



RESEARCH REPORT 5

Governance of Africa's Resources Programme

February 2010



'Untangling the Nets'

The Governance of Tanzania's Marine Fisheries

Mariam January and Honest Prosper Ngowi

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FOREWORD

This case study of marine fisheries governance in Tanzania forms part of a three-year project entitled Strengthening the Governance of Africa's Natural Resources conducted by the Governance of Africa's Resources Programme of SAIIA. Funded by the Norwegian Ministry of Foreign Affairs, it aims to make a significant input into policy governing the exploitation and extraction of Africa's natural resources by assessing existing governance regimes and suggesting alternatives to targeted stakeholders.

The level and quality of governance within key states is central to the developmental trajectory of the entire continent. The GARP project examines the governance of a number of resource-rich African countries in terms of cross-cutting themes such as environmental change and sustainability issues. Addressing these elements is critical for Africa to avoid deepening the challenges of governance and reducing its vulnerability to related crises, including climate change, energy security and environmental degradation. The programme focuses on four natural resource sectors in four African countries, namely mining, forestry, fisheries and petroleum in Tanzania, the Democratic Republic of the Congo, Angola and Sudan.

Based in Cape Town, GARP has partnered with in-country experts with a view to forming an African research network on natural resource governance. Desktop and field research for this paper was conducted by Mariam January of GARP, while the case study that comprises the second part of the report was conducted by Dr Honest Prosper Ngowi of Mzumbe University, Dar es Salaam. We wish to thank Dr Ngowi for his work and collegiality in carrying out this research.

We also wish to thank our partners in Tanzania, the Economic and Social Research Foundation, without whose support this research would not have been possible. We wish to thank the personnel of the Norwegian Embassies in Dar es Salaam and Pretoria for their remarkable support. Our thanks go to the British, Danish and Swedish diplomatic missions in Tanzania, as well as to the World Bank, civil society, non-governmental organisations (NGOs), the University of Dar es Salaam and the media in Tanzania for their support of our work. Finally, we wish to thank the government of Tanzania for granting interviews that helped us conduct this research.

ABBREVIATIONS AND ACRONYMS

ASCLME	Agulhas and Somali Current Large Marine Ecosystems
CBD	Conventions on Biological Diversity
CIA	Central Intelligence Agency
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DEAT	Department of Environmental Affairs and Tourism
EEZ	exclusive economic zone
EMA	Environmental Management Act
GEF	Global Environmental Facility
FAO	Food and Agriculture Organisation (United Nations)
ICM	Integrated Coastal Management (Strategy)
IGA	income-generating activity
IUCN	International Union for Conservation of Nature
IUU	illegal, unreported and unregulated
LME	large marine ecosystem
MACEMP	Marine and Coastal Environmental Management Project
MCS	monitoring, control and surveillance
MIMP	Mafia Island Marine Park
MKUKUTA	National Strategy for Growth and Reduction of Poverty (Mkakati wa Kukuza Uchumu na Kapunguza Umaskini Tanzania)
MP	member of parliament
MPRU	Marine Parks and Reserves Unit
NEP	National Environmental Policy
Nepad	New Partnership for Africa's Development
NGO	non-governmental organisation
NPES	National Poverty Eradication Strategy
SADC	Southern African Development Community
SAP	strategic action plan
TAC	total allowable catch
TAFIRI	Tanzanian Fishery Research Institute
TCMP	Tanzania Coastal Management Partnership
TZS	Tanzanian shilling
UNCLOS	United Nations Convention on the Law of the Sea
URT	United Republic of Tanzania
WWF	World Wildlife Fund for Nature

PART I**THE GOVERNANCE OF TANZANIA'S
MARINE FISHERIES**

MARIAM JANUARY

INTRODUCTION

The environment and the use of natural resources are critical in addressing poverty in Tanzania. This is evident in the policy statements of the various international, regional and national policy documents that Tanzania is signatory to. The contribution of fishing to the Tanzanian economy has increased in the last two decades due to the increasing export of fisheries products, resulting in the sector becoming a significant source of foreign earnings.

The Tanzanian coastline is 1 424 kilometres long¹ and the marine fishery is divided into territorial waters that are dominated by artisanal fisheries and the exclusive economic zone (EEZ), which extends 200 nautical miles off-shore and is dominated by the commercial fishing industry. The marine component of the fishery sector, however, is dwarfed by the lake fisheries. There are competing statistics as to how much marine fish is caught annually, reflecting a range of 50 000 tonnes² to 70 000 tonnes³, and there is also little certainty about the number of people involved in the fisheries sector. It is unclear whether some sources combine freshwater and marine fisheries, e.g. the UN's Food and Agriculture Organisation (FAO),⁴ which reports that in excess of 170 000 individuals are involved in the sector, of which 149 946 are artisanal fishers.

The FAO further reports that 17 847 people are involved in aquaculture; a further 4 000 people, primarily women,⁵ are engaged in fish processing; and up to two million⁶ people are involved in related sectors. Where it is clear that when the figures are referring to marine fisheries only, there is still a significant variation in the statistics quoted in various documents giving the numbers of those involved in fishing. The number of people believed to be involved in the marine fisheries ranges from 10 000⁷ to 43 000⁸, although the latest statistics offered by INFOSA report that 21 000 people are involved in the marine fishing sector.⁹ What is clear is that the vast majority — in excess of 90% — of these fisher people are in the artisanal sector.

Tanzania's fisheries policy formulation is reasonably well developed and the country is an active member of a number of regional and international fishing management arrangements. Yet despite its progressive policies, the sector still fails to achieve its stated aims and objectives. Reasons for this include the lack of research capacity, resources and co-ordination in fisheries management activities.

This report is structured into two sections. The first starts with an overview of the structure, content and exploitation of Tanzania's marine fisheries. This is followed by an outline and summary of the major legislation, policies, programmes and instruments governing the marine fisheries sector. These policies and instruments are located within a discussion of Tanzania's broad development plans and priorities. The section concludes with a number of observations regarding the challenges confronting marine fisheries governance in Tanzania. A set of recommendations for the improvement of marine fisheries governance flow from this.

The second section of the report examines the case of the Mafia Island Marine Park (MIMP), which is widely regarded as a positive model of co-management in the marine fisheries sector. Despite the positive elements to the Mafia Island programme, concerns and criticisms have been raised about the degree of inclusivity and community participation in the design and operation of the park. Moreover, concerns have been raised with respect to the unequal access to governance instruments and the impact of the park's arrangements on local communities. The case study was conducted at the end of 2008 and presents a number of its key findings and recommendations for consideration. Specifically, the case study report concludes that, while the MIMP has many progressive features that have the support of important constituencies on Mafia Island, the governance, structure and operation of the park require revisiting in a manner that ensures full, transparent and equitable participation by all affected communities, particularly if the benefits of the MIMP are to be enjoyed and sustained over the long term.

DEFINING FISHERIES GOVERNANCE

'Governance', like 'sustainable development', is often used as an all-encompassing term in a wide array of contexts, and consequently means different things to different people. Governance occupies centre stage in development discourse and is a key element to be incorporated into development strategies.¹⁰ The UN Development Programme defines governance as¹¹

the system of values, policies and institutions by which a society manages its economic, political and social affairs through interaction within and among the state, civil society and private sector. It is the way a society organizes itself to make and implement decisions — achieving mutual understanding agreements and action.

Elements of good governance include participation, the rule of law, transparency, responsiveness, consensus orientation, equity, effectiveness, efficiency, accountability and strategic vision.¹²

Environmental governance is seen as a subsector referring to the processes of decision-making involved in managing and controlling the environment and natural resources. The manner in which decisions are made is a key indicator of good governance. Thus, principles of inclusivity, representivity, accountability, efficiency and effectiveness, social equity, and justice are the foundations of good governance.¹³

The elements that constitute good environmental governance can be applied to fisheries governance. These elements include the following:¹⁴

- Governance should be responsible and accountable.
- Regulations should be enforced.
- Integrated mechanisms and structures that facilitate participation should be established.
- Institutional responsibilities for regulating environmental impacts and promoting resource exploitation should be separated.
- Adequate access to information should be ensured.
- Provision should be made for institutional and community capacity building.
- Environmental issues should be mainstreamed (i.e. included in other sectors).

Article 61 of the UN Convention on the Law of the Sea (UNCLOS) states, 'the coastal state, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures that the maintenance of living resources in the EEZ is not endangered by over-exploitation'.¹⁵ This places the responsibility for fishery governance squarely on the state. Developing states cannot always meet this responsibility due to capacity and resource constraints. It is partly for this reason that the discourse has moved beyond government control of fisheries to the broader concept of governance.

The increase in the focus on governance in recent decades stems from the growing realisation that fish stocks in various parts of the world are being harvested beyond sustainable yields. Hence the need for limiting harvesting of marine resources and ending open access to fisheries has become widely recognised.¹⁶ Achieving sustainable fisheries is hampered by several problems such as ecological uncertainty, exacerbated by issues such as climate change and the pressure to pursue short-term social and economic objectives at the expense of longer-term sustainability objectives.¹⁷ Institutional problems are also cited as hindering sustainable fisheries objectives. Institutions are defined as 'not only a set of rules, but include ... the processes and organisations (public, private, formal and informal) that develop and implement the rule (management measures) affecting the fishery resources'.¹⁸ In terms of fisheries governance, two elements of institutional weakness have been identified as being of critical importance, namely: (1) the widespread existence of inappropriate mechanisms and approaches for regulating access to a fishery; and (2) the failure to include stakeholders in the management process.¹⁹

According to the FAO, fisheries governance is the

sum of the legal, economic and political arrangements used to manage fisheries. It has international, national and local dimensions. It includes legally binding rules, such as national legislation or international treaties and also relies on customary social arrangements as well as on the respective national framework provided for all economic activities.²⁰

The effectiveness of fishery governance depends on whether an agreed set of rules can be established and the practical arrangements made to co-ordinate and manage conflicting claims for access to resources and markets. The capacity to form effective management entities is crucial for the achievement of effective governance. These entities should have authority over the whole sea area normally occupied by a fish stock or fishery.²¹

Features essential for effective fisheries management include (1) the existence of a fisheries management authority (within the state) that has the mandate to perform

specified fisheries management functions;²² and (2) this authority having the capacity to provide the following functions:²³

- collection of data on the fisheries, typically biological data, catch data and socio-economic data of each fishery;
- analysis of relevant information to identify trends in resources and ecosystems and the performance of each fishery to allow for appropriate modification of the management measures to ensure that the objectives of the fishery are being achieved;
- consideration of all relevant information in decision-making, which must include the appropriate participation of key stakeholders in developing the management rules; and
- monitoring, control and surveillance designed to encourage compliance with the management measures and enforce regulations, thereby implementing the management rules.

The governance systems for an EEZ and the international high seas differ, despite similar basic concepts and problems that prevail. National fisheries management is a nested institution/set of rules in a global system of governance. The devolution of management authority to the local level is, in turn, a nested institution within national fisheries arrangements. Regional fishery bodies are also considered as management entities, whereby two or more fishing nations work co-operatively to regulate access to resources and markets.²⁴

INTERNATIONAL FISHERIES GOVERNANCE REGIMES

Co-management

Co-management can be defined as an arrangement where the responsibility of resource management is shared between government and resource user groups, i.e. it refers to a paradigm shift that supports the inclusion of resource users in management decision-making.²⁵ Worldwide there are numerous examples that suggest that the central management approach to coastal resources is not working.²⁶ Sen and Nielsen outline a spectrum of the types of co-management systems showing the degree of participation in the decision-making process.²⁷ The spectrum ranges from 'instructive' to 'informative', as shown in Figure 1 on page 10.

Sen and Nielsen concede that their co-management typology is a simplification of very complex situations. A multitude of tasks can be co-managed at different stages of management. Co-management therefore covers a broad spectrum of collaborative decision-making between government and user groups. The key objective of co-management is to develop a strategy for collaborative decision-making that leads to an agreement on the decision-making process, together with management roles and responsibilities.²⁸ The key tenets for successful co-management are power sharing, benefit sharing and capacity building.

Figure 1: Spectrum of co-management arrangements

Instructive	Consultative	Co-operative	Advisory	Informative
Government-based management			User group-based management	
Minimal exchange of information between government and users	Mechanisms exist for government to consult with user groups, but all decisions are taken by government	Government and users co-operate as equal partners in decision-making. For some, this is the definition of co-management	Users advise government of decisions to be taken and government endorses these decisions	Government delegates authority to make decisions to user groups, who are responsible for informing government on these decisions

Source: Sen S & JR Nielsen, *op. cit.*

The mainland Tanzanian Fisheries Division²⁹ has designed a community-based fisheries management system that is thought to be an improvement on the top-down state-centric management system, especially given the government's lack of capacity and resources. This co-management system involves the devolution of power and sharing the responsibility of fisheries management between resource users and government. Some of the responsibilities include monitoring, control and surveillance. An example of the devolution of power is the establishment of beach management units at Lake Victoria, which have the responsibility to manage and control some of the fishing activity.

The Fisheries Division further envisages devolving some management responsibilities to fishing communities, as well as involving them in the formulation of by-laws, data collection and the development of general management plans. Given the characteristics of the Tanzanian fishing industry, co-management would be an appropriate management regime, provided that communities have the capacity to adequately assume the responsibilities that have been devolved to them. State-centric management still remains an important form of management, especially in commercial fishing.

Territorial user rights in fisheries

Territorial user rights in fisheries is a system whereby a community is allocated a specific portion of the coastline, to which it has exclusive access, in the belief that this should incentivise communities to harvest resources sustainably.³⁰ This system is common in developing countries such as Chile and many parts of Africa, but it is not used directly in Tanzania. It is used to some extent in marine fish resource exploitation, where prawn

trawlers are restricted to fish in areas above 5 metres in depth to accommodate small-scale fishers. This is, however, more of a zoning measure to avoid conflict between sectors competing for the same fishing areas.

