover/Germany, where one of the eco-bungalows was exhibited in the Tanzanian pavilion, the 2000 UNEP Global500 Award, the 2001 Green Hotelier of the Year Award of the International Hotel and Restaurant Association (IH&RA) and the 2001 World Award for Ecotourism Destination by the Cond Nast Traveller Magazine. In 2001, Chumbe also became a finalist for the Aga Khan Award for Architecture.

- **Internet.** Chumbe would not have survived without the Internet. Though it reached Tanzania relatively late, this was just in time when marketing became a pressing need. From 1998, the comprehensive homepage and its high ranking on the web were decisive for attracting business in the nature and ecotourism market and for cost-effective communications.
- **Travel agents and tour operators.** Contrary to expectations, the established travel industry only started showing interest in marketing Chumbe after the above alternative non-conventional marketing channels had succeeded. While in the early days most clients booked individually over the Internet, travel agents and tour operators provide now about 50% of bookings.

### ***Volatile tourism market***

Surviving without government or donor subsidies is no minor achievement, considering that the tourism industry is particularly volatile and sensitive to political turmoil (often associated with election periods), adverse weather conditions (el Niño) and perceived security and health risks. With all the above high profile marketing publicity, the occupancy rate increased slowly but steadily, still remaining far below capacity after five years of operations, as shown below.

#### **Occupancy rate and income from paying guests**

<b>Financial Year</b>	<b>Occupancy rate</b>	<b>Income in US\$</b>
1998 –1999	13%	21,759
1999 – 2000	28%	42,858
2000 – 2001	34%	82,551
2001 – 2002	29%	128,893
2002 - 2003	43%	187,248

Much of this situation reflects the well-known problems the travel industry suffered over the last years. For example, bloody post-election riots in Zanzibar in January 2001 that were publicized by CNN and BBC resulted in a wave of cancellations worth over US\$ 35,000 within a week.

### ***Operational costs fully covered by tourism proceeds***

With frugal cost-efficient operations, an occupancy rate between 30-40% is sufficient for running the park provided that taxation by government is more favourable (see below). Recurrent costs were mostly covered from tourism proceeds from 2000 and are now around US\$ 150,000 per year. Compared to donor-funded conservation projects, the total annual operational costs of CHICOP roughly equals the cost of one technical adviser alone. Capital payback would require a higher occupancy rate and income level though.

### **3. Strategic partnerships and local benefits, raising awareness and capacity**

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, as revealed by an analysis of the syllabi of primary and secondary education (Riedmiller 1991, 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 (Horrell 1992, Guard 1997). Several marine parks designated along the coast in the early seventies remained on paper only (Jameson et.al. 1995).

#### ***Campaigning for the MPA***

Therefore, when the project started in the early nineties, there was a strong case for lobbying for conservation and sustainable management of coral reefs and coastal zones, among resource users, political leaders and the general public in Tanzania and Zanzibar. With the increasing pressure on coastal resources and the generally weak enforcement of fisheries regulations, the understanding and support of local fishing communities became essential to the 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, completely protected area. Natural restocking of the adjacent reef areas after a few years helped in this process. Political and public support was also boosted by the enthusiastic feedback from local and international visitors and the several prestigious international awards won by the Chumbe project.

#### ***Village meetings***

With the decisive support of the Departments of Environment and Fisheries, the project was discussed in several fishing villages along the adjacent coast in 1991. As expected for an off-limits area, few people felt affected by the closure of the reef. However, villagers made it quite clear that they expected to be given preference in employment over urban people. Assured of this by the project team, they proposed candidates among the fishermen to be employed and trained as park rangers. Candidates had to be literate, good swimmers and experienced fishermen, sympathetic to the project objectives and interested in being trained in new skills.

