

**AN EVALUATION OF COASTAL ZONE MANAGEMENT  
PRACTICES IN THE EASTERN AFRICAN REGION**

**Salim Mohammed and Julius Francis**

**MAY 2005**



**IUCN**  
The World Conservation Union

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The preparation of this report was commissioned to the Western Indian Ocean Marine Science Association (WIOMSA) by IUCN-Eastern Africa Regional Office, under Contract No. EARO/76163-000/859: Development and Implementation of ICM Policy Frameworks and Legislation Facilitated Throughout the Region

**MAY 2005**

## **Acknowledgements**

IUCN-EARO and WIOMSA wish to thank all the individuals who contributed in different ways in the preparation of this report. A number of individuals reviewed the early drafts of the report and provided constructive comments, to all of them, we are very grateful.

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## Acronyms

CBO	Community Based Organisation
CCMS	Committee for Coastal and Marine Systems South Africa
CE	Council for the Environment
CEC	Committee for Environmental Coordination
CMO	Coastal Management Office
CMPP	Coastal Management Policy Programme South Africa
CNE	National Advisory Committee for the Environment Madagascar
CRC	Coastal Resource Centre
CTWG	Core Technical Working Group
CWG	Core Working Group
DANIDA	Danish International Development Agency
DCI	Development Corporation of Ireland
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DFID	Department for International development
EAF/5	Protection and Management of the Marine and Coastal Areas in the Eastern African Region Project
EEZ	Exclusive Economic Zone
EIP	Environmental Investment Programme Mauritius
EMC	Coastal and Marine Environmental Unit Madagascar
EMPS	Environmental Development Plan for Seychelles
FAD	Fish Attraction Devices
FAO	Food and Agricultural Organisation
GDP	Gross Domestic Product
GEF	Global environmental Fund
ICM	Integrated Coastal Management
ICMU	Integrated Coastal Management Unit
ICZM	Integrated Coastal Area Management
IOC	Indian Ocean Commission
IOC	Intergovernmental Oceanic Commission
ISPW	Issue Specific Working Group
IUCN	World Conservation Union
KICAMP	Kinondoni Integrated Coastal Area Management Programme Tanzania
KZN	KwaZulu-Natal
MBCA	Menai Bay Management Project Tanzania
MBREMP	Mnazi Bay Ruvuma Estuary Marine Park
MICOA	Ministry of Coordination of Environmental Affairs Mozambique
MIMP	Mafia Island Marine Park
MMP	Mangrove Management Project
NEAP	National Environmental action Plan Madagascar
NEC	National Environmental Commission Mauritius
NEMC	National Environmental Management Council Tanzania
NEMP	National Environmental Management Programme Mozambique
NGO	Non-governmental Organisation

NICEMS	National Integrated Coastal Environment Strategy Tanzania
NORAD	Norwegian Agency for International Cooperation Development
NSC-ICM	National Steering Committee on Integrated Coastal Management
ONE	National Advisory Committee for the Environment
PAP/RAC	Priority Actions Programme/Regional Activity Centre
PC	Policy Committee
PRE-COI	Regional Programme of the Commission for the Indian Ocean
REMP	Rufiji Environmental Management Project Tanzania
RIPS	Rural Integrated Project Support Tanzania
SAREC	Swedish Agency for Research Cooperation with Developing Countries
SCLP	Sustainable Coast Livelihood Programme South Africa
SDI	Spatial Development Initiative South Africa
SEACAM	Secretariat for Eastern Africa Coastal Area Management
Sida	Swedish International Development Cooperation Agency
STWG	Science and Technical Working Group
TCMP	Tanzania Coastal Management Partnership
TCZCDP	Tanga Coastal Zone Conservation and Development Programme Tanzania
UNDP	United Nations Development Programme
UNEP	United National Environmental Programme
UNESCO	United Nations Education, Science and Cultural Organisation
USAID	United Agency for International Development
WCS	Wildlife Conservation Society
WIO	Western Indian Ocean
WWF	World Wide Fund for Nature

## Executive Summary

The countries of the Western Indian Ocean (WIO) region share a common but varying dependence on the coastal resources including fisheries resources. Currently the coastal zone of the mainland states is home to over 30 million people and about 7.7 million more live on the Islands of Seychelles, Mauritius, Madagascar, Comoros and Réunion (Linden and Lundin, 1997). Coastal resources in the Eastern African region have supported the livelihoods of generations of coastal dwellers and have contributed to the economic development of most countries in the region. However, these resources have increasingly come under a combined pressure of over exploitation as a result of increasing demand, resource degradation and inadequate management. Other coastal management issues in the region also include user conflicts, especially between traditional uses such as fisheries and new and emerging uses such as tourism in some of the countries. The overall effect is the reduction of coastal productivity and services thus undermining economic and socio-economic development of the countries in the region.

Recognising the inadequacy of sectoral management in addressing the multiplicity of issues in the coastal zone and to reverse the above-mentioned trend, countries in the region are committed to and have embarked on an integrated approach to the management of their coastal areas. The Integrated Coastal Management (ICM) approach has been deemed as an effective means to address the multiplicity of issues found in the coastal zone and its resources. This decision has received wide regional and international support. Of the ten countries in the WIO region only Tanzania and South Africa have adopted national ICM programmes. However, while South Africa adopted a national ICM policy in 2001, Tanzania adopted a national ICM strategy in 2002. Tanzania did endeavour to have a national ICM policy but her attempts to do so did not succeed mainly due to insufficient publicity of the issue and little political support for the measure.

Some of the other countries in the region such as Madagascar are in the process of developing their national frameworks for coastal management while others still rely on field-based programmes and region-wide projects. In the case of Madagascar the development of a national ICM programme is affected within the framework of the country's National Environmental Action Plan. At present however, ICM efforts in Madagascar are in the form of field programmes such as the Sustainable Coastal Zone Development Pilot Project for Menabe.

This is also true for Mozambique where a number of field-based programmes have been implemented. The most notable one is the Mecufi Project that was executed in the Mecufi District in the coastal province of Cabo Delgado. Seychelles, Mauritius, and Comoros are far from developing national level ICM programmes but also rely on field programmes and projects.



# 1 Introduction: Regional Overview

The East African region is made up of the mainland states of Kenya, Tanzania, Somalia, Mozambique and the island states of Mauritius, Seychelles, Comoros, Madagascar and Reunion. Though these countries are essentially politically, economically and ecologically diverse they all share similar habitat types and a common but varying dependence on the coast and its resources not least as principal population centres. The 1100 km or so of shoreline of this region is home to over 30 million people and about 7.7 million more live on the Western Indian Ocean Islands (Granlund and Lundin, 1996) and according to a 1998 report by UNEP this number will double by the year 2025

The region is endowed with some of the world richest ecosystems with remarkable ecological diversity. According to UNEP at least one third of the 38 recognised marine and coastal habitats are represented in each and every country in the region (Kamukala and Payet, 2001). These include extensive mangrove forests and rich coral reefs systems. Others are sea grass beds, extensive sand beaches, lagoons and estuaries. These coastal habitats have for generations supported the livelihood of coastal dwellers and have been the economic mainstay of most countries in the region. For example, fishing is an important activity in the region both for local consumption but increasingly as an important source of foreign currency (export earnings). For example, in Kenya fisheries contributes about 15% to the national economy (Mwaguni et al, 2001). Other resources are equally important.

## **Box 1. The Principles of Integrated Coastal Zone Management**

*Integrated Coastal Zone Management (ICZM) is a dynamic, multi-disciplinary and iterative process to promote sustainable management of coastal zones. It covers the full cycle of information collection, planning (in its broadest sense), decision making, management and monitoring of implementation. ICZM uses the informed participation and co-operation of all stakeholders to assess the societal goals in a given coastal area, and to take actions towards meeting these objectives. ICZM seeks, over the long-term, to balance environmental economic, social, cultural and recreational objectives, all within the limits set by natural dynamics.-Commission of the European Communities*

Overpopulation coupled with increasing demand for coastal and aquatic resources has exerted an immense pressure on the region's coastal ecosystems and resources. Additional pressure arises from degradation of coastal environment including habitat destruction as a result of unsustainable exploitation techniques, erosion and pollution. The overall effect is reduction of coastal productivity and services as well as denying future generations the benefits of these resources (Voabil and Engdahl, 2001). In order to reverse this trend countries in the region have embarked on an integrated approach to the management of their coastal areas. The ICM approach has been deemed as an effective means to address the multiplicity of issues found in the coastal zone and its resources (see Box 1). This decision has received wide regional and international support.

In 1993 the environment and natural resource ministers from the region met in Arusha where they considered and endorsed a resolution – *The Arusha Resolution on Integrated Coastal Zone Management in Eastern Africa including the Island States* - which addressed the coastal zone and recognised ICZM as an appropriate tool for the management of their coastal zones. Another

meeting was held in Seychelles in 1996 to assess the successes and failures in ICZM since Arusha and discussed and agreed on measures that need to be taken to improve ICZM efforts in the region. A third major meeting took place in Maputo in 2001 to critically assess the situation and make further improvement to the process. Another regional initiative includes the formation, in 1997 of the Secretariat for Eastern Africa Coastal Area Management (SEACAM) for the purpose of assisting the East African Coastal countries to implement and coordinate coastal management activities in the region following the Arusha Resolution and the subsequent Seychelles statement in ICZM.

At the national level several initiatives that can be broadly described as ICM are currently being implemented in the region. These range from those having national characteristics such as the ICM programmes in Tanzania and South Africa and simple field programmes such as the Mecufi Coastal Zone Management Project in Mozambique. These projects are spearheading ICM efforts in the Western Indian Ocean Region.

This report makes an informative assessment of various ICM initiatives in the region with the view to help countries move forward, especially those aspiring to develop national ICM programmes.

## **2 Situation Analysis: Countries with National ICM Programmes**

### **2.1 Tanzania**

#### *The Coastal Setting*

The coastal area of Tanzania stretches for over 800km from the Kenya border in the north at latitude 4°S to that of Mozambique in the south at latitude 11° 45' S and includes the coastal regions of Tanga, Coast, Dar es Salaam, Lindi and Mtwara. An extensive fringing reef runs along the length of the coastline except where large river systems – such as the Rufiji River - drain into the sea. The coast also harbours extensive mangrove forests especially around river deltas including that in the Rufiji estuary which holds the largest mangrove stand on the East African coast.

Tanzania has a relatively narrow continental shelf - average width 5.8 km – along most of its coast but reaches a width of 62 km at the Zanzibar and Mafia Channels. The continental shelf has an area totalling 17500km<sup>2</sup>. Tanzania has an Exclusive Economic Zone (EEZ) with an area of 223,000 km<sup>2</sup> (Linden & Lundin, 1995). The islands of Unguja, and Mafia and numerous smaller islands are found on the continental shelf. The island of Pemba lies in deeper water and is separated from the mainland by the 800 m deep Pemba Channel.

The population of the five coastal regions of mainland Tanzania is estimated to be 8 million – 25% of the nation's total – and a population growth rate ranging between 6-8% (Government of Tanzania, 2003). The majority of the people living in the coastal area live under US \$ 100 per capita GDP and hence are among the poorest in the country (National Account of Tanzania, 1995).

The Tanzania coastal area is important to the well being of local communities as well as to the national economy as a whole. Communities living in coastal rural areas depend largely on smallholder farming and artisanal fishing for their sustenance. Other activities are lime and salt production, livestock husbandry, and in recent years, seaweed farming which has been very promising in some areas of the coast. At the national level the coastal zone is important for agriculture, natural gas, tourism, fisheries, transport and trade and residential development. The five coastal regions of Tanzania contribute to the national economy about one third of the national Gross National Product (World Bank, 1996).

### ***Priority Coastal Management Issues***

Some parts of the coastal area of Tanzania are still in a relatively good state. However, impacts of human pressure on coastal environments and resources are evident in many parts of the coast. Increased demand for food and fuel has led to widespread use of destructive resource exploitation methods such as the use of dynamite, dragnets, seine nets, poison and other destructive fishing practices (Wagner, 2003). Uncontrolled exploitation of coastal forests and clear-cutting of mangroves for wood and fuel and to make way for agriculture and solar saltpans has also had severe impact on the coast. In addition, large amounts of living corals has been mined in some areas of the coast such as around Mikindani Bay in Mtwara for the manufacture of lime that is then supplied to the local construction industry. The amount of coral mined is staggering. According to reports, the amount of live and dead coral mined in just two southern regions amounted to 80000 tons (Government of Tanzania, 2003). Another major concern is increasing conflicts between resource users including potential conflicts between emerging uses of the coastal zone such as between tourism and traditional uses of the coast including fisheries. This can be exemplified by a once long running conflict between local fishers and the management of the Chumbe Coral Park, a tourist/education centre in Zanzibar (Riedmiller, 2000)

In major coastal cities such as Dar es Salaam, Zanzibar, Tanga, Mtwara and Lindi, problems include uncontrolled population growth - including migration from the hinterland - with resulting upsurge of settlements in unplanned areas. Many of these areas lack basic social services, including sanitary services thus leading to pollution to coastal waters such as reported in Tanga (Shilungushela, 1999), Zanzibar (Mohammed et al., 1993) and Dar es Salaam (Lugwisha, 2000; Machiwa, 1992; Munissi, 2000) among other coastal towns and cities.

