

University of Cape Town

**A PROPOSED APPROACH TO THE FORMULATION OF AN
INTEGRATED COASTAL ZONE MANAGEMENT POLICY FOR
THE ERONGO ZONE IN NAMIBIA**

by

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of M.Phil in Environmental Science.

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LIST OF ABBREVIATIONS

CAMPNET	Coastal Area Management and Planning Network
CZM	Coastal Zone Management
DANCED	Danish Co-operation for Environment and Development
DEA	Department of Environmental Affairs
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPZ	Export Processing Zone
FAO	Food and Agricultural Organisation
IAP's	Interested and Affected Parties
ICM	Integrated Coastal Management
ICZM	Integrated Coastal Zone management
MFMR	Ministry of Fisheries and Marine Resources
MLGH	Ministry of Local Government and Housing
MLRR	Ministry of Lands, Resettlements and Rehabilitation
MRLGH	Ministry of Regional and Local Government and Housing
NAMPAB	Namibian Planning Advisory Board
NDPI	First National Development Plan
NGO	Non-governmental Organisation
NPC	National Planning Commission
OECD	Organisation for Economic Co-operation and Development
OPM	Office of the Prime minister
TPS	Town Planning Scheme
UNCED	United nations Conference on the Environment
UNEP	United Nations Environmental Programme

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CHAPTER 1

INTRODUCTION

1.1. BACKGROUND TO THE STUDY

As a follow-up to the United Nations Conference on Environment and Development (UNCED) which was held in Rio de Janeiro in 1992, the Danish Co-operation for Environment and Development (DANCED) was established in 1993. DANCED was established with the overall objective of contributing to the restoration of the global environment in accordance with the recommendations of Agenda 21. The DANCED programme is managed by the Danish Ministry of Foreign Affairs.

To support the DANCED programme in the Southern African region, a DANCED office has been established at the Royal Danish Embassy in Pretoria. In the Southern African region, activities were initiated in 1995 with South Africa, Namibia and Botswana as target countries.

In February 1995, a DANCED programme formulation mission assessed institutional and organisational issues in relation to the future DANCED programme in Namibia. During this process, the Ministry of Fisheries and Marine Resources (MFMR) requested assistance from DANCED with an environmental management plan for Walvis Bay and surrounding areas. This concept fitted with DANCED's identification of integrated coastal zone management (ICZM) as one of its key areas of support. After discussions with the Ministry of Environment and Tourism (MET), and other key stakeholders, the project proposal was broadened into developing an integrated management plan for the Erongo coastal zone in Namibia. The mission for this project was carried out from September to November 1995.

In November 1995, DANCED contracted the 1995/96 masters students from the Environmental and Geographical Sciences Department, at the University of Cape Town, to collect baseline information which would contribute to the development of an ICZM

plan for the Erongo coastal zone in Namibia. This exercise was initiated in November 1995. Information was gathered, synthesised and compiled into a baseline report which was submitted to DANCED at the end of March 1996.

This dissertation focuses particularly on the policy aspects of an ICZM plan and draws on the information contained in the baseline report.

1.2. NATURE OF THE PROBLEM

The coastal zones of many developed and developing countries are the foci of population and economic development activities such as the clearing of land for agriculture, commercial and industrial undertakings, provision of infrastructural services, and increased residential and recreational developments (Burbridge, 1993; Sowman, 1994). For the foreseeable future, these coastal zones will be under great pressure to sustain population growth and the expansion and diversification of national economies (Burbridge, 1993). This pressure on coastal zones is due to factors such as urban encroachment into the coastal zone, pollution of estuarine and coastal waters, impacts of marine resource exploitation, including nature conservation impacts, coastal hazards such as erosion, flooding, and other issues and problems (Burbridge, 1993; OECD, 1993).

Many of the problems experienced in the coastal zone are a result of inadequate understanding of the functioning of the complex processes occurring in the coastal zone as well as poor management of coastal resources (Sorensen and McCreary, 1990).

The situation in the Erongo coastal zone in Namibia is no different from that observed in countries world-wide. This coastal zone is faced with a number of problems that need to be addressed in order to ensure sustainable use of coastal resources. During a DANCED project mission to Namibia a number of issues were identified. These included:

- poor planning and lack of co-ordination between stakeholders and government officials;
- the need to address sustainable economic, environmental and social development of the coastal zone;
- the need for sustainable management of extremely sensitive desert and coastal ecosystems including breeding grounds for endangered species;
- poor or non-existent communication between line ministries; and
- a sectoral approach to coastal zone management.

1.3. THE STUDY AREA

The study area is located in one of four of Namibia's coastal regions, namely the Erongo region. Map 1. indicates the location of the Erongo region in Namibia. The area that has been identified for the implementation of the integrated coastal zone management forms the coastal belt of this region (see Map 2).

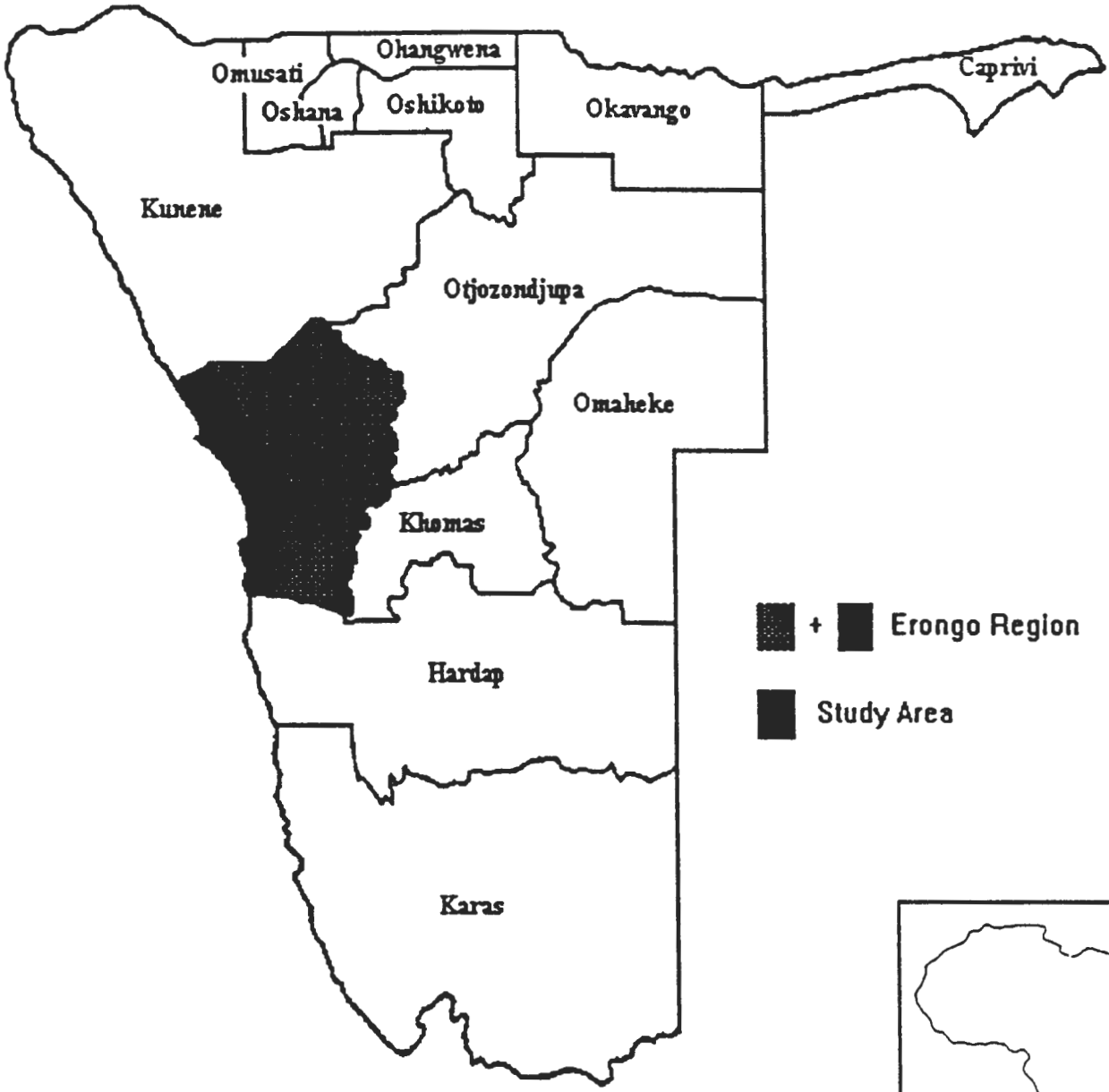
The northern boundary of the study area is formed by the Ugab River, with Sandwich Harbour forming its southern border. The National West Coast Tourist Recreation Area forms the inland easterly border and the Namib-Naukluft Park forms the southerly portion of the eastern border. The seaward boundary is defined by a three nautical mile limit from shore. This study area includes the municipal towns of Walvis Bay, Swakopmund, Henties Bay and Arandis as well as Rossing uranium mine (see Map 3).

1.4. AIMS AND OBJECTIVES

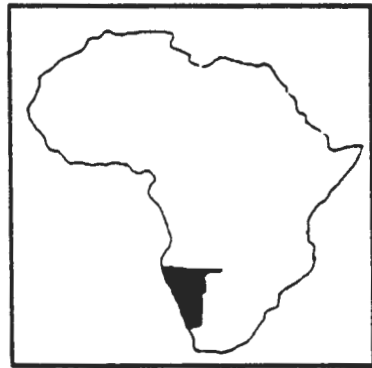
1.4.1. Aims

The overall aim of this study is to provide a possible approach to the formulation of an ICZM policy for Namibia and its coastal regions, with particular focus on the Erongo coastal zone, and to comment on the key components of their policy.

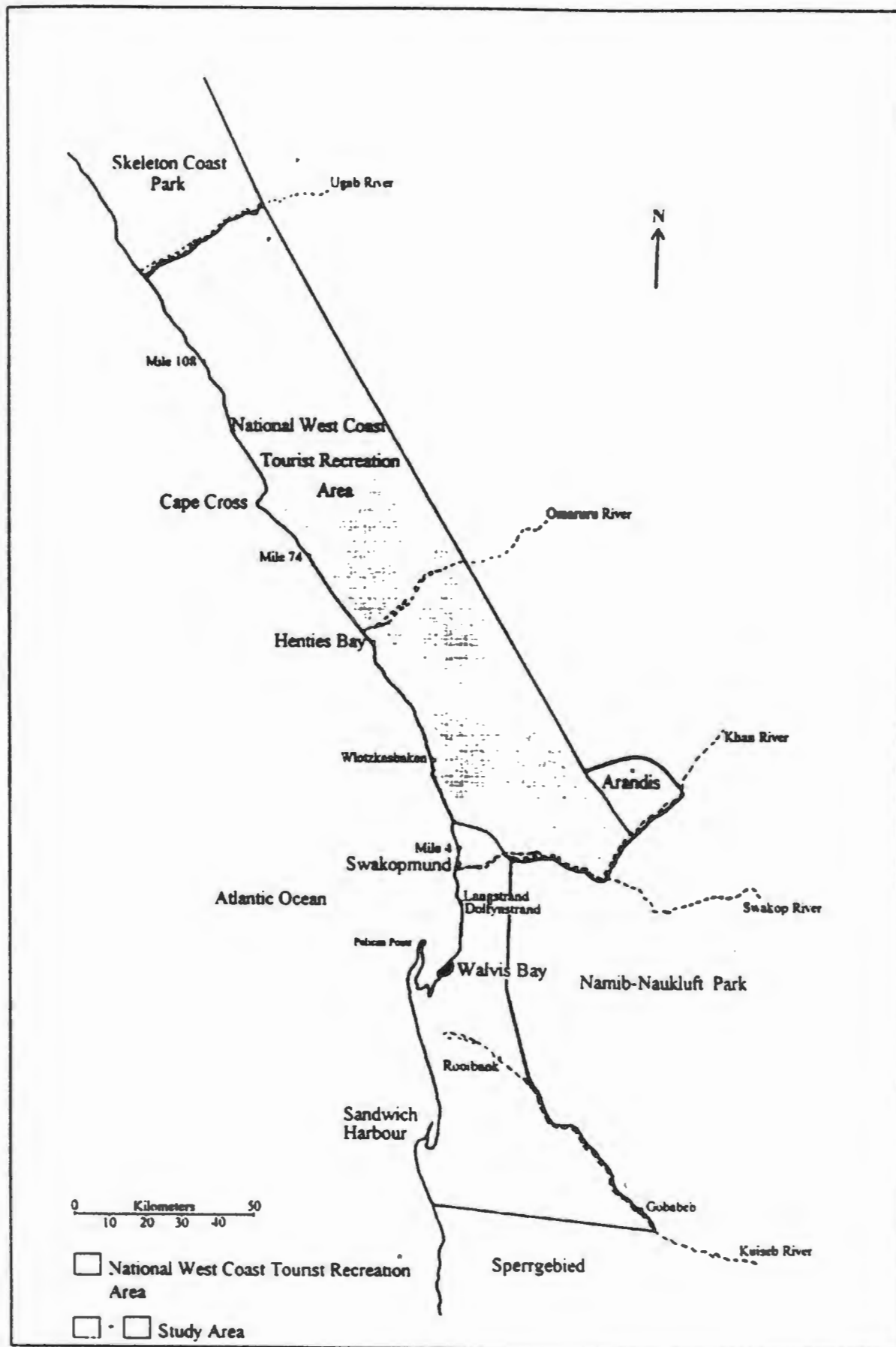
Map 1: Erongo Region and Study Area



■ + ■ Erongo Region
■ Study Area



Map 2: The Study Area



Map 3: The Erongo Region



1.4.2. Objectives

The objectives of this study are:

- to provide the conceptual framework for an ICZM programme for Namibia and its coastal regions;
- to identify the key problems facing ICZM in the Erongo coastal zone;
- to provide an analysis of the status of coastal zone management in the Erongo coastal zone;
- to develop an ICZM policy framework for Namibia and its coastal regions; and
- to propose an institutional framework which needs to be set up for effective implementation of the ICZM policy.

1.5. LIMITATIONS

1.5.1. Time Constraints

Time has been a major constraint for this study. Firstly, the masters students could only make two visits, of two weeks each to Namibia to gather information and familiarise themselves with the area and the project. During those four weeks one had to focus on specific topics as it was impossible to gather comprehensive information during the given time. For example, it was only possible to hold meetings with certain stakeholder groups in the Erongo coastal zone.

Furthermore, the three month study period did not allow for a comprehensive analysis of all the problems identified in the study area and the strategies to address problems. Rather, in the available time, a general overview was undertaken, key problem areas were highlighted, and the most appropriate responses to address the problems were explored.

1.5.2. Size of the Masters Class

The size of the masters class (12 students) posed logistical problems. For example, during one of the visits to Namibia only two vehicles were used by the group and yet each person was focusing on a different aspect of the study.

1.5.3. Distance to the Study Area

The distance to the study area limited opportunities for follow-up work. For example, it was not practical to return to Namibia to interview certain individuals who could have valuable contributions but who could not be interviewed during the two visits. Further, the immense distance and associated costs posed logistical problems in terms of gaining access to materials which would have provided further detailed information.

1.6. ASSUMPTIONS

- It is assumed that the government of Namibia and its people recognise the value of their coastal zone and want to formulate and implement policies to ensure that these areas are not degraded.
- The information in the baseline report is assumed to be a true reflection of the situation in the Erongo coastal zone.

1.7. STRUCTURE OF THE DISSERTATION.

The dissertation is structured as follows:

Chapter 1 provides a background to the study and sets out the nature of the problem being addressed. It goes on to outline the overall aims and more specific objectives of the study. Key limitations to the study as well as some of the assumptions underlying the study are discussed.

