Coastal Management
in the Western Indian Ocean Region

A Capacity Needs Assessment

Coastal Resources Center

University of Rhode Island

COASTAL MANAGEMENT
IN THE WESTERN INDIAN OCEAN REGION

A Capacity Needs Assessment

October 2001

Report of the Western Indian Ocean Marine Science Association Coastal Management
Capacity Building Needs Assessment
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GLOSSARY

AusAid	Australian Aid Agency
CBO	Community-based Organizations
CDA	Coast Development Authority (Kenya)
CIDA	Canadian International Development Agency
CO	Comoros
CORDIO	Coral Reef Degradation in the Indian Ocean
CRC	Coastal Resources Center
CRCP	Coral Reef Conservation Project
DANIDA	Danish International Development Agency
EENESA	Environmental Economics Network of Eastern and Southern Africa
EEZ	Exclusive Economic Zone
EMPS	Environmental Management Plan of Seychelles
FAO	Food and Agricultural Organization
G/ENR	USAID Global Bureau Environmental and Natural Resources Office
GEF	Global Environmental Facility
GESAMP	The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GNP	Gross National Product
GTZ	German Technical Cooperation Agency
ICM	Integrated Coastal Management
ICZM	Integrated Coastal Zone Management
IMS	Institute of Marine Sciences
IOC	Indian Ocean Commission
IUCN	World Conservation Union
JICA	Japanese International Cooperation Agency
KWS	Kenya Wildlife Service
KY	Kenya
MAUR	Mauritius
MG	Madagascar
MICOA	Ministry for Coordination of the Environment
MPA	Marine Protected Area
MZ	Mozambique
NEAP	National Environmental Action Plan
NEMP	National Environmental Management Program
NGO	Non-governmental Organization
NORAD	Norway Development Agency
PACSICOM	Pan African Conference on Sustainable Integrated Coastal Management
RE	Reunion
REDSO	Regional Economic Development and Service Office
RSA	Republic of South Africa
SAREC	Swedish Agency for Research Cooperation with Developing Countries (defunct)
SEACAM	Secretariat for East Africa Coastal Area Management
SEY	Seychelles
SIDA	Swedish International Development Cooperation Agency
SOM	Somalia
TCMP	Tanzania Coastal Management Partnership
TZ	Tanzania
UDSM	University of Dar es Salaam
UNCED	United Nations Conference on Environment and Development
UNDOLALOS	United Nations Division of Law of the Sea
UNDP	United Nations Development Program
UNEP	United Nations Environmental Programme
URI	University of Rhode Island
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society
WIO	Western Indian Ocean
WIOMSA	Western Indian Ocean Marine Science Association
WWF	World Wildlife Fund

PREFACE

The goal of integrated coastal management (ICM)… "to improve the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems"… is widely shared by the world's coastal nations. Over the last decade, there has been much effort and some progress in moving towards that goal. Yet the effective management of coastal areas and resources remains the exception, rather than the rule.

Perhaps nothing is more central to achieving the goals of ICM than developing skilled coastal management practitioners who are able to catalyze, lead and manage coastal programs. The need to build human capacity, especially in tropical developing nations, is widely recognized. The challenging question is how to develop this capacity. What skills do coastal managers need? How are such skills best developed? Once skills are developed, how can favorable enabling conditions be created so that they can be effectively applied? These are among the questions that the Coastal Resources Center and its partners have been attempting to answer.

While commitment and capacity in ICM are needed in all sectors of society – from the political decisionmakers to fisherfolk – it is current and future coastal practitioners who must be the engine for progress. In this report, the capacity-building needs of coastal management practitioners in the Western Indian Ocean were identified by the Coastal Resources Center (CRC) and the Western Indian Ocean Marine Science Association (WIOMSA). The report first postulates the knowledge and skills required by the "ideal coastal manager." This profile was built from CRC and WIOMSA's almost 30 years of ICM experience, and refined through interviews with practitioners, government institutions and donors in the Western Indian Ocean region.

We postulate that the ideal coastal manager needs competence in four areas: a sound technical background in any one of the natural or social sciences, professional skills, project management skills, and a broad and deep ICM repertoire. Specific skills within these broad areas are discussed in the report.

CRC and WIOMSA developed a survey tool to measure the perceived competencies of coastal management practitioners in the Western Indian Ocean region. We then used the results to tailor a capacity-building program to the needs of emerging ICM practitioners. In the Western Indian Ocean, the need for professional and managerial

skills, as well as for ICM repertoire was greater than for specific technical skills. Hence, a program was designed, with generous support from USAID/REDSO-ESA, to build the skills of ICM practitioners through a linked series of modules held at different locations in the Western Indian Ocean region.

