

THE UNITED REPUBLIC OF TANZANIA  
MINISTRY OF NATURAL RESOURCES AND TOURISM  
THE BOARD OF TRUSTEES  
MARINE PARKS AND RESERVES - TANZANIA



PHYSICAL AND FINANCIAL REPORT OF THE UNEP/ICRAN SUPPORT FOR  
SUSTAINABLE AND PROTECTION OF RESOURCES IN DAR ES SALAAM MARINE  
RESERVES SYSTEMS (DMRS) FOR PERIOD FROM AUGUST 2002 TO AUGUST 2004

FINAL REPORT

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# FINAL PHYSICAL AND FINANCIAL REPORT OF THE UNEP/ICRAN SUPPORT FOR SUSTAINABLE AND PROTECTION OF RESOURCES IN DAR ES SALAAM MARINE RESERVES SYSTEMS (DMRs) FOR PERIOD FROM AUGUST 2002 TO AUGUST 2004

## 1. BACKGROUND

The Dar es Salaam Marine Reserves system (DMRs) was gazetted as an MPA since June 1975 due to their biodiversity, aesthetic, recreational, educational and research under the Fisheries Act No. 6 of 1970. However, effective management of the area started 1999 when the Marine Parks and Reserves Unit (MPRU) undertook the mandate. The system comprises chains of small islets located close to Dar es Salaam city, north of the main entrance of Dar es Salaam harbour (Bongoyo, Mbudya, Pangavini and Fungu Yasini). The islands are surrounded by diverse and unique habitats of coral reefs, sea grass beds, sand beaches and rocky shores and lie on a shallow continental shelf with waters of less than 20 metres deep.

DMRs was recognized by ICRAN as an area of importance in terms of its biodiversity and designated as a demonstration site for conducting biophysical and social monitoring surveys; coral reef monitoring and training for the user groups surrounding the reserves. In July 2002 a Memorandum of Understanding (MoU) was signed between the Board of Marine Parks and Reserves and UNEP/ICRAN for implementation of agreed matters in DMRs.

The MoU outline the objective and priorities of action aimed at implementing activities which will address issues related to conservation of the biodiversity and environment, build capacity of the reserve managers, users and others stakeholders as well as promote and develop nature tourism opportunity.

**The objectives of the MoU were to support the actions, which address the following:**

- i. To create an enabling environment that will lead to active participation of all relevant stakeholders in the conservation of natural resources on DMRs.
- ii. To improve capacity of key stakeholders and institutions for conservation and management of DMRs
- iii. To protect natural resources, cultural heritage and tourism attractions from illegal use.
- iv. To promote, diversify and develop ecotourism opportunities that could create employment while maintaining the health of the ecosystem.

**Action Plan Priorities:**

- i. Preparation of DMRs General Management Plan with stakeholders involvement
- ii. Zoning of DMRs and installation of boundary markers
- iii. Purchasing of equipments such as radios, dinghies and snorkels
- iv. Community capacity building in micro-enterprises
- v. Guide training and training in visitor handling skills for community honorary rangers (HRs)
- vi. Law enforcement support including fuel and sea rations
- vii. Small grants to facilitate micro financing as a poverty alleviation strategy

**2. IMPLEMENTATION**

The implementation of agreed actions started after both parties signed the MoU. Under the DMRs management the agreed actions were integrated in the action plans and various activities were carried out so as to ensure effective management of the DMRs.

## **2.1. Ecotourism**

The DMRs management aimed at preparing the outreach materials, construction of visitor centres and train villagers, fishers and other stakeholders in relevant skills related to sustainable tourism.

### **A. Construction and Documentation of Mbudya and Bongoyo Information Centers**

The two visitor centers at Bongoyo and Mbudya Island Marine Reserves were constructed. The visitor centers are simple huts built with environmentally friendly materials from local materials such as bamboo, tree trunks, reeds and coconuts leaves as roofing. In each center there are fixed notice boards with information on the complexity of the reserve ecosystem. The centers also contain documentations and outreach materials for visitors including tourist, students, other locals and international stakeholders. The materials were edited to suit the purpose of each stakeholder.

