

THE MANGROVE FORESTS OF MNGAZANA: LESSONS LEARNED ON SECURING THEIR FUTURE THROUGH CO-MANAGEMENT

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1. Introduction and background

Mngazana Estuary is located 20 km south of Port St Johns on the Wild Coast of the Eastern Cape. It is an estuary of national importance and contains the third largest mangrove forest in South Africa, covering approximately 118ha. Mangroves fulfill a central role in the ecology of the Mngazana Estuary by trapping silt, clearing the river and allowing the conversion of nutrients into plant material. The Mngazana Estuary supports a rich diversity of both invertebrate and fish species including three Red Data crab species.

Recent studies show that 36ha of mangroves have been lost since 1961 and that mangroves are being lost at an increasing rate. The direct cause of this loss is likely to be a combination of factors including environmental changes (e.g. flow of water entering the estuary and associated fluctuations in the salinity levels) and human impact (e.g. harvesting of poles for building materials).

In 2003, an initiative funded by the Department of Environmental Affairs and Tourism (Marine and Coastal Management) was launched to initiate a co-management approach to resources at the Mngazana Mangroves. The primary focus has been on the effective management and conservation of the Mangrove Forest. The co-management approach has two key features:

- The establishment of a co-operative management structure and system involving all stakeholders
- The delivery of economic benefits from the mangroves as incentives for sustainable management of the resource

All Mangrove Forests, regardless of land ownership, are protected under section 7 of the National Forests Act. Mangroves are characterised as:

Salt-tolerant trees and shrubs

- Growing in the tidal and saline wetlands
- Occurring on tropical, subtropical and temperate coastlines
- Located between sea level and the high spring-water tide level
- During high tide their roots and lower stems may be submerged

The Mngazana Mangroves include three tree species:

- *Avicennia marina* (White Mangrove)
This species is regarded as a pioneer mangrove. It has a wide environmental tolerance and establishes rapidly both in open areas and in the soft substratum near the water's edge.
- *Bruguiera gymnorhiza* (Black Mangrove)
This species prefers higher ground where inundation is restricted mainly to spring tides.
- *Rhizophora mucronata* (Red Mangrove)
This species is not as common as the White or Black Mangroves in the Mngazana Mangroves. It produces a straight trunk and is therefore highly sought after as building poles for local housing.

The Mngazana Mangroves are surrounded by three rural communities: Madakeni on the south bank, Cwebeni on the north bank and Mtalala inland (Figure 1). These are some of the poorest communities in South Africa, and the people in these communities rely extensively on harvesting mangrove and estuary resources to meet their daily livelihood needs.

There is currently both consumptive and non-consumptive use of the Mangroves:

- Recreation and tourism

There are approximately 50 private holiday cottages on the south bank of the Mangroves. Some of these cottages are rented out to holiday makers. The cottage owners and tourists make extensive recreational use of the Mangroves and Estuary, particularly for water sports. Many tourists from Umngazi River Bungalows (approximately 2 km north of the Mngazana Mangroves on the Mngazi River) also make recreational use of the Mangroves for canoeing, bird watching etc. The local people use the Mangroves for recreational purposes as well as to operate a

number of small tourism operations including honey production & canoe trails. These enterprises were established through the co-operative management initiative to create employment and income generating opportunities for local people as an incentive for the sustainable management and conservation of the Mangroves.

- Subsistence

Households from Madakeni, Cwebeni and Mtalala utilize a range of Mangrove resources at a subsistence level including the harvesting of poles and other building materials, honey and crabs and bait.