#### ***Training fishers as Park Rangers***

From 1992, as soon as the project had been approved by the government and even before the conservation area had been gazetted, five local fishermen were employed by CHICOP and stationed on the island. They were, over several years, trained on-the-job by volunteer marine scientists and educationists. This rather informal training focused on the basics of coral reef ecology, the benefits of a fully closed area, the aims of the Chumbe project, and how to communicate this all 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 to this at a later stage. This proved very successful. Traditional 'subsistence' fishers responded well to this approach. The fact that the rangers work in two- to three-weekly shifts on the island and continue to reside in the village and even fish during their off-time, probably also helped for close bonds with villagers.

#### ***Rescue services for fishers***

In the absence of marine rescue services in the country, local fishers also welcomed the presence of fully equipped rangers on the formerly uninhabited island. From 1994, the rangers rescued over 160 vessels with between 2 - 16 fishermen, each from storms, engine failure, loss of boats, and lack of drinking water, likely saving several lives.

## ***Infringements***

While initial community response had been encouraging, challenges to the establishment of the MPA increased during project implementation. The booming tourism industry created a rapidly growing market for marine products and contributed to over-exploitation. High prices made fishing an attractive occupation for urban youths who could afford modern propulsion and fishing gear and had little respect for traditional fishing grounds and the more conservative traditional fishing practices. There was evidence that during election times party politics also played a role.

Infringements of park regulations reached a peak in 1994/95 with 45 incidents a month, but have dropped to less than five since then. Management Agreements oblige the government to assist CHICOP with enforcement, but government support was weak then and enforcement left to the park rangers. Being privately employed, they do not carry arms and have limited powers of enforcement other than 'educating' local fishers on the value of the protected area as a breeding ground for fish. This has worked well, also because after a decade of total closure of the protected area, local fishers indeed report increased catches outside the park boundaries. This welcome spill-over effect provides a convincing rationale for the park in the eyes of local fishers and they now generally respect the park boundaries.

Employing fishers as rangers also helped build feelings of ownership and local political support for marine conservation. The realisation that tourists come from far away to visit coral reefs was quite an eye opener for the rangers. Also, the fact that coral reefs are only found in the tropics, not in the rich countries in the North, helped in developing feelings of ownership among local people from government to village level.

## ***Advisory Committee***

With decisive support of the Institute of Marine Sciences of the University of Dar es Salaam, an Advisory Committee was established for crisis management in the early years. It included representatives of the Departments of Fisheries, Forestry and Environment, the Institute of Marine Sciences and local fishing communities.

## ***Management Plan 1995-2005***

A wide variety of stakeholders were involved when the Management Plan 1995-2005 was developed for Chumbe Island in 1995. Formulation of the plan was supported by the British volunteer agency BESO and the German Tropical Forest Stamp Program.

## ***Capacity building of Government officials***

It is the approval and legal backing of the investment proposal by the Government of Zanzibar that made Chumbe possible in the first place. Though marine conservation was a new concept in the early nineties, some government departments provided decisive political support from an early stage, such as the Departments of Environment and Fisheries, and later the Institute of Marine Sciences of the University of Dar es Salaam.

Government staff from over seven departments had been involved in project negotiations for the establishment of the park, in later discussions on the Management Plan 1995-2005 and finally as partners in the Advisory Committee. This has helped to raise conservation awareness and understanding of the legal and institutional requirements of MPAs and prepared the ground for improvements in Zanzibar's legal framework to support conservation projects. Environmental legislation passed in 1997 in Zanzibar provides for private management of protected areas.

Whenever possible, CHICOP also invited government staff to join expatriate volunteers for fieldwork on particular projects. Examples were the rat eradication campaign in 1997, where staff of the Plant Protection Division were trained on the technicalities of rodent control in nature reserves, and the Aders Duiker Sanctuary established on Chumbe Island in 1999, where staff of the Forestry Department received expert training in wildlife translocation techniques. However, it is in this field where 'competition from donors' is felt most. Nowadays, allowances expected by government officials for meetings or field

trips (and routinely paid by aid agencies) are far beyond the reach of both private and NGO conservation projects.