OVERVIEW OF THE TANZANIAN MARINE ECOSYSTEM

The Tanzanian coastline is 1 424 kilometres in length (including islands) and has an exclusive economic zone of 526 880 square kilometres.³¹ With 21% of the country's 36 million inhabitants living within 100 kilometres of the coastline, marine resources are an important source of protein and livelihood.³² The total amount of fish harvested in 2005 was approximately 300 000 tonnes, including approximately 50 000 tonnes of marine fish. Thus, the fisheries sector in Tanzania is worth approximately \$10–14 million and the number of people employed in the sector is between 10 000 and 15 000.³³ The 4 000–5 000 craft operating are primarily outrigger canoes (traditional canoes) or small dhows that are mostly propelled by sail. A small number of trawlers and purse seine fishing vessels also operate along the Tanzanian coastline.³⁴

Physical characteristics

Tanzania generally has a very narrow continental shelf, with the 200 metre depth contour being about 4 kilometres offshore, except for the Zanzibar and Mafia channels, where the shelf extends for 60 kilometres.³⁵ This part of the shelf is estimated to cover 30 000 square kilometres and is the area most commonly used by artisanal fishers.³⁶ The continental shelf is characterised by sandy/muddy tidal flats, mangroves, coral reefs, rocky inter-tidal platforms, seagrass beds, lagoons and estuaries, all of which are important habitats for a variety of fishery resources.³⁷

Major rivers such as the Ruvu, Rufiji, Pangani, Wanii and Ruvuma, together with other smaller river systems, provide a major source of nutrient supply to inshore waters. The south-east monsoon period is when the 'Kusi' winds prevail, which are more persistent and have characteristically higher wind speeds that are accompanied by lower air temperatures. The persistent winds and lower temperatures cause heat loss from the water that results in a mixing of nutrients in the euphotic (top) zone, resulting in phytoplankton blooms. The persistent winds also cause the thermocline³⁸ to deepen to 120 metres. Phytoplankton is the basic building block of the marine food chain. The fact that the major source of nutrients is external to the marine environment makes the entire system vulnerable to the capacity of land-based pollution to alter the productivity of the marine system.³⁹

Type of resources: Primary producers and habitats

Two cornerstones of Tanzanian fishing waters are phytoplankton and seagrass: phytoplankton because it is a primary producer and therefore the basis of the food chain, and seagrass because it traps sediment and provides a nursery ground for juvenile fish. Seagrass can also have a dampening effect on wave action, thereby decreasing the erosion of coastlines through such action.

Tanzanian waters boast high species diversity, as well as high diversity of habitats, with abundant mangroves, coral reefs, sandy shores and seagrass beds. All of these are

important habitats for a variety of marine species. Marine mammals and turtles are particularly abundant in Tanzanian waters, as well as reef fish and other marine species that are important for export markets.

Marine mammals

Tanzania boasts a high diversity of dolphin species, and eight out of the ten species found in the western Indian Ocean have been recorded in Tanzanian waters. Whales, such as the humpback (*Megaptera novaeangliae*) and sperm whale (*Physeter macrocephalus*) have been sighted off the Tanzanian coastline, but there is very little information on the occurrence, distribution and abundance of whales. Dugongs (sea cows) were thought to be extinct, but there have been anecdotal sightings that confirm their continued existence.⁴⁰

There are numerous threats to marine mammals off the Tanzanian coast. They suffer direct and indirect attacks and are also victims of habitat degradation. One of the major threats to cetaceans (dolphins and whales) is incidental catching in gill nets, which is a major cause of mortality. These nets are used to catch large fish such as tuna, marlin and billfish. At present, little scientific research is being conducted on cetaceans in Tanzania, and therefore their distribution and the magnitude of the various factors affecting them are poorly understood.⁴¹

Increased fishing pressure poses a serious potential threat to marine mammals as fishers compete directly with marine mammals for fishery resources and, in doing so, also reduce the fish population that mammals depend on for food. Other human activities like increased traffic of marine vessels and dynamite fishing have an impact on cetaceans' hearing, as well as disruptive effects on their social lives and foraging habits. More studies on marine mammals are needed to better understand them so that appropriate management interventions can be implemented for their protection and conservation.⁴²

It is important that local communities become involved in the protection and conservation of marine mammals to help motivate such communities to protect these animals. There is a poverty alleviation aspect in the protection of marine mammals too, and proper management could lead to a reversal of decreasing trends in their numbers. Furthermore, the involvement of women in the dolphin tourism industry could help reverse gender imbalances found in coastal communities. An income that does not depend on male fishers would make women less vulnerable to fluctuations in the resource base and also give them a greater sense of autonomy. Thus, the involvement of local communities in management initiatives could potentially improve their economic well-being.⁴³

Sea turtles

Turtles are known locally as kasa, and Tanzanian waters are a favourable habitat for turtles, as all five species that are found in the western Indian Ocean have been sighted in Tanzanian waters. Yet sea turtles are under threat the world over. Turtle populations are thought to have declined by 50–80% in the last 50 years. The leatherback and hawksbill are on the critically endangered list of the International Union for Conservation of Nature (IUCN) due to the drastic population decline of more than 80% in the last 50 years.

Human activities such as habitat destruction and over-harvesting are the primary causes of diminishing populations. Turtle meat and eggs are consumed locally. Tanzanian people have traditionally also used turtles for medicinal purposes. Apart from natural predators, the main threats to turtles are accidental capture in gill nets (shrimp trawling is a major

perpetrator of the incidental catching of juvenile and adult turtles), the slaughter of nesting females, egg harvesting and the disturbance of nesting beaches through construction. Tourism development along the coastline in Zanzibar has contributed significantly to the destruction of nesting beaches, and many hotels have been built on nesting beaches in Unguja and Pemba.

In many villages in Tanzania, people still harvest sea turtle eggs for consumption. Although it is illegal to take eggs, enforcement is lacking. Since the 1990s Zanzibar has made efforts to protect sea turtles, after a successful campaign against the local trade in turtle products culminated in a symbolic burning of a sea turtle shell by the government in 1995. Tag returns provide useful information on the migration routes of breeding turtles, with 15 such tags being recovered in Zanzibar between 2001 and 2002. The current management of sea turtles is conducted through the establishment of a network of locally elected turtle monitors, offering financial incentives as an alternative to hunting for turtle meat and eggs, and the implementation of environmental awareness and education programmes.

Turtle tourism has also been touted as a poverty alleviation avenue, whereby divers would be taken to sites where they can see turtles, and thus ecotourism stands to gain from actively pursuing turtle conservation programmes.⁴⁴ A nest protection scheme on Mafia Island pays villagers TZS (Tanzanian shillings) 3,000⁴⁵ for finding turtle nests and an additional TZS 40 for each egg that hatches and TZS 20 for rotten eggs. Since the inception of the programme in December 2001, 115 nests were reported and protected by local communities with an average reward of TZS 7,000 per nest.⁴⁶ However, tourism is a double-edged sword. It can contribute to income diversity for coastal communities and, through ecotourism, can promote the conservation of marine species. If left uncontrolled and unplanned, however, it can be highly destructive of the marine environment and local economy. One example of the negative effects of tourism is that it has resulted in an increased demand for fish, thereby increasing the price of the resource, resulting in a decrease in the contribution of fish to the local diet and added pressure on fishery resources.

COASTAL PEOPLE OF TANZANIA: THE CONTRIBUTION OF FISHERIES TO LIVELIHOODS

'People are poor and therefore become fishers'.⁴⁷ This quote turns the 'received wisdom' that people are poor because they are fishers on its head and suggests that fishing is often an activity of last resort and but one of a host of livelihood strategies of poor rural coastal communities.⁴⁸

In Tanzania, well over 90% of fishers in the marine sector are employed in the small-scale or artisanal fisheries subsector. Furthermore, marine fisheries provide up to 90% of the animal protein in coastal communities and 30% of the animal protein nationally.⁴⁹ Thus, sustainable utilisation is critical to food security and reduced vulnerability, as coastal communities depend heavily on communally held marine resources for survival and income.⁵⁰ Poor rural coastal communities in Tanzania, like others worldwide, depend on multiple livelihood strategies that are primarily subsistence in nature and complement their livelihoods gained from fishing activities. Other activities include smallholder farming, subsistence farming,⁵¹ lime and salt production, seaweed farming, livestock husbandry and handcrafts.⁵²

Most coastal villages in Tanzania are situated on land that is made up of coral rag where soil and hydrology are poor, adding to the vulnerability of coastal villages. Poor performance in fishing and agriculture is a major concern for food security and is considered to be a major contributing factor towards rural–urban migration.⁵³ Coupled with this is the ever-growing significance of the unforeseen effects of climate change on the marine and terrestrial environments, and this, together with the limited capacity of coastal communities to cope with changes, sends out alarm signals regarding the vulnerability of coastal communities.⁵⁴

The Tanzanian coastal region comprises 13 districts in five regions on the mainland and five administrative regions in Zanzibar. The Population and Housing Census of 2002 shows that 23% (8 million) of the Tanzanian population live along the coast. This relatively large urban population is mostly concentrated in Zanzibar and urban areas of the mainland coastal regions. In the urban coastal areas, rapid growth rates, as illustrated in Table 1, and poor management have led to severe degradation of coral reefs, shoreline change and deforestation.⁵⁵

Table 1: Population data for Tanzania

Coastal region/ district	Population	Growth rate, 1988–2002 (%)	Population density/ per square km
Tanga	1 642 015	1.8	61
Pwani	889 154	2.4	27
Dar es Salaam	2 497 940	4.3	1 793
Lindi	791 306	1.4	12
Mtwara	1 128 523	1.7	68
Total mainland coast	6 948 938	Average: 2.32	Average: 392.2
North Unguja	136 953	2.5	291
South Unguja	94 504	2.1	111
West Pemba	391 002	4.5	1 700
North Pemba	186 013	2.2	324
South Pemba	176 153	2.3	531
Total Zanzibar	984 625	Average: 2.72^a	Average: 591.4^a
Total Tanzania	34 569 232^b	Average: 2.9^b	Average: 39^b

a It is not indicated in the source how these figures were calculated.

b These are figures for the whole of Tanzania, and are not aggregates of the figures for the coastline and Zanzibar given above.

Source: 2002 Population and Housing Census, National Bureau of Statistics, Government of Tanzania in Whitney A *et al.*, *op. cit.*

Table 1 illustrates that the highest population densities can be found in urban coastal areas, namely Dar es Salaam and West Pemba, which correlates with the highest population growth rates. It is interesting to note that the growth rate for Zanzibar is higher than that of the total growth rate of Tanzania as a whole. The high demand for marine resources from urban coastal areas exerts pressure on the entire environment along the coast and is thought to be a driving force behind growing resource exploitation in the rural areas.⁵⁶

Poverty has both social and economic dimensions, thus access to social services is a good indicator of the poverty experienced by coastal communities. Development practitioners speak increasingly of well-being, which relates to people's ability to effect change for themselves, thus poverty is not simply about the lack of material wealth and access to resources, but also about the sense of helplessness and disempowerment that the poor experience, thereby incorporating a psychological aspect to poverty.

The 2003 *State of the Coast Report* stated that a large proportion of Tanzania's coastal population live at very low levels of welfare.⁵⁷ Hence, the levels of per capita income, education, basic infrastructure, nutrition and access to safe water were very low. Little has changed since the publication of this report. Nationwide, only 12% of households have electricity (only 2% in rural areas), 6% have a bank account and 25% have houses built of modern materials, while for 45% of households, potable water is more than one kilometre away. One of the reasons for continued poverty in rural areas is poor infrastructure and social services.

While services in urban areas such as Dar es Salaam are generally better, they are nevertheless over-burdened with high population growth rates.⁵⁸ In Dar es Salaam, only 10% of the city's population have sewerage services. With the aged sewerage system dating back to 1950, most of the population are dependent on on-site sanitation systems, which consist primarily of pit latrines and, to a small extent, septic tanks and soak pits.⁵⁹ Although 85% of the population in Dar es Salaam have some kind of access to piped water, this service is erratic, with most households only having service for six hours of the day. More than 45% of households buy water from neighbours, tankers or street vendors.⁶⁰

The percentage of adults whose primary activity is agriculture has decreased from 73% to 63%. By suggesting that the economy has diversified and household incomes have increased,⁶¹ this change confirms the assertion made by the Household Budget Survey that slight improvements have been made over the past decade. However, the vast majority (87%) of poor people are in the rural areas. Poverty also has a gendered aspect, where women have lower incomes than men.

With respect to gender equity and coastal management, most activities relating to fisheries livelihoods do not have conspicuous gender boundaries, with the exception of fishing and activities such as carpentry, which are predominately the domains of males. Despite the inconspicuousness of women in the fishing industry, they play an important role nonetheless.⁶² Women predominantly attend to the household upkeep, collect sea shells and are involved in post-harvest activities such as small-scale processing and marketing. Their fishing activities are usually restricted to the inter-tidal zone for a limited period during the day, which is when they also collect sea cucumber and octopus during spring tides.⁶³ The time burden on women is heavier than men, and opportunities for recreation and rest are more limited for women.⁶⁴ Inheritance is an important source of property acquisition, but traditional practices influence control and ownership of productive assets and resources in favour of men. Women's time burden; their limited

access to resources, productive assets and credit; and other discriminatory processes have limited their ability to access and take advantage of economic opportunities. Their limited access to credit and sources of capital is because of low levels of education and awareness.⁶⁵

THE FISHING INDUSTRY IN TANZANIA

The fishery sector is of great importance to the development of Tanzania, as it is one of the top three growth sectors.⁶⁶ It makes a significant contribution to gross domestic product and is an important source of foreign exchange earnings.⁶⁷ The domestic market absorbs the majority of the national catch, while the prawn, Nile perch and sea cucumber catches are predominantly for export. Other marine resources for export include sardines, shells, lobster, crab, squid, octopus and aquarium fish.⁶⁸

The marine catches are represented by multiple species where reef fish make up approximately one-third of the catch, indicating that shallow reef waters are used as the main fishing grounds. Another third of the catch is composed of small pelagic fish such as sardines (*Clupeidae*), anchovy (*Engrulidae*), small mackerel (*Scombridae*) and horse mackerel. The large pelagic fish species include jacks and trevallys (*Carangidae*), kingfish (*Scomberocoridae*), tuna, mullet, swordfish and silver biddies. Other important species include sharks, rays, crustaceans, gastropods and shellfish.⁶⁹ The catch composition is generally multi-species, with no signs of a dominant species. The main targets of the fisheries are the large and long-lived predators high up the food chain.⁷⁰

There is a high diversity of species, which includes snapper, kingfish, sharks, rays, prawns, lobster, sardines and sea cucumber. The offshore tuna fishery is dominated by foreign vessels, a trend that is seen throughout the Indian Ocean.⁷¹ The expansion of prawn and sardine fishing occurred in the late 1980s and early 1990s as a result of structural adjustment programmes and market liberalisation.⁷² This meant that foreign vessels that had the capacity to exploit the prawn resource were allowed to operate in Tanzanian fisheries.

Artisanal fishery activities are concentrated inshore (0–12 nautical miles) and around the islands, whereas foreign fleets dominate the EEZ fisheries (12–200 nautical miles).⁷³ Most fishing operates out of coastal urban areas such as Dar es Salaam in the centre, the Lindi-Mtwara area on the south coast, the Tanga-Pangani area in the north and Zanzibar town.⁷⁴

Artisanal sector

The marine artisanal sector is the main area of economic activity of coastal people. It is an open access system, characterised by crowding in the coastal waters, which is in part due to the lack of technical skills and capital on the part of the fishers to go beyond inshore waters.⁷⁵

The artisanal sector typically utilises low-technology fishing equipment, including dugout canoes, outrigger canoes and plank boats. The sector uses a range of nets for the varying fishery resources, but the most common in terms of the number of fishers engaged is hand-line fishing, targeting high-value reef species, resulting in a relatively low

fishing cost. A wide variety of nets are used, including bottom gill nets (5–10 centimetres), floating gill nets (5–10 centimetres) and entanglement nets/drift nets (15–20 centimetres). The small gill nets are used around coral reefs and estuaries, and entanglement nets are used as drift nets to catch sharks and rays. Seine nets are either used from the beach or in open reefs. This fishing method can be particularly damaging to coral reefs and seagrass when the nets are dragged along the bottom. Furthermore, because of the small mesh size, these nets predominantly catch small fish. Ring nets are used for small pelagic fishing and are the most productive fishing method in terms of the catch volume, as their output accounts for approximately 25% of the total production of marine artisanal fisheries.