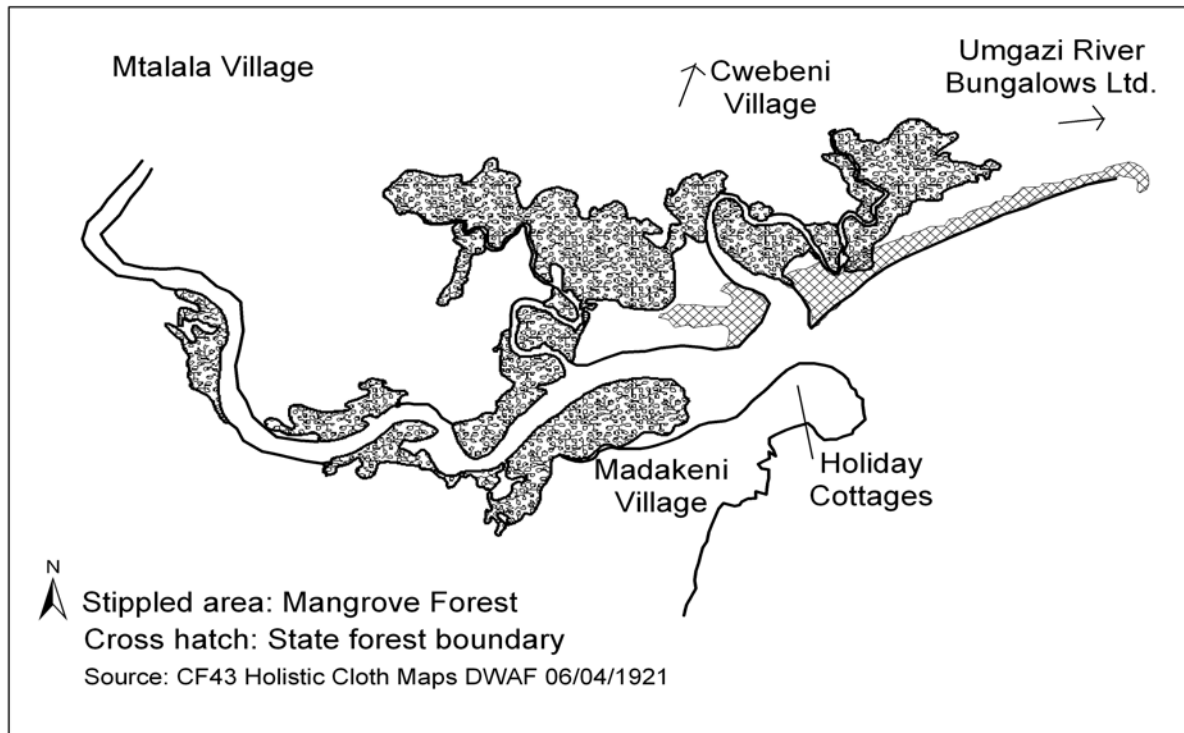


Figure 1. Location of the Mngazana Mangroves and surrounding villages.

2. A changing management approach

The rate of loss between 1961 and 1995 was estimated at 0.5 ha/year. However, the rate of loss has increased to 2.7ha/year in the subsequent 7 years (Rajkaran *et al.*, 2004). While the direct cause of this loss is still largely unknown, it is likely to be a combination of causes:

- Environmental changes (e.g. flow of water entering the estuary and associated fluctuations in the salinity levels)
- Human impact (e.g. harvesting, trampling, etc.)

The management approach by Government Departments has been largely law enforcement. From time to time law enforcement officials from the Provincial Department of Economic Affairs Environment and Tourism have undertaken law enforcements raids to apprehend those harvesting mangrove resources illegally (without permits). This does not appear to have been a deterrent however, with the rate of loss having increased five fold between 1995 and 2002. Furthermore, this approach to management has also resulted in conflict between the community and law enforcement officials with little sentiment for co-operation and collaboration for the sustainable management of the Mangroves.

In 2002 a co-management initiative was started with funding from Marine and Coastal Management (Department of Environmental Affairs and Tourism). At the centre of this initiative was the establishment of a co-management forum (Mngazana Mangrove Management Forum) with members from the three communities, Department of Water Affairs and Forestry, Provincial Department of Economic Affairs Environment and Tourism, Port St Johns Municipality, Department of Land Affairs, and local cottage owners.