#### ***Box 2: Tanzania's ICM Issues*** *(Government of Tanzania, 2003)*

- Poverty
- Uncontrolled population growth
- Destructive resource exploitation practices
- Uncontrolled coastal resource exploitation
- Conflicts between coastal resource users
- Pollution of coastal waters

### ***Coastal Management: historical perspective***

Tanzania is one of only two countries in the region (after South Africa) to have instituted a national governance process for the coastal zone. In Tanzania this has been done through a cooperative process (The Tanzania Coastal Management Partnership, TCMP) between Tanzania (through the National Environmental Management Council, NEMC), the University of Rhode

Island's Coastal Resources Centre and the United States Agency for International Development (USAID). TCMP was established with the explicit goal of establishing the necessary foundation for effective coastal governance with the view to improve the quality of life of coastal communities. Since its establishment in 1997, TCMP has adopted a partnering approach whereby it teams up with national and district government agencies, non-governmental organizations (NGOs), scientists, local stakeholders and existing local ICM programmes to achieve its set goals. From the outset TCMP adopted a two-track approach: focusing both at the national as well as local level. At both levels TCMP invited and accommodated the views of a broad range of stakeholders and maintained this participatory approach throughout its development.

As mentioned above TCMP endeavoured to institute a national ICM programme for the country. Two factors helped chart the direction of TCMP's efforts to initiate such a programme: First, there were already local programmes existing on the ground that were in need of managerial support, better coordination and connection between them (Torell et al, 2003). These include the Tanga Coastal Zone Conservation and Development Programme (TCZCDP), the Mafia Island Marine Park and Rural Integrated Project Support (RIPS). Together these provided a wealth of hands-on experience at the community level that TCMP could and did tap. Secondly, though the government recognized the good work that these local programmes and initiatives were doing it also saw the need for a national umbrella programme not only to coordinate the activities of these local programmes but also to help deal with national-level issues. In addition the government was concerned that the experience and lessons learned from these local programmes were not being effectively captured and transferred (Government of Tanzania, 2003). TCMP also saw the need of developing an ICM policy that would help guide coastal management efforts in Tanzania and as such took the necessary steps to affect the matter.

### *National ICM Policy Development*

Significantly, the policy (later called strategy) development process – spearheaded by TCMP - was participatory in nature and entailed a comprehensive consultative process through stakeholder participation. In embracing this approach TCMP has mandated itself to create both the context and process in the overall ICM policy formulation. Moreover, this approach has also enabled TCMP to utilize a participatory and transparent approach and has therefore been able to draw ideas and inputs from key stakeholders and especially from lived experience from communities, sectoral initiatives and local ICM programmes.

The first step was to identify key issues that would be addressed by the national policy. The TCMP's Core Working Group (CWG) spearheaded this activity. The Group comprised of a multi-sectoral group of local experts and was assisted in this task by community members and other local stakeholders. The issue profiling was carried out through a period of 18 months and involved 150 institutions and organizations and over 300 individuals (TCMP, 1999). The result of this initial phase of the consultative process was the production of the Tanzania Coastal Management Issue Profile. The second step was the submission, in October 1998, of the Issue Profile (see Box 2 above) to sectoral agency directors to review, revise and approve of these issue areas. The Permanent Secretary in the Vice President's office chaired the meeting. Another Directors' meeting in April discussed and approved a new document "*Initial Elements of a Coastal Policy - Proposed Vision, Principles, Goals and Strategies*" that detailed goals, objectives and strategies for the major coastal issues. Following this consultative process, key elements of the policy were

developed. This was then followed by the drafting and submission of a Green Paper “*Option for a National Integrated Coastal Management Policy*” in November 1999 detailing policy options and thereafter a White Paper that was then submitted to cabinet and was approved in December 2003. However, before the White Paper was submitted to cabinet the document that was hitherto referred to as a policy document became known as a strategy.

The National Integrated Coastal Environment Management Strategy (NICEMS) aims to improve the decision-making process in managing the coastal zone and resources by providing the required guidance to resource use and ensuring proper and equitable allocation of resources. The strategy proclaims to grant resource users, especially the local coastal communities, a bigger say in the management of their resources. The goal is “to preserve, protect and develop the resources of Tanzania’s coast for use by the people of today and succeeding generations to ensure food security and to support economic growth” (Government of Tanzania, 2003)

**Box 3: NICEMS overall goal:**  
*Preserve, protect and develop the resources of Tanzania’s coast for use by the people of today and for succeeding generations to ensure food security and to support economic growth*

In recognition of the multi-user nature of the coastal zone, the strategy also provides a framework for harmonizing sectoral management decisions and provides an environmentally sound management of coastal resources and environment. The strategy also recognizes the important role that local ICM programmes play and as such it provides a framework for bringing these programmes together as well as promoting other local ICM efforts. Existing local marine resource management programmes that contribute to ICM in Tanzania include: Tanga Coastal Zone Conservation and Development Programme (TCZCDP); Mafia Island Marine Park (MIMP); Kinondoni Integrated Coastal Area Management Programme (KICAMP); Rufiji Environmental Management Project (REMP); Menai Bay Conservation Area (MBCA) and Mangrove Management Project (MMP) and the Mnazi Bay Ruvuma Estuary Marine Park (MBREMP).

**Box 4: Tanzania’s NICEMS Implementation Strategies:**

1. Supporting and harmonising environmental planning and integrated management of coastal resources and activities at the local level.
2. Promoting integrated, sustainable and environmentally friendly coastal resource use with the view to optimize benefit.
3. Conserving and restoring critical habitats and areas of high biodiversity.
4. Establishing integrated planning and management mechanisms for areas of high economic significance and/or areas deemed very environmentally fragile
5. Developing and using effective research, monitoring and assessment to help ICM decision-making process.
6. Granting meaningful opportunity for stakeholder participation
7. Building human and institutional capacity for effective and integrated management of coastal environment

Following a review of several options for implementation, TCMP has adopted district action planning as one of its mechanisms. In taking this approach TCMP is of the view that this is the best way to bring the national strategy down to the community level (Torell et al, 2003). In implementing this approach TCMP first developed guidelines for action planning that encourages each district to focus on their own priority ICM issues and also specify their own specific goals and objectives. In 2000, TCMP launched the

“Local ICM Action Planning Programme” at two selected pilot districts - Bagamoyo, in the Pwani region and Pangani in the Tanga region. These became the first regions in Tanzania to develop and implement their action plans.

## 2.2 South Africa

### *The Coastal Setting*

The coastline of South Africa stretches for about 3000 km from the Namibia border in the west to the border with Mozambique in the east (Glavovic, 2000). South Africa has an Exclusive Economic Zone totalling 1.3 million square kilometres in which the country controls all exploitation of resources and other economic activities.

Numerous rivers enter the sea between the Orange River at the Namibian border on the west coast and Ponta do Ouro at the Mozambique border on the East. The continental shelf along the east coast is generally very narrow or non-existent. However, the southern coast boasts the large triangular Agulhas Bank. This is an area of significant economic and biological importance.

Off the South-western coast lays the rich Benguela Upwelling System that supports rich epipelagic, demersal and mid-water fisheries as well as birds and mammals. On the East coast lies the Agulhas Current which although has relatively smaller fish stocks but is reputed to have a greater diversity of species. The two systems are the backbone of the South African fishing industry.

Fishing is a relatively small sector in the national economy and contributes just about 0.3% of the South Africa's Gross Domestic product (GDP). However, the commercial fishing sector employs about 27 000 people (with an additional 60 000 people employed in related industries) and generates about R1.7 billion per annum (ICM Country Profile - South Africa, 1999). On the other hand, recreational fishing contributes approximately R1.3 billion per year and employs 131 000 people in related activities. In addition to these commercial fishing activities, a huge sector of society – estimated at least 3.6 million people depend largely on coastal food sources through subsistence activities.

Another important economic coastal activity is shipping. South Africa is situated on one of the world's busiest ship transport routes and is ideal placed for tankers transporting crude oil from the Middle East to European and American markets. In addition, cargo worth 140 billion Rand is transported through South African ports annually (ICM Country Profile - South Africa, 1999). It is estimated that over 4000 ships pass the Cape of Good Hope every year.

#### **Box 5: South Africa Priority ICM Issues**

- Rapid population growth
- Sedimentation of estuaries and coastal waters
- Oil pollution
- Over fishing

## *Priority Coastal Management Issues*

### i) Rapid population growth

Population growth is possibly the single most important driving force for environmental change in the coastal zone of South Africa (Burns et al, 1999). It is estimated that over thirty per cent of the South Africans lives along the coast (Government of South Africa, 1998). The high coastal population is both from natural growth but more worrisome is the net in-migration from job seekers and other groups flooding the coastal area. In addition, according to Cross and Welsh (1999) coastally orientated development policies and initiatives such as the Rural Development Framework, Growth, Employment and Redistribution Strategy and Spatial Development Initiatives (SDIs) are encouraging migration to coastal areas. The rapid population growth has put pressure on the coastal zone in the form of growing demands on living resources for food, recreation and fresh water, growing demand for land for housing and for other development activities.

The concentration of a large number of people (as well as industrial activities) in the coastal zone has in turn placed high demands on the environment in terms of, among others, the capacity of coastal waters to receive and assimilate sewage and industrial emissions. The South African coastline receives approximately 800 000 cubic metres of sewage and industrial effluent into the sea daily (ICM Country Profile- South Africa, 1999).

### ii) Sedimentation of estuaries and coastal waters

Development activities upstream of estuaries – such as cultivation and construction activities - have often triggered more rapid rates of soil erosion. Sedimentation in estuaries has caused frequent and in some cases permanent closure of estuary mouths as well as destroying fish and shellfish habitats.

### iii) Oil pollution

Oil pollution from shipping and from hydrocarbon exploitation is also of great concern. Pollution from shipping includes operational and major oil spills and the discharge of ballast water and waste from vessels. Oil and other hydrocarbon pollution have an adverse effect on marine water quality making it less suitable for human as well as marine ecosystem functions. For example in 1998 a devastating pollution incident occurred when a fractured marine bunkering pipeline in Table Bay docks fractured and discharged about 200 tonnes of oil which fouled beaches and the rocky shoreline of the Bay and caused oiling of seabirds including penguins and cormorants (<http://sacoast.uwc.ac.za/publications/2F-Pollution>).

#### **Box 6. Main principle of the South Africa's policy**

*Whereas past coastal management efforts focused on controlling human impact on coastal resources, the present policy is "people centred" in that it recognizes the contribution that the coastal zone can make to development.*

### iv) Over fishing

Over fishing has been attributed to increased fishing effort due to improvements in fishing methods. This is exemplified by the white Steen-bras (*Lithognathus lithognathus*) fishery where

increased angling effort and industrial purse seining combined with the traditional beach seining has led to a serious decline in stocks (Bennet, 1993).

### *Coastal Management: historical perspective*

In South Africa the need for an integrated approach to coastal management became more obvious in the late 1970s following concerns about severe environmental degradation taking place in the coastal area. Concern over over-exploitation of fisheries resources, oil spills, unplanned and poorly placed infrastructure development along the coast attracted strong media coverage, which in turn spurred a rethink of the then sectoral uncoordinated way in which the coastal zone was being managed. Early departure from this approach came in the form of the appointment within the Department of Environmental Affairs and Tourism of coastal management staff whose activities included planning on pollution control, protected area management and planning, promoting awareness and funding and coordinating research (Coetzee and Geldenhuys, 1989). The main coastal zone issue identified at this time was physical development – in the form of resort and township development - that was thought to constitute the principal threat to the coastal area. In a further response to this issue the government in 1986, introduced Coastal Regulations that were aimed, without much success, at stemming uncontrolled coastal construction (Snowman & Glazewski, 1987; Glavovic, 2002). However, the introduction in 1997 of mandatory Environmental Impact Assessment (EIA) procedures for coastal development activities did have some measures of success. Previously the principal concern was on the negative impacts of physical development. However, by the 1990s there was an increased understanding of the interaction between communities and the natural environment and concern about the degradatory impact of human activities on coastal environment and resources. This cemented the need for a holistic look in the way coastal zone was managed.

Coastal Zone Management efforts in South Africa got a major boost in 1982 with the establishment of the Committee for Coastal and Marine Systems (CCMS) of the Council for the Environment (CE). CCMS, in cooperation with the Department of Environment, took several key steps towards establishing an institutional framework for the management of the coastal zone.