### ***Co-operation with the Port Authority to keep the lighthouse functioning.***

In the absence of Port staff on the island, the rangers act as lighthouse keepers for the old AGA-gas-powered system. This service is particularly important for the traditional shipping traffic (dhows), which has no access to modern navigational aids, such as GPS.

### ***School excursions for snorkelling and nature trails***

Taking schoolchildren for day excursions to the island also helped win public support. Guided by the park rangers, they walk along nature trails and learn how to swim and snorkel over the reef. This is a unique opportunity particularly for girls who are not normally given that chance in the Islamic tradition of Zanzibar. Nature trails and educational materials (in Kiswahili and English) have been developed about the forest and the reef in English and Kiswahili. The Chumbe Environmental Education Program now includes in-service teacher training. In 2003, all secondary schools in Zanzibar are scheduled to participate in the Program.

### ***Are up-market guests disturbed by school children?***

Initial concerns about a potential conflict between up-market tourism and island excursions of local school-children proved unfounded. Project experiences so far are that guests are not disturbed by school children sharing the island with them. A combination of targeted ecotourism marketing, efficient management of the trips and the well-behaved schoolchildren of Zanzibar have so far allowed us to run the school trips even during high season. Some guests are even delighted to help the rangers organize the kids.

## **4. The policy, legal and institutional context: opportunities and limitations**

### ***Economic liberalisation and tourism creating a market for conservation***

In the late eighties, Zanzibar had developed a severe economic crisis due to decades of state-controlled economic policies and over-dependence on one cash crop, cloves, that had lost its value on the world market. This opened the way for economic and political liberalisation, and for tourism as an alternative source of income. Tourism has now become the leading sector of the economy with average annual growth rates of above 10%. This resulted in a rush of (sometimes speculative) 'land-grabbing' particularly of beach areas around the country.

The unique opportunity Chumbe Island presented for establishing a small totally MPA, the low political priority marine conservation had at that time and the failures of earlier attempts of marine conservation in the country gave birth to the Chumbe MPA as a private initiative. In a race against time, the project initiator proposed to the Zanzibar investment agency that Chumbe Island should become a nature reserve, and a lengthy process of negotiations ensued involving altogether seven government departments. Finally, in 1992, a private company, Chumbe Island Coral Park Ltd. (CHICOP) was registered for the management of the reserve.

### ***The legal base for the private MPA***

In the early nineties, Zanzibar had not yet created a policy and legal framework nor institutions for conservation. A new opportunity arose when the 1986 Zanzibar Investment Act invited private investment in tourism, thus providing a market for investing in conservation. In the absence of more explicit legislation, the 1988 Zanzibar Fisheries Act provided sufficient basis for the Chumbe MPA. Based on this, and the lease of a plot on the island, Management Agreements were signed between CHICOP



and the Ministry of Agriculture, Livestock and Natural resources in 1994 and 1995. However, critical issues remain for investment in conservation.

### ***Investment policy and regulations***

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.

### ***New environmental legislation sending mixed signals***

The 1996 Zanzibar Environmental Protection Act offers 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, other provisions of the Act weaken contractual security and thus increase long-term risks to private investment in conservation. So far the Act has not been implemented and the institutional setup and regulations are yet to be established and formulated.

### ***Limited security of tenure***

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, Kenya, which allow freehold and have attracted considerable private investment in protected areas (Watkins et al. 1996). 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.

### ***Tax and other incentives lacking for investing in the environment***

Lack of security of tenure could be offset to a certain degree for small investments, by legal provisions that offer special incentives for investment in the environment and conservation, such as long-term land lease and management rights, tax exemptions or reduced rates for land rents, licenses and fees. However, these are not readily granted. Rather the contrary: CHICOP was recently engaged in a conflict with the Zanzibar tax authorities over the Chumbe Education and Research Programs, where full tax payment was demanded for schoolchildren and researchers visiting the island, though no income is generated with these programs.