According to Jiddawi,⁷⁶ a number of fishing practises pose significant threats to the fisheries and marine habitats, including the dragging of nets, dynamite fishing and spear fishing. However, at the Southern African Development Community (SADC) conference in 2008⁷⁷ on illegal, unreported and unregulated (IUU) fishing, Tanzanian fishery authorities reported that they had made significant progress in curbing dynamite fishing.

Due to the narrow continental shelf, Tanzania's marine fishing industry productivity is low. The marine artisanal sector catches up to 70 000 tonnes, compared to 280 000 tonnes in the lake fisheries, with marine fisheries making up 25% of the total annual artisanal landings. It is thought that much of government's resources go into governance of the lake fisheries, leaving the marine fisheries largely open access and less controlled. Most of the fisheries resources are over-exploited.⁷⁸

Despite the artisanal and commercial industries being very different, and despite the fact that the first 12 nautical miles are reserved for artisans, these two sectors often occupy the same fishing grounds, as a result of the narrow continental shelf. The two sectors compete for space, and this competition tends to result in conflict between them. Other than prawns, there is little overlap in the species they exploit.⁷⁹

Marketing and distribution

Up to 80% of the fish landed in the marine sector is sold as processed fish.⁸⁰ There are more than 1 000 landing sites, where fish are landed before processing or further distribution. Traditional fish-processing methods include smoking, sun-drying and salting. Processed fish dominate rural area markets. Sardines, known locally as *dagaa*, are mostly sun-dried, while bony fish are smoked and cartilaginous fish such as sharks and rays are salt-dried. Fresh fish traders are to be found at the vast majority of landing sites, and they purchase fresh fish and sell them in the surrounding area. Other traders take the fish to distant markets where they can achieve a higher price for the fresh produce. There has been a shift in preference from cured fish to fresh fish, which is believed to be a function of technological development coupled with the availability of ice and improved transport systems. Various means of transport are used, including boats and trucks, depending on the type of fish and market destination.⁸¹ There is no effective central marketing agency for villages.⁸² Harvested fish are transported to the markets by fish traders, whose visits range from daily to irregularly, depending on the distance. Hence, fish prices are linked directly to the variable cost of transport.⁸³

Industrial sector licensing for fishing in Tanzania's EEZ began in 1998 with the licensing of nine vessels. The number of licences increased to 64 in 2004. According to INFOSA,⁸⁴ the EEZ has a potential production of 730 000 metric tonnes of fish per

year. The industry operating in the EEZ comprises shrimp and prawn trawlers, as well as purse seine vessels, which harvest sardines. The sector is export oriented and exports marine resources such as tuna, shells, lobster, crab, squid, octopus and aquarium fish.⁸⁵ Industrial fishing accounts only for an estimated 5% of the total marine catch, with shrimp production ranging between 1 000 and 1 500 tonnes per annum. Ironically, in a country where the fishery potential of its EEZ has not been assessed, the number of licences is often used as an indication of the potential of EEZ fisheries.⁸⁶

The severe lack of data on the fishery production potential in the EEZ makes its management extremely difficult. Without knowing the status of the stock, it is nearly impossible to assess whether resources are harvested sustainably. This also makes it very easy for illicit fishing activities to thrive in the EEZ. One management tool that has been adopted is the limitation that has been placed on the capacity of fishing vessels operating in the EEZ. The capacity of the vessels may not exceed 150 gross registered tonnage and they may not have more than 500 horsepower engines. This limitation was implemented in order to safeguard sustainability. However, the fact that the shrimp industry collapsed early in 2008 points to the fact that this limitation on vessel capacity has not proved to be a successful means to ensure sustainable utilisation of this resource. The prawn fishery too experienced a rapid decline in catches and associated by-catch in 2004, and recently a two-year moratorium was imposed on prawn fishing, as it is no longer economically viable.⁸⁷ Notably, this drastic measure has been endorsed by the members of the prawn fishing industry.⁸⁸

POLICIES AFFECTING FISHERIES MANAGEMENT

The list of legal instruments depicted in Table 2 on page 19 is not comprehensive, as it does not reflect other sector policies that affect fisheries sector management. Table 2 is meant to serve as an example of the many different policies and laws that are in effect and are affecting fisheries management. The number of different policies that the Fisheries Division has to implement can be seen as an indicator that the fisheries sector is not governed in a holistic and integrated manner, although there is a trend to move to better fisheries governance with the most recent laws, most notably the 2003 Integrated Coastal Management Strategy and the 2003 Fisheries Act, which will be discussed later.

Table 2 shows primarily policy instruments for mainland Tanzania, and there is little to suggest that the Fisheries Divisions of Zanzibar and mainland Tanzania work together for joint fisheries management. In fact, due to the political governance structure of Tanzania and Zanzibar, there is no national fisheries policy, as the fisheries sector is not considered a union matter. Mainland Tanzania and Zanzibar therefore manage their fisheries sectors separately. A possible reason for the lack of co-ordination between the two Fisheries Divisions is that mainland Tanzania has put most of its management efforts into the lake fisheries, and marine fisheries have been an open access system.⁸⁹ It must be stressed that there is a need for policy harmonisation between the fisheries management systems of Zanzibar and the Tanzania mainland. Recently, some efforts have been made in the harmonisation of regulations, which take into consideration the international and regional obligations listed in Table 2. At the local level, local government authorities have considered the harmonisation of legal frameworks when developing by-laws in areas

Table 2: Policies, statutes and international instruments affecting fisheries management in Tanzania

International/regional	Other national policies affecting fishery management	National fisheries policies
1971 Ramsar Convention on Wetlands of International Importance	1967 Arusha Declaration (Tanzania's home-grown socialism policy)	1970 National Fisheries Act
1975 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1974 Wildlife Conservation Act	1988 Zanzibar Fisheries Act
1982 UN Convention on the Law of the Sea (UNCLOS)	1996 Forest Management and Conservation Act 10/96 (protection, conservation and sustainable management of Zanzibar's forestry resources)	1992 Town and Country Planning Regulations (Public Beaches)
1985 UN Environmental Programme Convention for the Protection, Management and Development of the Marine and Coastal Environment of Eastern African Region	1996 Environmental Management for Sustainable Development Act (Zanzibar)	1993 Zanzibar Fisheries Regulations
1992 Rio Declaration Agenda 21	1997 National Environmental Policy	1994 Marine Parks and Reserves Act
1992 Conventions on Biological Diversity (CBD)	1998 National Poverty Eradication Strategy	1997 National Fishery Sector Policy Strategy Statement
1995 FAO Code of Conduct of Responsible Fisheries	2000 Poverty Reduction Strategy Paper	1998 Deep Sea Fishing Authority Act
2000 Millennium Development Goals	2000 Development Vision 2025	1998 Territorial Sea and Exclusive Economic Zone Act
2001 SADC Protocol on Fisheries	2002 Forest Act	2001 Tanzania State of the Coast, People and Environment
2002 Johannesburg Plan of Implementation (World Summit for Sustainable Development)	2005 National Strategy for Growth and Reduction of Poverty (MKUKUTA ^a)	2003 National Fisheries Act
2003 Protocol on Sustainable Development of Lake Victoria Basin		2003 Integrated Coastal Management Environmental Policy
2005 Nepad ^b Action Plan for the Development of African Fisheries and Aquaculture		

a: For a discussion of this policy, see below.

b: New Partnership for Africa's Development.

Source: Adapted from Ruitenbeek J *et al.* (eds), *Blueprint 2050*. Washington, DC: World Bank, 2005, p. 88.

where the managed resources are shared. Policy harmonisation is critical, since fish do not respect political boundaries.⁹⁰

BROAD TANZANIAN FISHERIES POLICY FRAMEWORK

The tectonic shift away from the practices of the Ujamaa socialist government has changed the government's role in major sectors of the economy and has therefore impacted on how natural resources are used and managed. This has led to the private sector and civil society playing a far greater role in the development of policy and the taking of investment decisions relating to the environment and natural resources.⁹¹ A critical question is the degree to which Tanzania's broad environmental policies are 'pro-development' and conducive to progressive and sustainable fisheries policy and development. Some of the major broad Tanzanian policy instruments are discussed below.

National Environmental Policy (1997)

The National Environmental Policy (NEP) provides a framework for making fundamental changes that are needed to bring environmental considerations into the mainstream of decision-making in Tanzania. It also provides for sectoral and cross-sectoral policy analysis in order to achieve compatibility among sectors and interest groups. The NEP is necessarily broad in scope, as it involves many sectors, and the logistical demands for overseeing its implementation are complex, due to the number of stakeholders involved across all the sectors that the NEP affects. The central challenge of the NEP is to ensure that all stakeholders concerned take action such that environmental protection is pursued. Furthermore, the NEP sets out to ensure that the actions of all stakeholders are mutually supportive and reflect a mission subscribed to by all. This means strengthening the functions of government and the corresponding institutions dealing with environmental protection.⁹²

The NEP provides for the execution of a range of functions, including:

- developing a means of consensual agreement for making trade-off decisions between intermediate economic effects to meet short-term and urgent developmental needs and long-term sustainability benefits;
- developing a unifying set of objectives and principles for an integrated multi-sectoral approach necessary in addressing environmental issues;
- fostering government-wide commitment to the integration of environmental concerns in the sectoral policies, strategies and investment decisions and the use of relevant policy instruments to achieve this objective; and
- creating a context for planning at the multi-sectoral level to ensure a more systematic approach.⁹³

The NEP takes a holistic view of the environment and uses the term in its broadest sense. It defines the environment as

air, land and water; plant and life including human life; the social, economic, recreational, cultural and aesthetic conditions and factors that influence the lives of human beings and their communities; buildings, structures machines and other devices made by man; any solids, liquids, gases, odour, heat, sound, vibration and radiation resulting directly or indirectly from activities of man; and any part or combination of the foregoing and the inter-relationships between two or more of them.⁹⁴

It is noteworthy that the natural environment is not seen as separate from the built environment, and people and communities are seen as intricately part of the environment, both in the rural and urban spheres. This broad conception has implications for the way in which environmental policy is implemented, because it understands that human beings and their activities are part of the environment; thus environmental management cannot view the natural environment in isolation.

The NEP 'takes ownership' of Tanzania's environmental problems and in doing so takes responsibility for solving these problems. It also recognises the cause-and-effect relationship between poverty and environmental degradation and that a healthy economy is inextricably linked to a healthy environment: 'Problems of underdevelopment such as poverty, ill health and others that plague the majority of Tanzanians are as much environmental problems as they are developmental. Environmental protection is therefore a social and economic necessity.'⁹⁵

For policy purposes, poverty is seen as a composite index of human deprivation, extending from command over economic resources and access to education, food, shelter and energy needs, and the quality of the physical environment.⁹⁶

A cardinal challenge confronting government is to mainstream environmental issues into the core of national development policymaking. The NEP identifies six problems that require or demand urgent attention:

- 1 land degradation;
- 2 lack of accessible, good-quality water for urban and rural inhabitants;
- 3 environmental pollution;
- 4 loss of wildlife habitats and biodiversity;
- 5 the deterioration of aquatic systems; and
- 6 deforestation.

All of these impact on the economic well-being and health of the people of Tanzania.⁹⁷ A number of cross-sectoral policies highlighted in the NEP, as well as specific sectoral policies, seek to address the environmental issues highlighted above. The cross-sectoral policies are those of

- 1 addressing poverty;
- 2 demographic dynamics;
- 3 land tenure;
- 4 technology;
- 5 biodiversity;
- 6 public participation and education;

- 7 the role of the private sector and NGOs; and
- 8 an enhanced role for women.

The 13 specific sectoral policies within the NEP are those related to agriculture, livestock, water and sanitation, health, transport, energy, mining, human settlements, industry, tourism, wildlife, forestry and fisheries.

The primary policy objective of the fisheries sector policy within the NEP is to preserve the environment, while simultaneously providing nutrition to people and enhancing their income through fish sales. Supporting policy objectives of the fisheries sector policy are to ensure that fisheries are developed in a sustainable manner and that destructive fishing and processing methods are combated. Fishers are to be supported by government so that appropriate fishing equipment is made affordable and alternative fish processing methods are promoted. In doing so, government is attempting to curb the deforestation of highly diverse coastal forests as a result of fish smoking. It is hoped that, through improved processing and preservation methods, post-harvest losses will be reduced. Through stock assessments, fish stocks are to be conserved by implementing maximum sustainable yields, and the introduction of non-indigenous species will be controlled. Lastly, through proper fisheries management, endangered species and fragile ecosystems will be protected and integrated fish farming will be pursued to increase the productivity of fishing and decrease the pressure on wild fish stocks.

The National Poverty Eradication Strategy (1998)

The National Poverty Eradication Strategy (NPES) was enacted in June 1998 and provides a policy blueprint/template for the eradication of poverty in Tanzania. It provides background information about earlier poverty eradication policies that pre-date it, starting from independence in 1961, such as the national campaigns Uhuru na Kazi and Uhuru ni Kazi,⁹⁸ which were strategies to enhance employment and promote agriculture. Poverty eradication has been a policy objective since the 1960s, but the policies implemented did not promote sound economic growth, despite their implicit assumption that poverty eradication could be achieved as an outcome of economic growth and general distribution policies. The NPES looks at why these policies failed and the circumstances that limited their success.

The NPES categorically states that poverty eradication is everyone's responsibility. Thus, it provides an overall strategy that is to be incorporated into and mainstreamed in other policies, whether or not they deal specifically with poverty eradication. Poverty eradication is to be tackled at all levels of the state, namely the national, regional, district and village levels. This approach involves both state and non-state actors at all levels as key stakeholders in implementing the NPES, thus the NPES also provides a framework and sets in place co-ordination machinery for poverty eradication among the various stakeholders.

Given the renewed commitment in the international community to combating poverty, such as the UN Millennium Development Goals, more resources are being directed to poverty eradication initiatives. It is therefore important for individual countries to develop and implement national poverty eradication policies that serve to guide the international community in supporting national initiatives. Having the NPES ensures that Tanzania sets its own development agenda.

Other sectoral policies being implemented simultaneously with the NPES include policies for water, health, education and housing. There are also policies for agriculture, tourism, employment, the environment, women, community development, energy and mining. Because poverty eradication is a cross-sectoral initiative, it is not covered adequately by any of the abovementioned policies. The NPES therefore endeavours to bring about coherence and consistency and eliminate contradictions in policies in addressing poverty eradication.