Chapter 2 deals with the methodology employed during the study. This includes an overview of methods used to gather information for the baseline document as well as methods used in this specific three-month study.

In chapter 3, a conceptual framework for integrated coastal zone management is set out. An attempt is made to clearly define key terms such as coastal zone, coastal zone management, ICZM, and clarify the processes involved in ICZM and its own evolution as well as principles underpinning, and key elements comprising an ICZM effort. This chapter concludes with the review of global proliferation of ICZM efforts in both developed and developing countries.

Chapter 4 discusses the current problems facing coastal zone management in the study area. These include socio-economic, bio-physical and institutional problems.

Chapter 5 provides an analysis of the status of coastal zone management in the Erongo coastal zone. This analysis is based on a framework which has been used to assess the status of coastal zone management in South Africa. The various attempts made to improve coastal zone management in the Erongo coastal zone are reviewed and comments on their effectiveness are made.

In chapter 6, the need for the development of an ICZM policy as a starting point for any ICZM programme is discussed. A possible approach to formulation of an ICZM policy in Namibia and its coastal regions is presented. Various strategies for the implementation of ICZM policy are proposed.

Chapter 7 discusses the institutional framework that needs to be set up for effective integrated coastal zone management in the Erongo coastal zone. In Chapter 8 conclusions and recommendations emanating from the study are made.

CHAPTER 2

METHODOLOGY

In this chapter an overview of the methodology used to prepare the baseline report is given and then the methods employed in this study are outlined.

2.1. COMPILATION OF THE BASELINE REPORT

The initial part of this study was the gathering of baseline information by the 1995/96 masters students for the Erongo coastal zone. This information would form the basis for the work being done by DANCED, namely, to formulate an ICZM plan for the Erongo coastal zone. Each student had to address a specific topic which was relevant to his or her academic training.

Two visits, of two weeks each, were made to Namibia. Some of the time was spent in Windhoek, the capital town of Namibia, where the national administrative offices are based, and in the coastal towns of the study area.

Whilst in Windhoek, and in the study area, the following methods were used for information gathering:

- Conducting interviews with government officials, private sector representatives from various organisations, key stakeholders from the study area and certain representatives of the general public;
- Materials that were relevant to the study were collected;
- Site visits to some of the areas of major importance in the study area such as Cape Cross, Rossing uranium mine, Sandwich Harbour and the Desert Research Foundation were made; and
- Photographs of some of the relevant and important socio-cultural phenomena such as informal settlements, and scenes of environmental importance and degradation were taken.

While synthesizing this information into various sections according to the topics, the masters students held several meetings in order to collate all information. Finally, a baseline report was compiled and this report formed a key reference for the individual dissertations.

2.2. COMPILATION OF THE DISSERTATION

- The research methods outlined below were used in this study.
- An in-depth review of literature in the field of integrated coastal zone management and integrated coastal zone management policy formulation was undertaken. “Grey literature” such as internal reports, consultant memoranda, minutes of policy meetings relevant to the processes proposed and used in the formulation of coastal zone management policy for the South African coastline; was also reviewed. This review formed the foundation for proposals made for the Erongo coastal zone.
- Interviews were held with some local government officials.
- The baseline report was used as a major reference for the various sections that were not prepared by the author.

Telephone interviews were held with both South African and Namibian government officials, and specialists in the field of coastal zone management in order to obtain additional information on issues that were either not covered or not clear in the baseline report.

CHAPTER 3.

A CONCEPTUAL FRAMEWORK FOR INTEGRATED COASTAL ZONE MANAGEMENT

3.1. INTRODUCTION

The coastal zone is essentially a natural resource system, which provides space, living and non-living resources for human activities (van der Weide, 1993). Throughout the world coastal zones have historically been among the most heavily exploited areas because of their rich resources (World Bank, 1993). While the coastal zone represents approximately 10% of the earth's surface, its coastal lowlands are inhabited by between 50% and 70% of the world's population (Chua, 1993; Burbridge, 1993) and migration from upland areas to the coast is increasing (World Bank, 1993; van der Weide, 1993; Olsen, 1993). However variations do occur among nations in the estimated numbers of people living and working in coastal areas as illustrated by Table 3.1 (Burbridge, 1993). Migration to the coastal areas has resulted in the coast now being a focal point in many national economies, as a large number of social and economic activities are concentrated in this area (Chua, 1993; van der Weide, 1993; Burbridge, 1993).

Rapid urbanisation and economic development in many countries of the world cause a host of complex resource-use conflicts and environmental degradation problems in the coastal zone (Burbridge, 1993; Olsen, 1993; Chua, 1993). In many coastal developing countries characterised by hunger, unemployment, poverty and rapid population growth the issues of environmental degradation and resource-use conflict have reached critical stages. This situation has created an urgent need for long term planning and the development of management strategies to regulate activities in the coastal zone.

Table 3.1.: Variation Among Numbers Of People Living In Coastal Areas In Various Coastal Nations

Country	Population in millions	% Population in coastal zone	% Population in large coastal cities	Length of coastline (Km)
Mozambique	15.7	60	86	2 470
Norway	4	not known	85	5 832
Kenya	24	18	25	536
USA	250	60	41	19 924
Indonesia	178	70	77	54 717
Belize	---	not known	0	386
Mauritius	1.1	not known	100	177
UK	57	41	39	12 492
Maldives	0.21	100	0	644
Syria	12.4	11	0	993
Ecuador	10.3	not known	55	2 237
Brazil	150.4	not known	30	7 491
South Africa	48	---	---	3 000

Adapted From: [Burbridge, 1993 & Sowman, 1993]

Conflicts in the coastal zone have grown in scope and size with increasing population density and related increase in the use of the resources (Burbridge, 1993; Olsen, 1993).

While management intervention is a response to coastal pressures and problems, it is also in recognition of the economic value of the coastal zone that governments have responded to by initiating coastal zone management efforts and policy processes. Conventional sectoral management is not effective in addressing the complex management issues of the coastal zone which are often cross-sectoral in nature. The need for an alternative but effective management system is obvious.

Among calls for integrated coastal zone management at the beginning of this decade, were those from a number of international organisations such as the United Nations Environmental Program (UNEP), United Nations Conference on Environment and Development (UNCED), the Food and Agricultural Organisation (FAO), member governments of the Organisation for Economic Co-operation and Development (OECD). These integrated coastal management processes would be established for the protection of valuable coastal ecosystems and to achieve sustainable use of coastal resources in the coastal nations around the world (World Coast 2000). Subsequently a number of international organisations, national governments, and non-governmental organisations have initiated efforts to operationalise integrated coastal zone management.

In this chapter, a brief description of the coastal zone and its boundaries will be given and various definitions of ICZM will be reviewed. The evolution of ICZM programmes and the role of policy in ICZM will be outlined. Finally, a review of the global proliferation of ICZM efforts will be given.

3.2. DEFINING THE COASTAL ZONE

It is generally agreed that the term "coastal" conveys the notion of a land-ocean interface (Chua, 1993; Sorensen and McCreary, 1990). This land-ocean interface has two principal axis, one which runs perpendicular to the shore (or cross shore) and another which runs parallel to the shore (or longshore) (Sorensen and McCreary, 1990). It is the cross shore axis around which there is considerable discussion since it profiles a coastal zone of transition between the ocean environment and the terrestrial or inland environment (Chua, 1993; Sorensen and McCreary, 1990).

"The coastal zone is commonly referred to as the interface or transition space between two environmental domains, the land and the sea. It has been defined as that part of the land affected by its proximity to the sea and that part of the ocean affected by its proximity to the land" (Sorensen and McCreary, 1990).

An in-depth understanding of the functions of the coastal resource systems and their characteristics is fundamental to a better appreciation and application of ICZM (Chua, 1993). While the coastal zone is commonly defined as the interface between the land and sea, concern and interest are concentrated on that area in which human activities are interlinked with both land and the marine environment. Chua (1993) describes the coastal zone as having the following characteristics:

- Presence of habitats and ecosystems (such as estuaries, seagrass beds, mangrove swamps, lagoons, bays) which provide goods and services (such as natural defence against storms and tidal waves, recreation, transportation) to the coastal communities.
- Competition of various stakeholders for land and sea uses, often resulting in severe conflicts and destruction of the functional integrity of the resource systems.

- Backbones of most national economies of coastal states as a substantial proportion of the gross national product depends on the outputs from coastal activities such as the oil and shipping industries, coastal tourism and some primary industries.
- It usually has a high concentration of human settlements and is a preferred site for urbanisation.

As a result of the environmental, resource and governmental differences among coastal nations, there is a considerable variety in the selection of boundaries to delineate both the seaward and inland extent of the coastal zone. For example the inland boundaries of the coastal zone range from those which include entire watersheds, to those that comprise only the immediate strip of shoreline adjacent to the water (Sorensen and McCreary, 1990). Figure 3.1. illustrates the sets of options for delineating the inland and ocean boundaries of the coastal zone, while figure 3.2. depicts these boundary options along a profile across the coastal zone. Figure 3.2 also presents examples of programmes that use different sets of boundaries.

3.3. COASTAL MANAGEMENT

Generally coastal management refers to any government programme that is established for the purpose of utilising or conserving a coastal resource or environment. It is intended to include all types of governmental intervention in a society and is the broadest of the terms used. Its use implies that the government unit administering the programme has distinguished a coastal area as a geographic unit. The extent of the coastal geographic area is defined by the resources or environment being managed. A coastal management programme can focus on only one type of resource, such as fisheries, or one type of environment such as tidal wetlands. However, most commonly a coastal management programme includes several types of resources and environments (McCreary and Sorensen, 1990, Chua, 1993).

3.4. DEFINING INTEGRATED COASTAL ZONE MANAGEMENT

A review of the literature indicates that various definitions for ICZM have been proposed by various authors. For the purposes of this section, some of those that are in current use will be reviewed since there are similarities amongst them.

CAMPNET (1991) reports that at an international workshop held in Charleston, USA in 1989 which involved 28 participants from 13 nations, the delegates unanimously agreed to define ICZM as:

“ a dynamic process in which a coordinated strategy is developed and implemented for the allocation of environmental, socio-cultural and institutional resources to achieve the conservation and sustainable use of the coastal zone.”

Another definition, which parallels the views expressed in the one above, has been given by the Priority Action Programme (PAP) of the Mediterranean Action Plan (Knecht & Archer, 1993) as:

“a dynamic process of achieving goals and objectives for environmentally sustainable development, within the limits of physical, social and economic conditions and within the constraints of legal, social, financial and administrative systems and institutions.

Being process oriented, ICZM does not have as its objective the preparation of an ultimate product-plan as an ideal state which is hoped to be achieved by a certain time in future. Rather it is an adaptive process of resource management, capable of responding to expected or unforeseen changes and events. This process includes analysis and forecasting, plan-making and evaluation, monitoring and feedback, all of which should be oriented towards

achieving clearly defined goals and objectives through practical and effective means of implementation.”

The PAP report (as cited by Knecht and Archer, 1993) further states that integrated planning is not a substitute for existing sectoral planning systems, but rather proposes linkages between sectoral planning activities to achieve more comprehensive goals. The integrated planning process should be designed to achieve better co-ordination and compatibility between planning activities and to encourage public participation. Knecht et. al.(1992) describes integrated coastal management(ICM) as:

“a dynamic process by which decisions are taken for the use, development and protection of coastal areas and resources to achieve goals established in co-operation with user groups and national, regional and local authorities. ICM recognises the distinctive character of the coastal zone, itself a valuable resource for current and future generations. ICM is multiple purpose oriented, it analyses implications of development, conflicting uses, and interrelationships between physical processes and human activities, and it promotes linkages and harmonisation between sectoral coastal and ocean activities.”

While different authors emphasise somewhat different aspects of ICZM, partly as a result of diverse disciplinary backgrounds and partly as a reflection of the authors' varying experiences, there appears to be a clear consensus amongst the above definitions that ICZM represents a continuous and dynamic decision-making process by which decisions are taken for the long-term sustainable use, development and protection of coastal areas and resources.

The Organisation for Economic Co-operation and Development (OECD) report (1993) describes ICZM at a broader scale. According to this report, ICZM is management of the coastal zone as a whole in relation to local, regional, national and international goals; it implies a particular focus on the interactions between the various activities and resource demands that occur within the coastal zone and between coastal zone activities and activities in other regions.

The report further states that in practical terms this might mean the integration of environmental protection goals into economic and technical decision-making processes, the management of impacts of various activities in the coastal zone, the co-ordination of different policies within different parts of a particular coastal zone, or all of these and more simultaneously (OECD, 1993).

The OECD concept broadens the scope of ICZM in that it involves integration of a number of scales, values, interests and goals.

According to Kenchington and Crawford (1993), the underlying intent of integrated resource management is to share and co-ordinate the values and interests of a broad range of interests when conceiving, designing, and implementing policies, programmes and projects.

From the above review it appears that the concept of ICZM can still be considered to be in the definitional phase. It also seems likely that until guidelines are prepared and circulated by the relevant international organisations, this phase will continue. This, however is to be expected, since the concept and practice of ICZM is relatively new.

A review of literature suggests that up to four kinds of integration are included in the various concepts of ICZM, namely:

(a) Intergovernmental

This dimension encompasses the necessary vertical integration of various levels of government into coastal management, especially between the national and regional levels, and the horizontal integration across government departments such as fisheries, economic and agriculture.

(b) Land-Water Interface

Integration across the land-water boundary is basic to the concept of coastal management. The coastal zone area to be managed is usually defined in terms of both a shoreland area (the uses of which affect the coastal waters) and the water area (the uses and disturbances of which affect the shoreland). The land-water interface makes

integration complex because of the different property and ownership regimes across this interface.

(c) Intersectoral

Rational management of coastal resources requires that all activities affecting such resources or the coastal environment in which they reside, get incorporated into the management programme.

(d) Interdisciplinary

This dimension pertains to the need for an holistic approach in ICZM. It reflects the realisation that coastal zone issues not only involve the use and protection of natural resources, and the coastal environment, but that economic and social issues almost always exist as well (Kenchington and Crawford, 1993; Knecht and Archer, 1993).

3.5. EVOLUTION OF INTEGRATED COASTAL ZONE MANAGEMENT: FROM CONCEPT TO PRACTICE

Literature reviews of integrated coastal zone management efforts indicate that similar processes are followed by nations in the evolution of their programmes, starting with an initial awareness stage and culminating in programme implementation and evaluation (Sorensen and McCreary, 1990; Sorensen and MacCreary, 1993). Figure 3.3. illustrates this process. A description of the process outlined in Figure 3.3. is presented below.

The first stage is incipient awareness. This stage usually requires extensive destruction from coastal hazards or obvious coastal resource damage before a national or sub-national unit identifies the need for an ICZM programme and gives it political recognition. These events are compounded by the occurrence of intense conflicts among different coastal use activities and their associated interest groups. This means that before government can take action, coastal resources and environments usually have to exceed some threshold of resource degradation.