### **B. Training Local Communities on Sustainable Tourism**

Eight (8) local community members who are now serving as Honorary Rangers (HRs) in DMRs were trained in basic skills for offering service to tourists and hygiene. Fulltime tailored training was provided by the National Tourism Training College based in Dar es Salaam for a period of one month. All participants performed well and were awarded certificates of attendance. The DMRs management forged a partnership with HRs who are currently engaged in conservation activities, providing tour guide services to the tourists while in DMRs as well as providing first aid and rescue operation to visitors and fishers within the vicinity of DMRs. They also offer catering and refreshment services at cost. They are also responsible to keep the marine reserves clean and tide, maintaining nature trails, security for DMRs and visitors properties as well as conduct biophysical monitoring.

## **2.2 Capacity Building**

### **A. Training Visit to Malindi / Watamu Marine Parks of Kenya and Mafia Island Marine Park in Tanzania**

Ten (10) members of communities from villages around DMRs accompanied by MPRU staffs visited other already existing MPAs within and outside the country to see how their counterparts are involved in conservation in those MPAs and learn how best they can participate in marine conservation activities around DMRs. The two trips were successful as participants were able to identify the strengths and weaknesses of their counterparts and vice versa. In addition, the visits have also helped to change the altitude of some participants and other local communities towards marine conservation.

### **B. Formation of HRs Association**

Several discussions with HRs on various matters concerning their daily activities and works were able to identify the need of having their constitution. The DMRs management facilitated the formation of Honorary Rangers Association by providing them with legal backup by engaging a lawyer to help them on this. The constitution was prepared and registered with the registrar of Societies. Now HRs association is a legal entity (CBO) with a registration certificate in the name of ***DAR ES SALAAM ISLAND AND BEACH ENVIRONMENTAL CONSERVATION ASSOCIATION (DIBECA)***.

### **C. Improving Working Environment for Honorary Rangers**

Honorary Rangers were provided with facilities to strengthen and simplify communication and enforcement activities. The facilities provided were hand held radios, one binocular and fibber boat with 40 HP engine.

### **D. Participatory Awareness Meetings**

Seven meetings with the local communities were conducted on effective community participation in the sustainable utilization of marine resources

around the reserve areas. The selected villagers were used to educate their fellow locals on the importance of having MPA in there area. The meetings were very successful and most of DMRs users appreciated active control of the management of MPRU through enforcement of regulations and regular surveillance, which have contributed to the increase in fish abundance and size. During the meetings they decided to form enforcement units within their respective villages and a total of four (4) community enforcement units were formed on the villages of Msasani, Kunduchi, Ununio and Mbweni for the purpose of protecting the environment in particular the use of destructive gears such as seine nets and dynamite after they identified them as main issues to tackle. The meetings were also part of initial stages of community engagement in the development and implementation of General Management Plan (GMP) for DMRs. Following that the MPRU management is working together and very closely with these communities in constructive engagement in conservation endeavours as the way forward for preparation the management plan of DMRs.

#### **E. Monitoring Training**

Sixteen (16) trainees out of who thirteen (13) were community members of the villages of Kawe, Kunduchi and Msasani located adjacent to DMRs were trained in reef monitoring on the reserve areas. Two MPRU staffs and one University student also participated in the training. Expert from Tanga Coastal Zone Conservation and Development Programme (TCZCDP) assisted by one community member from Tanga facilitated the training. Trainees had an opportunity to learn on ecosystems management and coral monitoring techniques. They also acquired skills like snorkelling; rescue operation and life saving techniques. At the end of the training the participants ***realised the need for a collaborative protection of coral reefs around the reserve areas as well as placement of markers on the reserves boundary to avoid unnecessary conflict between law enforcers and fishermen.***

### 2.3 Biophysical Surveys and Social Economics Assessment of DMRs

The biophysical survey was undertaken by the expert from the Institute of Marine Science of the University of Dar Es Salaam based in Zanzibar who completed the work and submitted a report in mid of July 2004. Various biophysical characteristics including health conditions of the coral reefs and associated habitats were assessed during the survey. The area covered by the islands and their intertidal zones were estimated together with the extent of the sea grass beds and other habitats like sand beaches.