These steps include:

- defining principles and objectives for ICM;
- voicing the need to safeguard ecologically sensitive/high-risk areas of the coastal zone and
- defining the need for coastal land use strategy.

The CCMS played a major role in advancing the need for a coastal policy in the country and was in the forefront in fostering ICM objectives. However these efforts fell short of establishing an effective integrated policy for the coastal zone. For one, CCMS failed to address some key socio-economic issues of the coastal area. These include issues related to sustainable economic development of local communities, community access to local resources, and stakeholder involvement in the management of the coastal area and resources. To reverse this trend and to push the ICM process forward the Department of Environment took the following steps:

#### **Box 7: The main goals of the CMPP:**

- Promote an integrated approach to coastal management
- Promote a policy commensurate with the above approach
- Develop a policy that has scientific integrity
- Promote and encourage stakeholder participation

To reverse this trend and to push the ICM process forward the Department of Environment took the following steps:



- It appointed consultants to advise on how to incorporate stakeholder participation
- Started a policy formulation process – the Coastal Management Policy Programme (CMPP)
- Conducted consultative workshops in 1993 and 1994 to assess and secure political and civil support for the policy initiative
- Formed an independent, non-profit company Policy Committee (a government–civil society partnership, accountable to the minister responsible for environmental issues).
- Securing donor funding for the policy process

These were key developments in the ICM process in the country.

### *National ICM policy development*

Between 1997 – 2000, South Africa embarked on formulating a coastal policy that acknowledges the need of integrated management approach for the coastal zone. The policy formulation process took several steps:

- Publicising the process by launching a well-advertised media event (through news papers, TV interviews, coverage in local print media) and the distribution of thousands of newsletters. This was meant to raise awareness of coastal zone issues and develop a new way of thinking about the coastal zone and its management
- Stakeholder workshops and consultations were held to identify issues and define vision. These were later translated into a “national vision”
- Another round of workshops was held to develop policy options
- A Coastal Policy Green Paper was developed and distributed to the stakeholders and other people and was then tabled in a number of meetings and workshops for more inputs
- Drafting and submission of a White Paper to the Ministry of Environmental Affairs and Tourism in March 1999 for distribution to Regional managers and stakeholders for further discussion
- Approval of the proposed policy by parliament in June 2000

#### **Box 8: Some key features of South Africa’s Coastal Policy**

- Whereas previous coastal management efforts were sectoral and fragmented, the policy views the coastal zone holistically and advocates an integrated management approach
- The policy underscores the importance of the coastal zone as a cornerstone for human development in general as well as a development potential for coastal regions that were previously marginalized under apartheid rule
- Whereas past coastal management efforts focused on controlling human impact on coastal resources, the present policy is “people centred” in that it recognizes the contribution that the coastal zone can make to development. In this regard the policy recognizes that maintaining the productivity of coastal system is key to achieving this goal
- The policy advocates a “facilitator” style of management in contrast to the “top-down” approach of the past. The new approach emphasizes stakeholder involvement and shared responsibility among all concerned.

The implementation policy is coordinated by CMO through CoastCare. Significant progress has been made in the implementation of the policy. The following activities are noteworthy:

- Passing of the National Environmental Management Act of 1998 and a Coastal management Act proposed.
- Public awareness campaigns
- Capacity building
- Information gathering and dissemination: Several activities have been carried out. These include research on human dimension of the new initiative, the creation of an internet-based information system and a compute-based decision support programme. The programme helps local authorities make informed decision on matters regarding coastal development
- Projects: Several programmes have been initiated under the Coast Care project. The most notable of these are the “Working for the Coast Programme” that provides training and jobs for poor coastal communities

**Table 1: South Africa ICM Policy - Summary of Goals and Objectives (Source: Government of South Africa, 2000)**

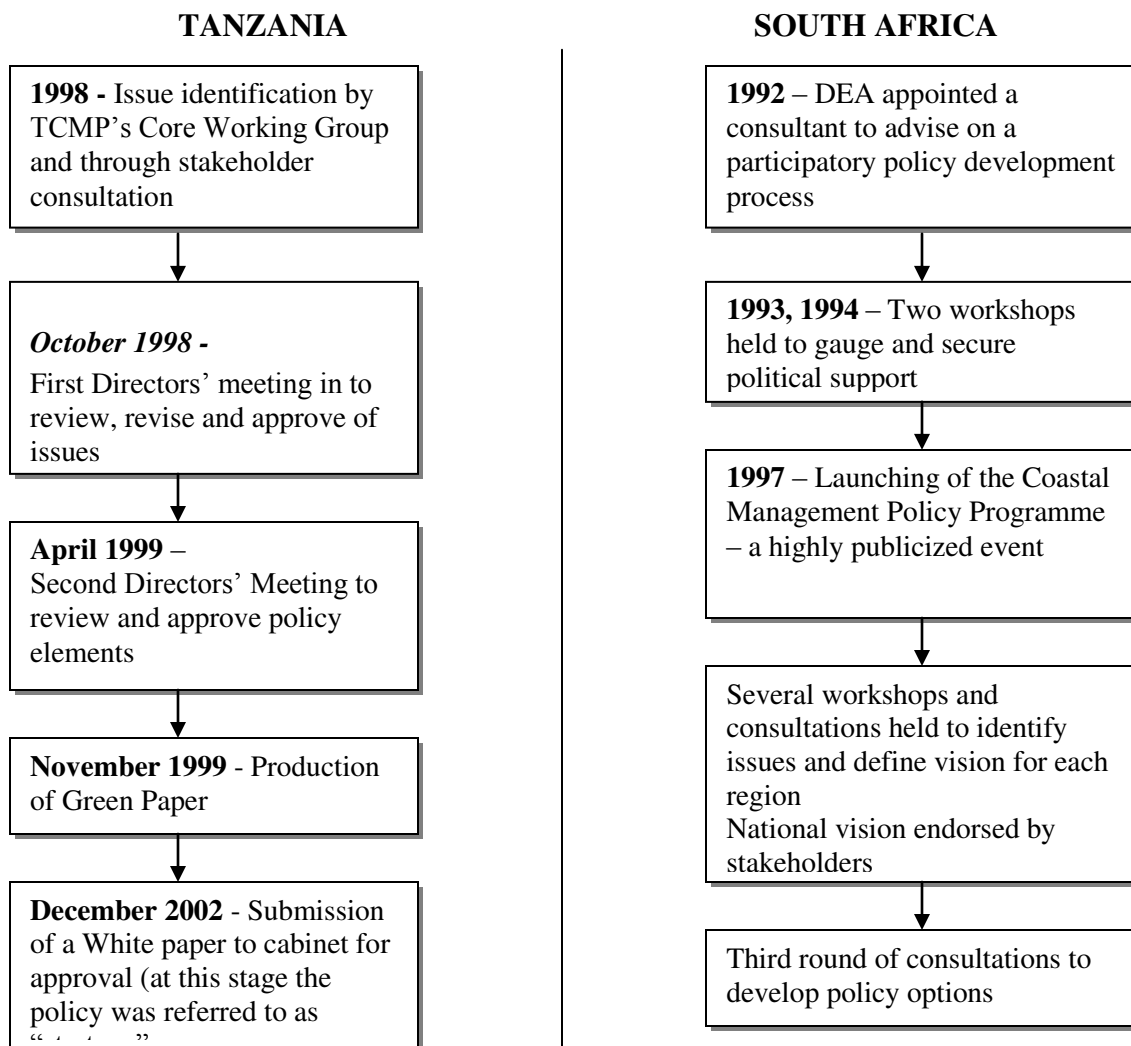
Theme	Goal	Summary of Objectives
A: Governance and Capacity Building	A1: To ensure meaningful public participation, and to promote partnerships between the State, the private sector and civil society in order to foster co-responsibility in coastal management	<ul style="list-style-type: none"> <li>▪ Public participation</li> <li>▪ Partnerships</li> <li>▪ Co-responsibility</li> </ul>
	A2: To promote public awareness about the coast and to educate and train coastal managers and other stakeholders to ensure more effective coastal planning and management	<ul style="list-style-type: none"> <li>▪ Public awareness</li> <li>▪ Education and training</li> </ul>
	A3: To promote a dedicated, co-operative, coordinated and integrated coastal planning and management approach	<ul style="list-style-type: none"> <li>▪ Interrelationships</li> <li>▪ Dedicated effort</li> <li>▪ Specialist support</li> <li>▪ Innovative instruments</li> <li>▪ Integration</li> <li>▪ Devolution</li> <li>▪ Consensus-building</li> <li>▪ Information system</li> </ul>
	A4: To conduct coastal planning and management activities in a manner that promotes learning through continuous research, monitoring, review and adaptation	<ul style="list-style-type: none"> <li>▪ Coastal management initiative</li> <li>▪ Practical implementation</li> </ul>
	A5: To fulfil international and trans-boundary responsibilities, whilst retaining South Africa’s sovereignty	<ul style="list-style-type: none"> <li>▪ International conventions, protocols and agreements</li> <li>▪ Cordial relations</li> </ul>
Our National Asset	B1: To ensure that the public has the right of physical access to the sea, and to and along the sea shore, on a managed basis	<ul style="list-style-type: none"> <li>▪ Opportunities for public access</li> <li>▪ Managing public access</li> </ul>
	B2: To ensure that the public has the right of equitable access to the opportunities and benefits of the coast, on a managed basis	<ul style="list-style-type: none"> <li>▪ Equitable access</li> </ul>
	B3: To preserve, protect or promote historical and cultural resources and activities of the coast	<ul style="list-style-type: none"> <li>▪ Historical and cultural resources</li> <li>▪ Traditional and cultural activities</li> </ul>
	B4: To ensure that the State fulfils its duties as the legal custodian of all coastal State assets on behalf of the people of South Africa	<ul style="list-style-type: none"> <li>▪ Coastal waters</li> <li>▪ State land</li> <li>▪ Admiralty Reserve</li> <li>▪ Parastatal coastal resources</li> <li>▪ Historically granted rights</li> </ul>
C: Coastal Planning and	C1: To promote the diversity, vitality and long-term viability of coastal economies and activities, giving preference to those	<ul style="list-style-type: none"> <li>▪ Economic development potential</li> </ul>

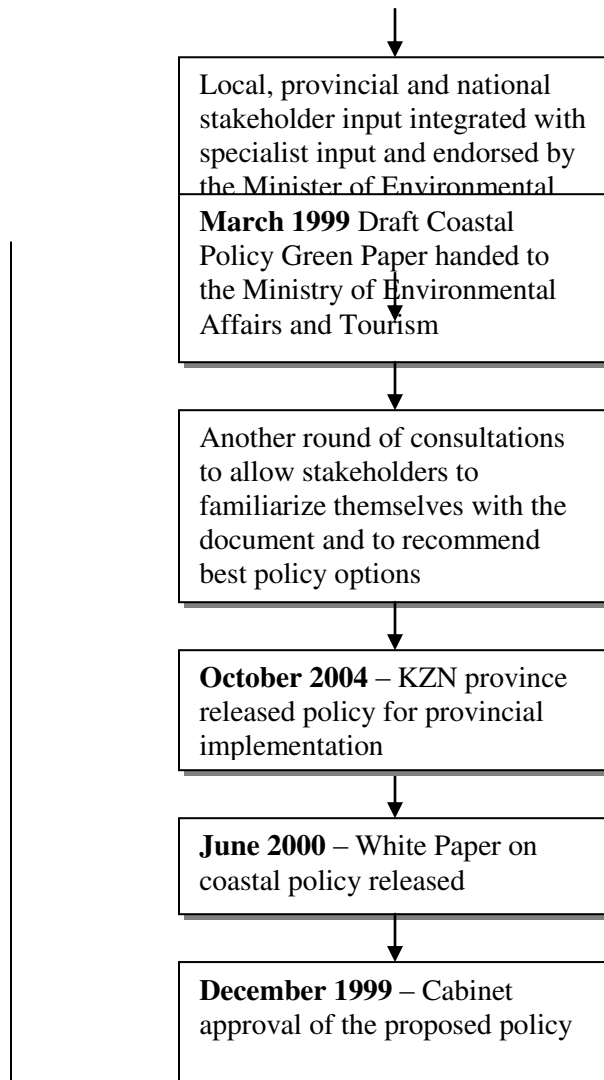
Development	that are distinctly coastal or dependent on a coastal location	<ul style="list-style-type: none"> <li>▪ Approval procedures</li> <li>▪ Coast-dependent activities</li> <li>▪ Ports and related facilities</li> <li>▪ Public facilities</li> <li>▪ Mariculture and aquaculture</li> <li>▪ Tourism, leisure and recreation</li> <li>▪ Mining</li> </ul>
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### 2.3 Comparative Analysis: Development of ICM Programmes in Tanzania and South Africa

Both Tanzania and South Africa have instituted national ICM programmes - the only countries in the Eastern African region. Seemingly the two countries have adopted similar approaches towards the development of their national ICM programmes (Fig 1); however there are some key and fundamental differences. These are summarized below:

**Fig. 1: Tanzania and South Africa national ICM policy developing processes**





### 2.3.1 Policy or Strategy?

The most significant difference is that South Africa has managed to develop an ICM policy (approved by parliament in December 1999), Tanzania on her part, though initially embarked on developing an ICM policy, only managed to institute an ICM strategy.