We believe that this assessment report will be of interest not only to individuals and institutions concerned about ICM in the Western Indian Ocean, but also to a broader audience concerned about building capacity for ICM. CRC and WIOMSA intend to further develop the ICM Practitioner Assessment Survey. We welcome dialogue and feedback both on what constitutes the ideal coastal management practitioner, how to measure existing capacity, and, most importantly, how to then expand human capacity for ICM.

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Executive Summary

Developing capacity in coastal and marine issues of the Western Indian Ocean (WIO) region is a very important activity, given the present growing and projected pressures on the coastal and marine resources. The region's experience in both knowledge-based, technical and equipment capacity building has been progressively growing. Many large milestones have been reached in this current effort to assess the capacity of the WIO region both in the form of increasing the knowledge base on core competencies of a good coastal manager as well as identifying the capacity-building efforts going on in the region.

Management of coastal and marine issues is critical to ensure a sustainable future in a region where tens of millions of people depend on coastal resources for their livelihoods. Thus, there is an important need of increasing not only the number of competent and well-trained coastal management practitioners, especially with respect to project and program management and its various aspects, but to also facilitate the creation of enabling environments in which these managers can work.

Expanding this knowledge base is a capacity-building challenge that is best addressed at both regional and national levels, and by collaboration among various agencies including governments, non-governmental organizations and community-based organizations. Many national and international organizations and governments have contributed to short-course training in different issues, using this as the best medium to not take an employee out of the work setting for too long a time.

It is well recognized that human resources are the most valuable assets of any governmental process like integrated coastal management (ICM). ICM is a process driven by people where sustainable human development implies societal development, and that in turn implies a deepening of the organizational structures of society. Capacity development is the process by which individuals, groups, organizations, institutions and societies increase their ability to understand and deal with their development needs in a broad context and in a sustainable manner.

The Western Indian Ocean Marine Science Association (WIOMSA), in cooperation with the University of Rhode Island's Coastal Resources Center (CRC), assessed ICM capacity needs in the WIO region for several reasons. The primary one was to get input on a proposed advanced skills course on ICM. The specific objectives of the needs assessment were:

- To gather information about on-going training
- To determine who was offering the courses
- To explore other programs with which partnerships could be forged to deliver training

Capacity-building programs must address the unique needs of individuals. However, there are some common features that effective capacity-building programs include:

- Clear statements of learning objectives
- Use of indicators and benchmarks to determine how well objectives are being realized
- Understanding of "organizational life cycles" and tailoring capacity building to suit the organization's needs at a particular time
- An emphasis on "learning by doing" hands-on approaches with sustained follow-up

The "pitfalls" that characterize less successful programs include:

- Confusing capacity building with training, and focusing training on individuals rather than on both individuals and whole organizations
- Relying on organizations to articulate their own capacity-building needs without the assistance of skilled facilitators
- Training based on what the provider can supply as opposed to what the participant can use
  - Poor quality and overly formal teaching methods
  - Lack of follow-up
  - Failure to account for language difficulties
  - Unreasonable goals that result in resources being "spread too thin"

Taking all of the above into consideration, WIOMSA and CRC's goals are to provide the WIO region with a systematic approach to continuous and improved learning in fields related to marine and coastal management. With the orientation toward capacity development, the partners aim to make the most effective use of the region's available human and financial resources to achieve ICM in a sustainable way.

CHAPTER 1

INTRODUCTION

1

Coastal areas are complex places providing a range of services and resources critical to the human populations that live there. They provide food, shoreline protection, opportunities for economic development, and they house important cultural, historic and religious sites. Coastal areas make up some of the most bio-diverse areas on the planet, and are also the sites of many of the world's industry and urban centers. In order to manage these complex places, there is great need for adequate numbers of well-trained coastal management practitioners.

Coastal management primarily involves working with diverse levels of stakeholder groups, and requires sound knowledge of the variety of environmental factors affecting coastal areas. Practitioners must therefore have a wide range of skills to deal with the enormous complexity of coastal areas. They must have sound project/program management skills, understand the practice and process of integrated coastal management, have a strong technical background, demonstrate key professional skills, and be able to interact with communities and policy makers while ensuring success. Finding an individual with this diversity of skills is uncommon. Finding adequate numbers of such individuals to deal with the growing complexity of coastal areas is a challenge.