A management plan has been drafted by the Forum and progress is being made towards the implementation of the management plan.

3. Key lessons learned on implementing co-management

Over the past decade there has been a move away from top down management approaches towards participatory management where local resource users actively participate in management decisions and activities. This co-management approach is seen to improve the chance of succeeding in meeting the challenges currently faced in resource management, such as addressing the livelihood needs of local resource users while meeting sustainability and biodiversity conservation objectives. However co-management is met with a range of its own challenges. A number of lessons were learned during the establishment of the Mngazana Mangrove Management Forum. The key lessons and challenges are described below.

3.1 Access rights

The issue of ownership and access/use rights in the Mngazana Mangroves is complex. A portion of the Mangrove Forests falls in State land while the balance falls into community land. Differentiation is difficult, with the boundary only being denoted by hard to find beacons. However, mangrove forests are protected by the National Forests Act and therefore even the mangrove resources within the communal areas may not be harvested without permits.

From the perspective of the local communities active management and conservation by Government is very limited. In this vacuum, access and use has tended to be open, with local people using what they perceive to be their resources.

A clear definition of resource use access rights is fundamental to successful cooperative management of the Mangroves. Co-management promotes the empowerment of sound local level institutions that are able to negotiate clearly defined access rights, promote regulation, and effective management of resource use.

Through co-management stakeholders can participate in decisions on how resource base should be used and managed. However stakeholders need to understand that *de jure* rights to regulate use of mangrove forests rest with the State. The co-management forum provided a platform to raise awareness about the legislation and resolve issues pertaining to gaining access to the use of the resources in ways that are consistent with the law. While negotiating and formalizing access rights does not secure compliance, it does contribute to limiting unlawful and unsustainable use of resources:

- Stakeholders become aware of permissible and non-permissible resource use practices, they collectively engage in identifying alternatives or substitutes.
- Discussion on why some resources are out of bounds to users creates awareness to the outcomes for the community and the notion of using those resources provides the basis for local level management institutions to effectively manage those resources.

Experience from the establishment of the Mngazana Mangrove Management Forum demonstrates the fact that when users enjoy explicit rights to the use of a resource they have an incentive to look after it because of increased sense of ownership.

3.2 Benefits exceed costs

There is evidence that successful cooperative management is determined by the extent to which local level resource users realize the benefits of resource stewardship. Undoubtedly, the benefits of forgoing resource use should outweigh the costs of conservation or regulated use of the resource at individual or household level. The fact that communities located around the Mngazana Mangroves are among the poorest in the Country increases the need to provide benefits that exceed the management costs.

Sustainable management of the Mangroves results in direct costs to the communities (i.e. investment of time, travel etc into management activities) as well as indirect costs (e.g. opportunity costs of forgoing certain use types of levels). In order to make management of these resources affordable and co-management a viable option, it is therefore important to develop an understanding of the costs and benefits

arising from management, create alternatives for benefit creation (e.g. access to alternative resources, resource based enterprises such as canoe trails and honey production, etc.) and implement equitable benefit sharing mechanisms.

In rural conditions such as Mngazana there is heavy dependence on natural resources for survival and co-management efforts must therefore address livelihood needs of the locals in combination with conservation of the resource base. Failure to achieve this will compromise the effectiveness of cooperative management. This is often seen as failure of community participation in co-management rather than failure to find integrated approaches to community based and cooperative resource management.

3.3 Active participation and commitment from all stakeholders

Co-management requires the active participation of multiple and diverse stakeholders. However their active participation is dependent on their having the capacity to participate. Stakeholders may be willing to participate, but experience practical constraints that limit their ability to participate in co-management systems. These constraints may include resources, language or time. In the case of the Mngazana Mangrove Management Forum, there is often very good participation at Forum meetings, but implementation is left to the local community due to time and resource constraints of Government officials. The community in turn is limited by capacity and resources.

