

ENFORCEMENT IN KENYA'S MARINE PROTECTED AREA NETWORK

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Introduction

The Kenyan coastline is approximately 500 km long, with a well developed fringing reef system except where major rivers (Tana and Athi Sabaki) discharge into the Indian Ocean (Hamilton and Brakel, 1984). Additionally patch reefs occur in Malindi and Kiunga in the north and Shimoni in the south on the Kenya Tanzania border (Fig. 1). Coral reefs are the predominant marine ecosystem in terms of ecology and economy but seagrass beds and mangrove forests also contribute to the economy of the coastal communities (Muthiga ITMEMS). The coastal topography, climate and habitats of the Kenyan coast have been described in McClanahan 1988, McClanahan and Young 1986, Obura et al 2000).

In order to conserve and manage these important ecosystems, the government of Kenya has established a system of marine parks and reserves managed by the Kenya Wildlife Service (KWS). Kenya has four marine parks including (from north to south) Malindi, Watamu, Mombasa and Kisite and 6 marine reserves including Kiunga, Malindi-Watamu, Mombasa, Diani-Chale and Mpunguti marine reserves (Fig. 1). All these marine protected areas encompass important marine habitats including coral reefs, seagrass beds and mangrove forests, but are ecologically and economically dominated by coral reefs.

Institutional arrangements

Reefs associated ecosystems of Kenya fall under the jurisdiction of several government departments hence enforcement of regulations of is often a challenge. The Fisheries department has jurisdiction over fishing activities, the forestry department manages the mangrove resources while tourism department licences all tourism activities. Often there is little consultation between these departments leading to user conflicts in MPAs.

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Enforcement Mechanisms

There are several legal and policy instruments that guide enforcement including

- The Wildlife Conservation and Management Act Cap and park regulations. Unfortunately park regulations were drafted for terrestrial environments and are very specific for these environments but are weak for on-water activities and MPAs. In addition, overlapping mandates mainly between KWS and Fisheries dept in the marine reserves, KWS and Forestry dept in the mangrove forests within marine reserves and in the Tourism department and KWS who license all tourism activities regardless of area. Some mechanisms have been developed to address these problems, mainly consultations at the time of licensing to minimize conflict, however there are many issues in each legislation that need harmonization.
- Protected areas are managed by wardens and rangers who are required to have a basic training in wildlife management upon recruitment by KWS. These staff are then sent to the KWS paramilitary school (Manyani) for further skills including law enforcement, weapons use and maintenance, ecology and survival techniques. These skills are required because rangers are periodically deployed in the Anti-poaching unit and problem animal control requiring a high level of paramilitary skills. Until recently the courses at Manyani were geared towards terrestrial protected areas, the Wetlands program however funded courses in marine ecology, scuba and ICAM. Most managers now have a basic background in marine issues. Much of the enforcement includes daily patrols by boat, foot patrols and night patrols all geared towards minimizing poaching, checking that visitors have paid the appropriate fee and fishers are licensed and using the appropriate gears. Infringement of regulations is recorded in an occurrence book and persons arrested are usually handed over to the Police for prosecution. Unfortunately, lack of adequate awareness and weak laws usually mean that fines are low and are often not a sufficient deterrent making enforcement an inefficient and expensive process.
- Although no formal program has been implemented to involve communities in enforcement, Wardens often depend on information from community elders especially when 'foreign fishers' are involved. The level of community involvement is often a reflection of how well the Warden interacts with the community. In the older parks and where Wardens have been there for an extended period, communities are more forth coming with information. Unfortunately KWS has gone through a period of restructuring that has meant transfer of Wardens and this has often disrupted relationships and hence decreased efficiency of enforcement.
- With the development of the Community Wildlife department within KWS, there has been a general attitude change within KWS increasing consultation with communities hence increasing compliance.