Development Vision 2025 (2000)

The objective of the this Development Vision is to awaken, co-ordinate and direct the people's efforts, minds and natural resources towards those core sectors that will enable us attain our development goals and withstand the expected intensive competition ahead of us.⁹⁹

Development Vision 2025 is about strengthening Tanzania as a country with a strong developmental focus. It cites four reasons for the failure of two previous visions, namely donor dependency; weak and low capacity for economic management; failures in good governance and the organisation of production; and, lastly, ineffective implementation. The drafting of the vision entailed widespread consultation with various sectors of society. Its preamble highlights the point that the implementation of Development Vision 2025 is the responsibility of all stakeholders in their varying capacities.

The core developmental objective of Development Vision 2025 is that Tanzania will graduate from a least-developed country to a middle-income country by the year 2025, with an economy transformed from a low-productivity agricultural economy to a semi-industrialised one. The five main targets are:

- 1 a high-quality livelihood;
- 2 peace, stability and unity, emphasising democracy;
- 3 good governance, with emphasis on accountability;
- 4 a well-educated learning society, highlighting the importance of education; and
- 5 a competitive economy capable of producing sustainable growth and shared benefits, and understanding the need for a diversified economy.

Notably, Developmental Vision 2025 says little about natural resources and the environment, but these issues can be implicitly linked to the first attribute, a high-quality livelihood, which covers such issues as food security.

MKUKUTA/National Strategy for Growth and Reduction of Poverty (2005)

The successor of Tanzania's first Poverty Reduction Strategy Paper (2000) is the National Strategy for Growth and Reduction of Poverty, known as MKUKUTA (Mkakati wa Kukuza Uchumu na Kapunguza Umaskini Tanzania), which was completed in June 2005 to be implemented over the period 2005–10. It builds on Development Vision 2025, especially in terms of its emphasis on growth and the long-term strategy for reducing aid dependence.¹⁰⁰

MKUKUTA's development and implementation have taken place in a context of a significant overhaul of national planning and budgeting systems, with the intention of boosting results-based management, increasing domestic accountability, and achieving greater alignment and harmonisation of external financing.¹⁰¹ By recognising the need for ownership of policy in terms of its design and objectives, and the instruments and processes for effective implementation, the government has prioritised the task of building national planning and budgeting institutions that fully integrate MKUKUTA into their activities.

The development of MKUKUTA has enjoyed broad-based stakeholder engagement and extensive consultations. It is based on the principles of national ownership, political commitment to democratisation and human rights, and the maintenance of macroeconomic and structural reforms. It is predicated on building sector strategies and cross-collaboration, welding local partnerships for citizens to engage in policy dialogue, the harmonisation of aid, equity and benefit sharing, sustainable development, the strengthening of macroeconomic links, and the decentralisation and mainstreaming of cross-cutting issues.¹⁰²

MKUKUTA is an instrument for mobilising resources towards targeted poverty outcomes, and it identifies three clusters of broad outcomes:

- 1 the growth of the economy and the reduction of income poverty;
- 2 the improvement of the quality of life and social well-being; and
- 3 governance and accountability. Thus, it has an increased focus on equitable growth and governance.

Each of these clusters has a set of goals and targets, in addition to related cluster strategies. The government recognised that proper monitoring and evaluation of MKUKUTA is essential in assessing its developmental effectiveness and also for promoting accountability. Additionally, the government has made considerable progress in developing its monitoring and evaluating systems.¹⁰³

There is recognition in the MKUKUTA policy document that the environmental sector has the potential to increase its contribution towards poverty reduction over and above what is presented in the 2004 Environmental Management Act (EMA), which accords rights and responsibilities to individuals as well as national and local institutions with respect to the six environmental challenges outlined in the NEP.¹⁰⁴ This is to be done by increasing incomes and revenues from natural resources and wetland resources, by protecting the environment and providing environmental services and benefits for the well-being of Tanzanians, and by improving transparency in providing access to and exercising control over resources. With the NEP and EMA in place, and given MKUKUTA's successful mainstreaming of environmental issues (15 environmental targets out of 108), it may be concluded that on paper Tanzania is well placed to address its environmental challenges.¹⁰⁵

INTERNATIONAL AND REGIONAL FISHERIES POLICY

The United Republic of Tanzania is a signatory to a host of international laws and policies governing the fisheries sector. These include UNCLOS, the UN Code of Conduct of Responsible Fisheries, the SADC Fishery Protocol and the Nepad Fishery Action Plan.

These international laws and policies have an influence on Tanzania's national fishery policy arena, as they are incorporated into its national fisheries policies when they are ratified by the Tanzanian government. The majority of these international fishery laws and policies promote the use of the fishery sector as a developmental tool and a poverty alleviation strategy. The national fishery policy is overwhelmingly developmental in its objectives, and while concern for the conservation of marine resources is not central, it still remains an important issue. Tanzania is also a member of a number of regional bodies concerned with transboundary management, such as the Indian Ocean Tuna Commission and the Agulhas and Somali Current Large Marine Ecosystems (ASCLME) project, although the latter is concerned with management at an ecosystem level. Tanzania is reasonably active in participating in regional and international issues that are considered relevant in order to achieve effective marine resource conservation, protection and management while ensuring that people benefit from these resources.¹⁰⁶

Agulhas and Somali Current Large Marine Ecosystems Project

The inception of the ASCLME project follows on from the Benguela Current Large Marine Ecosystem project, and like the latter, the ASCLME project recognises the need for transboundary management of fishery resources. The ASCLME project is a five-year Global Environmental Facility (GEF)-funded project that started in 2007. It involves nine countries on the east coast of Africa, namely the Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa and Tanzania.

The primary objective of the project is to undertake an environmental baseline assessment of the ASCLME. The project focuses on information capture and management, capacity building, and co-ordination. The deliverables of the project are (1) to acquire sufficient data to support an ecosystem-based approach to transboundary management of the two large marine ecosystems and (2) to develop transboundary diagnostic analysis and strategic action plans (SAPs). The expected project outcomes are fourfold:

- 1 information capture for development transboundary diagnostic analyses;
- 2 the long-term development of data collection, management and distribution mechanisms;
- 3 the development of SAPs and associated sustainability mechanisms adopted to support a large marine ecosystem (LME) approach; and
- 4 LME co-ordination and communication, and the establishment of a participation mechanism to ensure better understanding by policymakers and other stakeholders of LME issues.

NATIONAL FISHERIES POLICY

National Fisheries Sector Policy and Strategy Statement (1997)

The overall goal of the National Fisheries Sector Policy and Strategy Statement is 'to promote conservation, development and sustainable management of the fishery resources for the benefit of present and future generations'.¹⁰⁷

This policy document outlines the characteristics of Tanzania's fisheries, both in terms of their significance and the challenges faced by the sector. It focuses on the promotion of the sustainable utilisation of and marketing of marine resources to provide food, income, employment and foreign exchange and the effective protection of the aquatic environment in order to sustain development. The document acknowledges the limitations of fisheries as a renewable resource and the need to conserve the resource. Some of the problems outlined in the policy document persist today, although many have improved as a result of various donor-funded projects. These problems include 'conflicting sectoral policies, lack of general appreciation of the values of the natural resources and therefore their need for conservation and management, as well as lack of a central point for co-ordination of management actions'.¹⁰⁸

The fisheries sector policy contains four policy statements, each of which has a number of strategies to achieve the relevant policy statement. They are as follows:

- 1 to put to efficient use the available resources in order to increase fish production and improve fish availability, as well as to contribute to the growth of the economy;
- 2 to enhance knowledge of the fisheries resource base;
- 3 to establish national strategic/applied research programmes that are responsive to the fisheries sector; and
- 4 to improve the utilisation and marketability fisheries products.

The National Fisheries Sector Policy and Strategy Statement is overwhelmingly developmental in that its primary aim is to manage the fisheries so that the fisheries sector can contribute more substantially to the livelihoods of coastal communities and the developmental objectives of Tanzania. There is little emphasis, however, on conservation efforts and measures to limit the fishing pressure on stocks other than the promotion of aquaculture.

Integrated Coastal Management Strategy (2003)

The national Integrated Coastal Management (ICM) Strategy provides a policy framework and specific strategies to improve coastal and marine stewardship and environmentally sound development planning. The strategy is based on the notion that achieving a healthy marine and coastal environment needs to go hand in hand with improving the livelihood standards of coastal communities.

Strategy 1 supports environmental planning and integrated management of coastal resources and activities at the local level and provides mechanisms to harmonise national interests with local needs, and also acknowledges the importance of and actively promotes community participation in the management of marine resources.¹⁰⁹

Strategy 2 highlights the need to balance environmental stewardship and seeks to 'promote integrated sustainable and environmentally friendly approaches to the development of major economic uses of the coastal resources to optimise benefits'.¹¹⁰

Strategy 3 highlights the need to conserve critical habitats such as seagrass beds and biodiversity hotspots while ensuring that coastal communities benefit from the sustainable utilisation of marine resources.

Strategy 4 is to 'establish an integrated planning and management mechanism for coastal areas of high economic interest and/or with substantial environmental vulnerability to natural hazards'.¹¹¹

Strategy 5 addresses the inadequacy of the information resources required for sound decision-making. It aims to develop an effective coastal ecosystem research, monitoring and assessment system that will allow scientific and technical information to enhance ICM Strategy decision-making.

The importance of sustainable utilisation is highlighted in **strategy 6**, which seeks to 'provide meaningful opportunities for stakeholder involvement in the coastal development process and the implementation of coastal management policies'.¹¹²

Strategy 7 seeks to 'build both human and institutional capacity for interdisciplinary and inter-sectoral management of the coastal environment'.¹¹³

Marine and Coastal Environmental Management Project

The Marine and Coastal Environmental Management Project (MACEMP) is a World Bank-funded project with co-funding from the GEF. It was initiated in December 2005 and is applied to both the mainland, which receives 60% of the funding, and Zanzibar, which receives the remaining 40%. The project has four components:

- 1 the establishment of a common governance regime for the EEZ and the establishment of the Deep Sea Fishing Authority;
- 2 the improved management of territorial and internal waters;
- 3 improvement of the livelihood of coastal communities; and
- 4 project implementation and facilitation.

The MACEMP embraces the following objectives as part of its four main components:

- 1 the sustainable development of resources for the benefit of local communities;
- 2 the development of a network of marine protected areas such that 10% of the coastline consists of 'no-take' areas;
- 3 strengthening the management of deep-sea fishing in the EEZ; and
- 4 capacity building to engage local communities in the management of marine resources.

The MACEMP is to establish a common governance regime for the EEZ; this undertaking is facilitated by the amendments made to the Deep Sea Fishing Authority Act. The project intends to set up a deep-sea fishing authority composed of members from mainland Tanzania and Zanzibar. Such an authority will have the power to issue licences to fish in the EEZ, which at present are issued independently.

The project also intends to establish effective management of territorial and coastal waters. Part of this objective is to ensure that local communities are empowered to be in a position to help manage resources sustainably. Part of the project is also to make an inventory of cultural heritage sites so that they can be marketed as tourist sites, as well as collecting indigenous knowledge of the coastal environment. Through this project, the Tanzanian Fisheries Research Institute is commissioned to conduct a baseline study, essentially a stock assessment of the inshore resources.

The MACEMP is also intended to improve the livelihood of coastal communities. To achieve this, the project intends to raise the awareness of communities about the importance of the conservation of marine resources and to ensure that the benefits accrued from coastal resources are sustainable. It is envisaged that through co-management arrangements, communities will play an active and integrated role in management. The project also attempts to facilitate and fund the implementation of small-scale projects to increase the income of rural livelihoods. These projects are intended to look at alternative sources of income other than fishing, as near-shore resources are in decline. Some of the alternatives include seaweed farming, salt production and other aquaculture projects such as fish and crab farming.

TANZANIAN FISHERIES GOVERNANCE

The responsibilities of the government's Fisheries Division include the formulation of national fisheries policies; setting the governance rules for resource utilisation and conservation; determining the size and type of fishing equipment appropriate in a particular fishery; conducting research; and providing training to ensure the implementation of national, regional and international obligations and that policy objectives are met.¹¹⁴

Until recently, fishery resources have been regulated by the 1970s Fisheries Act, which has been replaced by the Fisheries Act No. 22 of 2003. This Act makes provisions for sustainable development; the conservation and protection of fishery resources; aquaculture development; and the regulation and control of fish, fish products and aquatic flora and their products. Historically, fisheries management concentrated on lake fisheries in Lake Victoria, Lake Nyasa and Lake Tanganyika, leaving the marine fisheries essentially unrestricted and open access.¹¹⁵

In the process of improving the fishery sector, the need to include resource users and other stakeholders such as the private sector, NGOs and research institutions was recognised, resulting in the development of the 1997 National Fisheries Sector Policy and Strategy Statement (discussed above).

Despite the recognition that the participation of all relevant stakeholders is needed in the management of fisheries, power is still overwhelmingly concentrated within the ministry.¹¹⁶ In 1998 the Fisheries Division developed an implementation plan to form the basis for implementing the National Fisheries Sector Policy and Strategy Statement, but this plan lacked empowerment capabilities and was not consistent with the 1970 Fisheries Act. With the assistance of the Japanese government, steps were taken to operationalise the National Fisheries Sector Policy and Strategy Statement and its implementation plan, which involved conducting a thorough study of the national fisheries, culminating in the Master Plan on Fisheries Development.¹¹⁷

The 2003 Fisheries Act makes provision for the sustainable development, protection, conservation, regulation and control of fish and their products as well as aquatic flora and their products. The Act places the overwhelming responsibility for fisheries management in the hands of the Fishing Division, and only acknowledges beach management units as other stakeholders in fisheries management.

All powers relating to fisheries management are vested with the director of fisheries. This goes directly against the grain of earlier policy instruments that seek to devolve power through systems of co-management, as the final decision-making power rests with the director. This is not unlike the powers of fisheries ministers seen in governance systems in other parts of the world.

Tourism development is one of the issues not addressed within the National Fisheries Sector Policy and Strategy Statement and is of growing concern to coastal management. Coastal areas are known for attracting tourist activities, but the tourist sector has been described as a double-edged sword.¹¹⁸ Apart from the positive investment opportunities and the creation of employment in an area, uncontrolled tourist development is having a negative effect on the Tanzanian coastal environment. For example, the construction of tourist hotels may lead to the clearance of important habitats such as mangroves, negatively affecting marine species that depend on this key habitat within the Tanzanian marine ecosystem.¹¹⁹

The NEP (1997) becomes important in this regard, as it provides holistic environmental planning guidance (see above). The 2003 ICM Strategy is another progressive piece of legislation that could address the issue of development in the fisheries sector, as it provides a framework and process for linking various coastal sectors such that decisions relating to coastal issues are made in a holistic manner to improve the management of coastal resources and the environment (see above).

