

# **PARTICIPATORY MANAGEMENT OF TANZANIA'S MANGROVES**

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## **RESUMEN**

La toma de conciencia de la importancia económica y ecológica de los bosques de manglares, y de los peligros de su sobre-explotación, ha sido más lenta en el Africa que en el Asia y en el Pacífico, en donde el manejo de los manglares ha sido el objeto de atención por más de dos décadas. Tanzania es uno de los primeros países africanos en realizar un inventario detallado de sus manglares, en llevar a cabo estudios socio-económicos de los usuarios, y preparar planes de manejos exhaustivos para la conservación y el desarrollo de sus manglares. La búsqueda de estrategias y medios para lograr una asociación entre la población local y la División Forestal con el fin de manejar los bosques de manglares, es un punto neurálgico del plan de manejo.

## **RÉSUMÉ**

La réalisation de l'importance économique et écologique des mangroves et des dangers de la surexploitation a été plus lente à se faire jour en Afrique qu'en Asie ou dans le Pacifique où la gestion des mangroves fait l'objet d'une attention particulière depuis plus de deux décades. La Tanzanie est l'un des premiers pays africains à entreprendre un inventaire détaillé des mangroves, à mener des enquêtes socio-économiques sur les consommateurs et à préparer un plan de gestion complet pour la conservation et le développement de ses mangroves. La recherche de moyens et de méthodes pour associer les populations locales à un partenariat avec la Division de la Forêt pour gérer la forêt de mangroves se situe au coeur même du plan de gestion.

## **INTRODUCTION**

Like tropical forests, mangroves, which grow in the inter-tidal zone, are being degraded and destroyed globally on a large scale through over—exploitation of their potentially renewable products and through conversion to rice fields, shrimp farms and solar evaporation ponds, often promoted by commercial interests. The realisation of the economic and ecological importance of mangrove forests and the dangers of over-exploitation has been slower to dawn in Africa than in Asia and the Pacific, where mangrove management has received attention for more than two decades. Tanzania is the first African country to carry out a detailed mangrove inventory, conduct socio-economic surveys of users and prepare a comprehensive management plan for the conservation and development of its mangroves. The search for ways and means to involve local people in a partnership with the Forest Division to manage the mangrove forest lies at the heart of the management plan outlined here.

### **The Importance of Mangroves**

Tanzania's mangroves represent an ecosystem of ecological and economic significance, out of all proportion to the relatively small area (115,500 ha) they occupy. They occur from the border with Kenya to the north to that of Mozambique in the south and fringe many of the islands off the coasts. The main concentration is in the Rufiji delta. Since the beginning of the Century, Tanzania's mangroves have been a territorial (state) forest reserve, but this has generally not prevented their use by coastal communities. Mangroves offer shelter, food and breeding grounds for a large variety of fish, shrimps and oysters for at least part of their life-cycle. Villagers who depend on fishing are generally aware of this relationship. Mangroves provide an alternative source of food (herbs, honey, fodder), income and employment for the local fishing communities who use different mangrove species for fuelwood, fences, house construction and boat building, for making fish traps, and for tannin and for medicinal purposes. Mangrove poles are extracted in commercial quantities, both for the local market and for export. Mangroves stabilise the coastline, protecting it from erosion. Unlike man-made coastal defences, mangroves maintain themselves at no cost. They prevent the siltation of coral reefs by trapping sediments and build land through the accumulation of silt and detritus, and absorb pollutants washed from the land.

### **Mangroves Compared with Terrestrial Forests**

The regeneration of mangroves after selective cutting is a relatively reliable process, requiring little or no intervention. Under favourable conditions, mangroves have much higher increments than terrestrial forests. Reclamation by planting of bare areas can be carried out very easily, simply by pushing the propagules (seeds) into the soft mud. Seedlings require neither watering nor weeding. However, reclamation of rice land and abandoned salt pans is more difficult and therefore more costly.

Mangroves in Tanzania are not ravaged by bush fires, nor do they normally need to be protected from livestock (as in Pakistan and Sudan from browsing camels). Agricultural encroachment into mangroves is not normally a problem, but it is becoming an issue in parts of the Rufiji delta where land is cleared for flood-irrigated rice. Control of illegal felling of mangroves is less difficult than of terrestrial forest reserves. Mangrove wood offered for sale in the market can only have been taken from a reserve. The boundaries of mangrove forests are very well defined naturally, which makes their delineation for management purposes (or exclusive use by a village) relatively

straightforward. In contrast, timber of terrestrial tree species may equally have been harvested from village land. As the latter sources of timber and fuelwood become increasingly scarce, the mangrove forests are coming under greater pressure, especially in the neighbourhood of large settlements and so the fate of mangrove and terrestrial forests are inextricably linked.

### **Legal and Tenorial Status of Tanzania's Mangroves**

The economic importance of Tanzania's mangroves was recognised at an early stage in the country's colonisation. In 1898, the German administration established an ordinance dealing with mangroves, especially those of the Rufiji delta. Under this legislation, building poles were sold by the forest administration to merchants who transported them to the treeless areas of Arabia and the Persian Gulf. The British subsequently expanded the mangrove reserves. Some were gazetted as far back as the 1920s. The Tanganyika Forestry Laws and Rules Handbook, 1947, described mangrove reserves covering an approximate area of 80,000 ha in nine coastal districts. After independence, the Tanzanian Government maintained their protected status as territorial forest reserves, but failed to manage them as they did the forest reserves on dry land. In 1987, a national ban on the cutting of mangroves was imposed by the Director of Forests, pending the preparation of a mangrove management plan.