This report presents the findings, recommendations, and a way forward developed through an extensive assessment of needs for integrated coastal management (ICM) conducted in the Western Indian Ocean (WIO) region. The purpose of this needs assessment was to:

- Catalog on-going coastal management capacity-building activities and training
- Identify gaps in skills, knowledge and attitudes of ICM practitioners
- Identify potential partner institutions at the national and regional level
- Present a broad framework for increasing coastal management capacity in the WIO region

For the purpose of the needs assessment and this report, capacity building is regarded as building skills for professional development of individuals in order to enhance their

The goals of WIOMSA and CRC with respect to ICM capacity building are to provide the Western Indian Ocean region with a systematic approach to continuous and improved learning in fields related to marine and coastal management. With the orientation toward capacity development, the partners aim to make the most effective use of the region's available human and financial resources to achieve sustainable ICM.

ability to knowledgeably and competently achieve the development and management of coastal resources in a sustainable and consultative manner. Capacity, in this document, does not include institutional or organizational capacity. The target group for the "Learning and Performing" course is coastal practitioners. These are the individuals who are, have been, or may be actively involved in developing, managing and evaluating coastal management projects, or those partnership sectors that are key to integrated management of coastal resources.

WIOMSA and CRC have worked together in the region since 1996 to increase the capacity of coastal practitioners.

The needs assessment team, made up of WIOMSA and CRC staff, carried out the assessment, and completed this report. The needs assessment team applied a variety of tools and techniques assessing the region's capacity including:

- An extensive global literature search in ICM capacity building
- Site visits to a sample of countries in the region
- Interviews with key informants (individual practitioners and donors)
- Workshops

The methods used in this needs assessment are described in Chapter VI. This range of methods allowed the team to interact with a wide variety of practitioners and, from that interaction, identify their needs and attitudes with respect to ICM. It also allowed the team to generate an accurate and up-to-date (albeit not exhaustive) catalog of past and present ICM capacity-building activities (Chapter IV).

Prior to starting the regional assessment, the team developed a number of hypotheses about capacity and capacity building in the region. The team also developed a "core competencies" tool that presents and evaluates the skills and knowledge that an ideal coastal manager would possess (Chapter VII). This tool was used as a foil to determine existing capacity, identify gaps and build recommendations. The core competencies are a composite sketch drawn from a number of previous studies and writing on the subject of capacity for ICM.

After describing how the assessment was completed, this document presents the findings (Chapter VII). These findings address current gaps in capacity, areas that exist but need to be enhanced and observations about how current courses and workshops –

mainly in the region – are conducted. The results from this needs assessment were presented to an audience of WIOMSA country representatives and board members for validation and clarification. A group with regional experience in capacity building was convened by USAID-REDSO, and they were also asked for input. All these steps ensured that the results were indeed workable.

From these findings, a number of broad recommendations have been developed (Chapter VIII). These are intended to assist other organizations and agencies develop future capacity-building programs. These insights are built around both the types of courses that would work best in the region and the types of skills that need to be built and enhanced.

WIOMSA and CRC will pilot these findings and deliver a newly designed learning by doing course that addresses many of these findings. This new course is slated to start in 2001 and draws from the recommendations made by those who participated in the needs assessment. It is meant to test a new approach to building ICM capacity in the region. It is also meant to be only the first in a series of such courses. WIOMSA and CRC will identify other organizations and universities interested in the "Learning and Performing" model, and work with these groups to design and deliver future courses —either independently or in partnership with WIOMSA.

This report will interest those who are developing coastal management courses aimed at the WIO region. It should also provide useful information to those interested in coastal management capacity building, regardless of the region. The core competency tool is drawn from global experiences and is applicable to most coastal management capacity contexts.

A post-course report that complements this needs assessment report will be produced early in 2002. It will focus on the "Learning and Performing" course design and delivery including selected session plans, course administration and logistics, as well as lessons learned.

CHAPTER II

BACKGROUND

2

The WIO region comprises ten countries – Somalia, Kenya, Tanzania, South Africa, Mozambique, Madagascar, Comoros, Seychelles, Mauritius and La Reunion (France) (Figure 1). The region has a mainland coast that extends over 11,000 km and a coastal population of roughly 20 million (Olsen et. al. 1999). The diverse array of coastal resources in the WIO region provides livelihood, food, medicine and building material to the regional population.