Figure 3.1. Options for Delineating the Ocean and Inland Boundaries of a Coastal Zone or an Ocean Management Area

Oceanward Boundary Options Inland Boundary Options		Increasing Jurisdictional Area					
		Mean low tide (MLT) or mean high tide (MHT)	Arbitrary oceanward distance(s) from a tidal mark	Boundary between provincial or state jurisdiction and national jurisdiction*	Ocean boundary of the territorial sea* (usually between 3 and 12 n.m. from CB) †	Ocean edge of the continental margin or shelf**	Ocean boundary of the exclusive economic zone (EEZ) ††
Increasing Jurisdictional Area	Arbitrary distance(s) from a tidal mark (such as 200 meters from low tide)	Costa Rica (MLT)	Sri Lanka Brazil Israel	California (from 1972 to 1976)	Spain	Great Barrier Reef Marine Park Authority	Sri Lanka, Netherlands, and Sweden ocean management program
	Inland boundary of local government's jurisdiction***	Western Australia (MHT)		State of Washington (for planning)			
	Inland limits of lands on which adverse impacts may be generated			<ul style="list-style-type: none"> • U.S. Coastal Zone Management Act • California (since 1976) 			
	Inland limit of climatic influence						

* In many cases the boundary between a coastal state (or province) and the national jurisdiction is the same as the territorial sea boundary line.

** In a number of places the continental margin extends oceanward beyond 200 nautical miles.

*** The inland boundary of local government's jurisdiction often extends further inland than the lands on which adverse impacts may be generated.

† The coastal baseline (CB) is a series of straight lines that interconnect coastal islands, headlands and promontories. It is used to map the oceanward boundary of the territorial sea and the exclusive economic zone.

†† The EEZ extends 200 n.m. or to the oceanward limit of the continental margin, whichever is greater.

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* In many cases the boundary between a coastal state (or province) and the national jurisdiction is the same as the territorial sea boundary line.

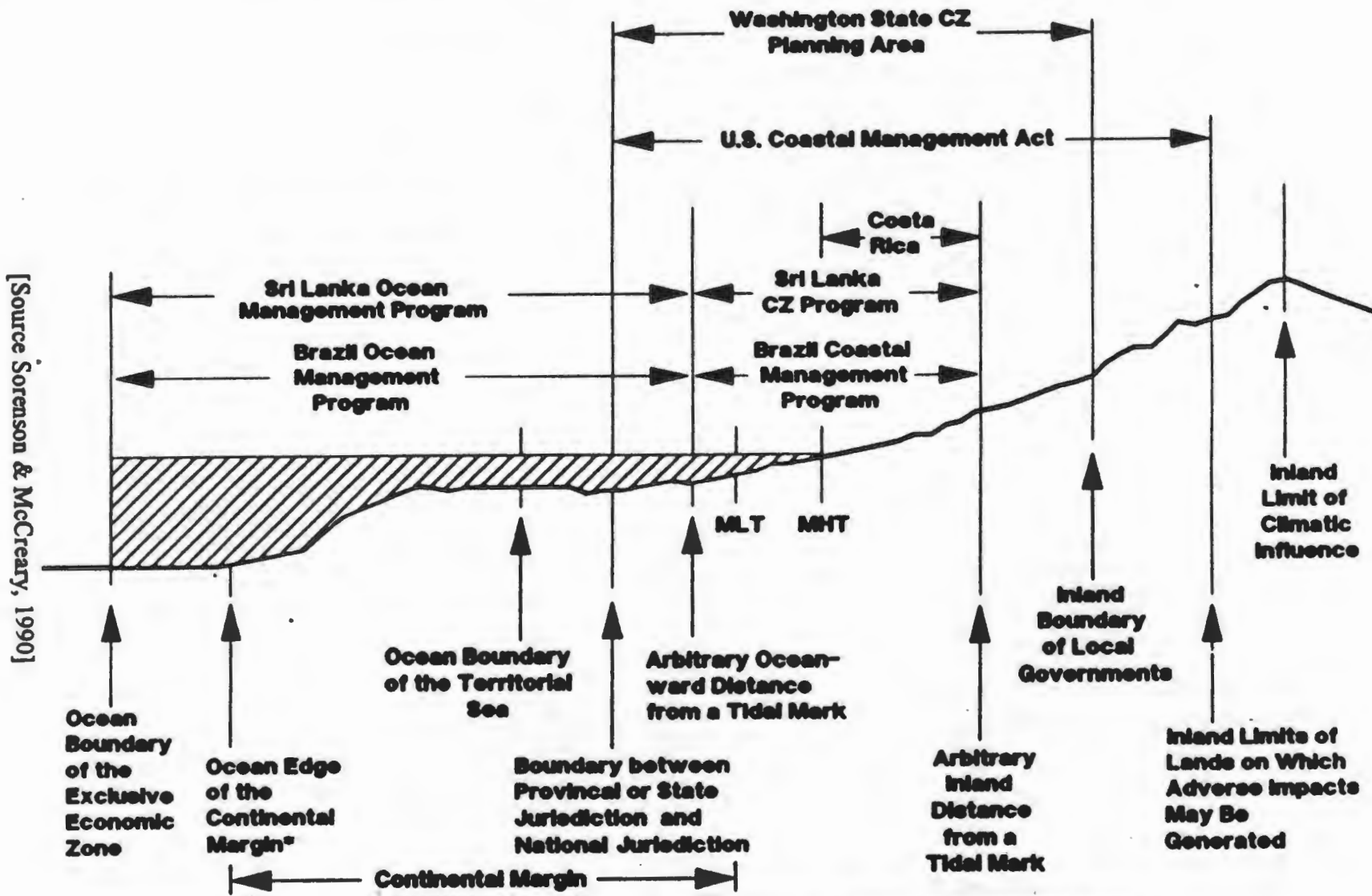
** In a number of places the continental margin extends oceanward beyond 200 nautical miles.

*** The inland boundary of local government's jurisdiction often extends further inland than the lands on which adverse impacts may be generated.

† The coastal baseline (CB) is a series of straight lines that interconnect coastal islands, headlands and promontories. It is used to map the oceanward boundary of the territorial sea and the exclusive economic zone.

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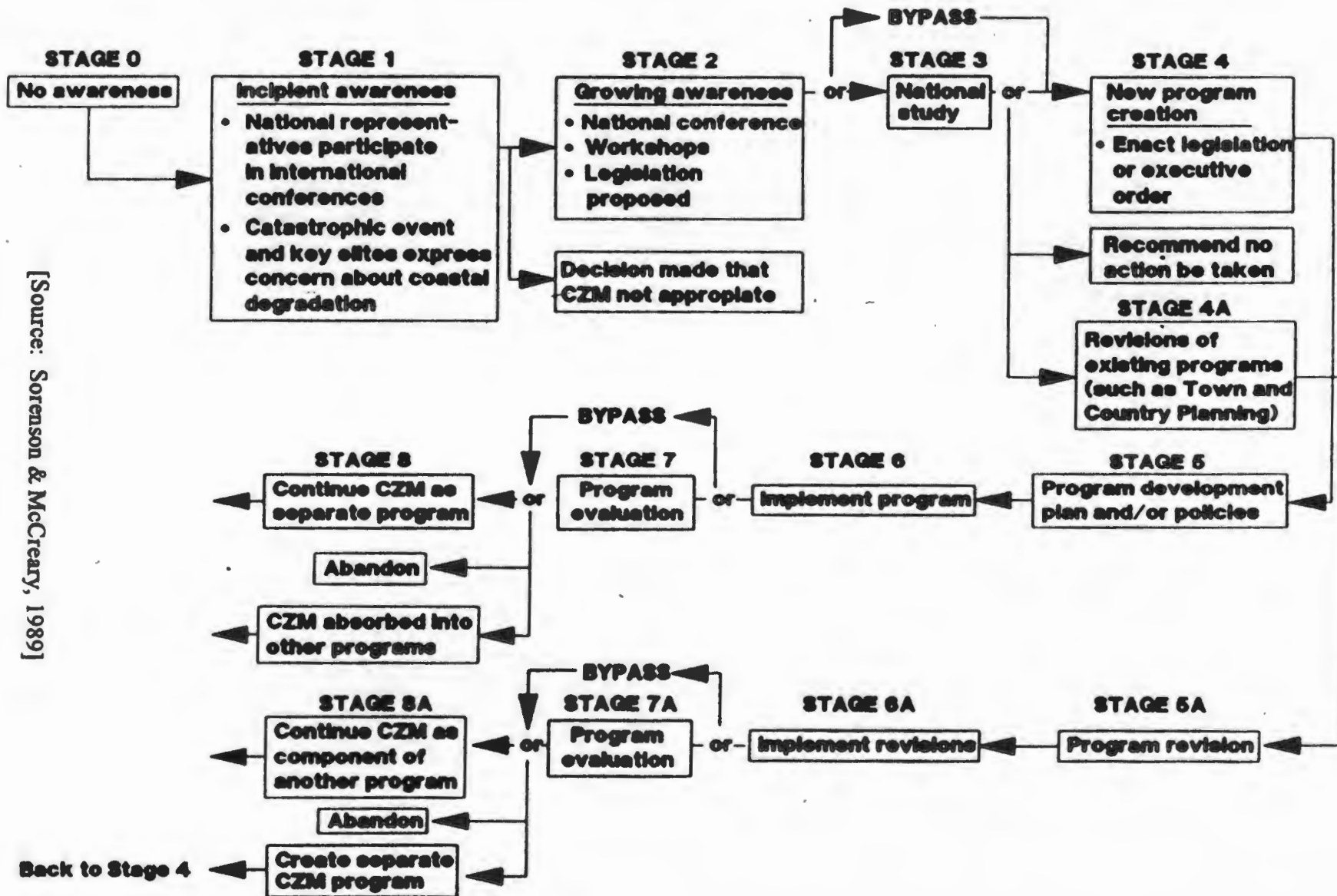
Figure 3.2.: Existing and Potential Boundaries of Coastal Zone Management Programmes and Ocean Management Programmes



[Source Sorenson & McCreary, 1990]

* In a number of places the Continental Margin extends oceanward beyond 200 nautical miles.

Figure 3.3.: Evolution of Coastal Management: From Concept to Practice



[Source: Sorenson & McCreary, 1989]

Sometimes a catastrophic event catalyses public notice and government consciousness of the need for integrated coastal resource management, for example, the Terrey Canyon oil spill in 1967 indicated to France and other nations the limited capacity of their institutional arrangements in terms of coping with disasters of big magnitude.

Stage 2 indicates that visits by foreign experts and exposure of local government, industry and academic representatives stimulates the awareness of the value and prospects of ICZM further. This awareness often results in national workshops, conferences or hearings being held, and these lead to the preparation of national studies. Among countries which have held national studies on ICZM are: Australia, Ireland, South Africa., Indonesia Saudi Arabia, Barbados and Caicos, and the United Arab Emirates.

Stage three is characterised by the preparation of national studies which analyse coastal resources, institutional arrangements and management options.

The fourth stage is the new programme creation and it is characterised by three options:

1. creation of a new programme;
2. revision of an existing programme into one that embraces ICZM or;
3. the decision not to initiate an ICZM programme.

Stage five is the programme development plan or programme development policy, which is followed by the implementation programme in stage 6. The evaluation of the programme is carried out in stage 7. The evaluation process leads to one of three options in stage 8, where the CZM programme is either continued separately, abandoned or absorbed into other programmes.

3.6. OBJECTIVES AND GOALS OF ICZM

Integrated coastal zone management is a resource system which employs an integrative, holistic approach and an interactive planning process in addressing the complex management issues in the coastal area. It could serve as a blueprint for attaining the goals and objectives of sustainable development by:

- maintaining the functional integrity of the coastal resource systems;
- reducing resource conflicts;
- maintaining the health of the environment;
- facilitating the progress of multi-sectoral development (Chua, 1993).

3.7. POLICY IN INTEGRATED COASTAL ZONE MANAGEMENT

Environmental damage and inefficient allocation of resources in coastal zone management occurs when there are poor policies (or lack of policies), and poor implementation of policies. Policy driven coastal zone management relies on having appropriate policies and equally important, the political commitment and power to see policies translated into action. Many cases exist, world wide, where the aspirations for ICZM are not yet matched by reality, because policies are lacking and/or there is lack of political will to formulate appropriate policies (OECD, 1993).

Where coastal zone management problems have been identified, and initiatives are taken towards the formulation of an integrated coastal zone management plan or programme, policy formulation should be one of the first steps to be taken towards establishing such a plan or programme. Policy is formulated to provide a framework for a management plan and should therefore precede plan formulation.

3.8. GLOBAL PROLIFERATION OF ICZM EFFORTS

The literature indicates that over the last three decades there has been a global proliferation of interest in the integrated management of coastal zones. The database of ICZM efforts divides almost evenly between developed and developing countries. However, the greatest increase in ICZM efforts over the last decade has been in developing countries. This conclusion derives from a chronological listing prepared for all ICZM efforts according to the year in which they were created (Sorensen, 1993). The chronology begins in 1965 with the creation of the San Francisco Bay Conservation and Development Commission and continues until 1993 with the creation of three efforts in Albania, Egypt and Tunisia in the first four months of the year (Sorensen, 1993).

While there is an increase in the number of developing countries that undertake ICZM initiatives, a great number of coastal developing countries are still presently not considering ICZM. Sorensen (1993) lists six apparent reasons for failure of developing countries to engage in ICZM efforts:

1. The issues are not of significant magnitude to force coastal management onto the national agenda.
2. Opinion leaders are not aware of the ICZM concept and its potential benefits.
3. Insufficient economic resources to initiate a new programme.
4. Insufficient political stability of the national administration.
5. Availability of alternative national programmes to achieve ICZM objectives.
6. The lack of support by international assistance institutions.

A possible explanation for the increase in the number of developing countries that show interest in ICZM could be the fact that Development Agencies offering assistance to these countries prompt these initiatives. In 1993 a total of 141 ICZM efforts were identified in 56 coastal states by development agencies.

CHAPTER 4.

ANALYSIS OF THE PROBLEM FACING COASTAL ZONE MANAGEMENT IN THE ERONGO COASTAL ZONE.

4.1. INTRODUCTION

Before addressing the problems facing the Erongo coastal zone and initiating policies and implementing strategies to address these problems, there is a need to identify and understand the major problems in the coastal zone.

Coastal zone management implies the effective conservation and utilisation of the coast as a dynamic ecosystem at the interface between the land and the sea. The overall aim of CZM is therefore to ensure that planning and development in the coastal zone is regulated in such a way as to benefit the greatest number of people, while at the same time safeguarding the intrinsic environmental features including social and cultural features, and ecological processes of the coast. This implies wise use of the coast and its resources and encompasses the concept of both optimal utilisation and protection of the coastal environment (Council for The Environment, 1989).

In the Erongo coastal zone a number of issues and problems which relate to the management and sustainable utilisation of coastal zones and its resources have been identified (Ramboll, 1995). These issues and problems need to be identified and addressed and appropriate policies and strategies implemented in order to effectively achieve the goals of ICZM.

This chapter analyses the major issues and problems that have been identified in the Erongo coastal zone.

4.2. KEY ENVIRONMENTAL PROBLEMS IN THE ERONGO COASTAL ZONE

4.2.1. Pollution

Various forms of pollution such as marine, air, and ground water pollution form part of the major problems facing the Erongo coastal zone.

(a) Marine Pollution

Commercial activities at the harbour are responsible for occasional minor oil spills into the sea. In addition to oil spills, paints and other chemicals used and spilled in docks also contribute to the pollution of sea water in the harbour area. Further pollution of sea water is caused by pollutants which are washed ashore on the beaches between Walvis Bay and Swakopmund. These pollutants are believed to be derived from waste produced by ships which is simply dumped into the sea. In addition to the waste generated on board ships, sewage from the ships is discharged into the harbour and bay area thus polluting the sea water further (Ramboll, 1995).

Another major source of organic pollution is the fish processing industry as there are no stipulated pollution control measures for this industry. Waste water from the industry is discharged directly into the sea thus polluting the water in its vicinity (Ramboll, 1995).

Effects of increased marine pollution are a major cause for concern as this pollution hampers or impact negatively on other development initiatives at the coast. The aquaculture industry, for example, is affected by this pollution as mussels and oysters absorb these impurities in the water thus making them unsuitable for human consumption (Ramboll, 1995). Proper control measures are required in order to address this problem.