The Forest Ordinance of 1957, published in 1958, governs the administration of all territorial forest reserves. This imposes all manner of restrictions on what can be done in a forest reserve. For example, any person who cuts or removes any forest produce, cultivates land, erects any building, grazes animals, collects honey, etc., without a licence or lawful authority, commits an offence. However, The Director of Forests may exempt the whole or any part of any forest reserve from the application of the restrictions "by notice published in the Gazette". In practice, numerous exemptions are allowed in mangroves, although never officially gazetted. Even under the current general ban on cutting mangroves, villagers are not prosecuted for cutting poles for domestic use. There is tacit recognition that local villagers have traditional rights to use mangrove forests in a sustainable manner. On the other hand, unsustainable use and unlicensed commercial exploitation are not permitted. However, there are many instances under the prevailing system of local government where the Director of Forests in Dar es Salaam has been unable to use his authority to protect the resource.

### **Problems of Enforcement**

Until the ban on mangrove harvesting was announced in 1987, it had become commonplace for the district authorities to issue harvesting permits, without reference to the Forest Division in Dar es Salaam. Other government officials often exert greater authority over the use of the foreshore and adjacent areas than the forestry officer attached to the office of the District Council. In theory, the district councils had no legal authority to issue permits for the exploitation of territorial forest reserves (as opposed to local government reserves – formerly `native authority reserves'). The practice of district-council licensing developed because the councils controlled the work of the forest officers posted to the districts and paid their wages. Understandably, these foresters were expected to generate the revenue required to meet the cost of their salaries. Because access rates were (and remain) extremely low and because district councils faced (and continue to face) chronic financial constraints, there was a tendency to over-exploit the mangroves. No Forest Division staff were posted to look after the coastal mangroves unlike the territorial forest reserves controlled by Central Government as over-exploitation of mangroves was not perceived as a

danger.

In rural coastal areas, such as the Rufiji Delta, settlements are interspersed within the mangroves on small islands which can be reached only by boat. Even on the rare occasions that district council forest officers have access to road and river transport, mangroves are difficult to patrol, especially the exposed outer margins which are being cut illegally by traders operating from dhows up and down the coast. Local people and their village governments are powerless to protect the resource on which they depend for their livelihood, but over which they have no legal authority.

### **Towards a Management Partnership**

Under the 1991 Mangrove Management Plan, a small field organisation of specially trained mangrove forest officers will be established under the direct control of the Director of Forests in Dar es Salaam, to monitor and regulate the production and use of the mangrove ecosystem and provide advice and assistance to local people and government officials on its management. Further destruction of mangroves by unjustifiable conversion for salt evaporation pans and rice fields will be halted.

The plan recognises that any attempt by a small field force of forestry officers to regulate the use of the mangroves would be in vain without the active support of local people. Thus the Forest Division will seek to form a partnership with those local communities with most to lose if the mangrove resource is depleted and most to gain from its conservation and development. Initially, attempts to devise and test participatory approaches to mangrove management will be confined to three of the ten coastal districts. The particular strategy adopted will depend on the degree of pressure on natural resources and the ability of the local community to administer natural resources. What may be appropriate for rural areas is unlikely to be relevant in peri-urban situations. For example, in the former, the benefits of sustainable mangrove management are expected to be sufficiently attractive for local people to want to police the system themselves without the government having to pay local people to work as forest attendants. In peri-urban areas, however, sustainable management of what remains of the mangrove forest will be seen to have few, if any, direct benefits to the thousands of urban poor in their daily search for fuelwood.

It is recognised that people will need secure long-term tenure over their forest resources if they are to conserve them properly. Granting leases is one way of giving such an assurance, but another might be formally recognising customary communal user rights. The granting of tenure would not mean the withdrawal of the Forest Division from regulatory activities to protect the forest. The State does not need to own a resource to ensure that it is managed. Local communities will need the advice and support of the State to help them use a resource in a sustainable manner and police it against intruders.

Where villages are widely spaced along the coast, there is good potential for involving them in the management of the mangroves. The Forest Division could give a particular village exclusive rights to use a stretch of coastline (or island) and involve the village in drawing up the management plan for the mangroves and marking the zones for utilisation. The villagers would then be responsible for carrying out the plan, including helping to protect the mangrove area from exploitation by outsiders. The Forest Division would check up periodically how things were going and would retain authority over the mangroves, including the right to withdraw the village licences if there

were problems. Such an approach is believed to be much more feasible for mangroves than for most forests. If outsiders were permitted (by the Forest Division and the village government) to harvest within the area allocated to the village, then the village should be allowed to charge a royalty on the extracted produce. Such is the practice inland where village governments exert control and exact royalties on timber harvested by merchants from the surveyed village land. This is allowed for in Section 9 of the Local Government Finances Act No.9 of 1982.

An institutional change of the type proposed can only be introduced after careful testing of alternative participatory approaches. Initially a four-year pilot programme is proposed in three districts, representative of the conditions prevailing the length of the coast. A small team of professionals from HQ (a sociologist, a community development/extension worker, and an artisanal fisheries specialist) will support the mangrove forest officers and the village communities in drawing up the necessary agreements and management plans. At this stage, it is uncertain which groups will constitute the most effective local partners for the Forest Division. Currently, there is considerable distrust of village governments. It is recognised that village officials given too much power could monopolise the benefits which would destroy the incentive of the community to use the resource sustainably.