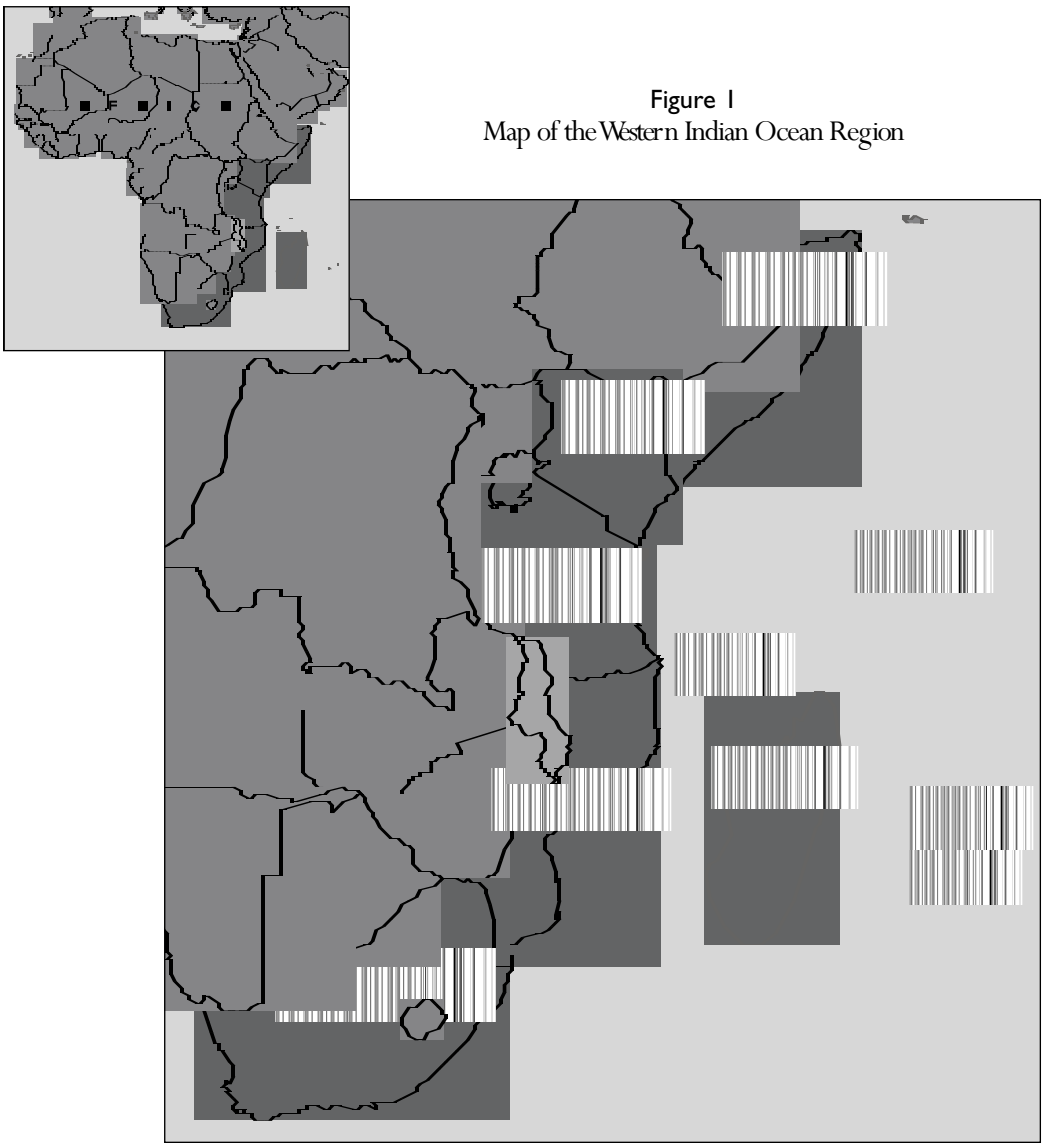


Figure 1
Map of the Western Indian Ocean Region

THE COAST AND ITS PEOPLE

Quality of life in the WIO region, particularly of coastal communities, is inextricably linked to the quality of coastal resources. Socioeconomic indicators in many WIO countries have experienced decline over the past decade, a trend projected to continue. The WIO region's coastal population is projected to double as a result of migration and birth, reaching 40 million by 2020. Increase in human pressure on coastal and marine resources in the WIO region is evident from decreasing fish catch, destructive fishing practices, and by the increased volume of untreated sewage and nutrient runoff released into near-shore areas.