(b) Air Pollution

Air pollution in the Erongo coastal zone can be divided into two categories, namely, unpleasant odours and air pollutants. Major sources producing unpleasant odours in the area include the fish factories in Walvis Bay, sewage treatment works and waste disposal sites of Walvis Bay and Swakopmund. The breweries in Swakopmund also contribute to the unpleasant odour problem. The municipality of Walvis Bay has received numerous complaints from residents and tourists with regard to the unpleasant odour from the fish factories (Ramboll, 1995). Since there are no pollution control measures stipulated for the fish factories, the situation has not changed and nothing has been done about these unpleasant odours. This situation is damaging the town's prospects for the development of tourism.

Air pollutants in the area are emitted by the Rossing uranium mine during the processing stages of uranium production and the largest air pollutant emitted from this operation is sulphur dioxide. Though these emissions are unpleasant they are not regarded as a great threat, since the average concentrations are well within limits set by the South African air quality standards which are used in Namibia (Rossing Handbook, 1994).

Although not currently considered a major problem, except in the Walvis Bay industrialised area, air pollution in the coastal zone needs to be controlled and monitored strictly because of the threat it poses to the potential increase in the tourism industry. The air pollution problem could be exacerbated by oil and gas exploration off the Namibian coast and could still be further worsened by the possible development of petro-chemical industries in Walvis Bay (Ramboll, 1995). A management strategy to integrate the control of all atmospheric pollution will be discussed in chapter six.

(c) Ground Water Pollution

There is great concern over ground water pollution from the waste dump site at Walvis Bay. This concern is caused by the fact that the lower level of the dump site coincides with the water table. Of even more concern is the fact that some of the waste consists of hazardous material. This dumping of hazardous waste together with

ordinary waste is a result of inadequate legislation with regard to the dumping of hazardous waste (Ramboll, 1995). This issue needs urgent attention before any further developments can take place in the coastal zone. Since the study area is in an arid environment, where there is a scarcity of fresh water resources, underground water is an important source of water for the future. Its pollution would therefore have serious repercussions for development in the area. Already, from the analysis of projected water demand figures, it has been concluded that a shortage of water can be expected from 1997 (Baseline Report, 1996) and the development of a desalination plant has been identified as a solution to the problem.

4.3. WASTE MANAGEMENT

An inadequate waste management system is a major problem in both the Erongo coastal zone and Namibia in general. In many regions there are no waste management systems and where they do exist they are geared towards the dumping of bulk waste (Namibia's Green Plan, 1992). The various municipalities and the peri-urban boards have their own regulations governing waste disposal. Mines and industries are left to determine their own standards provided that their emissions and effluents do not contaminate the surrounding water resources (Namibia's Green Plan, 1992).

In Namibia, waste is divided into two major categories namely, domestic waste and industrial waste. These two categories are further sub-divided into organic waste, hazardous waste and inert waste such as building rubble (Ibid). This section will now discuss the waste management systems of the major towns, Walvis Bay, Swakopmund and Rossing Mine in the coastal region and their inadequacies.

4.3.1. Waste Management in Walvis Bay

All the waste generated in Walvis Bay is disposed of at a 5 hectare site which is located 1,5 kilometres from the town, inland. This site has been in operation for 36 years and has a remaining lifespan of about 2 years (Namibia's Green Plan, 1992). The disposal operation has been privatised and there has been no monitoring of the contract by the Walvis Bay municipality (Baseline Report, 1996).

One of the major reasons for concern about this dump site is the fact that there is no separate disposal facility for hazardous waste. Hazardous waste is dumped together with municipal waste. Hazardous waste is now posing a major problem as some of it is placed in containers and dumped in the desert (Baseline Report, 1996). Furthermore, waste on the dump site is not properly covered and the fencing around the site is broken. This situation allows people who are scavenging into the dump site and gives them access to the refuse bags and other containers. Consequently, litter is often blown off the site into the desert. This situation of allowing people into the dump site is a great health hazard which requires urgent attention. Referencing of the site would be a first step towards addressing the problem. Furthermore, as mentioned earlier, this waste dump site may pollute underground water as the water table coincides with the lower level of the site.

With the expected future growth of the town, the domestic waste generated is expected to increase. This problem will be further exacerbated by the projected industrial growth. The exporting processing zone together with the anticipated increased number of foreign ships will result in an increase in hazardous waste being generated.

A workshop held in May 1995 attended by international and local solid waste specialists in Walvis Bay produced a report which identified the shortcomings of the system and made recommendations for improvements to the disposal operations. The Walvis Bay municipality is aware of the waste management crisis and has commissioned consultants to investigate the problem (Ramboll, 1995).

This is one of the problems which would need to be addressed within an ICZM plan for this area. There is a need to identify all sources of pollution in the area and developing an integrated approach to manage the pollution problem in the Erongo region.

4.3.2. Waste Management in Swakopmund

All the refuse generated in Swakopmund is disposed of at an uncontrolled "tip" site which is located on the edge of the town. This disposal site, like the one in Walvis Bay, is not properly covered and garbage gets blown around by wind. In addition to this problem, burning waste on site causes smouldering for long periods of time which cause smoke and odour problems. However, the recycling of certain products is being undertaken such as sending used car oil to Rossing mine for re-use (Baseline Report, 1996). Swakopmund municipality acknowledges the waste disposal problem and is planning to upgrade and improve management of the disposal site.

4.3.3. Waste Management at Rossing Mine

Waste management at Rossing uranium mine involves the use of a lot of water to carry solid waste to the tailings dam where they are deposited. Rossing mine has developed an extensive programme to recover the waste water as an attempt to minimise ground water pollution (Rossing Handbook, 1994).

4.4. CONFLICTING DEVELOPMENT INTERESTS

4.4.1. Conflicting Interests Between The Municipalities of Walvis Bay and Swakopmund

Conflicting development interests between the municipalities of Swakopmund and Walvis Bay result in uncoordinated development planning. Each of these municipalities is developing its own town planning schemes and structure plans in isolation. This approach leads to conflicting development objectives. Swakopmund, for example, is a tourism oriented town with an interest in environmental conservation measures while Walvis Bay is mainly an industrial town which does not rely on tourism for its future development (Ramboll, 1995). Development planning of these two municipalities needs to be co-ordinated and strategies developed in an integrated manner to ensure activities in one area do not undermine coastal zone management goals of another.

4.4.2. Conflicting Interests Between The Ministry of Mines and Energy and The Municipalities of Swakopmund and Walvis Bay

When Walvis Bay was re-incorporated into Namibia in 1994, the state land between Swakopmund and Walvis Bay (former Walvis Bay enclave) fell under the jurisdiction of Walvis Bay. However, while this may be the case, it is the Ministry of Mines and Energy that approves industrial development proposals and mining operations on state land. Neither Walvis Bay nor Swakopmund have a say in matters relating to such issues as is presently the case with a recent approval for dune mining in the area. This situation creates another area of conflict since Swakopmund is in need of more land for expansion along the coastline as expanding northwards into the desert would be costly. The only feasible possibility is to expand south towards Walvis Bay into the state land (Ramboll 1995). Although the two municipalities were not consulted before the decision was taken to allow the mining operations to go ahead, Walvis Bay municipality is now insisting that an EIA study be undertaken before the developer can start operating in the area.

The basic cause of the problem here is the fact that National Government sectoral departments make decisions which affect local planning and management efforts to improve the use and conservation of the coast. This sectoral approach to management by government ministries is dealt with in section 4.8.

4.5. DESTRUCTION OF THE ENVIRONMENT

4.5.1. Impact of Mining and Prospecting

The coastal desert environment within the Erongo coastal zone is extremely fragile and any disturbance requires long periods of time for regeneration. Mining activities increase vehicle traffic in an area and this often results in two major kinds of damage namely, disruption of the surface soil and compacting of surface and sub-soil. These forms of damage in turn result in increased wind and water erosion, decreased aggregate stability and reduction in the water absorbing capacity of the soil. In addition to the destruction of soil structure, vehicle tracks remain visible for decades or centuries on the gravel plains (Braby, Pers. Comm., 14-02-96).

Other impacts caused by inland prospecting and mining include: visual pollution in the form of excavations, abandoned equipment, buildings and litter; destruction and disturbance of sensitive plant and animal communities; introduction of invasive alien vegetation; destruction of the wilderness by development of roads, water supply lines and settlements as well as social problems (Brown, 1990). All these impacts have numerous implications for the management of the coastal zone.

Mining activities require large volumes of water. This is of great significance in the Erongo coastal zone where availability of water is severely limited. A good example which illustrates this problem is the continued abstraction of water from aquifers in the Lower Kuiseb River to meet the demands of the Rossing mine which has caused degradation and reduction in the vegetation in the Kuiseb River area (Brown, 1990).

The mining of salt is a further environmental problem. Siltation and disturbance are the main impacts observed where salt recovery takes place in the coastal lagoons. Salt mining, particularly of old gypsum pans, is even more destructive than salt recovery as these gypsum pans provide a stable environment for unique plant communities. Mining of these pans causes irreversible damage (Brown, 1990).

Proper decommissioning of mining and prospecting operations needs to be undertaken in order to ensure that previously mined areas are properly rehabilitated. In addition to rehabilitation measures, there is a need to develop an overall plan for the coastal zone in which areas of high conservation value are highlighted. Furthermore, there is an urgent need to develop an ICZM policy in which an overall vision for the future direction of development is formulated. When the Environmental Assessment Act is finalised, mining should be listed as one of the activities which require EIA.

4.6. CONFLICTING INTERESTS IN RESOURCE UTILISATION

4.6.1. Cape Cross Seal Colony

The Cape fur seal, *arctocephallus pussilus*, is the only seal breeding along the Namibian coast and its population at Cape Cross is estimated at about 80 000 animals. These seals live mainly on pelagic fish which is one of the major resources harvested by the fishing industry. Fishing is an important economic activity as it is the third most important industry after mining and agriculture in Namibia. The culling of seals from this colony has become the subject of much controversy, particularly between MFMR and MET and other NGO's such as the Wildlife Society of Namibia (Braby, Pers. Comm., 30-11-95; Swart, 1995). MET and the Wildlife Society believe that culling of seals in high numbers places undue stress on the seal population particularly after the heavy 1994 natural mortalities. MFMR on the other hand argues that seal culling is done on a sustainable basis in order to keep the population stable. Seals are seen as a renewable resource that can be harvested for economic purposes. Also, the rationale for culling seals is partly to increase pelagic fish stocks (Ramboll, 1995). However,

MET and the Wildlife Society believe that this could lead to unrecoverable damage being done to the Cape fur seal population (Braby, Pers Comm., 30-11-95). There has been pressure from international NGO's such as Green Peace against seal culling as well.

The controversy on seal culling should soon be resolved as the marine mammal section of MFMR is engaged in scientific research on the exploitation of seals along the Namibian coast (Roux, 1994; Oelofse, Pers. Comm., 06-02-96).

4.6.2. Conflict Among Anglers

Commercial fish anglers who have licenses to sell fish to the public, and to the hotel industry are encouraging the introduction of fishing licenses. These fisherman would like the license system to be combined with a conservation scheme that would operate on a rotation basis where certain areas of the coastline will be conserved while others are open for fishing. This proposition is in conflict with the interests of the unemployed members of the population who depend on fishing for their livelihood. These could not afford a license and would also not have the means of transport to travel up and down the coast when nearby fishing areas are closed (Ramboll, 1995).

This highlights a problem for coastal management, that of the need to balance needs of local user groups and long term conservation needs .

4.7. INCREASED PRESSURE ON RESOURCES AND SERVICES

- The high influx of job-seekers into the Erongo coastal towns is resulting in a number of social problems which require urgent attention. The most notable of these include:

- a high and fast growing unemployment rate;
- an increase in crime in the study area as a result of high unemployment;
- housing shortages which have resulted in the development of shacks as a means of providing shelter;
- heightened AIDS and TB figures which are believed to be a consequence of poverty, poor nutrition, ignorance and overcrowded living conditions which are prevalent in the study area presently;
- The increased number of people and their needs place huge demands on natural resources such as land, water, fisheries as well as infrastructural services. Expansion of these services to meet population needs in turn, if not undertaken in an environmentally sound manner will have impacts and implications. At the moment there is no overall plan for the area on how to proceed.

4.8. POLICY AND INSTITUTIONAL INADEQUACIES

The major weakness in the management of the Erongo coastal zone is the absence of an overall integrated coastal zone management policy in Namibia. In the absence of an ICZM policy, *ad hoc* and sectoral approaches to address problems are employed in the coastal zone.

During the course of developing the project proposal for an ICZM plan for the Erongo coastal zone by DANCED, a number of policy concerns which may lead to conflict during the implementation phase were identified by stakeholders in the Erongo coastal zone (Ramboll, 1995). In this section the issues of policy concern at the national, regional and local levels will be discussed.

4.8.1. Sectoral Approach Within Line Ministries Regarding Decision Making

Decision making within the various ministries is reactive rather than proactive due to the absence of effective intra-ministerial linkages and clear lines of communication. Within MET, for example, communication between the Directorates of Nature Conservation and Tourism is very poor or non-existent. This lack of communication results in conflicting development objectives and uninformed decision making (Ramboll, 1995). This shows that there is no overall departmental policy and *modus operandi* to respond to coastal problems even within a Ministry.

4.8.2. Interministerial Communication Problem

The present institutional arrangements between the various ministries do not allow for direct communication regarding issues of mutual concern. This situation leads to time delays, uninformed decision making and duplication of tasks (Ramboll, 1995). The problem is exacerbated by the fact that the present institutional framework is based on a variety of Acts administered by a particular line ministry. Since the individual Acts serve their respective ministries, gaps and /or conflicts do occur. These may either be that two or more ministries are responsible for the same task or that certain issues are not covered at all (Ramboll, 1995). This institutional arrangement does not allow for taking a holistic view of issues but approaches problems from a narrow perspective within the legislative framework which exists. For the management of developments in the Erongo coastal zone, this problem could probably be addressed by the establishment of an interdepartmental committee to address issues of mutual concern.

4.8.3. Incomplete Environmental Legislation

An issue of great concern with regard to the environment is the absence of formal environmental policy and overarching legislation. Although Namibia has declared its interest in preserving the environment within the constitution, EIA's are currently not mandatory and therefore not always conducted or if they are, provisions do not

always include all parties. This is due to the fact that undertaking EIA's and the recommendations flowing from these studies are not enforceable by law. This leads to ineffective regulation and control of activities which are potentially damaging to the environment such as mining. The recent granting of a prospecting license for dune mining between Walvis Bay and Swakopmund serves as a good example of lack of environmental control as no EIA was conducted prior to the issuing of the licence (Ramboll, 1995). However, EIA legislation is being drafted and once promulgated will be a valuable tool for regulating development in the coastal zone.

4.8.4. Absence of Regulations for Hazardous Waste Disposal

Local authorities are responsible for solid waste management within their respective municipal areas. Although the Namibian constitution states that no dumping or recycling of foreign nuclear or toxic waste will be permitted on Namibian territory, no guidance is given regarding the dumping of hazardous waste material produced within the country. This situation is causing more concern in the coastal zone since the establishment of the export processing zone (EPZ), it can be expected that more industries will produce hazardous waste.

4.8.5. Inefficient Enforcement of Control Measures

Due to outdated and incomplete environmental legislation, insufficient human and financial resources available to MET and other government ministries involved in coastal zone management, as well as the lack of formal training of officials, law enforcement regarding conservation matters is not exercised efficiently (Ramboll, 1995).