Key fisheries management objectives and focus

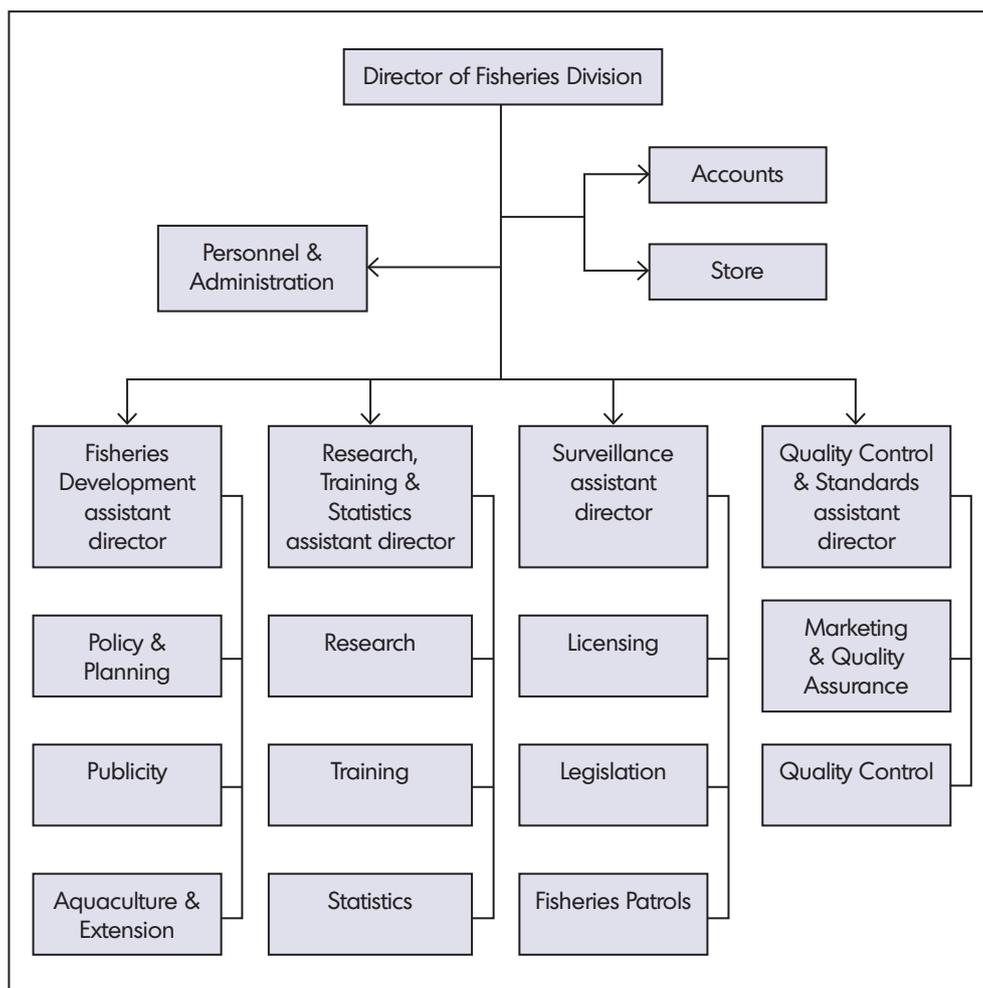
Monitoring, control and surveillance (MCS) is one of the core competencies of the Fisheries Division, as shown in Figure 2 on page 30. The national MCS programme includes the issuing of fishing licences, the prevention of illegal fishing, and the enforcement of laws pertaining to fishing equipment and other restrictions. Enforcement is executed at national and local levels, thus involving local authorities. Due to the high cost of enforcement, the Fisheries Division is unable to fulfil the mandate of MCS alone and therefore involves other stakeholders. An example of this involvement is that the Fisheries Division calls on the Tanzanian navy to aid with enforcement, especially in the EEZ, where it lacks sufficient capacity to patrol the entire extent of the EEZ.¹²⁰ Provision is also made for local community involvement in monitoring. A problem observed in the national MCS programme is that the judicial system does not provide for separate fisheries courts, as fisheries violations are seen as civil cases. The normal legal process is lengthy and is characterised by a poor prosecution track record and low penalties for fisheries law/regulations violations. Attempts have been made to revise the fisheries legislation to create fines and penalties that serve as a greater deterrent and to train fisheries staff in MCS and prosecution.¹²¹

Fisheries monitoring forms part of the national MCS programme, but the ability to monitor fisheries relates to the research capacity in the Fisheries Division. Within inshore and offshore commercial fisheries, observer programmes have been developed

and implemented.¹²² The greatest gap with respect to fisheries monitoring is in the artisanal sector. Due to the fact that fish are sold from boats as soon as they are caught, the exact size of the artisanal fishery harvested is unknown. This lack of information is compounded by the fact that the artisanal sector is open access and an entirely informal sector. Thus, tracking the sale of fish is not a viable option to gain insight into how much is sold. Considering that the artisanal sector makes up the bulk of the total annual landings, it is critical that monitoring programmes for the artisanal sector be developed. Historically, catch data used to be collected daily at landing sites, but following a change in the administrative structure as a result of decentralisation, the collection of daily records has ceased. Annual catch statistics are currently based on ad hoc catch assessment surveys and frame surveys. A frame survey looks at total remuneration of fishers, craft, equipment, etc., thereby assessing fishing markets and fishing efforts. Tanzania's last frame survey was conducted in 2007.¹²³ The estimated annual catch landing for the artisanal sector is at present an educated guess at best.

Structure and function of fisheries departments in Tanzania and Zanzibar

Figure 2: Tanzania mainland Fisheries Division organisational structure



Management tools

A host of management tools are commonly used the world over. In Tanzania the Fisheries Division utilises a number of these tools, some of which include:¹²⁴

- closed seasons;
- zoning to limit conflict between competing sectors and for conservation purposes;
- limitation on fishing equipment and boat capacity, as well as fishing times;
- restrictions on fishing depth; in Tanzania, fishing vessels are not allowed to fish in waters less than 5 metres deep to avoid destruction to marine habitats;
- collection of catch statistics for research and management purposes for commercial vessels;
- monitoring of the position of fishing vessels, who are obliged to communicate daily with the Fisheries Division;
- the establishment and management of marine protected areas; and
- the involvement of the fisheries stakeholders in the co-management of resources, as indicated in the National Fisheries Sector Policy and Strategy Statement of 1997.

The management of access to the fisheries is an important aspect of fisheries management. This is governed by the Surveillance Directorate, as seen in the Figure 2 on page 30. The open access nature of the fisheries hampers the ability of government to manage fishery resources. Other access management options used globally include individual quotas, territorial user rights and community rights.

An individual quota system is not used in Tanzania, because of the difficulty and expense of monitoring small-scale fishers.¹²⁵ Such a system is a common means of governing access control in industrial fisheries, whereby fishers or fishing companies would apply for a right to harvest marine resources. A total allowable catch (TAC) is determined by the fishing authority, which, in turn, will apportion the TAC to the rights holders for a particular year or fishing season. The TAC can be adjusted depending on the health of the stocks, but access rights are usually issued over a long period. There is the potential to use a quota system within the trawling sector because of the limited number of vessels and the use of a single landing site in Dar es Salaam.¹²⁶

Although the National Fisheries Sector Policy and Strategy Statement of 1997 promotes community participation in coastal resources management, community rights are not well defined. This contrasts with individual licences, which give fishers the right to fish along the entire coastline, thereby allowing for migrant fishing.¹²⁷ The movement of migrating fishers is locally known as *dago* and is an important characteristic of many fisheries in Tanzania. The increase in the number of fishers in a particular area over a season has resulted in an increase in fishing activities and has been the cause of many conflicts with local communities.¹²⁸

Funding

According to the 2003 Fisheries Act, the minister has the power to charge fees for licensing, services and permits. The Act also makes provision for the establishment of a Fisheries Development Fund. This fund is envisaged to finance a host of activities that relate to fisheries management. Contributions to the fund include those from parliament,

individual donor grants, corporations, foundations and private individuals. Any income generated from the projects financed by the fund is ploughed back into the fund once all the expenses of the project are met. A committee of the Fisheries Development Directorate is responsible for the fund and has to be appointed by the minister. The objectives of the fund are to:¹²⁹

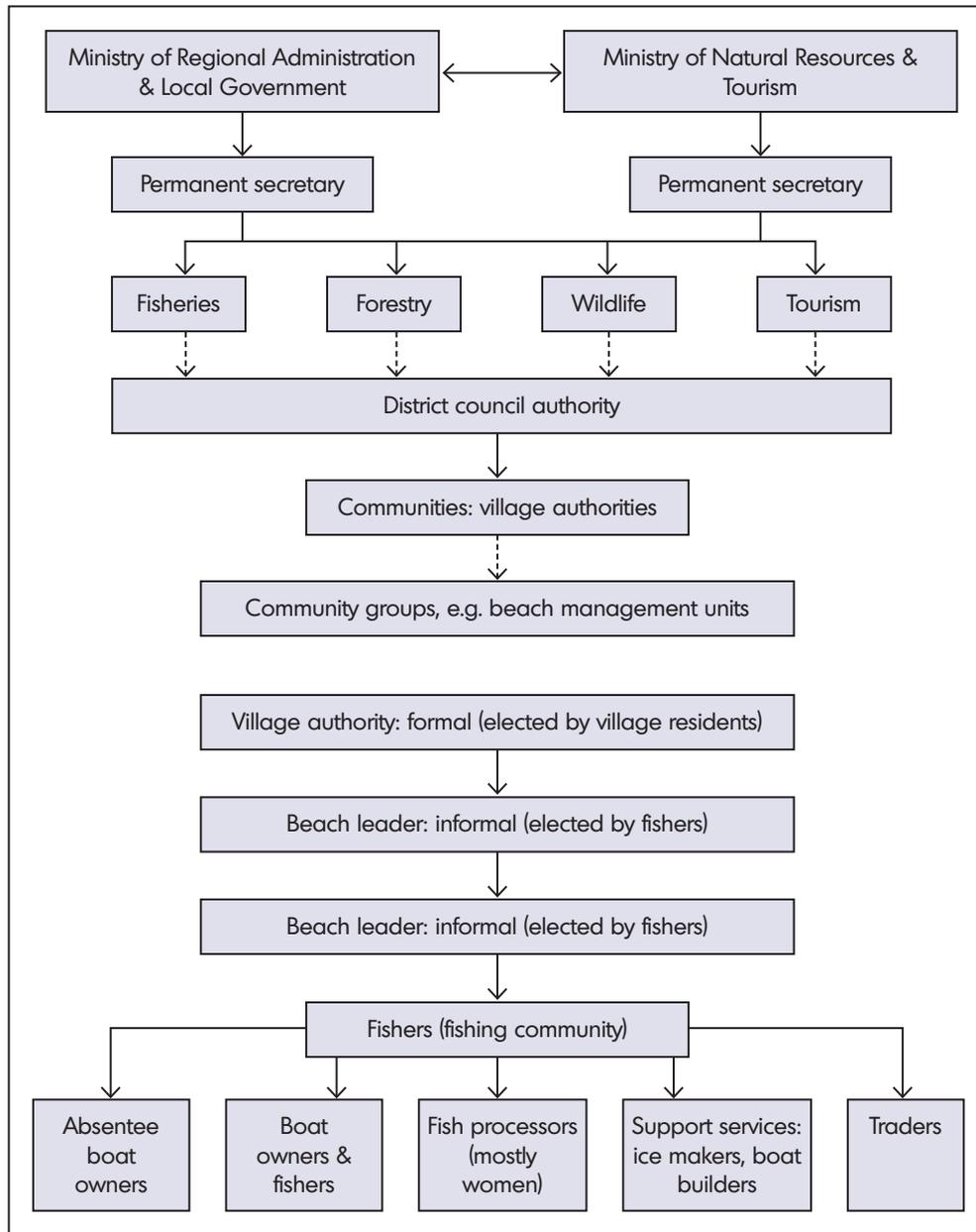
- raise awareness of sustainable utilisation and education and training;
- promote the development of community management units (in order to facilitate the proper functioning of a co-management governance system);
- ensure that mainland Tanzania benefits from international initiatives and international funds directed towards the conservation and protection of biodiversity and the promotion of the sustainable development of fishery resources;
- provide assistance to stakeholders, whether groups or individuals, to participate in any type of public debate and discussions on fisheries;
- promote and develop research on fisheries;
- support fisheries protection;
- assist groups and individuals to comply with the Fisheries Act of 2003;
- promote and market fishery products in external markets and ensure compliance with international standards, and also improve the quality for the local market;
- enable mainland Tanzania to pay the membership fees and contributions to international fisheries organisations;
- promote aquaculture and the restocking of natural water bodies;
- facilitate fisheries data collection; and
- promote any other activities that will advance the purposes of the Fisheries Act of 2003.

From the list of activities the fund is meant to finance, it is apparent that it is the central means of financing the activities of the Fisheries Division in mainland Tanzania. The Fisheries Division also enjoys a retention scheme whereby revenue accrued from the fisheries resources rents is allocated in the annual budget.¹³⁰ This older scheme is a parallel source of funding to meet the management and resource development obligations referred to in the Fisheries Act of 2003. Over the past ten years, revenues accrued to government from Tanzania's fisheries have improved¹³¹ due to increased participation in international markets and the increasing participation of foreign vessels in the burgeoning commercial fishing sector in the EEZ.

Actors in marine fisheries governance

The management of fisheries resources is the responsibility of government, but the National Fishery Sector Policy and Strategy Statement recognises other actors in fisheries governance, as well as their roles and responsibilities. Until 2008 the Ministry of Natural Resources and Tourism formulated policies, laws and fisheries legislation and held the primary mandate to manage the fisheries sustainably and to ensure that they are utilised optimally for the benefit of the Tanzanian people. Yet this configuration is complex and involves long lines of communication, as is seen in Figure 3 on page 33.¹³² Other government ministries such as Tourism, Forestry and Wildlife also provide support for

Figure 3: The institutional structure and chain of fisheries-related decision-making in Tanzania



the Fisheries Division. The Fisheries Division was recently moved from the Ministry of Natural Resources and Tourism to the Ministry of Livestock Development.

The donor community plays a significant role in the governance of fishery resources through the financial support given to the government, NGOs and the research community to fund fisheries research projects. The most significant management undertakings, such as the establishment of a joint management regime for the EEZ and the most recent frame survey, have been facilitated by the funding support of the donor community. The major

donors to the sector in Tanzania are the FAO, the World Bank, the Swedish International Development Co-operation Agency and the Norwegian government.

Despite the support provided to aid fisheries governance, one criticism that has been levelled is that this may narrow the scope for Tanzania to determine its own research and fisheries management agenda. Donors do not only give support to undertake research, but also provide critical support to develop fisheries policies. Tanzania has one of the most progressive fisheries policies in Africa, with the ICM Strategy as a testimony to this, as Tanzania is one of very few countries in Africa that has such a strategy. However, the level of support by donors raises the question as to whether Tanzanians are formulating their own policies. This concern is compounded by the observation that the Tanzanian government struggles to meet the objectives set out in the myriad policy documents that it is signatory to. Arguably, there is a lack of understanding and clarity during the policy formulation stage, particularly as this applies to existing constraints on the two Fisheries Divisions of mainland Tanzania and Zanzibar.