Furthermore, timing of events proved to be a crucial factor in the preparation of the policy/strategy in Tanzania and South Africa. In the case of Tanzania precious time was spent developing and fine-tuning a White Paper in 2000. This was election year in Tanzania. When the white paper was ready the individuals that were responsible for approving the documents were busy with the electioneering and the opportunity was lost (Torell, et al., 2003). In addition tension between rival environmental bodies ensured that the policy initiative got a rough ride through the governmental establishment with some quarters suggesting that a coastal policy was unnecessary since the country already has in place an environmental policy that they argued was sufficient. These and

other factors forced TCMP to submit the policy to decision makers after a one-year delay. Moreover the document was only approved after having been redefined as a “strategy” rather than a “policy”. This development obviously disappointed all those who were pushing for the policy approval as they regarded a strategy as a less powerful tool as compared to a policy.

### **2.3.2 Stakeholder Involvement**

South Africa’s success in developing and approving the ICM policy is attributed in part to the tremendous efforts that the country has taken in publicizing the initiative as well as in gauging and securing political and stakeholder support. In this process, a wide range of stakeholder and political interests were consulted and their views taken on board during the entire cycle of policy formulation. Participants in the policy development process included all levels of government, trade unions, CBOs, NGOs, parastatal organizations, organized businesses, among others (Glavovic, 2002).

Agreements reached in various fora involving these interest groups were instrumental in developing the CMPP. Consequently the programme secured the necessary political and civil support early on in the process. In the end these efforts paid off. In the case of Tanzania however, there was limited publicity for the initiative and only a small portion of the public was aware of the policy development. Furthermore, there were some efforts to secure the necessary political support but these were obviously not strong enough to convince some portions of the political establishment that an ICM policy was necessary. All in all stakeholder participation was very limited. As a result the policy formulation process in Tanzania did not enjoy the public enthusiasm as that seen in South Africa and equally therefore did not attract the same level of public and stakeholder support.

### **2.3.3 Role of Coordinating Institutions in Policy Development**

In South Africa an independent Policy Committee (PC) was set up to oversee the coastal management policy formulation process. The committee was answerable to the Minister responsible for the environment. The decision to form this committee was reached during workshops and follow-up discussions that were convened to identify and secure political support for this initiative (Glavovic, 2002). The ten-member committee was set up as an independent government-civil society non-profit company with equal representation. The five civil society members of the committee represented stakeholders including business, environmental NGOs, labour, sports and recreation among others. The members had equal status and decisions were reached by consensus.

The Policy Committee took over from the Committee for Coastal and Marine Systems of the Council for Environment, which had earlier spearheaded coastal zone management efforts. These initial coastal zone management efforts focused mainly on defining principles and objectives of CZM as well as on guidelines on rational land use practices. However, the committee also saw the need for a coastal policy. This prompted the DEAT to embark on a policy formulation process, the Coastal Policy Programme and charged the task to the PC.

In Tanzania the lead agency for ICM development is the Tanzania Coastal Management Partnership (TCMP). The partnership was formed in 1997 as a joint initiative between the Government of Tanzania (through the National Environmental Management Council, NEMC), the United States Agency for International Development and the Coastal Resources Centre (CRC) of the University of Rhode Island. Among other things TCMP was charged with the task of overseeing the formulation of the ICM strategy in the country. The TCMP comprise of a small Support Unit and various inter-disciplinary working groups. CRC has been providing technical advice. The working groups were created essentially to engage and maintain contacts with national government agencies (Torell et al, 2003) and also act as ideal platforms where these agencies channel their ideas and help TCMP achieve its goals. Members of the working groups are drawn from various national agencies and therefore foster a sense of ownership of the programme on the part of government agencies and local programmes. The working groups were convened around each of TCMPs main activity. They are the Core Working Group (for policy development), the Coastal Tourism Working Group, the Mariculture Working Group, and the Science and Technical Working Group

**Box 9: TCMP's management strategies**

- Use intersectoral working groups to spearhead issue identification and policy formulation
- Convene high level meetings to direct policy development
- Fill gaps in knowledge with primary research and synthesis of existing information
- Engage in day-to-day contact with key sectors and leaders

### **2.3.4 Timeframe**

The figure below shows the time frame of the policy and strategy development process in South Africa and Tanzania respectively.

**Figure 2: Time frame of the policy/strategy development process**

**(a) South Africa**

Committee for coastal and Marine Systems	[Shaded bar from 1982 to 1992]									
DEA appoint consultant to recommend a participatory policy formulation process	[Shaded bar from 1992 to 1993]									
Workshop to gauge and secure political support	[Shaded bar from 1993 to 1995]									
Policy Committee formed. Donor funds secured	[Shaded bar from 1995 to 1997]									
CMPP launched, issue identification, development of national vision, development of policy options, drafting of Green Paper	[Shaded bar from 1997 to 1999]									
White paper handed to Minister of Environmental affairs and Tourism	[Shaded bar from 1999 to 2000]									
Cabinet approve proposed policy	[Shaded bar from 2000 to 2004]									
Official White Paper released	[Shaded bar from 2004 to 2004]									
Kwa Zulu Natal province released policy for provincial implementation	[Shaded bar from 2004 to 2004]									
	1982	1992	1993 /94	1995 /96	1997-	Mar 1999	Dec 1999	June 2000	Oct 2004	

**(b) Tanzania**

Identification of key coastal issues Directors' meetings discuss issues Core working Group develop goals, principles and implementation actions	[Shaded bar from 1992 to 1995]									
Green Paper (outlining policy options) developed	[Shaded bar from 1995 to 1997]									

Green Paper presented to sector Directors for endorsement and thence to the Vice President Office for consideration					
Cabinet approves the National Integrated Coastal Environment Strategy					
The National Integrated Coastal Environment Strategy launched					
District ICM plans to be formulated					
	1998	Nov 1999	Dec 2002	Apr 2003	2003 -

### 2.3.5 Institutional Structure for Implementation

#### A. Tanzania

In Tanzania three levels of institutional structure will be created for the implementation of the National ICM Strategy. These are:

- i) National Steering Committee on Integrated Coastal Management (NSC-ICM)
- ii) Integrated Coastal Management Unit (ICMU)
- iii) Inter-sectoral working groups

The NSC-ICAM will be responsible for providing guidance on policy and on the over all ICM activities in the country. The Permanent Secretary responsible for environment who will also act as its chair will appoint committee members. Members of the committee will be drawn from the private sector, NGO, and the central government. Others will be the Director General of NEMC and the Director of the Division of Environment as well as a representative from the ministry responsible for local government.

The ICMU will act as the secretariat to the NSC-ICM as well as coordinate and facilitate the implementation of the National ICM strategy. The unit will conduct its activities under the auspices of NEMC and will report to the Director General.

The inter-sectoral working groups will include the Core Technical Working Group (CTWG), Science and Technical working Group (STWG) and Issue Specific Working Group(s) (ISWG). The ISWG, whose members will be drawn from appropriate sectors, will be responsible for developing issue specific guidelines (Govt. of Tanzania, 2003). Local governments will be accorded special responsibilities. These will include preparation and facilitation of ICM Action Plans and reviewing, approving and implementing of local ICM Action Plans among others.

The National Integrated Coastal Environment Management Strategy will be implemented through the following seven strategies (Gov. of Tanzania, 2003):



- i) Support environmental planning and integrated management of coastal resources and activities at the local level and provide mechanisms to harmonise national interest with local needs.
- ii) Promote integrated, sustainable and environmentally friendly approaches to the development of major economic uses of the coastal resources to optimize benefits
- iii) Conserve and restore critical habitats and areas of high biodiversity while ensuring that coastal people continue to benefit from sustainable use of the resources
- iv) Establish an integrated planning and management mechanism for coastal areas of high economic interest and/or with substantial environmental vulnerability to natural hazards
- v) Develop and use an effective coastal ecosystem research, monitoring and assessment system that will allow available scientific and technical information to inform ICM decisions
- vi) Provide meaningful opportunities for stakeholder involvement in the coastal development process and the implementation of coastal management policies
- vii) Build both human and institutional capacity for inter-disciplinary and inter-sectoral management of the coastal environment.

The NICEMS has identified various implementation mechanisms and actions and so are responsible institutions.

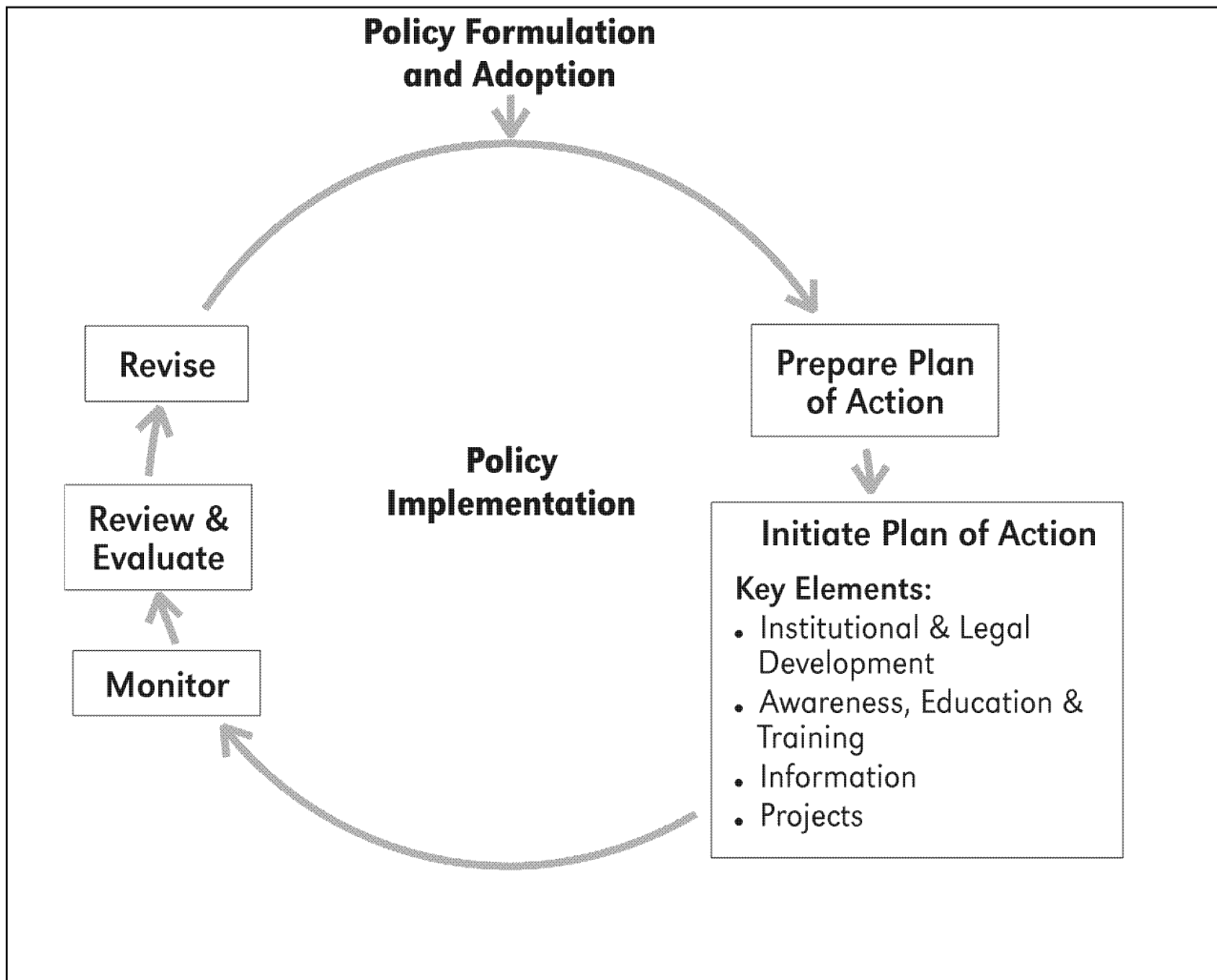
## **B. South Africa**

The country has proposed a phased implementation of the policy and the exercise is regarded as a cyclical process of evaluation and review and thus of continual improvement (see figure below).