Clearly there are a number of pressing problems facing those involved in the management of the coastal zone in Namibia and particularly in the Erongo coastal zone. The crucial problems appear to be:

- increasing population pressure with concomitant demands on resources and infrastructural services;
- *ad hoc* decision making with respect to development proposals;
- no overall policy and planning framework for CZM to enforce legislation, provide support and advice to government departments;
- insufficient human resources
- lack of communication and working relationship between government ministries involved in planning and managing of issues, resources and areas in the coastal zone.

There also appears to be limited awareness of the problems and of the value of an integrated approach to coastal zone management amongst government officials. Another observation was the lack of top level commitment from government officials.

CHAPTER 5

ANALYSIS OF THE STATUS OF CZM IN THE ERONGO COASTAL ZONE - NAMIBIA

5.1. INTRODUCTION

The Erongo Region is one of the four coastal regions of Namibia. The region encompasses the magisterial districts of Omaruru, Karibib, Swakopmund, Walvis Bay, Henties Bay and Arandis. The region shares a border with the Hardap Region in the South and the Kunene Region is situated immediately north, the Otjozondjupa and Khomas Regions to the east and the Atlantic ocean to the west (Map 1). The coastline of the region is approximately 300 km long.

Since the definition of coastal zone differs from country to country, it has been necessary, for the future integrated coastal zone management project to be implemented in the region, to address the issue of the boundaries of the Erongo coastal zone. In meetings held during the ICZM project formulation mission, a consensus was reached among the various stakeholders and DANCED that the landward boundary be defined as:

“the general area within the magisterial districts of Swakopmund and Walvis Bay that include the National West Coast Tourist Recreation Area, a portion of the Namib-Naukluft Park where the Kuiseb River is taken as the southern boundary, the old Walvis Bay enclave as well as the municipal areas of Walvis Bay, Swakopmund, Henties Bay and Arandis” (Ramboll, 1995).

The seaward boundary has been defined by the three nautical mile limit from the low water mark. The boundaries of the Erongo coastal zone are depicted on Map 2.

The reasons for deciding on these boundaries were:

- to include the National West Coast Tourist Recreation Area which is under great pressure from human activities in the ICZM plan since there is no coherent plan for its management and development;
- to include Sandwich Harbour in the southern boundary because of its close proximity to Walvis Bay. Impacts from its use as a tourist destination could be managed within the framework of an ICZM plan;
- to include Rossing uranium mine and Arandis because Rossing is a major employer and its employees reside in Swakopmund. Rossing also exports its products through Walvis Bay.

This chapter will review the status of coastal zone management (CZM) in Namibia with particular reference to the Erongo coastal zone.

5.2. A FRAMEWORK FOR ASSESSING THE STATUS OF CZM IN NAMIBIA.

A literature review of coastal zone management efforts in both developed and developing countries indicates that most ICZM efforts have been developed in response to crises such as resource over-exploitation and resource use conflicts (Clarke, 1991; Cicin-Sain, 1993). Different countries have developed and implemented different aspects of ICZM depending on the problems requiring attention. North Carolina, for example, has established a process for managing development in hazard areas and has prepared a series of coastal land use plans (Owens, 1991), whilst the focus of attention in the Masoala Peninsula in Madagascar has been the development of broad guidelines for the writing of specific management plans for the different coastal resources in the region (Strategic Plan For The Management of the Coastal Zone of the Masoala Peninsula, 1995). This has been done in response to over-exploitation of natural resources, particularly marine resources, and total lack of management.

While acknowledging that there is no universal model for CZM, Sowman (1993) suggests that any comprehensive ICZM effort should embrace the following components:

1. An overall policy statement that determines the nature and direction of any decisions, actions or other matters that may impinge on the coastal environment. Such a policy would define key terms, lay down principles for CZM, and set overall goals and more specific objectives to guide activities and decisions affecting the coast.
2. Management strategies that indicate how stated goals and objectives may be achieved. Management strategies range from legislative provisions and administrative procedures to more specific tools such as sensitivity maps and the development of coastal regional structure plans. Other management strategies include:
 - Coastal land use planning;
 - Project review and environmental management;
 - Development control or Environmental Impact Assessment;
 - Resource conservation and management;
 - Pollution control;
 - Coastal environmental education and awareness; and
 - Specific area protection.
3. Institutional arrangements for the implementation of the policy and management strategies. Implementation should occur either within the existing legal and administrative framework or by modifying or developing new legislation and administrative structures.
4. A system to evaluate the extent to which the coastal zone management system is achieving its policies and objectives.

The status of coastal zone management in the Erongo coastal zone will now be reviewed within this framework.

5.3. REVIEW OF CZM IN THE ERONGO COASTAL ZONE - NAMIBIA

5.3.1. Policy for Coastal Zone Management

Namibia has no clearly defined policy framework regarding coastal zone management (Ramboll, 1995). The absence of a policy framework has resulted in a fragmented sectoral approach to management of coastal resources and areas. This is particularly problematic in the face of the increasing development pressure on the coastal zone where decisions regarding the suitability of development applications are taken on an *ad hoc* basis. A draft Environmental Assessment Act has been compiled under the guidance of the Ministry of Environment and Tourism (MET) (Draft Environmental Act: Namibia). The draft is incomplete as schedules A and B, which are intended to give lists of environmentally sensitive activities and areas respectively, are not complete yet.

EIA is one of the strategies for achieving coastal management goals. Once promulgated, the Namibian Act will be an important tool or strategy to regulate development in the coastal zone which would be more effectively applied in the context of a coastal zone management policy.

It is essential that CZM policy be developed for Namibia because there is currently no policy to guide planning development at the coast. Fundamental to the formulation of an ICZM programme is the development of specific policies that are to guide the overall objectives of the programme (World Bank, 1993). However, since there is no existing ICZM programme for the Namibian coast, one of the starting points is the development of an ICZM plan for the Erongo coastal zone. Policy, will provide a vision and set the direction for the development of the ICZM plan.

5.3.2. Strategies To Achieve Coastal Zone Management.

This section is going to review the various strategies employed in order to achieve CZM in the Erongo coastal zone. Whilst Namibia does not have an integrated, co-ordinated CZM programme, there are various efforts, particularly in terms of natural resource conservation, which are in place.

(a) Special Area Protection

Within the Erongo coastal zone there are various areas that are important for the protection of species and ecosystems. Some of these are formally conserved and do not need much further immediate attention. Such areas include Sandwich Harbour which falls within the Namib-Naukluft Park, and the Cape Cross Reserve (see Map 2). Sandwich Harbour's importance derives from the fact that it comprises a lagoon and a freshwater wetland, and a vast area of intertidal sand flats. Sandwich Harbour is also habitat to both resident and migratory birds, and is also a nursery area for several fish species and estuarine invertebrates. Cape Cross on the other hand encompasses the second largest seal colony area in the world and some lichen fields and several lagoons with guano platforms. These areas are protected by the Nature Conservation Ordinance 4 of 1975, which is administered by MET (Braby Pers. Comm., 08/02/1996). However a more comprehensive strategy is required in order to achieve the conservation and sustainable use and development of coastal resources.

(b) Coastal Land Use Planning

In Namibia it is the Ministry of Lands, Resettlement and Rehabilitation (MLRR) which is responsible for the compilation of the Land Use Act that is supposed to address the co-ordination of various aspects dealing with environmental issues in land use planning.. However, because MRL is mainly responsible for the control and administration of land issues in communal areas, this ministry is not very active in the coastal zone due to absence of communal areas within this zone. The Ministry for Regional and Local Government and Housing (MRLGH) is primarily responsible for the physical planning and administration of urban areas. Since MRLGH does not have any formal representation within the coastal zone, its interests are represented by the local authorities of Walvis Bay, Swakopmund, Henties Bay and Arandis, and the

Erongo Regional Council. The Regional Councils have been introduced according to the Namibian Constitution as recently as 1992 in accordance with Article 56 of the Namibian Court (NDPI, 1995). Although these councils are responsible for co-ordinated planning within the individual regions, their activities are restricted due to limited human and financial resources.

The Ministry involved with regional development planning is the Ministry of Local Government and Housing (MLGH) which plays a co-ordinating role with central Government and Regional Councils. Regional Councils are responsible for the implementation of strategies for development in their regions (NDPI, 1995).

The Town Planning Ordinance 18 of 1954 makes provision for the preparation and implementation of Town planning Schemes (TPS) and provides a framework for the preparation of such schemes. Town Planning Schemes are statutory documents which allocate specific land use rights to individual properties. Within the coastal zone, Walvis Bay is the only town without a TPS. The objectives of the Ordinance are to facilitate the co-ordination and harmonious development of local authority areas and to outline a planning process to facilitate effective management and development. The scope of the ordinance includes, *inter alia*, the establishment of the Namibian Planning Advisory Board (NAMPAB), the prescription of town planning procedures in preparation and approval of TPS's and the purchase and expropriation of land (NDPI, 1995). However, environmental issues are not explicitly considered in this ordinance.

The Township and Division of Land Ordinance regulates development, the establishment of towns and the subdivision of land. The scope of this Ordinance includes the prescription of procedures to be followed in the establishment of the townships, and subdivision of any land less than 25 ha in extent. With the current increase in development pressure upon the Erongo coastal zone, the Ordinance could provide a means of controlling the region's urban development. Section 6(3) of the ordinance, for example, grants the Minister of Local Government and Housing powers to impose conditions on the way in which land is used or occupied. This section of the ordinance could provide a means of controlling the increase in the

regions urban development. Section 3 (1) outlines environmental parameters to be used when evaluating development applications (NDPI, 1995). However, this Ordinance is too general and does not specify any environmental procedures and requirements to ensure appropriate development in the coastal zone.

The Local Authorities Act 28 of 1992 provides for the declaration of municipalities, towns and villages. Urban land use planning within the jurisdiction areas of these Local Authorities is controlled and regulated by Town Planning Schemes Ordinance 18 of 1954. The individual local authorities may compile Structure Plans or policy guideline plans which indicate medium to long term development guidelines. These plans are not statutory and include guidelines for future planning and development, such as the establishment of the export processing zone (EPZ), the identification of areas needed for urban extensions, the identification of areas to be reserved for tourist attractions or the compilation of policies regarding solid waste management (NDPI, 1995; Ramboll, 1995).

A major shortcoming of this Act is that it does not require that environmental considerations be taken into account of during the compilation of Structure Plans. Another weakness is that where structure plans cover coastal zone areas they do not necessarily recognise the uniqueness and sensitivity of the coastal zone and in the absence of a policy framework for coastal zone management, they do not give special attention to the coastal zone.

(c) Resource Conservation

This section examines the progress which has been made with regard to the conservation of coastal resources in the Erongo coastal zone. Coastal resource conservation implies the wise management of renewable resources, including natural systems (such as estuaries and wetlands), species (such as rock lobster) as well as non-living resources (such as heavy mineral deposits) within an area defined as the coastal zone.

These natural resources may also be regarded as scenic resources (such as a feature of outstanding beauty); recreational resources (a beach or water body); or historic, cultural or scientific resources and, as such, require conservation action to ensure their sustained use and development (Sowman, 1993).

Like the rest of Namibia, the Erongo coastal zone is richly endowed with a wide variety of habitats that support a wealth of unique and interesting fauna and flora. This coastline is also one of the most productive marine ecosystems in the world. This high productivity is due to the upwelling which makes an abundance of nutrients available to marine organisms and thus results in large fish stocks. This region is also known for its diverse range of mineral deposits such as uranium, lead, zinc, marble and granite to mention just a few. The Namibian constitution seeks to protect these resources through the environmental provision of the constitution. Article 95 (1) of the constitution calls on the state to adopt policies aimed at the

“maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future”. (Jacobson et. al., 1995)

This is a guiding principle which is not enforceable by law and requires development of policies and strategies for specific areas and resources, such as the coastal zone, water catchment areas if this is to be achieved..

The major legislation through which important areas are protected is the Nature Conservation Ordinance 4 of 1975. This is an important piece of legislation which governs wildlife resources. This Ordinance protects various categories of wild animals and plants by providing enforcement mechanisms and stipulating rules of conduct within the declared conservation areas. The establishment of game parks and

nature reserves is provided for in chapter 11 of this Ordinance. According to chapter 14, the main reasons for the declaration of an area as a game park or nature reserve are, firstly, the protection and preservation of wild animals and plant life, fisheries and objects of geological, ethnological, archaeological, historical and other scientific interests; and secondly, for the benefit and enjoyment of the inhabitants of the country.

This Ordinance appears to be inadequate in that it focuses primarily on the control of wildlife inside protected areas and makes very few provisions for protection of wildlife and ecosystems outside proclaimed reserves (Jacobson et. al., 1995). Another shortcoming of this Ordinance is its discrimination between commercial and communal farmers as it gives commercial farmers ownership of wildlife resources found on their land while communal farmers are denied this ownership. Consequently, communal farmers display a negative attitude towards conservation. This negative attitude can create great problems for conservation efforts in the area as communal farmers could be uncooperative since they do not identify with conservation goals. Giving them the same benefits as the commercial farmers would be a great incentive for them to co-operate. The government would also save money by employing fewer law enforcement officers in the area.

With regard to policy guiding resource conservation, Namibia is a signatory to the United Nations Conference on Environment and Development, Agenda 21 Convention. As a result thereof, the former Ministry of Wildlife, Conservation and Tourism, (now MET) compiled a document entitled "The Namibian Green Plan". This Green Plan sets out the goals and objectives of the Namibian government with regard to conservation of resources and it serves as a working document. However this Green Plan also has its own shortcomings as it does not cover resources outside game reserves and nature reserves.

The utilisation of coastal living resources is controlled through the Sea Fisheries Act 29 of 1992 and the Sea Birds and Seal Protection Act of 1973. In terms of the Sea Fisheries Act, Namibia claims sovereignty over the fish, aquatic plants, shells and guano in its internal waters, and 12 nautical miles of sea in terms of the territorial sea

and 200 nautical mile exclusive economic zone (EEZ) (Ramboll, 1995). The Act provides for the exercise of control over sea fisheries and related matters in order to secure conservation of marine resources. While this Act is the principal measure by which government will pursue its objective of developing fishing industries that ensure lasting contribution to Namibia's economic and overall development, it does not deal with farming of marine plants and animals. It is concerned with animals and plants from wild stock in the sea.

The Sea Birds and Seal Protection Act 46 of 1973 provides for control over certain islands and rocks, for the protection and control of the capture and killing of sea birds and seals. This Act is to be revised in order to update it in the near future so that it is in line with the provisions of the Sea Fisheries Act 29 of 1992 (Baseline Report, 1996).

Policy with regard to fisheries is set down in the White Paper entitled "Towards Responsible Development of the Fishing Sector" and it encompasses three main features, namely:

- promoting stock recovery;
- ensuring increased Namibian participation and benefits, especially through increased onshore processing; and
- securing a productive industry based on a vessel quota system.

A major shortcoming of this policy is that it is directed at commercial fisheries only and does not cover recreational and/ or line fishing and marine-culture.

Exploitation of non-living coastal resources includes, for example, large scale mining, small scale mining and informal mining. Large scale mining in the Erongo coastal zone is mainly done by the Rossing Uranium Mine which is the sole uranium extractor in the region. This mine is the largest open pit uranium mine in the world with the total

production ranging from 4000 tons in 1985 to 22 000 tons in 1994 (Rossing Hand Book, 1994). Small scale mining on the other hand is dominated by a small number of foreign and multi-national companies. These companies are involved in the mining of minerals such as lead, zinc, copper, semi precious stones, salt granite and guano mining. Informal mining comprises haphazardly distributed mines which operate either in previously abandoned mines or as small, open-cast operations. Prospecting and exploration of heavy mineral sands and off-shore oil gas are other ways in which non-living coastal resources are exploited in the Erongo coastal zone.