Other than the donor community, international NGOs are also operating on a much more localised scale in Tanzanian fisheries governance. NGOs and Tanzanian civil society organisations are key stakeholder in fisheries management and bring the voice of local fisher communities to the fore in management engagement with government. NGOs play a watchdog role in ensuring that the government meets its objectives. They also support local fisher communities in building capacity to actively engage in management activities. Lastly, they serve as implementers of donor-funded projects. Thus, NGOs are key players in the Tanzanian fisheries management landscape.

Civil society has played an increasing role in fisheries management with the implementation of co-management initiatives and the formulation of beach management units, as it is essentially at the 'water's edge' of management and needs to be engaged at all levels of this process. Civil society can also play an important role in the monitoring of the resources, conservation and tourism initiatives, as well as surveillance in the case of IUU fishing. This can be achieved provided that it is capacitated to undertake these important management functions and is given the necessary support by government. Resource governance has a lot more to do with the management of people's resource extraction behaviour than conservation per se. If locals are left out of the fisheries management loop, it is unlikely that sustainable resource utilisation and conservation management objectives will be met.

GOVERNANCE CHALLENGES CONFRONTING THE FISHING INDUSTRY

Institutional framework

Due to the political governance structure of Tanzania and Zanzibar, there is no national fisheries policy, as the fisheries sector is not considered a union matter. Mainland Tanzania and Zanzibar therefore manage their fisheries sectors separately. The lack of a common governance regime between the Tanzanian mainland and Zanzibar leads to inefficiencies in generating licence revenues and impacts on the management of both inshore and offshore

fisheries.¹³³ But because of the shared EEZ, a programme is currently being implemented under the World Bank-funded MACEMP to establish a joint management regime for this area.

Institutional capacity

The Tanzanian mainland and Zanzibar have their own Fisheries Divisions. There have been significant changes in the mainland Fisheries Division in the last six months, most notably that it has moved from the Ministry of Natural Resources and Tourism to the Ministry of Livestock Development. The motivation for the change of ministries remains unclear, but is believed to have been informed by concerns of corruption and mismanagement. There are a number of directorates within the Fisheries Division, but the number is to be reduced. The current directorates include: Monitoring Control and Compliance, Fisheries Development (policy development), Quality Control, and Research and Statistics. These will be subsumed into three directorates.

Despite the significance of the artisanal sector, the number of fishers involved in the sector and the vast majority of the landings attributed to it, it is a difficult one to manage. Because fishers are geographically diverse, entry to the fisheries is free and fishing is a vital source of livelihood to coastal communities, limiting access to the sector would be problematic. The legal regulatory framework that governs the exploitation of fisheries resources by artisanal fishers comprises primarily conservation measures such as equipment limitations, closed fishing areas and zoning.¹³⁴

Research capacity

There is a general consensus that all stocks are either exploited to maximum capacity or over-exploited, but there is no certainty as to sustainable yields in the various fisheries.¹³⁵ Also, very little is known of the status of stock in Tanzania, because the capacity to undertake research is limited in all sectors. Indeed, much of the scientific research capacity that does exist is already funded by donors.

Jiddawi and Ohman contend that 45% of marine fisheries and marine ecology studies were conducted in the 1990s and 33% were conducted in the 1980s.¹³⁶ The last boat-based stock assessment was conducted in 1983. There are plans to conduct a stock assessment, however, as part of the World Bank-funded MACEMP.

A significant proportion of the extant research comprises short-term studies and research projects undertaken by students.¹³⁷ This is an indication of the quality of research that is used to gain an understanding of the fishery sector, which highlights the added difficulty of meeting the objectives of the elegant fisheries policies that Tanzania has drawn up. One simply cannot manage a resource about which there is wholly inadequate data and research.

The Tanzanian Fishery Research Institute (TAFIRI) conducts much of the scientific research used in decision-making by the Fisheries Division and in so doing performs an advisory role to government. Since TAFIRI is a government research facility, it is supposed to be wholly funded by government, but due to financial constraints, most of the research is externally funded. This state of affairs gives rise to questions about the independence of the research agenda and whether or not it aligns fully with national priorities.¹³⁸ Interviews

conducted with the head of TAFIRI for this report led to the response that decisions taken by government take ecological, social and political perspectives into account. The head of TAFIRI also contended that the organisation's research was in complete alignment with the current fisheries policy aim, which is to gain maximum benefit from the fisheries sector, both economically and socially, while conserving fish stocks.

Tanzanian management authorities invoke the precautionary principle when managing the country's fisheries resources. Much of the research on the state of stocks is based on monitoring fishing activity and primarily looks at trends based on catch data statistics, on the assumption that it is possible to arrive at a reasonable guess at the state of the resource in this way.¹³⁹ TAFIRI also has an observer programme on board some of the commercial fishing vessels, such as the prawn vessels. It is claimed that this facility provides reliable data and is fairly cheap to implement.

The biggest gap in fishery data, however, is in the artisanal sector. As previously argued, this is particularly significant due to the size of the sector and its influence on the natural environment. The difficulty of setting up a programme to collect catch data is complicated by the size of the sector, the levels of literacy and the fact that the sector is essentially an open access one operating from a myriad of beaches along the Tanzanian coastline. Nevertheless, research and data collection are critical steps in developing a manageable, equitable and sustainable marine fisheries industry in Tanzania.

SUMMARY AND RECOMMENDATIONS

Recognising the work of Ngatunga,¹⁴⁰ Mngulwi,¹⁴¹ and Jiddawi and Ohman,¹⁴² the main problems with Tanzanian fisheries management include the following:

- There is a lack of resources, including financial and human capacity to adequately execute management functions.
- The open access to fisheries is a problem, limiting the control government has on fisheries management.
- There is a lack of research capacity. Most management decisions are based on trends in the fisheries, but there are no precise catch statistics, adding to the complexity of the situation and the difficulty government experiences in meeting its management objectives for the fishing industry. Furthermore, much of the research is donor funded, calling into question the independence of the fisheries research agenda and the conducting of government research where it is most urgently needed.
- There is a lack of integration between the local and national levels of fisheries management. Co-management initiatives in Tanzania correctly attempt to bring local communities and resource users into the process of fisheries management, but it is unclear whether they have the capacity and the necessary resources to execute the management responsibilities devolved to them. It may be the case that local communities are given an unfunded mandate through co-management initiatives, and responsibility is handed over to them precisely because the government does not have the resources to carry out effective management itself.
- There is a lack of integration between the Zanzibar and mainland Tanzania fisheries. Fisheries are not considered to be a union issue and therefore they are managed by

two separate government Fisheries Divisions. The irony is that fishing, more than any of the non-union areas of governance, needs to be managed jointly, as fish and other marine resources do not respect territorial water borders. The MACEMP project's objective is to improve the livelihoods in coastal communities through improving the sustainable management and the use of the United Republic of Tanzania's EEZ and territorial seas.¹⁴³ A key component of the MACEMP is to facilitate joint management of the EEZ and to implement a common governance regime for it.

Another key component of the MACEMP is the promotion of sound management of the coastal marine environment by supporting and building on to the existing system of managing marine areas in the territorial waters and the ICM Strategy.

Other projects that are assessing and aiding the management of marine resources are the ASCLME project, which has an ecosystem management approach for the entire ASCLME, of which the Tanzania coast forms a part. In its initial phase, this project is primarily aimed at collecting baseline data and producing biological, social, economic and legislative frameworks to improve the management of the large marine ecosystems as a whole. A key objective is to develop strategic action plans that set out a strategy for how countries can collectively deal with transboundary threats.¹⁴⁴

Recommendations to ameliorate government fisheries management capacity include:

- ensuring that policy formulation includes all stakeholders in order to get greater buy-in to government policies;
- improving the dissemination of information regarding policies, legislation and fisheries management;
- improving knowledge of the resource base; and
- designing poverty alleviation strategies that take into account environmental considerations, thus ensuring that natural resource extraction contributes to sustainable development.

ENDNOTES

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PART 2**MAFIA ISLAND MARINE PARK: A CASE STUDY OF
MARINE FISHERIES RESOURCE MANAGEMENT
IN TANZANIA**

HONEST PROSPER NGOWI

INTRODUCTION

The Mafia Island Marine Park was selected as an appropriate case study for a number of reasons. Firstly, it has been argued that the process of the establishment of the MIMP has been acknowledged internationally as a good example of co-operative governance.¹ It is argued that in the process of establishing the MIMP, the government of Tanzania provided an enabling environment and new laws that encourage the decentralisation of fisheries management. The MIMP is also seen as an important example of the establishment of co-management arrangements through a 'learning by doing' process.

There are, however, dissenting opinions about the process by which the MIMP was established. Those who have questioned the process of the establishment of the MIMP include Andrews² and Mwaipopo,³ who question the extent to which it was participatory. Mwaipopo is of the view that process followed a top-down approach rather than one that was inclusively consultative. More particularly, local residents' dissenting opinions on the proposed marine park were not taken sufficiently into account.⁴

Some 50% of the about 18 000 residents within the MIMP boundaries depend on the exploitation of marine resources for their livelihood. The resources include fish, corals, mangrove trees, octopus and others. With very few alternative economic activities available, due to the poor soil quality and the inability to participate in other economic activities such as coconut palm farming and tourist initiatives, the opportunity costs are high when access to the most productive fishing areas are restricted. Some fishers in Mafia, according to Mwaipopo, feel that they had little choice but to accept that 'conservation regulations were inevitable and therefore they had to mould their ways and fit into the process'.⁵

With these differing views on the process of establishing the MIMP, among other things, this study attempts to identify, discuss and clarify a number of controversial and contested issues.

CONTENT OF THE CASE STUDY

The areas covered by the MIMP case study includes the following:

- the historical context of the MIMP;
- the management arrangements currently in place for the MIMP;
- a critical overview of the efficacy of these management arrangements in meeting the management objectives;
- the impact of the MIMP on the lives of residents; and
- the conflicting management objectives of the development of the fisheries sector to support sustainable coastal livelihoods and the conservation imperatives of maintaining ecological integrity and enhancing biodiversity.

METHODOLOGICAL APPROACH

Both primary and secondary data sources were used for the study. The desktop study was based on a comprehensive documentary review. The field research in Dar es Salaam and Mafia Island consisted of key stakeholder interviews, which were conducted through a questionnaire survey, semi-structured interviews and focus group discussions.

The key respondents in the study included local fishers in Mafia (Kilindoni and Kiegeani villages), fish traders at Kilindoni market and at fish landing site in Kilindoni, women engaged in the fisheries chain in different ways, councillors for Kilindoni and Kiegeani, the village executive officer for Kiegeani, Mafia District Council officials, MIMP staff in Mafia, staff of the Tanzania Marine Parks and Reserves Unit in Dar es Salaam, and staff of Tanpesca fish-processing factory and Kilimanjaro ice-making factory.

The study is also informed by inputs received in mailed questionnaires from key fisheries stakeholders. These include TAFIRI, MACEMP, the IUCN's Tanzanian Country Office, the ASCLME project, and the Ministry of Livestock Development and Fisheries.

MAFIA ISLAND AND MAFIA ISLAND MARINE PARK

Mafia Island and its chain of small islets lie approximately 120 kilometres south of Dar es Salaam and 20 kilometres offshore from the eastern extent of the Pwani region of mainland Tanzania. To the east of Mafia Island is the Indian Ocean. The main island of Mafia is about 48 kilometres long and 17 kilometres wide at its widest point. Several smaller islands and islets are scattered to the west and south.

The MIMP covers an area of 822 square kilometres and is located between S 07 45' 07" and E 39 54' 01", and S 08 09' 40" and E 39 30' 00". The park covers the southern part of Mafia Island and includes the inhabited islands of Chole, Juani Jibondo and Bwejuu and several uninhabited islets and the associated waters.

Mafia Island has about 40 000 inhabitants. The majority (estimated at between 80–90%) of people in Mafia depend on fisheries resources for their livelihoods.

Figure 1: Tanzania country map showing Mafia Island

MARINE RESOURCES AROUND MAFIA ISLAND

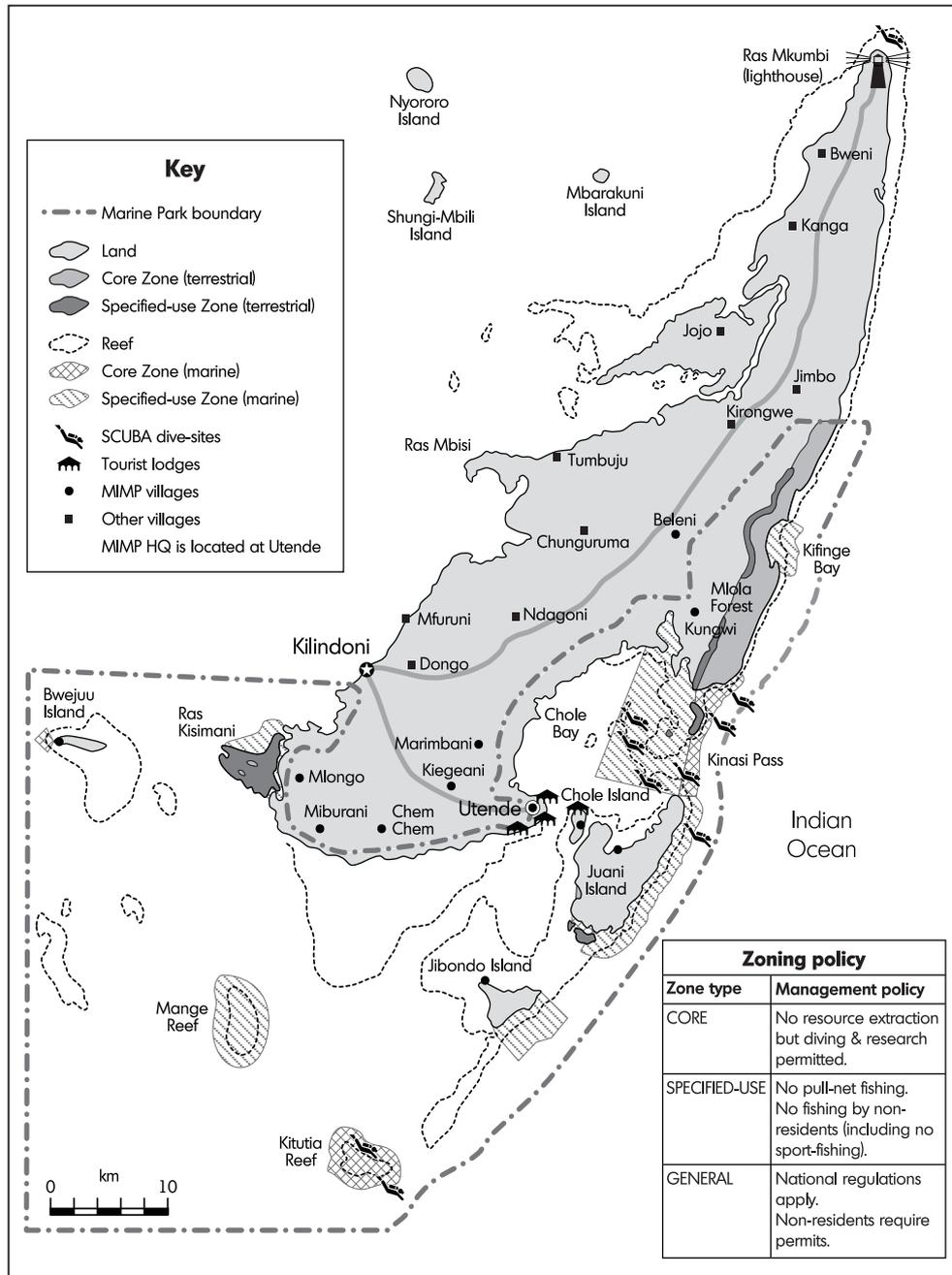
The waters around Mafia Island host an outstanding mosaic of tropical marine habitats with coral reefs, seagrass beds, mangroves and inter-tidal flats. In addition, a remnant block of threatened lowland coastal forest survives along the eastern seaboard of the island.