There are three broad phases of implementation of the policy. These are:

- Mid-2000 to the end of the year 2001 – short-term phase in which coastal management structures in the local, provincial and national spheres of government were to be initiated.
- Beginning of 2002 to the end of 2005 - medium-term, where there will be Consolidation of structures, functions and tasks.
- By the Year 2020 – long-term goal where it is envisaged that institutions that are financially self-sustaining and effective in promoting sustainable coastal development will be in place.

**Fig. 3: Implementation cycle of the South African Coastal policy (Source: Govt. of South Africa Date 2000)**



The implementation phases are in accordance with a Plan of Action that has the following implements:

#### Institutional and Legal Development

The lead agency at the **National** level is the Chief Directorate, Marine and Coastal Management of the Department of Environmental Affairs and Tourism (DEAT). The national lead agency for implementing the Plan of Action provides overall guidance to provincial and local government, the private sector and civil society on matters related to coastal management. In addition, the lead agency is responsible for coordinating with other national departments and the provinces. This occurs through a Coastal Management Subcommittee established under the Committee for Environmental Co-ordination (CEC).

At the **Province** level a provincial government lead agent is responsible for ICM co-ordination activities in each of the four coastal provinces. The White Paper proposes the establishment of a

Coastal Working Group in each province that will act as a sub-structure of the national CEC. This is to ensure an improved co-ordination of coastal management at this level.

At **Local** level neighbourhood coastal forums are established in some areas with the view to implementing the policy, improve co-ordination and to promote dialogue between government and other stakeholders.

- Awareness, Education and Training

The White Paper proposes a public awareness programme, to be carried out by the DEAT and by provincial lead agents in order to sensitize South Africans on coastal issues such as its value and development potential as well as the need to protect it. Accordingly, several projects have been launched including the erection of information boards along much of the South African coast.

- Information

A programme to monitor the state of the coast as well as the effectiveness of coastal management efforts will be initiated. These reports will be published by the DEAT as part of its State of Environment reporting programmes. In addition, the Chief Directorate: Marine and Coastal Management will establish a system of discussions amongst all key stakeholders to assess information need and research priorities with the view to assist decision-making processes at national, provincial and local levels. However, progress in this activity has been slow.

- Projects addressing priority issues and local demonstration projects

At national level the Chief Directorate: Marine and Coastal Management, through the Coastal Management Subcommittee of the CEC and in consultation with other departments, will identify national priority issues and develop programmes to address these issues. At the Provincial level Provincial lead agents, in consultation with provincial Coastal Working Groups, will identify provincial-level priority issues and on their part design provincial programmes to address them accordingly.

Details of the implementation mechanisms are given in the table below (Source: Government of South Africa, 2000).

**Table 2: Objectives, Functions and Structures for Coastal Management Institutions**  
**Local**

	<b>Short-term (2000 – 2001): Set-up</b>	<b>Medium-term (2002 – 2005): Consolidation</b>	<b>Long-term (2006 – 2020): Self-sustaining</b>
<i>Local</i>	<b>Overall objective:</b> Building capacity of local authorities to implement the Policy through day-to-day coastal management functions and tasks; identifying and initiating local demonstration projects.	<b>Overall objective:</b> Developing capacity of local authorities; improving co-ordination between role-players; implementing local demonstration projects.	<b>Overall objective:</b> Reprioritisation of local authority budgets to enable effective coastal management; devolution of selected coastal management responsibilities from provincial to local level.
	<b>Function:</b> To carry out day-to-day responsibilities for coastal management above the high water mark, for example, planning, engineering, beach management, tourism. <b>Structure:</b> Local authorities.	Further development of capacity	Reprioritisation of local authority budgets to enable effective coastal management; devolution of broader sectoral executive responsibilities, for example, below the high water mark – estuary management, in-shore marine resources.
	<b>Function:</b> To promote dialogue between governmental and non-governmental coastal role-players and improve co-ordination of coastal management at local level <b>Structure:</b> Local coastal forums established in areas with sufficient resources.	Establishment of local coastal forums in as many areas as possible; forums with capacity assume shared management responsibilities in some areas	Local coastal forums established in all areas.
	<b>Function:</b> To manage local demonstration projects to achieve specific objectives and to demonstrate successfully the effectiveness of integrated coastal management. <b>Structure:</b> Management structures for local demonstration projects initiated.	Expansion of co-management initiatives and public-private partnerships	Generation of funding for co-management initiatives and public-private partnerships.

Provincial and national

	<b>Short-term (2000 – 2001): Set-up</b>	<b>Medium-term (2002 – 2005): Consolidation</b>	<b>Long-term (2006 – 2020): Self-sustaining</b>
<b>Provincial</b>	<b>Overall objective:</b> Establishing provincial lead department's capacity for effective coastal management, initiating mechanism for provincial co-ordination of coastal management.	<b>Overall objective:</b> Developing lead department's capacity; improving provincial co-ordination; devolution of selected coastal management responsibilities from national to provincial level.	<b>Overall objective:</b> Reprioritisation of provincial budgets to enable fully capacitated coastal management structures in provinces; devolution of selected powers from provincial to local level.
	<b>Function:</b> To carry out provincial coastal management executive responsibilities, for example, identifying provincial priority issues, reviewing legislation, monitoring state of the coast. <b>Structure:</b> Designation of lead department for coastal management, for example, planning/economic development/environment/conservation.	Establishment of Coastal Unit in lead department for coastal management, where resources allow; carrying out provincial priority projects; devolution of selected executive functions from national to provincial level, where appropriate.	Reprioritisation of provincial budgets to enable fully capacitated Coastal Unit in each lead department for coastal management; devolution of selected executive function from provincial to local level, where appropriate.
	<b>Function:</b> To improve co-ordination of coastal management at provincial level through involving governmental and non-governmental role-players. <b>Structure:</b> Coastal working Group in each province as substructure of the national Committee for Environmental Co-ordination.	Review of Coastal Working Groups in terms of ability to involve government and civil society stakeholders.	Possibility of alternative mechanisms for provincial co-ordination and co-responsibility, for example, provincial coastal boards.
<b>National</b>	<b>Overall objective:</b> Building capacity of the DEAT as national lead agent; initiating mechanisms for national co-ordination and national-provincial co-ordination.	<b>Overall objective:</b> Developing the DEAT's capacity; improving national co-ordination; devolution of selected coastal management responsibilities from national to provincial level.	<b>Overall objective:</b> Establishing mechanisms to generate funds for self-sustaining coastal management work.
	<b>Function:</b> To act as national lead agent for coastal management and undertake	Carrying out national priority projects; devolution of selected	Reprioritisation of national budgets to enable effective coastal

	executive functions, for example, identifying national priority issues, CoastCARE, information systems. <b>Structure:</b> Chief Directorate: Marine and Coastal Management (DEAT).	functions from national to provincial level, where appropriate.	management at national level.
	<b>Function:</b> To achieve co-ordination of coastal management at national level. <b>Structure:</b> Coastal Management Subcommittee of Committee for Environmental Co-ordination.	Review of Coastal Management Subcommittee of Committee for Environmental Co-ordination in terms of ability to: involve government and civil society stakeholders, generate funding, and provide specialist support and independent monitoring.	Possible establishment of alternative mechanisms, for example, coastal trust/board, in order to involve government and civil society stakeholders, generate funding, provide specialist support and independent monitoring.

### 2.3.6 Funding and Funding Agencies

In Tanzania the NICEMS development process was mainly supported through donor funding mainly from the United Agency for International Development (USAID). However, the implementation of the National ICM strategy will be funded through four sources:

- i) Central and local government sources.
- ii) Participating sectors. These will be required to fund agreed upon priority activities
- iii) Contributions from development partners. This is a short term measure
- iv) The private sectors such as prospective investors in such activities as mariculture and coastal tourism and from other contributors such as NGOs and CBOs

In South Africa donor funding – mainly from the British Department for International Development (DFID) – primarily supported the Coastal policy formulation programme. The implementation of the policy is funded from national, provincial and local government sources with the support of DFID and other development partners.

## 3 Situation Analysis: Countries without National ICM Programmes

### 3.1 Mozambique

#### *Coastal setting*

Mozambique has a coastline of about 2770 km extending from the border with Tanzania in the north to the South African border in the south. The continental shelf is narrow, averaging less than

5 km in most places (Chemane et al, 1997), but widens to 100 Km in Sofala Bank, and covers an area of 68,000km<sup>2</sup>. It is estimated that up to 59% of the country's population live within 50 km wide coastal strip. Of the 110 administrative districts in the country, 42 are coastal. The high population density along the coastal zone is attributed in part to long periods of conflicts (pre-independence struggle and post-independence civil war that lasted until 1992) that forced major migrations of people to the coast for its relative safety (Bryceson and Massinga, 2002).

Several and diverse ecosystems are found in the coastal area of Mozambique. These include coral reefs, mangroves, sea grass beds, mudflats, dunes, barrier islands, deltas and estuaries. Corals are found along the entire coastline except near river mouths. However the most extensive shallow water reef system extends from the Ruvuma River in the north to the Primeiro/Secundo Archipelago in the south. Ten rivers discharge large amount of sediment into the coastal area creating extensive mud flats and offshore banks, especially in the vicinity of the Zambezi River.

Well-developed mangrove forests occur in the north and central sectors of the country and less so in the south. The Zambezi River delta boasts the most extensive mangrove forests.

In Mozambique, coastal resources contribute significantly to the national economy as well as play a pivotal role in the socio-economic development of local communities. It is estimated that up to two thirds of the population benefit from coastal resources (Gove, 1997). In some areas of the coast where the soil is too poor for agricultural activities, the exploitation of marine resources is the only means of sustenance for the majority of the communities living in those areas.

Although substantial industrial fisheries exist offshore, fishing along the coast is mostly artisanal and employs about 75,000 people who depend directly on it for their livelihoods (MICOA, 1998). Some commercial fishing takes place in and around Maputo Bay. In 1992 total fish catch was 120000tons although estimates puts potential fish of over 300000 tons. The fisheries sector employs between 50000 and 60000 people and represents about 45% of the total export (Hoguane, 200 ). In 1999 shallow water shrimp production alone contributes about U\$ 90 million to the national economy (Motta, 2001).

Coastal tourism is increasingly becoming an important economic activity especially after the end of the war and improved relation with South Africa. It is also one of the fastest recovering sectors.

### ***Priority Coastal Management Issues***

The coastal zone of Mozambique is experiencing severe population pressure as a result of migration brought about by both economic reasons but as well as an aftermath of the civil war. Whilst the average population density in Mozambique is 18 persons per km<sup>2</sup>, that of the coast is 75 persons per km<sup>2</sup> (Massinga, 1997). This has had severe impact on the coastal area and resources upon which the local communities and the nation rely for social as well as economic development. There has been localised loss of mangrove forests due to cutting for firewood and for converting mangrove areas into solar salt pans (Masinga, 1997; Motta & Truta, 1997). The use of illegal gear and over-fishing is threatening the artisanal fishery sector. Coral mining, soil erosion, deforestation and pollution are some of the other priority coastal management issues.

In addition, following the cessation of hostilities in the country Mozambique has seen a significant growth in development activities in the coastal zone (Gove, 1997). These include port and shipping activities, tourism, agriculture, forestry and related activities. However, these activities augmented by poor land use practices, pose a serious threat to the natural ecosystem and the resources they support.

In addition, the fast track recovery of the tourism sector has imposed a serious threat to the environment especially in the south of the country. Uncontrolled tourism development has resulted in undue pressure on resources and the social fabric of the society.

### ***Integrated Coastal Management: historical perspective***

The first positive step towards setting up an effective coastal management regime in Mozambique was the creation, in 1995, of the Ministry of Coordination of Environmental Affairs (MICOA) that has been given the task of coordinating environmental management in the country. The department responsible for the coastal zone within the ministry is the CZM Department and the Centre for Sustainable Development for Coastal Zones that are responsible, among other things, in coordinating all management efforts in the area. In 1994 the Government of Mozambique approved the National Environmental Management Programme (NEMP). One of the areas that the management programme has prioritized for action is the coastal zone. Five areas of management concern have been identified. These are: (1) coastal and marine ecosystems (2) marine parks (3) fisheries and (4) tourism. The NEMP has established that ICZM is the best approach to addressing these issues and has defined strategies and short and long term goals for each of the major issues.

#### **Box 10: ICM Field projects in Mozambique**

- Mecufi Coastal Zone Management Project
- Xai Xai Integrated Planning Demo Project.
- Coastal and Marine Biodiversity Project – World Bank

Mozambique is yet to finalise a national ICM programme.

However, the country has initiated the ICM process by developing several field projects that address coastal zone problems and opportunities. The best known of these projects include the Mecufi Coastal Zone Management Project and the Xai Xai Integrated Coastal Zone Management Project and Marine and Coastal Biodiversity Management Project.

