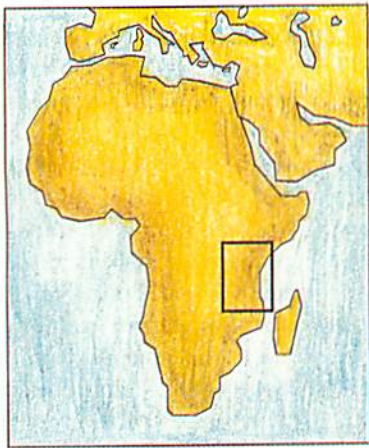


Mafia Marine Resources in Peril

Y.E.S. MNDEME

The rich marine resources of the Mafia District, Tanzania, especially its coral reefs and mangroves, are in danger of collapse. A proposed marine park faces chronic problems of dynamite fishing and coral mining.



Introduction

The Mafia District, 160 km south of Dar es Salaam, is a collection of many islets with a population of some 33,000 people. Most of the residents are fishers, the rest being involved in farming crops or livestock.

The area is particularly rich in shellfish, finfish and other resources like mangroves and coral reefs. However, in recent years, it has become one of the most dynamited areas of the country. The main causes are fishers coming from nearby regions and fish collectors from Dar es Salaam. The Government of Tanzania, in collaboration with international agencies and donors, is planning to establish a marine park in Mafia; it will be the first such park in the country, although recommendations were first made for Tan-

zanian marine reserves as long ago as 1968. Success of the Mafia marine park will largely depend on whether dynamite fishing and coral mining can be controlled.

Mafia Fisheries Resources

The majority of finfish caught are transported to Dar es Salaam, with much of the catch sold at sea rather than on the beach. There are some 50 to 60 fish collecting boats, each with a capacity of about 2 tonnes, operating between Mafia and Dar es Salaam. Octopus, squid and sea cucumbers are taken for export. Asia is the main destination for sea cucumbers.

The fisheries are traditional, the most common gear being beach seines, handlines, shark nets and traps, depending on the types of fish available and the fishing

ground. Catch rates vary according to lunar period and season.

Importance of Coral Reefs

The reefs harbor diverse fish communities due mainly to the enormous range of ecological niches; more than 380 species of fish, for example, have been recorded in southern Mafia marine waters. The reefs also provide habitats for many invertebrate species. Coral reefs are in addition barriers against strong waves which would otherwise erode the beaches.

Reefs in some parts of the country—Dar es Salaam, Bagamoyo, Tanga, Lindi and Mtwara—are subjected to frequent blasting by fishers, resulting in reduction of fish production which is the only source of income for the majority of coastal communities in those areas. Now it is





One of the proposed measures to save the Mafia marine resources is a public awareness campaign on the importance and fragile nature of reefs. ICLARM PHOTO.

Mafia's turn. Illegal dynamiting occurs in Nyororo, Shungimbili, Mbarakuni, Banja, Tumbuju, Mfukoni, Kijinge, Kitoni, Fungu Sefu and Bwejuu. Bwejuu is a receiving site for dynamite fishers from Dar es Salaam. Most of the dynamited fish sink to the bottom and cannot be collected, a great loss bearing in mind the great protein malnutrition present in Tanzania.

Proposed Measures to Rescue the Mafia Marine Environment

Several measures need to be taken to abolish dynamite use. Some are very costly but necessary to save marine life.

- *A strong, armed patrol squad with boats.* The main constraint is lack of funds for boats and operational costs.
- *Control over the source of the dynamite at its source in stone quarries in Kunduchi.* Regulatory control on the supply and use of dynamite should be made, while explosives importers should be closely monitored. If necessary, coral and stone mining in coastal areas should be stopped.
- *Prohibition on sale of dynamited fish.* Most of the fish are sold in Dar es Salaam markets where fisheries staff are employed. These staff are aware of the features of dynamite-caught fish but are discouraged by the legal procedures involved in prosecution.
- *Improvement of fisheries regulations.* Regulations pertaining to dynamite are

out of date and very loose; punishment is weak and fines small. The laws should be strengthened and the status of the fisheries staff improved through education, in order to conduct cases efficiently.



Can Tanzania save its reefs? A marine park such as this one would protect fisheries stocks as well as become a source of diving tourism. PHOTO BY MARK PREIN, ICLARM.

- *Public awareness.* Mass education is needed on the importance and fragile nature of reef resources, and the deleterious effects of dynamite on them.
- *Improvement and development of coastal fisheries.* Poverty is one of the major reasons for dynamite use in fisheries. There is a need to improve the purchasing power of the people, through soft loans, low-priced gear or alternative sources of income outside the sector.
- *Abolish corruption.* Corruption at present has deep roots in all govern-

ment and private institutions; dynamited fish continue to be sold openly through bribes. Corruption needs to be removed before the other measures will be effective.

- *Fishing zones.* It was found in a survey of the Bagamoyo area that shrimp trawlers are operating close to shore and with their sophisticated gear out-compete the small-scale fishers. It may be a reason why the latter resort to dynamite fishing. Setting boundaries between small-scale and industrial fisheries would reduce such conflicts.

Some coral reefs are mined for building purposes in several coastal towns and cities. In some areas coral is the only source of building material and hence protection becomes a great problem. Coral is also used in the production of lime which is used by many people in

Mafia. Coral collection is the second largest business in Mafia, especially by Jibondo and Chole islanders. Alternative sources of income for these people are necessary as are alternative building materials. Cement would be an ideal substitute but would need to be sold at a cost lower or equal to that of lime, bearing in mind the opportunity cost of the two products.

Y.E.S. MNDEME is from the Mbegani Fisheries Development Centre, P.O. Box 83, Bagamoyo, Tanzania.