Generally the DMRS was found to have well developed coral reefs with high coral cover on the reef slopes than on the reef flat. However, the coral species compositions around the reserve areas were found to change in favour of *Montipora*, *Porites* and *Fungia*. *Montipora* was found to cover more than 95% of the coral cover and in some places they grow in dead *Acropora* and *Porites* coral genera that were once abundant. On the middle part of Mbudya reef *Acropora* and *Galaxea* dominance decreased in the favour of *Montipora*. Reef fish biomass and species diversity in DMRS were found to have increased for the past four years as a result of improvement in enforcement of reserve regulations. The results of the survey also shows that the abundance of macro-invertebrates such as lobsters, ornamental and edible molluscs and sea cucumber numbers to be very low due to over fishing which was carried out in the past. In addition the abundance of non-commercial starfishes was found to decrease while the number of notorious coral-eating crown-of-thorn-starfishes (COTs) is increasing.

The information and data from this report will provide additional knowledge and assist in the development of effective management and options for sustainable development and conservation of the DMRS.

The first consultant who was commissioned to conduct the social economics assessments didn't undertake the task. The task has now been assigned to

another consultant and additional funding sufficient enough to undertake the task is being solicited.

#### **2.4. Surveillance and Enforcement**

A total of sixty six (66) joint patrols between communities, Marine Police and MPRU were carried out around the DMRS and its buffer zones. Ten (10) incidences of non-compliance were encountered and offenders were sent to court where five (5) cases were judged on our favour and rest five (5) cases are still pending in the court.

MPRU in collaboration with Fisheries Department and local communities was able to extend the patrols outside the reserve area following the outbreak of dynamite fishing on those areas. Seven (7) pieces of dynamites and 8 dynamite fishers were apprehended and sent to the court. The accused were charged for breaking Fisheries Regulations and five of them have been sentenced nine month in jail or fine of TShs. 300,000/= each, all paid the fines. However other three cases of dynamite fishing are still pending in the court.

Honorary Rangers (HRs) rescued Six (6) vessels around the DMRs area during their daily monitoring of resources and patrols. Two vessels were from the hotels along the Dar es Salaam coast and adjacent to DMRs and three were fisher's vessels. Such incidences normally occur especially during the Southern Monsoon period due to stronger winds at that particular time of the year.

#### **2.5. Development of General Management Plan of DMRs**

A management plan to promote sustainable uses of the DMRs is being developed. Considerable amounts of information on the biological status of the reserves have being collected through biophysical survey as in 2.3. Consultant is undertaking the social economics assessment of the DMRs

while the management is looking for more funds to ensure the completion of the work. Several consultative meetings with local communities living adjacent to DMRs are held as one of the stages of participatory development and implementation of DMRs general management plan preparation.

## **2.6. Reserve Boundary Markers**

A total of 40 pieces of marker buoys were ordered from UK for the purpose of installing in the reserve boundary are yet to be delivered because of shortage of fund. This was due to sudden fall of the Tanzanian Shilling against the British Pound. Additional funds are being mobilised from the government to complete the order by remitting balance of remaining the 50% as per the contract.

## **3. FINANCIAL PERFORMANCE**

See the attached annex "1"

## **4. LEASON LEARNED**

The effective management and conservation of DMRS is much depending on the effective follow-ups to be taken by the management on effective awareness and enforcement of laws, rules and regulations to ensure compliance with other management measures. Although the reserves boundary and GMP are not yet in place the users are complying with the presence of the MPA. Support for DMRs activities by UNEP have helped to improve the management of the area in various aspects.

- There is an increase in the coral cover as well as improvement in the coral health that has lead to the increase in fish catches on the buffer zones of DMRS. Following these the management is planning to put in place a regular monitoring of the resources.
- Full time presence of HRs has helped to reduce the use of destructive fishing methods not only around the DMRS but also in the buffer zones.

The problem which are facing the enforcement efforts on DMRS are absence of markers to reserve boundary as well as the increase of fishers especially new ones who complain of not knowing the area as MPA.

- Presence of equipments and facilities such as rubber boats, engines, hand held radios, diving and snorkelling equipments will facilitate the monitoring of resources to be easy and effective.
- Awareness and capacity building to users and villagers living adjacent to DMRS have changed their altitude towards ongoing conservation efforts around the DMRS. The local communities are now ready to participate in conservation activities such as patrols and resource monitoring.

## **5. CONCLUSION AND RECOMMENDATIONS**

General assessment shows that the performance of the project faired well in the whole period beside disturbances beyond our reach caused by things like inflations, etc.