### ***Second tier constraints***

When dealing with government, investors meet 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. This encourages rent-seeking and delays operations, thus increasing investment insecurity and costs, and creating obstacles particularly for small and medium investments and for innovative and environmentally-friendly project designs. In the case of Chumbe up to 80% of the Project Manager's time is needed for dealings with the various government departments.

### ***Hurdles to non-governmental initiatives***

Non-governmental initiatives in conservation were not encouraged until recently. Legislation for the registration of NGOs was enacted in 1995, but important provisions concerning government intervention and supervision discourage initiatives that are not created with the prime objective of seeking donor funding.

## 5. Getting the private sector on board for effective marine conservation

Resort managers and dive operators may have a strong interest in coral reefs and can become partners in their conservation and sustainable management. Marine tourists are increasingly environmentally aware, demand and acknowledge such commitment, particularly when a country markets itself as a nature destination.

### ***Support local management by genuine direct stakeholders***

Local fishing communities respond to similar economic motives as the private sector and form an integral part of this sector. Tourism operators, fisheries and other users often operate in the same area, compete for uses, and have thus strong incentives for direct negotiations on issues related to user rights, management and eventually conservation on-site. Localized private management bodies have a comparative advantage over central authorities and find it easier to deal with local communities, for enforcement, training, employment and education, by virtue of their small size and mutual dependence. This is in contrast to non-representative management authorities, where external funding sometimes creates incentives for high overhead costs that may alienate direct stakeholders (Andrews 1998).

### ***Transferability***

Private support of sustainable MPA management requires certain conditions. Where coral reefs have tourism potential and are not yet over-exploited for subsistence by local communities, privately managed marine parks are viable and can generate considerably more income than fisheries and other resource extraction. To be attracted under Third World conditions, private investment in conservation and marine park management would need above all a conducive investment climate.

- **Conducive investment climate.** An attractive investment policy would have to address issues of good governance, security of tenure, contractual and legal framework, financial services, as well as incentives concerning land rent, taxes, fees and licenses. A favourable policy framework is only the start of the process. 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. And last but not least, the investment climate for conservation would be improved by an official acknowledgment that making profits from conservation is not morally bad, but a condition of sustainability.
- **Avoid competition from over-funded donor projects.** Conservation in large parts of Sub-Saharan Africa is highly dependent on donor funding. Though much lip service is paid to sustainability, donor aid is about spending money rather than earning it. This crowds out conservation-oriented investors who cannot compete in a climate where park management is funded by external grants that sometimes tolerate the high overheads of state-run institutions. This situation perpetuates a systematic cycle of non-sustainability in the economic management of the resources (Cairncross, 1991).
- **Environmental certification.** It is sometimes suggested that tourism operations need to be controlled and regulated to adhere to minimum environmental standards (Colwell 1999). However, this assumes a framework of good governance that is not yet the reality everywhere. A more powerful tool is international environmental certification that has a high marketing value in the tourism source markets. This gives stronger incentives to owners and operators to adopt ecological principles in building designs and recreational activities, than inspection visits of sometimes rent-seeking government officials.
- **International insurance scheme for MPAs to buffer market risks.** The most serious threats to economic sustainability of privately managed conservation projects are their dependence on international tourism for income generation, a market that is sensitive to political turmoil and

perceived security and health risks. An international insurance scheme could buffer privately managed and other sustainable parks against severe income loss from visitor fluctuations.

## 6. Final remarks

It is suggested that the international conservation and donor community would improve the impact of 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 support sustainable management. This may include support to private management, particularly where small highly protected MPAs are created. These may even become popular with fishers as fish refuges, larval sources and suitable settlement areas that replenish adjacent fishing areas with marine species through reproduction or migration. Such well managed small MPAs may become the core of large, multiple use MPAs and free access areas.

Support to private initiatives would help alleviate the commercial risks of long-term investment in conservation and integrate a wider range of stakeholders in coastal zone management, and thus 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.

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