All the various pieces of legislation relevant to prospecting and mining take cognisance of the various aspects of the environment. Firstly, the Minerals (Prospecting and Mining) Act 33 of 1992 constitutes the main piece of legislation as it covers all types of mining. This Act vests ownership of all mineral rights in the state. Consequently, mining and prospecting can only be done after a license has been issued out by government (Ministry of Mines and Energy). The Act requires that details of mining methods, pollution prevention, waste management and safe guarding of minerals be specified when applying for a license. Applicants are further required to explain their reclamation and rehabilitation methods for the pieces of land which would be disturbed as a result of the mining operation. Finally, applicants are required to state how they would minimise disturbance to the land adjoining the mining area.

According to Section 122 of the Minerals Act 33 of 1992, the Minister of Mines and Energy may reserve land from prospecting and mining operations if he or she sees this necessary for national interests and for protection of the environment or the natural resources of Namibia or the prevention of the pollution. Rehabilitation and cleaning standards to be adhered to by the mining companies and government are stipulated in the Act. In addition, the Act allows the Minister to order mining sites to be cleaned whenever the Minister sees necessary. Rehabilitation of decommissioned mines upon cessation of operations was given high priority by the government through the introduction of this Act.

This legislation is valuable in terms of environmental conservation of the coastal zone. However the major problem with respect to development activities in the Erongo coastal zone is that decisions are taken on an *ad hoc* and site specific basis. There is no overall conservation plan of the whole coastal area which identifies areas of high conservation importance.

(d) Pollution Control

Pollution of the environment from various sources is one of the major problems facing the Erongo coastal zone. Walvis Bay, being the major industrial town in the study area is the most affected. In this section, the various forms of pollution will be examined together with the relevant legislative control measures.

Commercial activities at the harbour cause oil spills and heavy metals from the export of semi-processed mine ore contribute to the pollution of the sea water in the harbour area. Pollution from these two sources is believed to be the major problem for the aquaculture industry in the area (Ramboll, 1995). Legislation which controls pollution at sea in Namibia is in the form of two Acts, namely, the Seashore Ordinance 37 of 1958, and the Prevention and Combating of Pollution of the Sea by Oil Act 6 of 1981. Section 3 (1) (d) of the Seashore Ordinance 37 of 1958 empowers the administrator to make regulations for prevention or the control of the depositing or discharging of anything liable to be a danger to the health of the public and the ecosystem. This implies the seashore and the sea within the three mile limit that the Ordinance specifies.

The Prevention and Combating of Pollution of the Sea by Oil Act 6 of 1981 provides for the prevention of oil pollution at sea. The Act was inherited from South Africa, but sections of it have been omitted. In 1991 the Act was amended by the Prevention and Combating of Pollution of Sea by Oil Amendment Act (Act 24 of 1991). Suggestions have been made for the revision of this Act in order to update it and make it relevant to the present conditions in the country.

The Acts and Ordinances for pollution control in Namibia are inadequate and outdated since some of them were inherited from South Africa and are now no longer relevant. In addition to this problem, Namibia does not have the administrative capacity to enforce these laws.

The fishing industry is a major polluter of the sea water due to inadequate regulations regarding the cleaning of the fish and boats. Waste water is let directly out into sea. There is no legislation to deal with this form of pollution in Namibia. The Sea Fisheries Act 29 of 1992 only concerns itself with the control of the exploitation of marine resources.

Air pollution is mainly confined to the Walvis Bay area and is caused by sewage works, solid waste dump sites and the fish factories at Walvis Bay. It is controlled by the Public Health Ordinance of 1919 and the Atmospheric Pollution Prevention Ordinance 11 of 1976. The Ordinance classifies air pollution as a statutory nuisance to be regulated by local authorities, and enforced by way of notice of abatement and criminal action. In the Erongo coastal zone, the Act falls short as an effective mechanism of air pollution as it does not stipulate any control measures to be adhered to. The drafting of a new Health Act which is to replace the Ordinance is underway.

The Atmospheric Pollution Prevention Ordinance 11 of 1976 concerns air pollution prevention and provides for the control of four different types of pollution, namely, noxious or offensive gases, smoke, dust and vehicle emissions. This Act was originally inherited from South Africa but changes made to the South African Act from 1976 to 1977 were not carried over to the Namibian Act.

Legislation for pollution control in Namibia is once again outdated and ineffective. Consequently, in places with high industrial activity such as Walvis Bay, pollution has reached levels which cause concern among the general public and tourists. The situation is exacerbated by the inefficient administration of the laws due to lack of skilled manpower.

(e) Coastal Environmental Education and Awareness

There is no coastal environmental education and awareness programme in Namibia nor for the Erongo coastal zone. This is an area which needs to be addressed to enable the public to appreciate the value of the coastal resources and support strategies for its sustainable use and management. Coastal environmental education and awareness is a pre-requisite for effective coastal resource management in the sense that for coastal communities to appreciate and participate co-operatively in natural resource management strategies, their level of awareness has to be raised (World Bank, 1994). An education programme should explain what is being done in coastal zone management and why certain management measures are being taken. Successful implementation of coastal zone management strategies depends to a large extent on the understanding and support of communities living in the coastal zone. Those whose activities are being regulated need to understand why regulatory measures have to be taken (Earth Summit, 1992; Sri Lanka Coastal Conservation Dept., 1990). However, where communities understand the pressure on resources and the level of use that can be sustained and participate in the management of these resources, it reduces the need for "top-down" regulatory measures.

In order to inform all members of the community at all levels, awareness programmes should be multi-directional, involve traditional users, politicians, researchers and entrepreneurs, as well as planners and managers (Sri Lanka Coast Conservation Department, 1990). In the Erongo coastal zone, this would involve training officials from the various government ministries which have roles to play in the implementation of an ICZM plan such as the Ministries of Environment and Tourism, Fisheries and Marine Resources, Regional Local Government and Housing, Lands, Mines and Energy, Agriculture and Water Affairs, and Health and Social Services. In addition to these, representatives from the municipalities of the Erongo coastal towns, Rossing uranium mine, Walvis Bay Chamber of Commerce, Hotel Association, Shore Angling Federation, the Wild Life Society of Namibia and Namibian Port officials would be involved in the training programme.

It has been shown in the various sections in this chapter that the various government ministries are not efficient in the administration of legislation that is relevant to the coastal zone. Some of the reasons for this inefficiency have been covered in this chapter but the shortage of skilled manpower in the country is considered the primary reason. It has also been noted that the various pieces of legislation used in Namibia are mostly outdated and fragmented and therefore inefficient. This indicates a need for the review of environmental laws in general in Namibia, which have implications for coastal management.

It has also been noted that some efforts have been made towards coastal zone management in the Erongo coastal zone, such as special area protection, resource conservation and in land use planning. However, these efforts have been sectoral and undertaken largely on an *ad hoc* basis. There is need for the development of a comprehensive, overarching and integrated co-ordinated approach to coastal management that will address the current problems in the coastal zone.

CHAPTER 6

TOWARDS AN INTEGRATED COASTAL ZONE MANAGEMENT POLICY FOR THE ERONGO COASTAL ZONE - NAMIBIA

6.1. INTRODUCTION

The importance of coastal resources is recognised in both developed and developing countries of the world. The need for effective planning approaches and special management attention for coastal zones is seen as equally important since coastal zones are recognised as functional regions with valuable resources and distinctive attributes (Clarke, 1989; Sorensen & McCreary, 1990). Concern is growing over the destruction of natural coastal ecosystems as a result of demands placed upon them by population and economic growth (World Bank, 1994).

The recognition that coastal resources provide foundations upon which economic and social development programmes may be constructed and supported has resulted in an increasing interest among developing countries to initiate CZM-type programmes (Sowman, 1993). In developing countries in particular, coastal areas are increasingly subject to high population pressure and multiple economic activities across several sectors. This situation frequently results in cumulative and complex impacts on the environment, depletion of resources, and intensified conflict between competing user groups such as those relying on the coastal resources for livelihood and sources of income, and those interested in recreational uses of the coastal areas (World Bank Environmental Source Book, 1994).

Integrated coastal zone management is a process and it requires an appropriate legal and institutional framework to ensure that development and management plans for coastal zones are integrated with environmental (including social) goals and are made with the participation of those affected (Vallejo, 1993). The purpose of ICZM is to maximise the benefits provided by the coastal zone and to minimise the conflicts and harmful effects of activities upon each other (Chua, 1993; World Bank, 1993). ICZM starts with an analytical process to set objectives for the future planning, development and management of the coastal zone (Vallejo, 1993).

What ICZM ensures is that the process of setting objectives, planning and implementation involves as broad a spectrum of interest groups as possible; that the best possible compromise between the different interests is found; and that a balance is achieved in the overall use of the country's coastal zones (Vallejo, 1993; Chua, 1993, World Bank, 1993).

6.2. THE NEED FOR AN OVERARCHING ICZM POLICY

One of the fundamental reasons for most of the existing coastal problems in both developed and developing countries, is the lack of an explicit government policy for the development of the coast and the management of its resources. For example, in a recent major study, the OECD identified that there have been major policy weaknesses on the part of many OECD countries related to the use and development of their coastal areas. The OECD further identified that environmental damage and inefficient allocation of resources in CZM occurs when there are poor policies (or lack of policies), poor implementation of policies and unresolved conflict between and among policies in OECD countries (Vallejo, 1993; OECD, 1993).

A situation similar to that observed in the OECD countries has been identified in the Erongo coastal zone in Namibia. The current coastal zone management problems are mainly due to the use of sectoral policies by line ministries and the absence of an overarching national policy on coastal zone management. These problems have already been identified and analysed in chapter four of this study.

Policy driven coastal zone management relies on having appropriate policies and, equally important, the political commitment and power to see policies translated into action. Coastal policy must be consistent with the national development policy and vice-versa. This means that such a coastal zone policy should project the interests and objectives of the national development policy and at the same time seek coherence and consistency with all other sectoral policies in place. However, it is also desirable that sectoral policies are adjusted to be consistent with the broad aims and objectives of a coastal zone policy. In turn, the coastal policy should be integrated with the national ocean policy (Vallejo, 1993). In this respect, the coastal policy should be considered as a subset of a broader ocean policy that defines the role of oceans and coastal areas as an integrated whole and defines long term perspectives, values and aspirations of the country. Such a policy should take into consideration all aspects of the development process that impinge on coastal areas (Cicin-sain, 1993; Vallejo, 1993).

While the author is aware that there is no national ocean policy in place in Namibia, at the moment, this suggestion is made so that when formulating coastal zone management policy, those concerned could have a broader view of the ideal situation with respect to coastal zone management policy.

Policy establishes a course of action by specifying principles and mode of conduct, or a common purpose for all involved in a particular activity. It involves making decisions about the general direction in which change or development should occur, particularly decisions which have direct implications of a controversial, sensitive, value laden nature. It sets out accepted norms that must be complied with. In this context, a policy is legally entrenched and issued by government because it has the

authority to require compliance and the resources to monitor its implementation, in the public interest (DEA, 1992; Vallejo, 1993; DEA, 1994).

In chapter four, the author identified the key problems facing the Erongo coastal zone and in the preceding chapter it was shown that there are efforts in place to improve management of the study area. What is clearly lacking in the case of Namibia is an overarching CZM policy. One of the starting points for an ICZM plan is thus the formulation of policy and then the development of strategies to deal with some of the key problems.

In this chapter, suggestions will be given about the processes that need to be put in place in order to formulate policy and the kinds of strategies that may be appropriate to address the key problems. In the following chapter, preliminary suggestions regarding possible institutional arrangements to implement policy are proposed.

6.3 THE POLICY PREPARATION PROCESS

A review of the literature indicates that positive results have been generated and confidence has been built in developing and applying a consensus building approach to vexing policy issues in many countries all over the world (Sorenson & McCreary, 1990; Olsen & Lee, 1991; Caulfield, 1991; Owens, 1991). Broadly termed "policy dialogue", the process involves the establishment of a forum in which interested and affected parties, often with divergent views, seek agreement on complex public issues. This process has been an important supplement to traditional decision making processes, offering important advantages in terms of their informality and flexibility. Although the policy dialogue approach may take longer than traditional approaches, the result is a more stable outcome, built around consensus, which facilitates more effective implementation (DEA, 1992). The process of policy-making is almost as important as the outcome and participatory policy making is also very important in building awareness about the value of coastal resources. Also, when people participate in the formulation process, they are more likely to implement policy.

6.3.1. Developing the Process

(a) Identification of stakeholders

All parties with real and legitimate interests in the policy outcome are stakeholders and should participate in the process. For example in the Erongo coastal zone key stakeholders would include the Wildlife Society of Namibia, Walvis Bay Nature Reserve Committee, the Shore Angling Federation, Swakopmund Environmental Committee, the Hotel Association, Swakopmund, the Desert Research Foundation, the Fishing Industry, Walvis Bay, Walvis Bay Chamber of commerce (representing more than 150 companies) Regional Council Erongo Region, Rossing uranium mine, the Namibian Port Authority, and the numerous intra-ministerial and private committees that have been established in the Erongo coastal zone. These committees represent a greater majority of the stakeholders in the coastal zone. Table 7.1 provides a list of one of the key interested and affected parties (IAPs).

In addition to stakeholders, particular attention should be given to involving parties who may not have an interest in the coastal zone but whose activities significantly affect the coastal zone, such as farmers and industrialists in catchment areas inland. Stakeholder organisations need to be represented by individuals who are accountable to their constituencies (DEA, 1992).

(b) Involving Stakeholders

Once stakeholders have been identified a variety of approaches could be used to establish communication. The appropriate approach to be used would be determined by, among other things, the level of sophistication of the stakeholders in question. In some cases one-to-one meetings with representatives might be appropriate while in others a workshop forum might be appropriate. In other cases, such as with government agencies, contact by means of a letter may be sufficient to achieve stakeholder involvement. The aim is to create a climate conducive to obtaining a commitment to ongoing participation (DEA, 1992). It is therefore important to identify stakeholder groups and then get them to identify the person who could represent them on the forum.

(c) Jointly Designing The Process For Policy Formulation

All the parties involved should reach agreement on the procedures to be followed and rules to be adopted in preparing policy. Agreement will need to be reached on a variety of issues including: how to obtain ongoing input from stakeholder groups, the decision rule (e.g. 51% majority, 60% majority or full consensus); an appropriate time-table; who convenes and chairs meetings; and so on. Only once agreement has been reached on process related matters should attention be given to substantive issues of the policy (DEA, 1992). It may be necessary to identify or establish management structures for policy development such as a policy committee that is made up of representatives of stakeholder groups to guide the process and a management team to co-ordinate all activities and write up all documentation.

6.4. WHAT POLICY SHOULD ADDRESS

In order to achieve sustainable coastal development in the interests of all people, an ICZM policy should identify a common vision for all stakeholders, principles underpinning the policy and issues of concern to stakeholders, and formulate the policy around these issues.

6.4.1. Determining a Common Vision

In order to determine a common vision for a policy, two key questions need to be answered. These questions are:

1. **What should the coast be like in future and what role should it play.** This is the first question that should be addressed by IAPs. This implies the formulation of an overall goal for CZM, which is based on initial ideas and issues emerging from the policy formulation process and could be the type of commitment expected from the Namibian government. Such a commitment would include the objectives of maintaining and wisely using coastal resources to cater for the reasonable needs of the people of Namibia now and in the future, in a manner that aesthetic, cultural

and spiritual needs would be met and material qualities which enrich life would be protected. Also to contribute optimally to national endeavours to maintain or improve the quality of the Namibian coastal zone and the quality of life of the people of Namibia.