The Xai- Xai ICAM Demonstration Project was initiated by MICOA with the support of UNEP/FAO under the EAF/5 project and technical assistance from the Priority Actions Programme/ Regional Activity Centre (PAP/RAC). Among the expected outputs of the project were a Coastal Profile and Management Strategy for issues that have been identified for the area and training of a multidisciplinary ICM team (Motta & Truta, 1997). Presently this project is being financed by DANIDA and is being implemented in the coastal zone of Maputo, Gaza and Inhambane Provinces



## 3.2 Madagascar

### *Coastal setting*

Madagascar has a coastline of about 5000 km with a continental shelf of approximately 117000 km<sup>2</sup>. The country's EEZ occupy an area of 1.15 million km<sup>2</sup>. Several habitat-types occur along most of the coast including coral reefs, mangroves, sea grass beds, islands, mudflats and beaches among others. Coral reefs – patch reefs, fringing barrier reefs, and barrier reefs – occupy an area of over 3000km. In Madagascar mangroves are an important component of the coastal landscape as they provide essential habitat for fish, birds, and other creatures. They are more widespread in the Western coast where about 98% of the mangroves in Madagascar are found (Taylor et al, 2003). The southern coast of the island has fewer mangroves. The area, in addition to lower rainfall, is subject to intensive ocean swells. It is estimated that mangroves cover 3000 000 ha equivalent to 10 % of the coastline (Joignerez, et al, 2001). Sea grass beds occupy small areas within the lagoon systems.

About 39% of the country's population of 13.1 million lives within 60 km of the coastal zone. This translates to a coastal population density of 19.8 persons per km<sup>2</sup>. Fisheries and coastal tourism are major economic activities in the coastal zone. According to 1998 export figures, the fisheries sector earned the country approximately US\$ 90 million - mainly from shrimp export - which is equivalent to 17% of the total export earnings (World Bank, 2000). Likewise the tourism sector generated over US\$ 91 million in that year (Joignerez et al, 2001).

### *Priority Coastal Management Issues*

The coastal zone of Madagascar, due to its underdeveloped status (Joignerez et al, 2001) has so far escaped some of the severe environmental degradation common to countries around the region (Arico and Rakotoary, 1997). However, localised anthropogenic effects have been recorded especially in areas of high economic or development activities such as ports, tourism development and coastal towns. Other marine and coastal threats faced by Madagascar include uncontrolled industrial fishing, degradation of coral reefs through over fishing, climate change and sedimentation, over fishing of high value species such sea cucumbers and conflicts between different users of the coastal zone (WCS, 2004).

### *Coastal Management: historical perspective*

Madagascar does not have a national coordination structure for the management of its coastal area. However efforts are underway to develop a national policy for coastal management within the framework of the Coastal and Marine Environment Unit (EMC) and under the National Environmental Action Plan (NEAP).

At present, the task of managing the coastal area is spread over several institutions. These include:

- Ministry of Water and Forests
- Ministry of Environment

- National Advisory Committee for the Environment (CNE)
- Inter-ministerial Committee for the Environment
- National Office for the Environment (ONE)
- Ministry of Fishing and Marine Resources
- Ministry of Town and Country Planning
- Several Environmental Units established within most ministries

The decision to adopt an integrated approach to coastal management was taken far back as 1985 during the International Conference on the Conservation of the Natural Resources and Development held in Madagascar (Arico and Rokotoary, 1997). The workshop followed important developments in 1984: (i) the adoption of the national strategy for conservation and (ii) the establishment of the National Commission on Conservation for Development. However due to implementation constraints both the national strategy and the commission never became operational. However, plans to form a coastal and marine component of the Environmental Programme within the National Environmental Action Plan (NEAP) did come into fruition. Phase two (PE-II) of the programme proposed concrete steps aimed at the management of the coastal zone at the national, regional and local levels. These include the development, at the national level, of a framework for the management and economic development of the coastal zone.

Another important step was taken in 1996 when a national workshop on ICM was held. ONE and IOC of UNESCO organized the workshop with financial support of IOC-SIDA/SAREC Marine Science Programme for East Africa and the Environment Department of the World Bank. The key areas addressed during the workshop were: conceptual aspects of ICM, institutional coordinating/implementing mechanisms of ICM and national ICM programmes. More importantly, the workshop stressed the need for ICM to address coastal issues in Madagascar (Arico and Rakotoary, 1997).

In another development, in 1997/1998 The National Office for the Environment (ONE), under NEAP, established a think-tank and a working group to provide an inter-sectoral forum for key stakeholders. The working group draws members from all key Ministries, government programmes, NGOs, WWF, UNESCO and other key

#### **Box 11: ICM Field Projects in Madagascar**

1. **“Sustainable Coastal Zone Development Pilot Project for Menabe”**. The project site is the whole Menabe region (300 km long coastline) located on the west side of Madagascar. This project was launched in June 1997 and is an initiative between the Menabe Regional Development Committee (Menabe RDC) and the Indian Ocean Commission (IOC) Regional Environmental Programme and supported by the European Commission. The goal of the project is to “plan sustainable coastal zone development through the self promotion of village communities” (Henocque, 2000). In 1999 a draft master plan the project designated two priority planning and pilot zones (Morondava town, pop. 26000 and Andranopasy village, pop. 2000).
2. Madagascar also benefited from a regional ICZM project initiated by the Indian Ocean Commission’s Regional Environmental Programme (PRE-COI) that was conducted between 1995 and 1999.
3. The Wildlife Conservation Society (WCS) through its Marine Programme has been collaborating with Malagasy partners in areas of coastal and resource management. The WCS Marine Programme activities in Madagascar are built around these themes: (i) promotion of improved marine governance, including ICZM (ii) design, development and management of marine and coastal protected areas (iii) sustainable management and protection of fisheries and (iv) conservation of large marine mammals.

institutions. Among other matter, the group discusses issues related to coastal management and was charged with the preparation of a policy orientation document for ICZM (Joignerez et al, 2001).

The development of a national ICZM policy is being prepared within the framework of the National Environmental Action Plan (NEAP) and EMC of ONE. This exercise is expected to yield the following (Joignerez, 20001):

- A national ICM policy
- ICM legislative instruments
- ICM operational structure at national, regional and local levels
- Management plans

As part of these efforts ONE released the “Policy orientation Document” in June 2000. A number of ICM field programmes have been implemented in Madagascar. These are summarized in Box 9 above.

Madagascar has set its sights on further development and exploitation of coastal resources. Two economic areas that have already shown significant growths are coastal tourism and aquaculture. In recent years there has been a 10% increase in aquaculture growth per year (Joignerez et al, 2001). Furthermore, more and more people move to the coast thus expanding the area’s population. These activities will further enhance the need for an integrated coastal management framework.

### **3.3 Mauritius**

#### *Coastal Setting*

The Republic of Mauritius is made up of the main island of Mauritius and the outer islands of Rodriguez, Agalega, St. Brandon, the Chagos Archipelago and Tromelin. The islands are scattered over a vast area of the sea and consequently claim an EEZ totalling 1.9 million km<sup>2</sup> (Bhikajee, 2001). The total population of Mauritius is 1.13 million with annual growth rate of 1.1%. It has a population density of 572 people per km<sup>2</sup>. Mangroves are found in both Mauritius and Rodrigues. Significantly mangrove cover has been reduced over the years prompting the government to initiate a mangrove reforestation programme.

The traditional use of the coastal zone of Mauritius has been for artisanal coastal fisheries where up to 2700 fishermen operate in the lagoon and beyond. Total fish catch in the country has stabilised at around 1600 tonnes per year. However, according to reports the maximum sustainable yield stands at 1700 tonnes per year (Government of Mauritius, 1991).

In addition to catch fishery, raising of fish and other organisms is carried in coastal waters *barachois* (coastal waters surrounded by stone walls). In 1996 forty-four tonnes of finfish and 3 tonnes of shrimps were produced (Institute for Environment and Legal Studies, 1998)

The growing affluence of Mauritius beginning in the 1970s, the success of industrialization and the tourism drive of the 1980s and rapid economic growth have increased the use (and impact) of the coastal areas and resources:

- New tourist hotels have been built to accommodate increasing number of tourists;
- Private beach bungalows have sprung up in many areas of the coast;
- The beach has become increasingly popular for recreational purposes with a large number of Mauritians heading to the beach every weekend;
- Large numbers of leisure boats operate in the lagoon.
- Sand and coral mining

These new uses of the coastal area have added to the pressure on the coastal environment and resources.

### ***Priority Coastal Management Issues***

Since the 1980s the coastal zone of Mauritius has been under intense pressure from both land activities (such as industry, agricultural activities, waste disposal, beach hotel activities) and from the sea (such as fisheries and tourism activities) thus threatening the integrity of the coastal zone (Baissac, 1996). More specifically these activities have resulted into the following damaging effects (Bhikajee, 2001b):

- Reduced fish catch due mainly to over-fishing and pollution from agrochemicals
- Degradation of beach by solid waste
- Degradation of corals through dredging, anchoring, trampling, waters ports, coastal work, use of fishing nets
- Degradation of sea grass beds and coral reefs as a result of sand mining
- Mangrove degradation and deforestation
- Reduced water quality in coastal waters as a result of discharge of untreated and poorly treated municipal and industrial waste. Discharge of agricultural runoff has also caused severe water quality problems
- Beach erosion resulting from, among other factors, construction activities too close to the water's edge;

### ***Coastal Management - historical development***

In 1987 the Government of Mauritius took initial steps to address environmental – including coastal zone- management. These include (Baissac, 1996):

- The appointment in 1987 of a high powered commission, the National Environmental Commission (NEC), chaired by the Prime Minister which was tasked to review the existing legal and administrative structure for the management of the environment;

#### **Box 12: Role of the Mauritius: ICZM Division**

- Develop and implement an integrated coastal management plan
- Assess and monitor coastal resources including wetlands
- Control of beach erosion
- Islets and outer islands management
- Guideline for coastal construction
- Environmental sensitive areas identification and mapping

- By 1988 a set of recommendations were presented by NEC on how to improve the institutional and legal framework relevant to the management of the environment
- Preparation of the National Environmental Action Plan (NEAP) in 1988.

The NEAP was the basis for the formulation of the Environment Investment Programme (EIP) that consists of 33 projects including coastal and marine conservation projects (marine environmental management planning, establishment of marine parks etc) (Baissac, 1996).

Another product of these activities is a strategy document termed the “Economic Development with Environmental Management. Strategies for Mauritius” that has been the foundation for environmental planning in Mauritius.

The agency responsible for coordinating coastal management is the Division of Integrated Coastal Zone management within the Department of Environment (Ministry of Environment). However, given that the ministry has not enough capacity to deal with current and emerging environmental issues, it has to share management responsibilities with a number of institutions. This has resulted in fragmented responsibilities and overlapping jurisdiction with a number of institutions being responsible for coastal zone management.

Mauritius is yet to adopt a national framework for the coastal zone. However, the country has executed a number of coastal management field programmes. These include a UNDP sponsored project -The management and protection of the endangered marine environment of the Republic of Mauritius – and have also participated, together with Comoros, Madagascar, Reunion/France, and Seychelles in the Indian Ocean Commission ICZM project for the Indian Ocean.

### **3.4 Seychelles**

#### *Coastal Setting*

The Seychelles archipelago consists of 115 islands spread over an EEZ totalling 1.4 million square kilometres. Due to their small sizes all the outer coralline islands can be regarded as coastal zones. Moreover, the granite islands on which most of the socio-economic activities – including human settlements and most of the infrastructure – are located on a narrow belt of coastal lowlands and reclaimed land as most of the hinterland consist of central highlands and are inaccessible to human settlements and development (Shah, 1996). In many ways these too can be categorized as coastal zones (Shah, 1996; Payet, 2001; Ministry of Environment, 2003). The islands have an oceanic shelf totalling 43,000 km<sup>2</sup> and a combined coastline of approximately 600 km long (Domingue et al, 2000). According to 1999 statistics, the population of Seychelles is estimated to be 80,410 of which just over 99% are distributed over three islands: Mahé accounts for 88.7 % and the rest in Praslin and La Digue (Domingue et al, 2000).

Seychelles is highly dependent on its coastal and marine ecosystems - especially its low-lying coastal belt and reclaimed land. These areas are the backbone of Seychelles socio-economic development. Almost all-important economic activities are clustered along the coastal belt. The area is also home to between 85 to 90% of all communities in the Seychelles (Shah, 1996). The

economy of the Seychelles relies mainly on the tourism sector and to some extent on its fisheries industry.

### ***Priority Coastal Management Issues***

Given the low-lying nature of the islands, the country is very susceptible to nature's mood swings. The coastal area is very vulnerable to sea level changes, storm surges and erosion. Erosion has also been attributed to human activities and its impact has been observed in a number of cases (De Comarmond, undated).