Summary

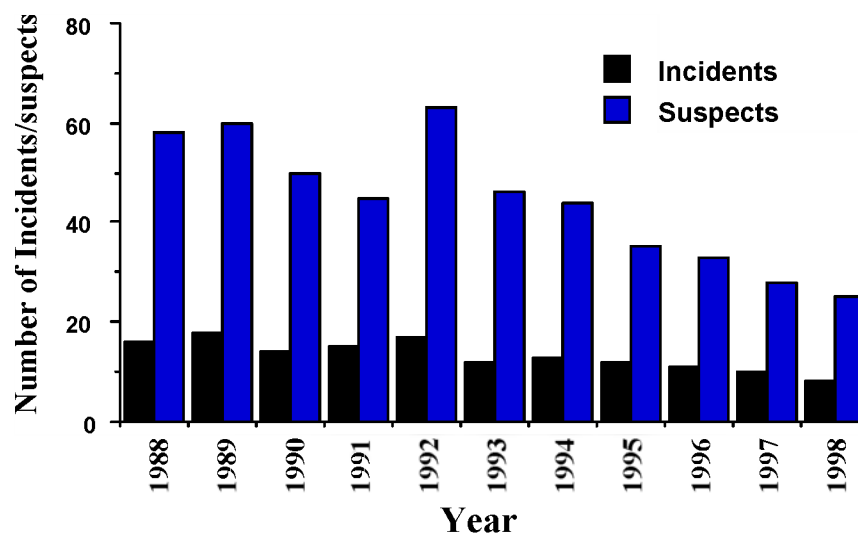
Several parameters indicate that enforcement is working up to a certain extent, however several strategies have been implemented by KWS as issues have arisen as detailed below

- The full protection of the marine parks has led to a marked improvement of the coral reef habitats. The coral cover an indicator of reef health has increased over the years for example, from 8% to 40% at Mombasa Marine Park which is the youngest park (Fig. 2). Fish biomass and sizes have also increased and the sea urchin biomass has gradually decreased over the years. Unfortunately, the Western Indian Ocean region experienced a drastic coral bleaching event during the El-Nino of 1997-98, in Kenya, this led to a very high mortality of corals (McClanahan et al 2001). In this case despite effective management, the coral cover was reduced almost to levels prior to protection in many MPAs.

Fig. 2. The changes in coral cover, fish and sea urchin biomass in Mombasa MPA (Source: CRCP database)

- The level of compliance to MPA regulations has increased in general as evidenced by decreases in infringement of regulations for example Mombasa MPA (Fig. 3)

Fig. 3. The number of incidents of infringement of regulations in the Mombassa MPA.



The level of compliance however differs among stakeholder groups. Stakeholders who depend mostly on tourism are highly compliant mainly because they understand the benefits of a managed system and improved habitats to their businesses. The fisher groups on the other hand show a lower level of compliance for several reasons including, 1) poverty and the need for a daily income, 2) the perception that other 'foreign' fishers do not follow the rules, 3) poor enforcement in the marine reserve because KWS concentrates on the marine parks where most revenue is collected, 4) lack of understanding of the regulations or lack of clarity and 5) an inadequate understanding of the benefits of a closed area as potential seeding grounds for their fishing grounds. In addition to the above, there is a conflict of interest between KWS and the Fisheries department who licenses all fishing activities in Kenya regardless of the status of protection. Increased consultation between KWS and Fisheries department has led to some improvements, for example the Fisheries department recently stopped the licensing of sea cucumber collection after a research study showed drastic reduction in sea cucumber numbers in the marine reserves (Muthiga and Ndirangu 1999). In addition, increased dialogue with the fisher communities of the marine reserve and better enforcement should serve to reduce the problem of beach seining as has occurred in the Diani marine reserve.

- The process toward initiation of an MPA has a great impact on enforcement. For example the Mombasa MPA was initiated without adequate consultation and participation of the local community. This led to serious conflict and slow implementation of management. It took several years of dialogue and community projects including assistance with boats and fishing gears, awareness raising programs and involvement in MPA management initiatives including the installation of mooring to win the support of these groups. When communities perceive tangible benefits of MPAs they are more likely to comply. It is also important to identify the key stakeholder and this is sometimes not the stakeholder that will bring in the greatest monetary benefit. The Diani marine reserve is a good example as this has stalled due to strong resistance from the fisher community whose perception that they would lose their fishing grounds and that mainly the tourism sector would benefit has led to political conflicts and slow implementation of the reserve. This issue is currently being addressed through an Integrated Coastal Area approach as discussed below.
- Increased collaboration between KWS and the stakeholders of MPs has led to less conflict and the development of policies that assist in the smooth running of MPAs. A code of conduct for boat operators that details mooring use and visitor care of the marine environment has met with a high degree of success. The MPAs currently rely on many different stakeholders including 1) hotels where most of the visitors originate, 2) boat operators who ferry visitors to the MPA, 3) NGOs like the Coral Reef Conservation Project (CRCP) and WWF and KMFRI who assist with scientific expertise and 4) the collaboration of fishers and recreational users who comply with MPA regulations. Without this collaboration, KWS would need a large work force and expensive infrastructure to manage MPAs. The recently completed management plans recognise this fact and recommend the