2. Why should the coast be what the stakeholders say it should be in 1 above. Answering this question would establish the motivating factors and guiding philosophy on which the overall goal is based. The Namibian government should therefore recognise that this requires all Namibians to have equitable access to the coastal zone, to use and have the right to enjoy its resources to satisfy their fundamental needs but within sustainable limits.

6.4.2. Principles Underpinning Policy

Before identifying the issues requiring policy attention, it is necessary to agree on a few basic principles which will guide policy formulation. The following principles, which are in line with recent international thinking, may provide guidance towards sustainable living along the Namibian coast. Some of these principles are being applied in the formulation of the South African ICZM policy.. The following seven principles are proposed for Namibia and the Erongo coastal zone:

- *Ensuring more equitable distribution of and access to resources.* This is of paramount importance because firstly effective implementation of policy requires popular support and commitment to wise stewardship and shared resources. Secondly, the environmental needs, perceptions and aspirations of different socio-economic groups must be recognised and respected. Thirdly, adequate and open opportunities for negotiation regarding the allocation of natural and cultural resources will avoid conflicts which frequently lead to environmental abuse.

- *Applying an integrated approach to planning in order to create a balance between conservation and development and emphasising their interdependence and common ground.* This requires more and earlier consultation between interested parties to minimise conflict, especially regarding the equitable distribution of resources.
- *Recognising the natural heritage nature of the coast.* There is a need to ensure that the coastal zone is managed in such a manner that its values and benefits will be sustained in the public interest, both now and in the future.
- *Acknowledging the distinctive character of the coastal zone.* To address the complex inter-relationships and inter-dependencies created by the land-sea interface, the coastal zone needs to be seen as an indivisible system with land and sea-based activities planned and managed as parts of a whole.
- *Keeping within the carrying capacity of coastal resources and ecosystems.* This is necessary in order to keep the levels and nature of human activities within the limits necessary for healthy functioning of natural and built systems.
- *Educating the community about the interdependence of sustainable development and conservation.* In particular, encouraging active participation by all sectors and socio-economic groups in the learning process and ensuring that environmental issues are made known to the general public.
- *Focusing on causes as well as symptoms.* This is necessary because it is usually more efficient to anticipate problems and to take positive preventative action than merely to react to problems when they arise. Also, problems with immediate economic or social costs attract more attention while chronic environmental problems may be overlooked, although their effects may be significant in the longer term.

6.4.3. Issues Requiring Policy Attention

Issues of concern to stakeholders form the key issues around which policy is needed. The process of determining these key issues would involve:

- a review of existing problems, (These have already been covered in chapter four of this document; and
- getting representatives of stakeholders to “ground truth” these issues with their constituencies and identifying additional issues.

Then, the policy committee, having agreed on key issues requiring policy attention, may need to commission some investigations. There may be a need for working groups to be established to focus on special issues. These working groups would have to communicate amongst themselves on specific policy issues and would be guided by the principles and common vision established earlier in the process. Having taken all the above steps, policy recommendations for the various issues can then be formulated.

6.5 STRATEGIES FOR IMPLEMENTING COASTAL ZONE MANAGEMENT POLICIES

The next stage in policy formulation is to identify appropriate strategies to implement policy. Whilst it is beyond the scope of this dissertation to consider the range of strategies that would be harnessed to implement policy in the study area, strategies for addressing two key problems identified in the course of this research will now be discussed. Two critical issues emerged from the analysis of problems facing the Erongo coastal zone. These were:

1. pollution (uncontrolled);
2. ad hoc planning and development in the coastal zone.

Clearly these will be identified as areas requiring policy attention. In this section, the author is building on from existing efforts to address these problems and is going to propose strategies for addressing these issues of concern.

Coastal resource management policies should be implemented within the broader objective of ecologically sustainable development. To achieve this objective policies should be carried out through the implementation of various strategies. These strategies will at the same time provide guidance and signals to the public, different levels of government and developers (whether from the private sector, the public sector or state owned commercial enterprises).

6.5.1. Pollution Control

Generally, pollution control is a government task which clearly involves local government and, where it exists, the regional level as well. The National Government is the logical agency to set standards, develop national coastal quality plans, compile and disseminate data as well as co-ordinate enforcement of policies and standards. At present in Namibia (or in general) with the agreement of national government, permits may be issued at the lower level of government. Particularly in the case of point sources, associated with industrial and residential areas, the local government in whose jurisdiction the source is located is typically responsible for regulating pollution, within the context of a national or state plan. In many cases, it is the lower levels of government which gather monitoring data and establish regulations. To reflect local conditions these regulations may be more stringent or detailed than those set out in the national standard.

Plans may stipulate principles to guide detailed measures of implementation. In Switzerland, for example, legislation for the protection of nature and the environment rests on four principles:

- that of prevention, which stipulates that each public and private activity or resource user is responsible for carrying out what is technically possible and economically supportable to reduce pollution;

- that of co-operation, which encourages all levels of government industry, agriculture and the population in general to jointly address problems of environmental degradation;
- that of contributing to the resolution of global issues, using a multi-disciplinary approach; and
- application of the Polluter -Pays Principle (OECD, 1993).

Plans for both point source and non-point source pollution control, such as from agriculture and stormwater runoff in urban areas, are feasible. Consultation with the groups whose activities will be directly affected, as well as with the public at large is often required. Planning and analysing the plans involves considering alternative measures and their effectiveness as well as the costs to achieve the desired levels of water and sediment quality. Analysis of different levels of quality, in order to assess trade-offs between cost and quality, and among different types of quality, is required, taking into account the impact on discharge-generating activities, distributional equity, social and cultural values. In planning, the best physical measures should be connected with the implementation incentive which will induce the activities to install and operate the physical measures, for example, infrastructure plans should be developed which explicitly consider waste water and solid waste disposal in relation to groundwater aquifers (Scura et. al., 1992; OECD 1993).

(a). Various Strategies That Can Be Used For Pollution Control

There are various strategies that can be used to prevent or control pollution. These include:

(1) The use of education, capacity building programmes and extension services to change attitudes and promote a more integrated and preventative approach to pollution management.

Increased use of environmental audits by industry is one way to identify opportunities for increased efficiencies in raw material use and processing as well as to reduce the volumes and concentrates of dischargers (for example the use of recycling).

(2) Using financial incentives to reduce discharge since they provide an economic reason for compliance when non-compliance is a realistic and practicable decision option.

(3) Limiting or prohibiting the use of substances which could lead to pollution and certain polluting activities by regulations.

(4) Limiting by regulation discharges from various polluting sources. The regulation could either be imposed uniformly or differentially on the various dischargers.

(5) Imposing emission costs which will induce dischargers to reduce discharge to the level where the marginal cost of pollution control equals to the cost of continuing to emit polluting substances.

(6) Allocating or selling tradable emission rights to certain dischargers to ensure that overall quality (air, water and soil) is broadly acceptable and complies with set standards.

(7) Helping dischargers change to less polluting production technology and improve efficiency in resource use to reduce emissions. The benefits to dischargers include reduced costs associated with lower or better use of inputs, and the lower cost of pollution prevention compared to cleaning up after discharge. Encouragement should also be given to the development of non-hazardous products and lower resource intensity methods, where possible.

Two important points about the approach to pollution control suggested here are that, firstly as there are many sources of discharge (for example into coastal waters) all major strategies mentioned above should be assessed before a decision is taken regarding the most appropriate strategy to implement. At the same time all dischargers should be included in the scenarios as potential sources for reduction. Secondly, the cost of pollution control is likely to vary widely according to the strategies chosen. These costs should be calculated over a period of time because firstly, the cost profile of different alternatives varies over time (some are heavily

capital intensive while others consist largely of annual operating and maintenance cost) and secondly, some measures can induce rapid technological innovation in production and / or control technologies and thereby could rapidly reduce the cost of control.

The scenario chosen should be the one that gives the most efficient environmental and economic solution over a period of time for a given level of pollution control. Adoption of the precautionary principle and a least-cost solution are possibilities. Other criteria that have to be taken into account in determining appropriate strategies to follow are practicability, environmental impact, and acceptability. In a least-cost scenario, for example, the first step is to prevent pollution where possible, recognising that prevention is usually cheaper than cleaning up. Implementation involves identifying and assessing the types, sources and impacts of polluting activities and substances. This information can thus be used to prepare a pollution profile of the region.

The next step is to calculate emission estimates for the various sources and then develop the reduction scenarios to achieve projected ambient quality (emission reduction). This would be followed by estimating the costs and implications associated with the various reduction scenarios over time using different strategies. The preferred scenarios could then be selected.

While the author recognises that this is a complex and difficult process to undertake, ecologically sustainable development will not be achieved without implementing appropriate strategies to regulate and where possible prevent pollution of coastal resources and ecosystems

6.5.2. Planning and Management of Coastal Land

The objective of coastal land management should be to allocate coastal land resources to activities providing net benefit taking into account the requirements of ecologically sustainable development. This means allocating land for housing, tourism, industry, agriculture and forestry, nature conservation and habitat protection, infrastructure development, reserves and recreational area in a manner which provides for the needs of society but does not undermine the value and integrity of coastal systems. The strategies used vary from planning strategies, structure planning and zoning land for various purposes as well as the pricing mechanism provided by the market. EIA can also be used as a strategy to regulate development.

a) Land Prices and Planning

Forward planning through the development of guide plans, structure plans and more specifically conservation and development plans which highlight areas of high conservation value and those that are stable and suitable for development should be used to guide future development. On a regional basis, land should be identified for dominant uses such as agriculture, mining, urban areas and conservation. At a local level, more detailed zoning should be carried out, that is, designation of specific zones for residential industrial, commercial recreational use, reserves and parks. However, the major problem with zoning is that it entrenches rights and when circumstances change there may be a need to change zoning. The author therefore suggests that Town Planning Schemes should be used for urban areas as long as rights lapse every 15 to 20 years so that re-evaluation can be done and the Town Planning Schemes reworked.

For coastal areas in-between towns, planning documents such as structure plans should be used to guide future use and development of the coast. It is important that the manner in which structure plans are drawn up involves the local people who are familiar with environmental conditions, and that the plans are based on good scientific and social investigation and evaluation of the conservation and development initiatives and plans for the region.

There is a close connection between zoning and land prices. For example, rezoning of agricultural land for urban or tourism land uses can result in substantial increases in land prices. Land use zoning (for development planning) is basically undertaken for environmental reasons to reduce urban sprawl, introduce aesthetic or amenity controls, separate incompatible activities (where uses or externalities might cause a nuisance to each other), protect important natural areas or features. Land use zoning should therefore be an essential element of coastal resource management. However, it has to be efficient in the following ways:

- Effective in the planning sense in that the allocation objectives are achieved. In most instances this is not always the case because of political or administrative problems. Major economic and environmental losses can arise from the poor implementation or enforcement of zoning regulations;
- Effective in the economic sense. Available land should be allocated through the price mechanism in a way that has been anticipated. This might not always be the case because of underestimation of demand so that densities are much higher than intended, placing pressure on land carrying capacity and infrastructure. Such development in turn can have adverse environmental effects. The net result may be a decline in the environmental quality of the area.

b) Environmental impact Assessment (EIA)

While structure plans provide guidance on how development should go, there is still need for environmental impact assessment to be used to regulate development in the coastal area. EIAs should be done on a project basis. This implies that all applications for development in the Erongo coastal zone should be subjected into some kind of environmental assessment through the EIA.

As a process EIA, is usually imposed by government to force public agencies and private developers to disclose environmental impacts, to co-ordinate aspects of planning and to submit development proposals for review. As an analytic method, EIA is used to predict the effects of a project or a programme. The fundamental premises underlying environmental impact assessment are that firstly cause and effect relationships can be determined with reasonable accuracy and presented in terms understood by policy makers and secondly, prediction of impacts will improve planning and decision making (Sorensen and McCreary, 1990).

The Namibian government is in the process of formulating an Act with guidelines for the EIA procedure for the country. The EIA procedure will be legally enforced when completed. it will be a powerful tool for regulating development by both government ministries and private developers.

This chapter presented a description of the processes that need to be developed during ICZM policy formulation. A key component of the formulation of an ICZM programme is the development of the specific policy or policies that are to guide the ICZM programme in question. Clearly, there has to be a close relationship between the kinds of coastal problems that trigger the need for an ICZM programme and the policies for that programme.

While all phases of the process of formulating an ICZM programme should be “transparent”, it is of the utmost importance that the policy formulation process be fully open and easily accessible to the affected coastal stakeholders. This is the approach advocated by the author for the policy formulation process in the Erongo coastal zone.

A description of implementation strategies to address key problems facing the Erongo region in Namibia was also presented. For the purpose of facilitating the description of the various strategies to be used, policy implementation was broken down into a number of strategies. However, there is a high degree of interdependence amongst the strategies and this needs to be undertaken in a co-ordinated way to implement policy.. The strategies that could be employed comprise a mix of planning, regulatory and economic measures. The regulatory type of instruments vary from limits on emissions of effluents to land-use zoning. Economic instruments involve charges on emissions.

CHAPTER 7

PROPOSED ORGANISATIONAL FRAMEWORK FOR IMPLEMENTING ICZM IN NAMIBIA AND ITS COASTAL REGIONS

7.1. INTRODUCTION

Much of the coastal zone and adjacent ocean and most of their resources are usually under state ownership. Programmes to manage those resources and areas are therefore usually operated by governments for the benefit of their people. Typically, particular government ministries, departments and/or agencies are responsible for particular resources or uses (World Bank, 1993).

The process of moving away from a strongly sectoral approach towards a more integrated institutional structure requires management in itself and is often laborious. Since ICZM is a government effort, it must have the necessary legitimacy in implementation. An ICZM effort developed outside the government framework will often encounter great difficulties. Even under a co-management or community management regime the government must first devolve management authority to the concerned communities or local authorities. Irrespective of the management regime in place, the government is still required to provide the necessary supervision, technical assistance and in most cases, financial support (Chua, 1993; Cicin-sain, 1993; Boelaert-Souminen and Cullinan, 1994).

A review of the literature indicates that experience has shown that institutional capacity building is not a question of superimposing a CZM administrative structure over the existing government pattern, but to integrate wherever possible CZM within the existing governmental structures. This integration is achieved by blending and sharing existing capabilities and human resources (Vallejo, 1993; Chua, 1993).

Institutional building for ICZM is based on the design of a co-ordinated mechanism at the highest level of government with the task of generating information, carrying out analytical studies for the political decision-makers, reassessing policies, undertaking the development of a long-term strategy, strengthening multi-sectoral co-operation by improving linkages among sectors and administrative levels, and providing overall guidance to the process of planning and implementation (Chua, 1993; Vallejo, 1993; OECD, 1993).

Theoretically a country wishing to embark on this process is faced with a number of alternatives including:

- creating a new government agency with jurisdiction over the coastal zone, and powers to enact, amend and complete an ICZM programme or plan and prepare legislation;
- setting up an interdepartmental commission or a task force with authority to devise an ICZM programme or specifically a coastal management plan, issue guidelines for the integration and co-ordination of existing policies and to develop appropriate laws;
- appointing a lead agency among the existing government ministries with a mandate to prepare a coastal management policy and plan, and with the power to direct the actions of other government agencies;
- setting up a non-executive advisory committee with members from several agencies and/or interest groups to study coastal issues and to advise the government on how to best address them; and
- setting up a framework for regular Interministerial consultation, supported if necessary by the signature of a memorandum of understanding (Boelaert-Suominen and Cullinan, 1994).