The area has been recognised internationally as a critical site for biodiversity. It has national importance as one of the few remaining reef complexes within Tanzania's coastal waters that are relatively intact, while the productive fisheries and other marine resources provide food and income for the local community.

Domestic consumption of fish on Mafia is relatively small. Traditionally, fish were sun-dried on the islands and shipped to the mainland coastal markets of southern and central Tanzania. In the second half of the 1980s and early 1990s this began to change with the availability of outboard motors and ice. This brought an expansion in the flotillas of boats of private fish traders from the mainland.

Fish traders arrive in Mafia for the spring tide, staying for a period of three to ten days, depending on how good the catches are. When their 2-tonne iceboxes are filled, they

Figure 2: Mafia Island and the Mafia Archipelago



transport the catch to Dar es Salaam. In some cases, the traders supply local fishers with fishing nets on condition that the entire catch is sold to the trader (similar to contract farming) at a price substantially below the market rate.

Live sea coral and land-based fossilised coral rock are a traditional construction material for domestic houses, especially in the island villages that lack mud. In the early 1990s, it was estimated that 90 tonnes of fossilised offshore limestone were being mined annually in the area that now forms the MIMP.

Before 1995 mangroves were heavily exploited for the production of lime from mined coral. Mangroves are also important for both boat building and as a source of building poles, although the latter are largely imported to the island from the Rufiji delta.

Mlola Forest inside the park is important for building materials, especially to the villagers at Beleni, Jimbo, Kirongwe and Kungwi. Mangrove branches are used as firewood, leaves, fruit and bark are used for medicine and colour dyes. Some sites within Mlola Forest are considered highly sacred by local people and are used for traditional ceremonies.

THE HISTORY OF THE DEVELOPMENT OF THE MIMP

The history of the development of the MIMP has been documented in various places. This element of the report draws on information provided by the Tanzania Marine Parks and Reserves,⁶ key sources⁷ and field interviews.

Various sources⁸ indicate that the idea of establishing a marine park at Mafia Island emerged in the 1960s. The idea emanated from the fact that the marine resources in the area were being heavily destroyed by unsustainable resources exploitation practices. The practices included dynamite fishing and the poisoning and harvesting of the coral reefs that are essential for fish breeding. Recommendations were made for the protection of coastal areas and marine resources in Tanzania through the establishment of marine parks, reserves and sanctuaries.⁹

These recommendations resulted in the declaration of eight small reserves along the Tanzanian coast. The reserves were under the Fisheries (Marine Reserves) Regulations of 1975. Two of these reserves — Chole Bay and Kitutia Reef — form part of the current MIMP.

The marine reserves remained merely reserves on paper because of a number of constraints. These included the small size of these areas and the lack of financial and human resources for enforcement of the regulations covering the reserves. As a result, dynamite fishing and other destructive and unsustainable resource utilisation methods continued to be practised.

The inadequacy of the management of these small areas led to the realisation that the creation of a larger marine protected area would make it possible to combine the conservation of reefs and other key coastal and marine areas with the management of resources to ensure sustainable long-term local economic development.

From 1988 baseline studies were conducted through the Frontier–Tanzania Project. This was a collaborative programme of the University of Dar es Salaam (including the Institute of Marine Sciences, Zanzibar) and the UK-based conservation research organisation Frontier. The results provided important baseline information for developing recommendations for the marine park management plan.

In 1991 the principal secretary of the Ministry of Tourism, Natural Resources and Environment appointed a steering committee to oversee the development of the marine park. The committee included representatives from the Fisheries Division, the Institute of Marine Science, the member of parliament (MP) for Mafia, the World Wildlife Fund for Nature (WWF), the Regional Natural Resources Office (Coast Region), and the Wildlife Conservation Society for Tanzania.

It is significant to note that in the context of participatory approaches, no local community representatives were on the Steering Committee. The extent to which the

relevant MP represented the views, opinions, concerns and protests of the people on the ground and at the sea is debatable. Among other things, in this government-led process (indeed, one may argue that it was a foreign-led process when looking at the influence of such foreign bodies as Frontier, WWF and, as we shall see below, FAO), an MP would naturally support the government initiative, especially at this particular time when Tanzania was practising single-party politics and it was virtually impossible to separate the government from the ruling party.

The Steering Committee and an FAO legal team, working in collaboration with the Attorney-General's Office, developed the legal framework for the Marine Parks and Reserves Act and Regulations. In 1992 WWF initiated a programme of support for the development of the marine park.

In the context of participatory approach, it is to be noted again here that local voices were neither listened to nor heard during the process of developing the legal framework that was to be applied to them later. This increases concerns as to how participatory the MIMP establishment process was.

Only later in the process did the Steering Committee recognise the need for community involvement. The need for a public forum at which the inhabitants of Mafia Island and other interested parties could air their views was recognised and a public workshop was held on Mafia in October 1991 to consult the communities and initiate the planning process.

It must be reiterated that the inputs and voices of the local communities on the establishment of the MIMP were therefore 'sought' for the first time in 1991, while the process dates back to 1960s. The extent to which the October 1991 workshop was a tool of participatory approach in the establishment of the MIMP is also questioned. It is contended that the 1991 event was more like a dissemination (information) workshop rather than a workshop to seek the free, independent, critical and alternative voice of the people on the ground whose lives were going to be affected by the establishment of the MIMP. Among other things, the workshop initiated the planning process, but a workshop that seeks the views of the people cannot end up by simply initiating plans. Inputs from the people have to be critically, thoroughly and objectively analysed before the planning process begins. This appears not to have been the case in Mafia.

Some 70 participants divided equally between residents of Mafia and mainland Tanzania and including representatives from national, regional and local government agencies and institutions attended the workshop. The number and composition of the participants of the workshop do not guarantee that the process was participatory. One needs to ask questions relating to the power relations (based on position, financial resources, knowledge, skills, information, decision-making and influence) between the people of Mafia (fishers specifically), on one the hand, and the national, regional and local government agencies and institutions, on the other. Given the situation of economic, social, political, media and civil society organisations in terms of their ability to carry out activism and lobbying in the Mafia Island of the early 1990s, it is likely that there was a power imbalance between the two major groups referred to above, and the local communities in Mafia were relatively powerless in relation to the national, regional and local government bodies. The extent to which they could have articulated independent and persuasive views (especially in opposing some elements in the MIMP establishment process) seems to have been very remote.

This lengthy process culminated in the preparation of the Parks and Reserves Act No. 29 of 1994. The National Assembly passed a resolution on 27 April 1995 declaring the establishment of the MIMP, to take effect from 1 July 1995. The park initiated operations in July 1995. The boundaries of the park were later gazetted under Government Notice No. 200 of 6 September 1996.

It should be noted that the above critique of the extent to which the process of establishing the MIMP was participatory is not meant to oppose the principle of the MIMP. That the MIMP is needed and essential is not in question, but what is debateable is the kind of MIMP that was created in the context of the incorporation of local communities' inputs in the form of free, independent, critical, and alternative views and opinions. The role of true and adequate participatory approaches for the approval, support, acceptance, endorsement and eventual success of any developmental initiative — including the formation of the MIMP — cannot be overemphasised.¹⁰

PURPOSES AND OBJECTIVES OF THE MIMP

According to the MIMP General Management Plan,¹¹ the purposes of the MIMP are drawn from both the 1994 Marine Parks and Reserve Act and from subsequent community consultation. The purposes include the following:¹²

- the conservation of biodiversity and ecosystem processes;
- the promotion of sustainable resource use and the rehabilitation of damaged ecosystems;
- the involvement of local residents in the development and management of the park, ensuring that they have priority access to resources and economic opportunities;
- the stimulation of environmental education and information dissemination;
- the facilitation of research and the monitoring of resource conditions and uses;
- the conservation of historical monuments, ruins and other cultural resources; and
- the facilitation of appropriate ecotourism development.

As an outcome of a participatory planning workshop held at Mafia Island Lodge in September 1999, the following was added to the specific purposes of the MIMP:

- to conserve and protect the historic monuments, ruins and other cultural resources that have been identified as of significance to the history of Mafia Island.

The integrated goal for the MIMP is to therefore to conserve the diversity, abundance and function of all physical and biological resources in order that they may continue to be enjoyed and productively utilised by present and future generations.

MANAGEMENT STRATEGIES

The MIMP General Management Plan¹³ points out that the broad aim of the management strategy is to fulfil the goals and purposes listed above in a manner that does not create conflict among user groups or compromise the conservation goals of the park. Among

others, a collaborative approach that involves communities and other stakeholders in all stages of planning and implementation has been identified as a critical factor in achieving these purposes.

The MIMP General Management Plan¹⁴ has recognised the fact that the over 18 000 people residing within the park boundaries depend substantially on utilising marine resources for their livelihoods. It has therefore outlined two major management strategies to reduce resources conflicts between conservation, tourism development and resources use.

The first strategy is the adoption of an integrated, multiple-user approach, especially through application of a zoning scheme. The integration of the variety of interests within the marine park area demands a multiple-user approach that is inclusive, but regulatory. This is customarily achieved in practice through the application of user zones that aim to integrate potentially conflicting uses by separating them into specific uses.

The second strategy involves collaborative management and community participation. Effective implementation of an integrated multi-user approach will depend on the active involvement of all stakeholder groups in the planning and implementation process, particularly resident communities, and also commercial tourism and fisheries operations. The 1994 Marine Parks and Reserves Act provides that these groups are represented on both the Board of Trustees and the Advisory Committee. The marine park will undertake regular consultation with these groups. This collaborative approach will necessarily extend to other parts of the government, particularly at the district level, including the judiciary and the police, but also at the regional and national levels.

THE MANAGEMENT ARRANGEMENTS CURRENTLY IN PLACE FOR THE MIMP

The larger administrative context

The management arrangements for the MIMP should be understood in the broader context of management authorities for marine parks and reserves in Tanzania. The management authorities include the following:

- the appropriate ministry (currently the Ministry of Livestock Development and Fisheries);
- the Board of Trustees, Marine Parks and Reserves, Tanzania;
- the Marine Parks and Reserves Unit (MPRU), under its manager;
- the advisory committees of individual marine parks; and
- the park management of individual marine parks under the warden-in-charge.

The first point of contact of the marine park and reserve management authority is the warden-in-charge for each individual marine park and the chief warden for marine reserves at the MPRU head office in Dar es Salaam.

Below is a brief description of the roles and responsibilities of the various organs in the MIMP management arrangements as provided for in the MIMP General Management Plan.¹⁵

The Board of Trustees and the MPRU

The board formulates policies on all marine parks in the country. It directs the MPRU on all matters regarding to the designation and management of the marine park system.

The Advisory Committee

The Advisory Committee has the role of advising the Board of Trustees; consulting with the marine park warden-in-charge on technical, scientific and operational matters; and proposing names to the Board of Trustees for the purpose of appointing a warden-in-charge. The committee constitutes a representative forum of MIMP stakeholders, including local communities, regional and district government, a non-governmental agency, a research institution, and representatives of tourism and fish processing investors within the marine park area. It is supposed to meet quarterly, and it submits its recommendations directly to the Board of Trustees. The warden-in-charge is the secretary of the committee.

The warden-in-charge

The warden-in-charge is responsible for all matters concerning the park administration and is subject to the control of Board of Trustees and the Advisory Committee. He has responsibilities to local communities, district authorities and other stakeholders, including informing them on planning efforts and ensuring that they have a proper opportunity to participate.

Village liaison committees

The 1994 Marine Parks and Reserves Act provides, among other things, for each village council that affects or is affected by the marine park to participate fully in all aspects of the development of the regulations, zoning and general management plan. The villages are supposed to participate either directly or through designated committees. Villages within the MIMP have established village liaison committees that report to the village councils. The committees are supposed to serve as the primary interfaces between the communities and the marine park.

It is the contention of this report that even villages outside the MIMP boundaries should be included in the management arrangement by having liaison committees too. Although they are outside the MIMP, they have been affected by and are in turn affecting the MIMP. With the establishment of the MIMP in general and its zoning policy in particular, these villages are experiencing denied access (in the core zone and specified zones), as well as reduced access (in the special use zone) and costly access (the payment of a fishing fee to these zones) to fisheries resources. Fishers from these villages are therefore affected by the MIMP. At the same time, they affect the MIMP in various ways, including illegal fishing practices such as poaching in the protected areas and the use of illegal fishing methods. Not involving these villages in the management arrangement is therefore a gap that needs to be filled if true, adequate, broad-based and inclusive participatory management of fisheries resources is to be practised.