implementation of an advisory body that will include relevant stakeholders to assist in the management of MPAs in Kenya.

- Local community participation in different aspects of management including consultations during the management planning process and assistance to community members are important factors in ensuring compliance to MPA regulations hence reducing management costs. The main community that needs this kind of incentive in MPAs is the fisher community. It is not surprising that the fisher community that interacts with KWS on a daily basis have a higher compliance level. These groups also participate actively in awareness programs and beach clean up activities organised by KWS.
- The Beach management program (BMP) (Box 1) is an example of a management initiative that would have benefited many stakeholders of the Mombasa MPA but unfortunately was not successful due to lack of strong government support and a legal framework to enforce the program (Bess 1992). At the initial trial, only 12 hotels signed up through a Memorandum of Agreement with KWS. Although obligations of each party were clearly laid out in the MOA, the hotels could not be forced to remit funds collected for the program to KWS. The initial reaction to the BMP were favourable however as soon as tourism revenues to hotels decreased due to the Likoni ethnic clashes of 1998, the program became ineffective. Although attempts were made to request the Minister for Tourism to gazette a legal notice to enforce the BMP, the program was not supported by some of the key stakeholders in the coast tourism industry and hence was shelved by KWS.

Box 1. The Beach Management Programme: an alternative concept in MPA management in Kenya

The BMP was a joint agreement between KWS, boat operators and hotels adjacent to the Mombasa MPA. The idea evolved at a stakeholders workshop held to identify ways to enhance co-operation between these three important stakeholders of the Mombasa MPA. The agreement was voluntary, hotels signed a Memorandum of Agreement to collect US\$ 0.50 per bed night and remit the funds to KWS. In return KWS would maintain security on the beach and keep the beach clean of solid waste pollution. The boat operators undertook to assist with security and maintaining clean beaches. In return assistance would be provided for registration of an association, the Mombasa Boat Operators Association (MBOA) whose members would have exclusive rights to the glass bottom boat or sailing businesses in the MPA. MBOA also benefited through donation of equipment for their boats, increased business and reduced annual boat fees. The hotels would benefit through improved security and less harassment of their guests on the beach, lowered park fees for their guests and cleaner beaches adjacent to their hotels. KWS would benefit through a timely and less cumbersome collection of revenue thus allowing KWS to concentrate on the primary business of protection of biodiversity in the MPA. The daily management of the program was under the responsibility of the Warden, however a BMP Advisory Committee was formed to provide oversight functions for the program. The program though initially successful

developed problems when the tourism sector experienced serious problems after the Likoni ethnic clashes of 1997 causing delays in payment of the revenue collected for KWS. After several unsuccessful attempts to develop a legal framework to guide the BMP, the program was finally abandoned by KWS.

- In 1995, the Coast Development Authority (CDA) initiated a pilot Integrated Coastal Area Management (ICAM) project in the Bamburi-Shanzu area (UNEP et al 2000). The main objective of this project was to demonstrate the ICAM concept to the relevant government institutions in Kenya. CDA, KWS, Fisheries department, KMFRI and the Mombasa Municipal council were the key institutions involved in the project. Initial profiling of the area identified the key issues and several demonstration projects were implemented. This included working with the fisher community to build a fish landing base, the boat operators to build a management building, the Jomo Kenyatta self-help group to rehabilitate recreational infrastructure at the public beach and KWS to initiate mooring installation. An ICAM secretariat consisting of the relevant government institutions has been fairly successful in demonstrating how different government departments can work together towards a common cause. This process has assisted KWS to resolve many issues at the Mombasa MPA.

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