#### **Box 13: Seychelles priority ICM issues:**

- Threats from natural hazards such as sea level changes and erosion
- Urbanisation
- Pollution of coastal waters

Other threats to the coastal zone also emanate from human intervention. The coastal area is under increasing pressure from urbanization (especially on the two largest granitic islands of Mahe and Praslin), over-exploitation of coastal resources and increased tourism and industrial development (Dominique et al, 2000). Sand mining activities in rivers and beaches for the construction industry have had adverse effects on the shoreline and beaches. Even though this activity is now banned, scars from the practice have been slow to heal. The threats to the coastal zone also include pollutants generated by both coastal communities as well as tourists. Moreover there are concerns of potential user conflicts between developers (especially in the hotel industry) and local communities.

### ***Coastal Zone Management – historical perspective***

Seychelles is yet to develop a nationwide integrated coastal zone management programme even though in the last decade some initiatives were taken to help the process forward.

Comprehensive coastal management has its roots in the 1960s, when the Nature Conservation Board was created. Later the board was reorganized to become the National Park and Nature Conservation Commission and later with, further reorganization, it became in 1982, the Seychelles National Environment Commission.

With the enactment of the Environment Protection Act in 1994 the coastal zone (including activities dealing with the coastal zone) became legally recognized as a management unit and serious efforts were directed towards setting up an effective management regime for the coastal zone. These have yielded several successes including the launching of the country's first Environmental Management Plan in 1991, the creation of several nature reserves and launching of public awareness campaigns. However, these efforts have been essentially sectoral as several elements of coastal management and authority are spread over a number of institutions (Shah, 1996). These include Division of Environment, Port and Marine Services, Seychelles Fishing Authority, Marine Parks Authority, Ministry of Tourism and Civil Aviation, Seychelles Housing Authority etc. In addition several inter-ministerial committees and institutions have been established to address cross-sectoral issues in the coastal zone. They include the Town and Country Planning Authority, the Natural Resource Committee and the Climate Change Committee among others (Shah, 1996).

Even though the process of adopting an integrated approach to coastal management has been slow in Seychelles, there have been positive developments in the last few years aimed at overcoming the sectoral approach to environmental management. Two of these are worth mentioning. They are the creation of the National Environment Advisory Council, under the Environment Protection Act 1994. The council drew members from government as well as from the private sector and NGOs. A more important step is the formulation of the new Environmental Management Plan for Seychelles (EMPS 2000-2010) under the Coastal Management and Land Use Programme. The plan gives a specific mention of the issue of integrated coastal management and consequently has given a new impetus to this approach.

### **3.5 Comoros**

#### *Coastal setting*

The Islamic Republic of the Comoro is composed of four islands in - Grande Comoro (1,146 km<sup>2</sup>), Moheli (211 km<sup>2</sup>), and Anjouan (424 km<sup>2</sup>) and Mayotte (374 km<sup>2</sup>). (Currently Mayotte is a French dependent territory). The human population of the islands is high, with over 700,000 residents on the four islands combined (with a population density greater than 330 people/km<sup>2</sup>).

#### *Coastal issues*

Priority coastal issues in the Comoro include over-fishing, poaching of fisheries resources, degradation of the coastal plateau through siltation, sand and coral mining and solid waste and wastewater dumping.

#### *ICM Development*

ICM efforts in the country started in 1994 with the establishment of an administrative and legal framework for the management of the environment. These are a National Policy on Environment and an Environmental Action Plan. The country however lacks a national ICM programme.

#### *Projects*

Several ICM related projects have been executed in the Comoros. These include the following:

- Conservation of Biodiversity and Sustainable development in the Federal Islamic Republic of the Comoro (supported by UNDP)
- Indian Ocean Commission supported projects
- UNEP's EAF/5 and EAF/14
- The Moheli Marine Park created in 2001 under the auspices of the World Conservation Union (IUCN), United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the Global Environmental Fund (GEF) - Island Biodiversity and Participatory Conservation in the Federal Islamic Republic of Comoros. This project is being co-executed by IUCN and has several components that include outreach, training, and environmental awareness.

## **4 Examples of ICM field projects in Tanzania and Mozambique**

### **4.1 The Tanga Coastal Zone Conservation and Development Programme**

#### **Introduction**

The coastal area of Tanga region in northern Tanzania supports a number of fragile but ecologically and economically important habitats that include coral reefs, mangrove forests, sea grass beds and coastal forests. These habitats support a rich coastal fishery that supports the livelihood of a large sector of the local communities. However, since the mid 1980s there had been a decline in fish catches brought about by, principally by use of destructive fishing methods especially dynamite and drag nets, over-harvesting of resources and general destruction of fish habitats including mangroves and coral reefs. Recent surveys have shown that about 12% of the reefs was destroyed beyond recovery, 24% is in good condition and the remaining 64% in poor or moderate condition (Horril and Makoloweka, 1998).

Administratively, the region is sub-divided into three coastal administrative Districts, Muheza, Pangani and Tanga. The coastal problems facing the Tanga region are not uncommon in the rest of the WIO region. These include declining fish catches and other coastal resources, poor status of the coral reefs, sea grass beds, mangroves and coastal forests and poor coastal management regime.

When government and community efforts to arrest this situation did not succeed assistance was sought from ICUN and Irish Aid to develop a long-term management strategy with the view to ensure sustainable use of the resources. This initiative led to the formulation of a cooperative programme - The Tanga Coastal Zone Conservation and Development Programme - between local communities from the three districts and local government to address the different coastal issues in the region.

#### **The Programme**

The Project was launched in 1994 as a collaborative programme between Tanga's three coastal districts (Pangani, Muheza, Tanga, the Development Cooperation of Ireland (DCI) and the World Conservation Union (IUCN). The programme is a community based integrated coastal area management programme that has brought together local communities and district officials in addressing priority management issues. The project is unique in that the local communities are key players in the management activities and that the programme has adopted a wholly top-down approach. The project's strategy is to address a number of key issues through a four-stage approach: listening, piloting, demonstrating and mainstreaming. Participation has been key in the execution of this programme. Local resource users have been involved in every step of the project cycle: issue identification and analysis, planning, implementation, monitoring and reviewing.



The core strategy being used by this programme is “action planning” i.e. the use of targeted, issue-based plans, identifying specific actions to address those issues and providing guidelines on how they will be implemented, monitored and adapted over time (Torell et al, 2000). The result is collaborative plans to address key issues especially those associated with mangroves, reefs and reef fisheries

## **Project objectives**

The project was launched in order to arrest the degradation of Tanga coastal resources through conservation initiatives and to raise the living standard of the local population. The project objectives had been revised twice following recommendations of external evaluators and staff of the programme who saw the initial objective as too broad (Torell, 2000). New objectives had to be formulated and the first phase of the programme (1994 – 1997) aimed at:

- strengthening the capacity of local institutions to carry out ICM and
- in collaboration with local communities, to effectively manage coastal resources including mangroves, corals, coastal forest and wildlife.

During this phase the emphasis was placed on listening and piloting. Project activities consisted mainly of participatory socio-economic and resource assessment to evaluate priority ICM issues. In addition, during this phase strategies to address the issues were identified and agreed upon by relevant stakeholders. A pilot village from each district was selected to test the performance of the measures that had been selected to address the issues. These measures include enforcement of bylaws, mangrove replanting in degraded areas of forests, monitoring activities to stop illegal harvesting of mangroves and to prevent illegal fishing, reef closure and piloting mariculture activities. During this phase two collaborative management plans were formulated: reef and mangrove management plans for the Kipumbwi and Same villages

During the second phase (1997 – 2000) the approach described above was spread over a much wider area. The focus was however to establish a collaborative fisheries and related resource management programme with the view to improve the economic well being of local communities through developing and use of collaborative fisheries and other coastal resources management plans (Torell et al, 2000). In this regard collaborative fisheries and mangrove management plans were developed by the resource users and District authorities. Also developed during this phase were environmental bylaws for the three districts. However only that of Muheza was approved. In addition agreements were reached between Tanga and Muheza on the issue of sharing of patrols and other management costs.

### **Box 14: Conservation measures adopted by the TCZCDP:**

- restriction on illegal fishing techniques,
- closing some areas to fishing,
- providing appropriate gear to fishers,
- developing alternative incomes to reduce pressure to stocks,
- restricting trawlers to fishing offshore and
- restricting use of small mesh size nets.

In the current phase of the project (2001 – 2004), the objective is to “establish collaborative fisheries and related coastal resources management in the three coastal districts” of the Tanga Region.

## **Programme activities**

The action planning in Tanga can best be described as having been developing sequentially where there have been three distinct stages of development: (i) pilot village plans (ii) fisheries management plans in the pilot villages as well as neighbouring villages and (iii) collaborative management plans. The process started with holding of workshops in each pilot village where local villagers and district officials identified priority management issues. These meetings were followed by participatory socio-economic and coral reef surveys to identify key areas of concern. For example in the workshops held in Kigombe and Kipumbwi villages local villagers identified declining fish catch as the major issue of concern. They also identified the causes of this problem as being illegal fishing techniques - that destroy coral reefs and kill juveniles -, increased fishing effort through an increase in the number of fishermen, over fishing, trawlers fishing close to shore, use of seine nets and fishing of juveniles. The villagers formed action oriented village committees to deal with fisheries-related issues, especially the enforcement of regulations. These committees have been the focal point for planning and implementation of management actions. These activities led to the formation of collaborative plans tailored to address the identified issues. For example in the case of the Kigombe village the major concern was declining fisheries and the plan recognised the need to increase peoples' income. To achieve this objective the plan recommended reduction of fishing pressure on reefs as well as diversifying fishing activities and other conservation measures.

An important element of the management plans is that they represent the agreed action strategies between communities on one hand and the district administration on the other and they emphasize community concerns. Consequently the implementation of the plans can rely on both the support of the communities as well as the legislative powers of village by-laws and by the central government's regulations especially the Fisheries Regulations of 1994. For example villagers have been urged to voluntarily abandon dynamite fishing but where necessary, regulations have been used to affect the measure. The same can be said in the case of the closure of reefs, banning of destructive fishing practices and in principle can be used to enforce ban on legal but destructive techniques.

## ***Achievements***

The Tanga Coastal Zone Conservation and Development Programme has been hailed as a good example of a successful collaborative coastal management programme in East Africa. The success and strength of this programme is attributed to improved communication between stakeholders (especially local communities) on one part and the local authorities on the other. However it is probably too early to declare that this community based management programme is effective in ensuring the sustainable use of resources. The programme's strategy has been described as adaptive management at best where issues are identified and acted upon, then actions are taken are monitored and evaluated. The result of the evaluation forms the basis for fine-tuning the plans to close the planning circle. However, the programme has notched some commendable success. Most of the intended objectives have been achieved to the satisfaction of both local communities and regional authorities. This includes the involvement of villagers, including women, to be involved in the management of their own resources. Other achievements include:

- The management approach has been able, for the first time, to bring together the government and communities (resource users) to make management decisions on resource use. Several collaborative resource management plans are in operation, covering a large area of the coastline
- The process has helped to shift responsibility for management actions from government to the community
- The collaborative approach adopted by this programme has increased trust and accountability of government officers. As observed by local villagers the work and usefulness of the government officers has improved.
- Implementation of collaborative plans has led to enhanced fish catches per fisher by up to 10% in some areas thus increasing the income of community members
- There has been effective enforcement of laws, rules and regulations. For example, the plans' recommendations for resource conservation have led to the closure of a number of reefs to act as source areas and for recovery.
- Voluntary compliance in the ban of dynamite fishing and other illegal fishing practices (enforcement of existing regulations) was realized. According to Programme Fisheries and Reef Monitoring Coordinator, dynamite explosions along the coastline of the region have decreased from between 180 –200 every month in 1994/95 to the current three to five.
- Reduction of legal but destructive fishing techniques.
- Use of fish attracting devices (FADs) has been tried and demonstrated
- Control of the numbers of visiting fishers to the region thus reducing fishing pressure
- Initiation of alternative income generating activities such as seaweed farming. This activity has attracted a sizeable number of female members of the communities.

### ***Problems***

The successes mentioned above did not come without some serious stumbling blocks. These include the following:

- Some differences had arisen between resource users and the user committees on one side and the village government on the other, over collection and use of revenues.
- Some times political pressure infringes on management decisions and brings about lack of adherence to agreed procedures. Such pressure had for example resulted in the village government of a pilot village to unilaterally declare a closed reefs open
- The participatory approach adopted by the programme had ensured that at the outset the programme achieved agreement on the management actions adopted. However as the case of reef closure had shown there had been problems between parties regarding implementation
- Lack of a clearly defined ICM policy and programme of implementation at all levels of government hampered some management efforts.