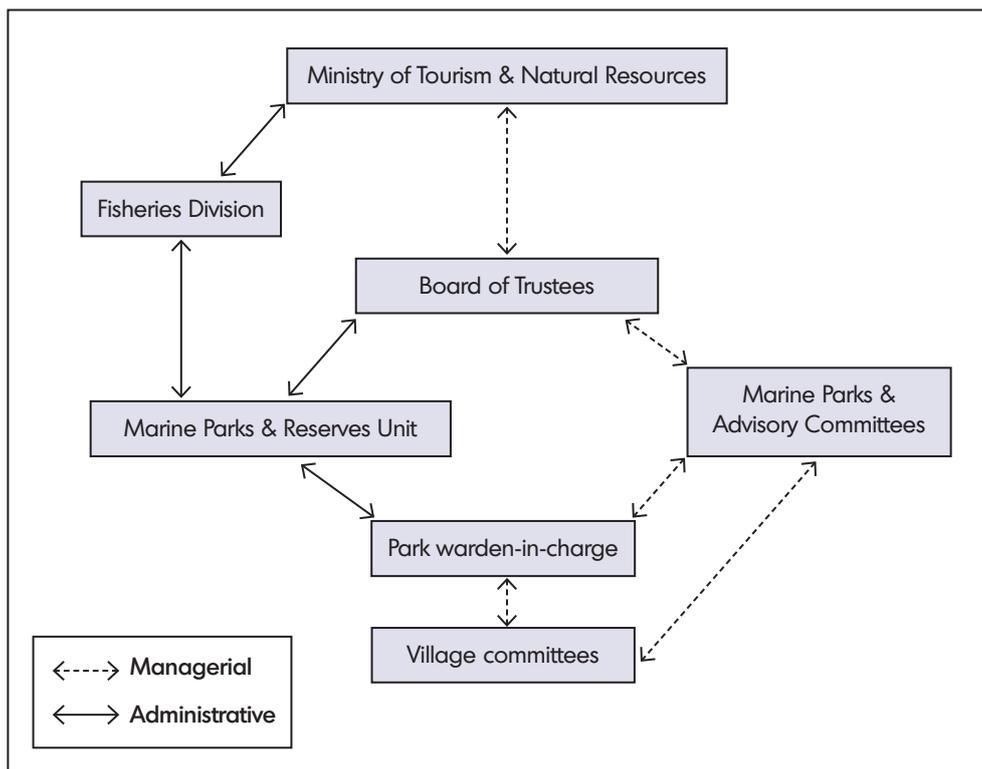
Mafia District Council

Due to the overlapping of a number of issues, the marine park requires collaboration and agreement with the Mafia district authorities. These issues include the following:

- environmental impact assessment requirements for developments outside the boundaries of the marine park;
- co-management of Mlola Forest, which lies between the marine park and the impending district forest reserve;
- the issuance of fishing licences and collaborative patrolling;
- the collection of user fees within the park and the disbursement of revenue; and
- issues relating to land title and concession fees within the park boundaries.

The arrangement can be summarised in the MIMP's administrative and management structure given in Figure 3.

Figure 3: MIMP administrative and management structure



On paper at least, the management arrangements are inclusive of all the key stakeholders from the national to the village level. It is a good example of a decentralised and bottom-up model for the management of fisheries resources.

The impact of the MIMP on the lives of residents

The findings of this study indicate that the MIMP has various impacts on the lives of residents of Mafia in general and of the villages within the park boundaries in particular. Some impacts are positive and others negative, some are short term and others long term, while some are direct and others indirect.

The impacts of the MIMP on the lives of residents of Mafia include denied and reduced access to fisheries resources due to the zoning policy of the park. The zones include the core zone (no resource extraction, but diving and research are permitted), the specified use zone (no pull-net fishing, no fishing by non-residents — i.e. those not living in the villages within the MIMP's boundaries — and no sport fishing) and the general use zone (national regulations apply and non-residents require a fishing permit at a fee).

Impacts of the introduction of the core zone

The introduction of the various zones has had a range of impacts on the lives of the residents. The core zone denies direct access to fisheries resources to both residents and non-residents. This implies a short-run reduction in the size of the fish catch and associated disadvantages, including reduced incomes. It is to be noted that Mafia residents have inhabited the island for over a thousand years with the harvesting of marine resources (including those within the core zone) as their main source of livelihood.

Impacts of the introduction of the specified zone

The introduction of the specified zone implies denied access to fisheries resources for non-residents and those who use prohibited equipment. For non-residents, the impact is similar to the impacts suffered as a result of the introduction of the core zone. This is because the non-residents are not allowed to harvest fisheries resources within the specified zone. The impacts are not as serious for residents as for non-residents, due to the introduction of alternative income-generating activities (IGAs) and equipment exchange schemes. However, it has been argued that the benefits of alternative IGAs have not been substantial in terms of individual incomes.¹⁶

Impact of the introduction of the general use zone

The introduction of the general use zone has a negative impact on both residents and non-residents. The residents have to access the resources by using specified equipment and according to specific regulations. Non-residents can only gain access by applying for a permit at a fee.

Impacts of the introduction of non-fishing IGAs

Other notable impacts include the MIMP's introduction of a number of non-fishing IGAs in the island, thereby changing (diversifying) lifestyles and the structure of economic activities in Mafia. Among other things, the MIMP has facilitated the establishment of various kinds of entrepreneurial activities. These include retailing, sewing, transport and

other businesses. The main purpose of these IGAs is to enable hitherto fishers to have alternative sources of livelihood other than fishing. It is expected that the IGAs will reduce pressure on fisheries resources. While it was beyond the scope of this study to measure the impacts of IGAs on the pressure on fisheries resources, it is clear that the IGAs are — albeit slowly — changing the local lifestyle and the structure of economic activities in Mafia.

THE ROLE OF WOMEN IN THE MAFIA ISLAND FISHERIES SECTOR

The role of women in most development activities has been under-recognised and acknowledged. Maeda points out that fishing is usually, but not always, associated with men.¹⁷ This view is rather narrow, as it looks at mainly one node of the fishery commodity chain. Women are absent from the actual fishing at sea, because this is essentially a tough and demanding physical undertaking. However, they play crucial roles in various nodes of the fish supply chain. Their roles start at home before the men go out to fish and include activities like boat making, net and boat repair, and related activities. Women play other significant facilitating roles, including the buying/collection and preparing of food for fishers (as the men's wives, mothers, sisters and/or daughters); they provide sanitation services for the house and clothes for the family, including the men; and they raise the children when the children's fathers are fishing.

The same women play a very important role in the fish marketing node of the supply chain. As hawkers, they buy fish from fishers when the latter land their catches. They process the fish by either frying or sun-drying them. Then they sell the fish at local and/or distant markets, thereby forming very important links between fishers and consumers in the fish supply chain. At the fish landing sites, women play another very important role of preparing and selling food to the fishers. Their role also includes involvement in post-harvest activities, making or mending fishing gear, and the cultivation and harvesting of fish in ponds or weirs. These roles have, however, been ignored in most fisheries projects and programmes. Indeed, the roles of women in the Tanzanian fishing industry are generally poorly recognised.

The role of women in Kilindoni Bay, Mafia Island

The field work on which this work is partly based involved a visit to Kilindoni Bay, Kilindoni fish market and Kiegeani village in Mafia Island. In the context of women's roles in the fishing sector, the following findings emerged clearly from the interviews, focus group discussions and observations.

Women at Kilindoni Bay have various roles in the whole fishing industry. They buy fish directly from fishers. They board a small boat (at a return fare of TZS 500¹⁸) to buy fish in fishers' boats that anchor some 30 metres from the coast. It is only the relatively young, energetic and those with 'bid' capital that make the boat trip and effect transactions at sea. Relatively old (about 55–60 years) women explained that they are not strong enough to board the boats at sea.

After the transaction, the women head back to shore. Some sell the fish they bought wholesale to those who could not make the transaction at sea, for the reasons given above.¹⁹

Some of those who buy at sea start processing the fish on shore by frying them. They then sell retail to various customers either at the bay or at various points in Mafia town and beyond. Some women collect octopus and sell them to the Tanpesca fish-processing factory at Kilindoni.

Implications of the roles of women for the management of fisheries resources

From the literature review and field findings, the role of women in the fishing sector is clear. Women are key, active participants and stakeholders in various nodes of the fish chain and thus they stand to benefit from the good management of fisheries resources, just as they stand to lose from their bad management. This implies that any interventions to manage fisheries resources should involve women directly or indirectly.

CONFLICTING MIMP MANAGEMENT OBJECTIVES

As we have seen above, the MIMP management objectives broadly include the development of the fisheries sector to support sustainable coastal livelihoods, on the one hand, and the conservation imperatives of maintaining ecological integrity and enhancing biodiversity, on the other. The two objectives seem to be in conflict, especially if one considers the fact that people have lived in Mafia Island for over a thousand years. The harvesting of marine resources in general and fishing in particular has been their main source of livelihood, with an estimated 80% of the population in Mafia dependent on fishing and related activities.

With this overdependence (a kind of a monoculture) on the marine resources for a livelihood, there is an immense challenge to strike a delicate balance between the apparently conflicting objectives mentioned above. This can be noted from the following statement from a focus group held in Mafia:

The ocean has been and will always be our farm. It has brought us up, it has fed us, it has built us houses, it has educated our children. Life here revolves around the pillar of ocean and its resources ... there is no life in Mafia without the ocean.

The main management objective in this context is ensuring and maintaining sustainable utilisation of the fisheries resources. Based on interviews held with MIMP officials, it became clear that to the extent that the sustainable utilisation objective is achievable, there will be no conflict between the two objectives. The challenge is to maintain the balance between them.

Similar to the findings of others,²⁰ this study found that the challenges are caused by the fact that the marine and coastal resources, not only in Mafia, but also in the whole of Tanzania, have in the past been the main sources of subsistence products, income and employment. These resources, however, are under various threats that have given rise to a significant developmental challenge to sustain their use. The need to strike the delicate developmental–conservation balance and the challenges involved in this process cannot be overemphasised in a place like Mafia, which lacks obvious sustainable, more preferred, natural and better sources of livelihoods than the harvesting of marine resources. The

lack of many sources of livelihoods in Mafia was well captured in the field work by the following remark from a fisherman in Kilindoni fish landing site:

Mafia is not Serengeti. Mafia is not Mikumi. Mafia is Mafia. In the onland parks on Serengeti and Mikumi you can prohibit people from harvesting the animals. They will do many other things like livestock keeping, cultivation, work in the urban centres, etc. Unfortunately, these alternatives are not available in Mafia. Here we have to both develop and use the resources.

This striking comment suggests that the development–conservation challenge is bigger in marine than in onland parks, as the latter are generally endowed with more potential sources of livelihoods.

EMERGING ISSUES

There are a number of emerging issues in the context of fisheries resources management in the MIMP. These include, but are not limited to, the extent to which the process of establishing the MIMP was participatory by adequately taking into account inputs from local communities.

Findings indicate that there are various schools of thought to explain the differing views on how far participatory approaches and techniques were used in the MIMP establishment process (see the introduction to this case study, above). These include the views related to the age-gap effect, in which it is argued that the members of the local communities who were involved in the process some twenty or so years ago are no longer active in fishing. To the extent that there was participation, these people are the ones who indicated the various fishing areas to the authorities, but they are no longer active in fishing today due to death, old age or ill health. These same people were to have acted as the ‘community’s institutional memory’ of the extent of participation/involvement of the local community in the establishment of the MIMP.

The same school of thought argues that those who are active in fishing today were either not yet born, or too young to have participated in the participatory process of establishing the MIMP, but these people comprise the active fishing labour force today that suffers the consequences of this process. These relatively young inhabitants of Mafia did not endorse, accept and contribute ideas on the establishment of the MIMP, yet they have to live with the park. Opportunities for them to air their voices — not on whether or not to establish the MIMP, but rather on the desired nature of the MIMP — include a participatory process of reviewing the MIMP’s General Management Plan. This review was supposed to be done every five years since the plan was formulated in the year 2000, but the first such review has not yet taken place. It is therefore some three years overdue.

Another factor to account for the differing views on participation or non-participation of the local communities is the quality of participation. In this regard, a huge gap exists between the perceptions of the authorities and the local community with regard to various aspects. These aspects include resources (financial, physical), knowledge and skills, political factors, and government power. The current communities of Mafia are less resourceful, less knowledgeable and skilled, and less politically powerful than the authorities that were responsible for the establishment of the MIMP. This implies that there

may have been undue imposition of the MIMP on the people of Mafia by the authorities. The point is not that the people of Mafia did not approve of the MIMP. They liked and still like it, but they have reservations on the kind of MIMP they are experiencing. Were the power bases equal on all counts, the people of Mafia would have demanded a better MIMP, i.e. one that takes more of their views, opinions, concerns and general inputs into account.

Yet another school of thought to account for the seeming lack of participation in the establishment of the MIMP points the social-political environment prevailing at the time, which permitted fewer basic liberties and freedoms, including the freedom to question, challenge or oppose the government, and in this particular case including questioning, challenging and opposing undesirable aspects of the MIMP. Throughout the MIMP establishment period, Tanzania had a single-party political system. Among other things, there was no clear distinction between a politician and a civil servant. Within such an environment, the local people's true voices could not have been adequately heard.

Similar to the views given above is the school of thought that points to the lack of true and independent alternative and critical voices from civil society, the media and opposition political parties when the MIMP process began in the 1960s and when it ended in 1995.

Those who were interviewed in Mafia (including people aged 60 and above) argued that only the community's leaders and a few influential people were involved in the establishment process, and not the average local people who live off the ocean. This too partly accounts for the feeling that the process of establishing the MIMP was not adequately participatory. Each of the above factors and the interlinkages among and within them may account for the current dissenting opinions that the process of establishing the MIMP was not adequately informed by inputs from the local people in the villages of Mafia.

From the emerging issue of participatory approach, as described above, it is clear that there is an urgent need for the MIMP to seek and acquire adequate input from the current generation of Mafia islanders regarding possible improvements to the system created for the management of marine resources in the MIMP. The best means of achieving this is to hold a truly participatory review of the MIMP's General Management Plan. This may be costly in monetary terms; take a long time; and raise critical and controversial questions, issues and suggestions. However, given the role of local people in the management of such delicate, fragile, rich and rare marine resources as those of Mafia Island, this is an essential process to turn a good initiative into one that has sustainable and equitable legitimacy and support.

ENDNOTES

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- 5 *Ibid.*, p. 13.
- 6 Tanzania Marine Parks and Reserves, website, accessed 2 November 2008, http://www.marineparktz.com/parks_mafia.htm.
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- 8 Including, for instance, MIMP, *op. cit.*, p. 5.
- 9 It is not clear from the website document who made these recommendations. See http://www.marineparks.go.tz/parks_reserves/docs/mafia_full.pdf.
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- 11 MIMP, *op. cit.*
- 12 For a detailed statement of these objectives, see *ibid.*, pp. 30–32.
- 13 *Ibid.*
- 14 *Ibid.*, p. 33.
- 15 *Ibid.*, pp. 40–41.
- 16 Mwaipopo R, *op. cit.*
- 17 *Ibid.*
- 18 Price as at 14 November 2008.
- 19 About 5–10 kilograms (no weighing is done, but price depends on the type and size of the fish).
- 20 See, for example, Sesabo J, *Marine Resources Conservation and Poverty Reduction Strategies in Tanzania*. Heidelberg: Springer, 2007; Francis J & I Bryceson, 'Tanzania coastal and marine resources: Some examples illustrating questions of sustainable use', in Ahmed J, Bergstrom CM, Bryceson I, Child B & J Francis (eds), *Lessons Learned: Case Studies in Sustainable Use*. Gland: IUCN, 2001, pp. 76–103; TCMP (Tanzania Coastal Management Partnership), *Tanzania State of Coast Report: The National ICM Strategy and Prospects for Poverty Reduction*, TCMP Coastal Management Report, 2002. Dar es Salaam: TCMP, 2003.

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