The above institutional approaches are characterised by the establishment of institutional arrangements that include the total hierarchy of government, recognising the mutual interdependence between different sectors and stressing two way communication between the top levels and the lower levels as well as horizontal relationships. The basic concept of integrated management is that the decision making bodies should decide and act in a co-ordinated, integrated way and thereby minimise the costs and losses arising out of uncoordinated management (OECD, 1993).

This chapter reviews the current administrative structure with regard to development planning in Namibia and highlights the advantages and disadvantages of this structure with regard to the implementation of an ICZM policy in the Erongo coastal zone. Suggestions will then be made as to what institutional arrangements may be appropriate in order to facilitate effective ICZM in the Erongo coastal zone.

7.2. THE CURRENT INSTITUTIONAL FRAMEWORK FOR DEVELOPMENT IN NAMIBIA

The current institutional framework for development planning in Namibia is illustrated in Figure 7.1.

1. Parliament comprises the elected representatives of the Namibian people. It approves all legislation, policy, White papers, expenditures presented in the annual budget as well as the National Development Plan.
2. Cabinet is the decision making body of the executive which approves all official policies and expenditures. It approves the allocations of resources which are proposed by the central resource agencies, the Office of the Prime Minister, the Ministry of Finance, and the National Planning Commission.

3. The National Planning Commission in the office of the State President is headed by the Director General who is the chairperson of the commission of five ministers and eight eminent persons from outside Government. The Director General is the principal advisor to the President on issues of economic development and planning and is responsible for co-ordinating all international development co-operation assistance to Namibia. The National Planning Commission Secretariat, which works with the Ministry of Finance is responsible for co-ordinating the National Development Plan, external aid and the Development Budget, and for monitoring progress on development programmes and projects.
4. The office of the Prime Minister (OPM) co-ordinates all other Government Ministries. It is also responsible for planning and managing the public service. This consists of organising the recruitment and remuneration of civil servants, and approving the establishment and staffing of Ministries and other central government bodies. This office therefore, has a decisive influence on the human resources that can be devoted to any Central Government activity.
5. Line ministries are responsible for particular sectors. Their task is to use the resources allocated to them to implement sectoral strategies, policies, expenditure programmes and projects with the aim of serving and developing their sectors.

Other institutions and bodies which identify development priorities and seek government support for them include:

- Regional, town and village councils which take greater responsibility for planning and budgeting as well as service delivery at the regional level.
- Parastatals undertake a major share of public sector investment and are an integral part of the public sector's development efforts. Often central government does implement programmes through sectoral parastatals.
- NGO's which represent important partners in promoting development efforts in many areas. It is often more common for central government to enlist the support of NGO's to deliver certain services to the community.

- Private sector investors which often have considerable managerial and technical skills but lack the capital to undertake high risk investments. Central government will promote joint ventures with private sector investors to pursue high risk investments in areas which would otherwise be unattractive to private investors (NDPI, 1995).

7.3. EFFICIENCY OF THE EXISTING INSTITUTIONAL STRUCTURE FOR DEVELOPMENT PLANNING

In Namibia, the existing institutional structure for development planning is organised for the implementation of the First National Development Plan (NDPI). It is the responsibility of all sections of government. The NDPI is produced every five years starting from the 1995/96 financial year detailing the activities of central government offices, ministries and agencies and outlines government's broad medium term objectives, strategies, macro economic framework, policies, recurrent and investment programmes as well as measurable targets for each sector of government activity.

The predominant body dealing with planning at national level is the National Planning Commission (NPC). The NPC plays an important role in monitoring the implementation of the Plan by publishing the annual report which assesses progress made on achieving the objectives and targets set out in the NDPI. This report is presented to Cabinet and Parliament and forms the basis of adjustments to targets, policies, programmes and projects of NDPI (NDPI, 1995).

Government recognises the urgent need to enhance planning capacity, both in the NPC, the line ministries and regional councils. In order to meet this need. Planning units will be set up in line ministries and regional councils. Planning systems and procedures will be further developed through a series of workshops and training courses in the early part of the Plan period. These lessons will also focus on the lessons learnt in preparing the NDPI and will provide recommendations on improvements to the preparation of the second National Development Plan (NDPI, 1995).

Special efforts will be made to enhance regional planning and implementation capacity. The roles and responsibilities of regional councils will be worked out, including procedures for economic and physical planning at regional level. Mechanisms will be developed for integrating regional planning processes into the national planning system. In addition, processes for improving the integration between physical and economic planning will need to be developed particularly in the area of land use planning (NDPI, 1995).

In this section the author has discussed the efficiency of the existing institutional structure for development planning in order to highlight the key areas in which it operates and the extent of its scope within the Namibian government. This has been done because the author believes that this is the institutional structure that should be used for the implementation of an ICZM in Namibia.

One of the alternatives mentioned earlier in this chapter for institutional building for ICZM is that of setting up an interdepartmental commission or task force with authority to devise an ICZM programme or specifically a coastal management plan, issue guidelines for the integration and co-ordination of existing policies and to develop appropriate laws. This is the option that the author proposes for Namibia and its coastal regions. The formulation of an ICZM plan for the Erongo coastal

zone is seen as the starting point towards the ultimate goal of the development of an ICZM programme for the Namibian coastline. This chosen option for **institutional building** will therefore set a framework for a longer term objective.

Sectoral approaches to development planning and its subsequent shortcomings have already been identified as one of the major problems facing coastal zone management in the Eronga coastal zone and were discussed in chapter four. Integrated planning is an essential component of the coastal management system because of the complexity and magnitude of coastal management issues. The next section discusses the proposed institutional mechanism that needs to be set-up in order to **implement** integrated coastal zone management in the Erongo coastal zone.

7.4. THE CREATION OF AN INSTITUTIONAL MECHANISM FOR EFFECTIVE INTEGRATED COASTAL ZONE MANAGEMENT

An improved institutional framework for coastal zone management will involve improving the linkages amongst the various government ministries and the development of better regulatory and economic instruments. The necessary administrative links would involve collaboration among representatives from national, regional and local governments as well as involvement of IAPs. This will not necessarily entail creating new bodies, but rather the bringing together of existing interests. Almost always, however, there will be need for a co-ordinating body or bodies with real powers and with more than just a sectoral perspective.

For the implementation of ICZM in the Erongo coastal zone and in order to minimise the effect of the administrative shortcomings on its implementation, the author proposes that an interdepartmental commission be set-up in Namibia. This interdepartmental commission should have authority to devise an ICZM programme or plan, issue guidelines for the integration and co-ordination of existing policies and to develop appropriate laws. In order to give this interdepartmental commission the necessary clout to harmonise sectoral actions, the author suggests that it be linked to the existing institutional framework at a higher bureaucratic level than sectoral ministries. To achieve this goal the author proposes that the co-ordinating body be directly linked to the National Planning Commission in the office of the President. This is the highest level at which economic development and planning issues are handled within the current institutional framework in Namibia. All line ministries would be represented in this co-ordinating body since it would be a major structure for planning for the management of the whole Namibian coastline.

For the management of individual coastal regions, other administrative and organisational structures should be set-up which would address issues specific to those regions. These structures would be regional co-ordinating bodies which would still be linked to the national co-ordinating body as its substructures. These regional co-ordinating structures would be composed of representatives of regional stakeholders, representatives from ministries which are relevant to a particular region in terms of their operations in the regions and representatives from the general public. A particular ministry may be appointed to head an integrated coastal zone regional management structure.

In the Erongo coastal zone, for example, the numerous inter-ministerial and private committees that have been established would be represented in the regional ICZM structure. These committees represent the majority of the stakeholders in the coastal areas and Table 7.1. shows the list of all the committees that have been formed in the Erongo coastal area thus far.

7.5. CAPACITY NEEDED FOR ICZM

Integrated coastal zone management may be seen as having three general parts, namely:

1. A continuing process to collect the necessary information and data on resources, coastal problems and issues, and on the needs and desires of the public;
2. A process to formulate a set of goals and policies for the coastal area and to develop a coastal planning and management process which applies these policies to the coastal zone; and
3. The adoption, development, and/or strengthening of means (legal, institutional, technical, financial and human resources) to achieve the goals and policies of the coastal zone management effort.
4. Various dimensions of capacity are needed to successfully carry out ICZM, namely:
 - Legal and administrative capacity to designate a coastal zone, to develop and carry out coastal plans, to regulate development in vulnerable zones and to designate areas of particular concern.
 - Adequate financial resources to carry out the planning and implementation of coastal management efforts.
 - Technical expertise for information gathering and monitoring of coastal or marine ecosystems and processes, patterns of human use, and assessments of the effectiveness of coastal zone management programmes. Establishment and maintenance of coastal database and information system.

Table 7.1. Intra-Ministerial And Private Committees In The Erongo Coastal

Zone	
COMMITTEE	COMPOSITION
1. Joint Management Committee	MET and MFMR
2. Committee for the Co-ordination of Combating Coastal Pollution	MET, MFMR, Municipalities
3. Fisheries Advisory Committee	MET, MFMR, Finance, Trade & Industry, NGO's
4. Water Desalination Committee	MET, MFMR, Mines, Water Affairs, NAMPORT, Shore Angling Federation, NGO's
5. Land Use Committee	MET, Land & Resettlement, Water Affairs, Agriculture
6. Walvis Bay EPZ Committee	Trade & Industry, Walvis Bay Municipality
7. Swakopmund Environmental Committee	NGO's
8. Environmental Conservation Committee	MET, Municipalities, Wild Life Society
9. Honourably Nature Conservation	MET, Private Industries
10. Regional Planning Advisory Committee	Regional Councils
11. Walvis Bay Nature Reserve Committee	Municipality
12. Emergency Plan Committee	Regional Councils, Municipalities
13. Tourism Management Committee	-----
14. Wlotzkasbaken Resident's Committee	Wlotzlasbaken residents
15. Housing Committee	-----

- Human resources capacity. Interdisciplinary training in social sciences, natural and physical sciences and engineering. Also, raising of public awareness and understanding of the coastal ocean environment, and the problems and opportunities it offers (Cicin-Sain, 1993).

The potential for the above-mentioned capacity dimensions in Namibia needs to be addressed particularly for the Erongo coastal zone where a lack of these capabilities have been noted. The human resources capacity, in particular, has been identified as the major contributory factor to lack of efficiency in most line ministries, while lack of financial resources also ranks high on the priority list. The environmental law framework is fragmented, uncomprehensive and incomplete and its administration is uncoordinated (Baseline Report). These are some of the key areas that need to be considered when planning for the establishment of an institutional framework for ICZM.

In concluding this chapter, it should be noted that while some suggestions and recommendations have been made with respect to the establishment of an institutional and management framework for CZM, a number of ministries are in a restructuring or privatisation process. The process is expected to be finalised in 1996 (Baseline Report). When finalised, these two processes may bring about changes to the existing situation in both Namibia and the Erongo coastal zone.

CHAPTER 8

CONCLUSIONS

This study has sought to provide proposals for a possible approach for the formulation of an integrated coastal zone management policy for Namibia, including the Erongo coastal region and to make some comments on key components of the policy. This concluding chapter reviews the process that has been followed to attain this objective.

Having outlined the nature of the problem, background to the study and the methodology employed, a conceptual framework for integrated coastal management was then set out in chapter 3. An attempt was made to clearly define key terms such as coastal zone, coastal zone management, integrated coastal zone management and to clarify the processes involved in ICZM. The evolution of the ICZM process as well as principles underpinning and key elements comprising an ICZM effort, were clarified. Finally, a review of the global proliferation of ICZM efforts in both developed and developing countries was done.

What emerged from this chapter was that coastal zones world-wide are under great pressure from rapid urbanisation and economic developments which cause a host of complex, resource-use conflicts and environmental degradation problems in the coastal zone. In order to maintain and maximise the value of coastal zones it is necessary to develop and implement policies, strategies and provide institutional arrangements for the integrated management and development of coastal zones.

In chapter four, the current problems facing the Erongo coastal zone in Namibia were discussed. A number of socio-economic, biophysical and institutional problems were identified. These problems included:

- a fast growing unemployment rate due to job seekers into the Erongo coastal towns which has resulted in housing shortages and heightened TAB and AIDS figures.

- various forms of pollution were identified as one of the critical problems that requires urgent attention
- destruction of the environment due to poor, or absence of, control measures as well as inefficient enforcement of such resources;
- need to itemise pollution and degradation of coastal resources and ecosystems from ad hoc planning and development;
- a sectoral approach to planning and management within line ministries;
- poor interministerial communication problems;
- incomplete environmental legislation

In chapter 5 an analysis of the status of coastal zone management in the Erongo coastal zone was undertaken. This analysis was based on a framework which has been used to assess the status of coastal zone management in South Africa. This framework identified key components that should be embraced by a comprehensive ICZM effort.

In the review of coastal zone management efforts in the Erongo coastal zone, the following key issues emerged.

- The absence of a clearly defined policy framework regarding coastal zone management in Namibia has been identified as a major shortcoming. This has resulted in a fragmented, sectoral approach to management of coastal resources and areas.
- No formal procedures for evaluating the environmental impacts and implications of projects and plans affecting the coastal zone. A draft Environmental Assessment Act has been compiled under the guidance of MET. However, the draft is incomplete.
- Various strategies are employed to achieve the goals of CZM in the Erongo coastal zone which include special area protection, coastal land use and resource conservation. However, these strategies are undertaken by specific sectoral departments and there is no co-ordination of efforts.

In chapter six the lack of an explicit government policy for the development of the coast and management of its resources was identified as the fundamental reason for

many of the existing coastal problems in the Erongo coastal zone. The need for development of an ICZM policy as a starting point for an ICZM programme or plan was suggested and a possible approach to the formulation of an ICZM policy for Namibia and its coastal regions was presented.

In particular, a participatory policy-making process, which involves all stakeholders, was proposed and its importance in building awareness about the value of the coastal resources and areas was highlighted. Key steps in the process include the identification of a vision for all stakeholders, establishing principles which guide policy and identifying issues of concern to stakeholders. management structures required to support policy formulation were also proposed.

Strategies for implementing integrated coastal zone management policies in two key problem areas namely, pollution and land use planning in the Erongo coastal zone were discussed. These strategies comprised a mix of regulatory and economic measures.

In chapter seven, a preliminary suggestion regarding the kind of organisational framework for implementing integrated coastal zone management in Namibia were made. The author suggested that an interministerial commission be set up in Namibia and that it be linked to the National Planning Commission in the office of the President which is the highest bureaucratic level at which economic development and planning issues are handled in Namibia.

The setting up of other administrative and organisational structures for the management of individual coastal regions was also recommended as these sub-structures would handle issues pertinent to the specific regions. These sub-structures could be headed by one of the government ministries operating in the area.

Various dimensions of capacity needed to successfully carry out ICZM were discussed. These include legal and administrative capacity, adequate financial resources, technical expertise and human resources capacity. The need to address the potential for these capacity dimensions in the Erongo coastal zone was highlighted.

The key conclusions arising from this study are briefly listed below.

The Erongo coastal zone is faced with a number of coastal zone management problems, some of which need urgent attention such as pollution management, in particular regulation with respect to hazardous waste, land use planning and development regulation through appropriate legislation.

There is a need for sustainable management of the coastal area and its resources and the development and implementation of an ICZM programme. This will contribute towards sustainable use and management of the area. However, since programme formulation is a long process, the development of an ICZM policy to guide the future use and development of the Erongo coastal zone is a critical starting point. Such a policy could then be supported by more specific strategies such as a coastal plan, environmental guidelines, land-use control measures and an integrated pollution management system.

Before a CZM plan for a particular stretch of the Namibian Coast is formulated, it is desirable that an overarching policy for the whole of Namibian coastline is formulated.

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