Several other ICM related projects have been implemented or are in progress in Tanzania. Among these include that being implemented in the Rufiji District with the support of IUCN. The Tanzania National Environment Management Council and the Rufiji District are the other implementing partners of the project. This is an innovative and multidisciplinary project whose objective is to promote the long-term conservation and "wise use" of the Rufiji River delta and associated floodplain ecosystems. The project has several components, which include environmental planning and management, enhancing the livelihoods of local communities,

capacity building and environmental awareness building among others. The project is also developing an environmental management plan for the area.

## **4.2 The Mecufi Coastal Zone Management Project**

The Mecufi district, an area of 1,190 km<sup>2</sup>, is situated in the coastal province of Cabo Delgado in northern Mozambique. According to a 1997 census the district has a population of 37,000 and a population density of 32 persons/ km<sup>2</sup> (Masinga et al, 1988). A large fraction of this population is concentrated in a narrow coastal belt and includes longstanding residents of the district and in recent past, immigrants and displaced people who had escaped to the coast during the war of independence and the civil war period of 1980s. Mecufi is a relatively poor district with most of its inhabitants relying on farming, and more significantly, on fishing for their sustenance. The intertidal and shallow water areas are typically visited by women and children gleaners, who collect a variety of intertidal organisms including bivalves, gastropods, lobsters, crabs, sea urchins and other organisms (Bryceson and Masinga, 2002).

The principal ICM issues that instigated the need for intervention include poverty, lack of awareness on environmental issues, absence of institutional structure to address environmental management issues, resource overexploitation which in turn has led to severe decline of resources. The rapid influx of people to the coast has also resulted to loss of other resources and environmental degradation.

### **The Project**

The Mecufi Coastal Zone Management Project was initiated with the principal development goal of establishing “a sustainable socio-economic development in the coastal area of Mozambique through environmentally sound use of the coastal resources” (Masinga et al, 1998) by reducing exploitation pressure on resources and by establishing enabling environment for an inter-sectoral collaboration in coastal area management. The project was funded by the Norwegian Agency for International Cooperation Development (NORAD) and implemented by the Ministry for the Coordination of Environmental Affairs (MICOA). The project was a collaborative programme between the government and non-governmental institutions that have some interest on the coastal zone. It had had the following immediate objectives (Masinga, 1997, Masinga and Santos, 1998, Government of Finland, 1998):

- Reduction of exploitation pressure on natural resources through the introduction and adoption of a more sustainable resource management system
- Raising of local awareness and understanding of environmental issues and encouraging community participation in environmental and resource management
- Strengthening institutional structures and creating enabling environment with the view to overcome existing institutional barriers to sustainable development and
- instituting a coastal area management strategy in Cabo Delgado that will serve as a model for other areas of the Mozambican coast.

At the end of Phase I of the project (1993-1995) the project was modified to accommodate the experience gained on the field as well as emerging issues such as resource use rights and land

tenure. Following these developments the focus of the project was then on community involvement on resource management and to increase the benefit accrued from these resources through community-based approaches. The goal was then modified accordingly to reflect this new thinking and was “to improve the management and conservation of indigenous natural resources and to increase benefits derived from such resources through community-based approaches”. It was envisaged that this new goal would be achieved through the following activities:

- Surveying of coastal resources and communities
- Involvement of local communities in the management of their resources
- Establishment conservation areas and institutional building
- Contributing to the improvement of public policies and regulations
- Creating enabling environment whereby local people will reap the benefit accrued from the natural resource base
- Developing marketable products derived from natural resources
- With the assistance of local communities, identify strategies and technical options appropriate for the management of the natural resources.

Following this new focus and reflecting on the experience gained from the initial phase of the project, the project concentrated on the main area of community participation and empowered through (i) awareness building (ii) community income generation (iii) natural resource management (iv) local capacity building and (v) monitoring and enforcement (Masinga, 1998). The aim was to improve the livelihoods of the local communities through improving their resource management capabilities.

### ***Achievements***

In an evaluation of the project carried out in 1998 (Government of Finland, 1998) the project was rated successful especially its Phase I. Most of the objectives identified during project preparation were successfully implemented. These include:

- i) completion of natural resource
- ii) surveys
- iii) training on resource
- iv) conservation
- v) establishment of participatory land use practices at village level
- vi) creation of a Village Management Nucleus
- vii) whose tasks include coordinating development
- viii) and resource conservation efforts at village level and
- ix) Community-based small-scale projects on agroforestry and mariculture have been established

### **Box 15. The success of the Mecufi Project has been attributed to:**

- The involvement of local communities during all stages of project design and implementation
- Integration of the project into existing government structures such as village level organizations, government institutions
- Support of the project from all levels of government
- Existence of village level administrative structures (the Village Management Nucleus)

(Government of Finland, 1998)

### *Problems*

There have also been some setbacks. For example, the project did not succeed in establishing sustainable income generation activities as those identified in Phase I of the project – charcoal and lime production - were not sustainable from both economic and environmental point of view. However this issue has been recognized by the project and relevant corrective measures were taken in Phase II. Moreover the project was not successful in developing an ICM strategy for the Gabo Delgado province and this initiative appeared to have been abandoned in Phase II. Moreover, some obstacles have been encountered during implementation of the project. These include political, administrative and social obstacles.

## **5 General Guidelines for ICM Policy Planning and Implementation**

As it has been discussed above several countries in the WIO region have opted for an integrated approach to coastal management. This approach is deemed the most appropriate means of achieving sustainable development of the coastal zone in terms of economic and social benefits. We have also seen that only Tanzania and South Africa have developed national frameworks for coastal management. Whereas South Africa has developed a national ICM policy Tanzania on its part has opted for a national strategy. However both approaches aim to better manage coastal resources for the benefit of present and future generations. We can draw some lessons from Tanzania's and South Africa's national ICM policy/strategies developing process that could be useful to those countries in the region that have opted for the same. Below is a summary of some key principles that can be drawn from Tanzania's and South Africa's experiences:

### *The policy should be focused*

An ICM policy should have a clear purpose. In South Africa ICM is now seen as a major vehicle for democratization and poverty reduction. In Tanzania, policy development and implementation is consistent with the country's priority of poverty alleviation and food security

### *Integrate ICM management into broader coastal development and planning strategy*

Integrated coastal management should be part of the wider coastal area planning. It should be ideally be integrated very early on in the planning process

### *Should be inclusive of all interests and should be founded on a collaborative/partnership approach*

ICM development process should take on board the interests of all key stakeholders. This will ensure a sense of ownership on the part of local communities and other management partners thus ensuring a strong collaboration and shared responsibilities among parties.

### *Learn from experience: Integrate ICM management into existing local programmes*

Tanzania's ICM development process benefited from existing local ICM projects such as the Tanga Coastal Zone Conservation and Development Programmes, Kinondoni Integrated Coastal Area Management Programme and Mafia Island Marine Park, among others. The programme was built upon the experience and lessons learned from these programmes. The national policy/strategies should also provide a mechanism by which these programmes will be linked as well as promote additional ICM efforts.

***Promote coordination of sectoral policies affecting the coastal zone***

ICM national policies should promote the coordination of sectoral policies that affect the coastal zone. This is obvious as for example in the case of fisheries. Policies on habitat conservation and fish production should be coordinated as there is a strong dependence on these sectors. Furthermore management needs to be guided in a way that is compatible with national development goals and objectives.

***Establish a system of coordination and feed back mechanism at the regional/provincial level***

Both Tanzania and South Africa propose to bring management effort to the regional/provincial level. This approach will ensure coordination of efforts at this level as well as harmonize national interests with local needs. At provincial level, ICM activities in South Africa are coordinated through Coastal Working Groups established in each province. Since these act as sub-structures of the national CEC they will ensure improved co-ordination of coastal management at provincial level but also between provinces and the national government. In Tanzania individual district action plans will be drawn to address regional level issues.

***Establish a mechanism for monitoring and evaluation of the programme and an assessment procedure for its effectiveness***

There is a strong need to incorporate a system of checks and counterchecks in ICM programmes. Such a monitoring system will ensure assessment of successes or setbacks in the implementation of the programmes. Coastal management activities should ideally therefore proceed incrementally in order to allow such assessments. Stepwise implementation of policy programmes should also be in-step with human and institutional capacity. Both Tanzania and South Africa have instituted an inbuilt mechanism of evaluation in their ICM programmes and this approach have put in place a process of continual improvement.

***Allow scientific and technical information to inform decision and enable readjustment of policy implementation when necessary***

Scientific and technical information is needed to contribute to the implementation of ICM policies and is also essential in achieving sustainable coastal development. A well researched scientific information is also important in setting up an information and decision support system that would help managers at national and provincial/regional levels

***Role of public education and awareness***

It is important to demonstrate the value and vulnerability of coastal resources and the danger posed by inaction. The need for proper management of these resources should be made clear early on in the policy development process. This will not only help dispel any apathy in the programme but also gain the necessary public and political support.

## **6 Concluding Remarks**

The countries on the Western Indian Ocean Region fully recognize the importance of their coastal zones as areas of strategic importance with regard to their social and economic developments. These countries rely heavily on their coastal areas for such economic activities as fisheries, tourism development and for other economic and social services. In recognition of the strategic importance of as well as the multiplicity of uses of these areas, the countries in the region have taken several steps towards adopting an integrated approach to manage their coastal zones. Some of the countries such as Tanzania and South Africa are well advanced towards this goal: Tanzania has adopted an ICM strategy while South Africa has put in place an ICM policy. Other countries lag behind somewhat.

The process of developing a national coastal management framework in Tanzania, like in some other countries in the region, has not been without obstacles. The most striking example of such stumbling blocks was poor relationship between key institutions in the country that are charged with environmental management, namely, the National Environmental Management Council (NEMC) and the Division of Environment (sister organizations within the Vice President's Office) that led to the loss of an important opportunity to develop a fully- fledged coastal management policy in Tanzania. The result is a coastal management strategy that many believe falls far short of what is envisaged as a powerful tool to manage the coastal zone (Torell et al, 2003).

The integrated coastal management process in South Africa was also not spared of such growing pains. Notably, a comprehensive new coastal legislation was proposed to give effect to the institutional arrangements proposed in the new coastal management policy. However, despite having adopted a coastal management policy, South Africa is yet to enact a Coastal Management Act. It was proposed that the act would have built on and updated the existing Seashore Act and act as a framework for a comprehensive and sustainable coastal development strategy (Government of South Africa, 1998). However some quarters in the country seriously questioned the practicality of such an act for the current South African context and the proposal attracted little support amongst Governmental decision-makers. Consequently this important opportunity was lost.

Other countries such as Mauritius and Seychelles still rely on some form of national environmental frameworks and relevant sectoral policies to regulate development activities on their coastal areas. The question is whether such an approach is adequate to address the complexity of issues inherently found in those areas. More specifically do these countries need national coastal policy/programme? The answer here should be an emphatic yes. As the experiences in several countries have shown general and non-specific environmental frameworks do not fully address issues found in the coastal areas and lead to several lost opportunities to establish effective coastal area management frameworks.



As case of Tanzania shows, the country had adopted a bottom-up approach where a number of local area-specific programmes were started in the absence of national umbrella in the form of a policy or a framework. These programmes took the shape of isolated pilot programmes that addressed specific coastal problems and issues in specific areas of the coastal zone at village and district levels. They were essentially independent of one another and in no way linked to a central coordinating body. Consequently coastal development missed a coherent national system to guide it and the local area programmes could not attract any support from the national government to implement integrated management plans. In addition there lacked a feed back mechanism that could have enabled the pilot programmes to inform national policy with the lessons that were being learned on the ground. Predictably, it was difficult to replicate successful local models in other coastal areas. The absence of a national framework for coastal management resulted in many lost opportunities to establish a nationwide ICM umbrella before TCMP was created in 1997 (Torell, et al., 2003).

What can other countries in the region learn from the success of Tanzania and South Africa? The apparent success of these two countries in developing a national policy framework for the management of their respective coastal areas lie in the fact that both countries set out a carefully crafted course of ICM development that in the end paid big dividends. Both countries recognized early on the importance of securing grass root support for a national ICM policy programme and this factor helped to ensure that the endeavour faced fewer obstacles. More importantly, strong political will in both countries was also crucial. Furthermore, as the case of Tanzania shows the national coordinating unit i.e. TCMP has taken the role of a facilitator or mentor rather than a command and control unit thus avoiding any obstacles that would have emerged as a result of suspicion or jealousy from the already running local programmes and sector specific departments. In fact TCMP strives to ensure that the national ICM strategy contributes to the success of local and regional programmes rather than replacing them.

Both South Africa and Tanzania encouraged the participation of all key stakeholders including state and parastatal groups, resources users and the private sector throughout programme planning and implementation. This was to pre-empt any feeling that this idea was being imposed on them but rather to make them feel that they were part and parcel of the whole process.

These are import lessons for countries like Mozambique and Madagascar that are still struggling to develop their own national coastal policies and programmes.

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