It is therefore vital to recognize the constraints experienced by stakeholders, and to accommodate rather than disregard these constraints to ensure that everyone who needs and wants to actively participate is given the best opportunity to do so.

3.4 Legitimate accountable and responsible structures

For management decisions to be acceptable and honoured, they have to be negotiated and agreed to by legitimate, accountable and responsible structures. A cooperative management structure that is not fully representative of the different stakeholder groups is unlikely to be recognized as legitimate. Legitimacy needs to be recognized at, and between, all levels:

- Between different levels of Government (National, Provincial and Local)
- Between Government and Traditional Leadership
- Between authorities and user groups

Establishing representative structures is important but is not a condition sufficient for achieving legitimacy. Legitimacy also requires a clear delineation of roles and responsibilities, and reducing empowerment differentials. Building the capacity of stakeholders in order that they might fulfill their roles and responsibilities is essential.

Information sessions have been presented by DWAF to community representatives on the Mngazana Mangrove Management Forum to develop an understanding of the policy and legislation governing mangrove forests. This has not only improved the legitimacy and capacity of the community representatives to participate in decision making on the Forum, but has also increased their legitimacy in the eyes of the broader community in terms of implementing and enforcing some of the management decisions arising from the Forum. This information sharing process has also strengthened relations between the community and DWAF and increased the community enthusiasm for the sustainable management of the Mangroves.

3.5 Decentralized and devolved authority

Devolving and sharing authority is closely linked with legitimacy. The willingness to decentralize and devolve authority is often limited by the perception that there is a lack of capacity at local level. This has largely led to reluctance within Government to delegate substantive governance and management responsibility to these levels.

Cooperative management leads to rethinking the notion of decentralized, devolved and delegated decision making entirely, and replaces it with a notion of spheres of governance, responsibility and management:

- National government needs to be policy orientated
- Province and local government focuses on strategic and integrated management
- Local management forum should be implementation orientated

Decentralised and devolved responsibility has yet to be achieved at Mngazana. The issuing of permits for example is still held by Government, despite the presence of the legally constituted Forum of which DWAF is a member. The intention of training local Forest Officers by DWAF, with authority to issue permits and regulate resource use, has been welcomed with excitement by the community and widespread interest has been expressed for this training.

3.6 Allocation of resources

One of the biggest constraints to effective co-management is the availability and allocation of resources. Government Departments such as DWAF have the mandated to manage Mangrove Forests, and are allocated financial and human resources, and infrastructure to fulfill this mandate. If duties and responsibilities are to be devolved to a community level through a co-management system, then adequate provision of resources must be made for the community to carry out its co-management responsibilities. Inadequate resources for the community co-management activities results in poor delivery which is seen as a lack of community participation rather than being recognized as a consequence of lack of resources.

However, Government officials are also often limited in their ability to carry out their roles and responsibilities due to resource constraints, and there is therefore no easy solution.

4. Conclusions and recommendations

The establishment of a co-management system is a complex process that requires adequate time to secure the understanding, support and participation of all stakeholders. A rushed process may result in the desired outcome on paper, viz. a legally constituted co-management forum, but is unlikely to have the buy-in and commitment of all stakeholders because of a lack of development of the necessary capacity for legitimacy between all stakeholders. The end result is therefore an inoperative co-management forum.

Furthermore, establishing a co-management forum is only one step in the implementation of a co-management system. Operationalisation of the forum and management system does not happen automatically after the establishment of the forum. It is a time consuming and resource consuming process. All stakeholders, including Government, Community, Funders, and Implementing Agents must recognise this before the onset, and must to be committed to seeing the process through. The establishment of co-management fora and systems without the necessary resources to support and mentor them through to sustainability increases the risk of their failure. Failure increases the risk of disillusionment with the concept of co-management. This disillusionment in co-management would however be incorrectly attributed to the inadequacies in co-management instead of inadequacies in implementation and resourcing.

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