The current situation of coastal and marine resources is one of increasing human and industrial pressure, and the continued decline of these same resources is due to poorly coordinated enforcement and unplanned resource exploitation. In some cases, there is under-exploitation of some resources, e.g. deep-sea fish, perhaps due to lack of appropriate technology. Studies focusing on the region (Olsen et al. 1999, Slinger and Uithol 1999, Bryceson 2000, UNEP and UDSM 1998) have identified the threats and issues facing coastal resources as:

- Increasing conflict over resource use
- Increasing pollution of coastal waters
- Soil erosion in watersheds affecting coastal waters
- Degradation and destruction of critical coastal habitats leading to resource depletion which affects food security
- Insufficient number of people trained to plan, implement and enforce sound management practices
- Weak institutions
- Insufficient coordination of activities, or sharing of ICM and other experiences and resources

If the region is to prosper, it must look toward institutionalizing action of a sustainable nature. Sustainable coastal development can only be achieved when the governance process responds to, and is accountable to the people who live with the results. International experience demonstrates time and again that programs are sustained only where there are constituencies that are active advocates for improved natural resource management.

Today, the very resources that have provided the foundation for economic development in the coastal region are in jeopardy. Rapid population growth and accompanying

development have put a variety of pressures on East Africa's coastal ecosystems. The continuation of business as usual without appropriate intervention will lead to an outlook for the region that is one of declining human welfare, declining resources and increasing user conflict.

The current situation in the region can offer positive opportunities, if attention is paid to the right issues. The absence of coastal management policy in most of the region's countries allows them to observe and learn from different cases in the world, thus putting the region in a position to develop coastal management policies using a best-practices framework. Most of the region's coastal population is non-uniform in distribution, with most people residing in large coastal cities. This uneven development provides the opportunity to adequately plan for population increases and establish new towns and cities along the coast. Under-exploitation of some fisheries resources means there is opportunity to develop techniques and management plans that focus on sustainability.

Awareness about the resources and their protection is increasing, thus leading to an increase in the number of conservation activities. Government agencies, non-governmental organizations (NGOs), community-based organizations (CBOs) and grassroots organizations are playing a pivotal role in managing the region's coastal assets. There are more new projects being initiated in the region than ever before. Additionally, there are more countries participating in the increasing numbers of international conventions and programs.

The WIO region is realizing the benefits of integrated approaches and planning toward solving their growing problems related to coastal resources. Planning projects have tapped local creativity in addressing coastal issues, and pointed out the clear need for practical approaches and solutions. There is also a need for a regional constituency of coastal managers to carry forth the implementation of these practical approaches and solutions.

CHAPTER III

Capacity Building is Essential to Meeting the ICM Challenge

3

"Capacity" comprises the human resources and institutions that permit and enable a country to achieve its development goals. "Capacity building" in turn means investment made with the purpose of enhancing the ability of individuals to achieve their development goals. It entails deliberate policies and actions at the national and sectoral levels to bridge the capacity deficits. Capacity is a complex concept, which involves economic, political, technological, cultural and social factors and it applies to the government and the many interlinked non-government sectors. Overall capacity is interlinked in the sense that capacity deficits in one sector or area inevitably affect capacity in others. This in turn implies that suggested policies to address capacity building in one area must take into account ways in which capacity in other areas is likely to be affected.

Capacity building is a central concept in Agenda 21 and in other agreements made at the United Nations Conference on Environment and Development (UNCED), also referred to as the Earth Summit, held in Rio de Janeiro, Brazil, in June 1992. As defined by the UN Development Programme (UNDP) and the UN Division of Law of the Sea (UNDOALOS) in 1994, "capacity building involves human resource development, the development of organizations and promoting the emergence of an overall policy environment conducive to the generation of appropriate responses to emerging needs" (UNDP/UNDOALOS 1994).

A less formal definition of capacity building in the context of ICM might be: "The design and conduct of the range of activities necessary to enhance the capacity of institutions and the individuals that comprise them to undertake effective ICM programs" as described in Education and Training in Integrated Coastal Management: Lessons from the International Arena by Biliana Cicin-Sain.

Given the challenges and opportunities facing the WIO coastal environment, it is imperative that coastal resources be managed properly and sustainably. Managing the integrity of the WIO region's coastal environment is a formidable challenge. Wise planning and use of coastal resources also requires commitment to intersectoral management at the national and regional level. It is important to act at these two levels simultaneously because they are complementary and will not be as effective without the other.

Table 1

Regional vs. National Perspectives of Integrated Coastal Management

National	Regional
Addresses specific national issues	Needs to take into consideration all national issues within region and prioritize
Narrower geographic focus therefore limited resources required	Wide geographic area to be covered, therefore need for more human and financial resources
Within one political boundary therefore easier to harmonize and coordinate activities and jurisdiction	Spans 10 countries, bound to be concerns of interference in sovereignty, difficult to coordinate and enforce
Nation may have limited human capacity/expertise	Drawing from all countries can help solve issues of individual country weaknesses and give strength all-round
Requires relatively less investment in networking because individuals went to the same schools, and work in offices with much interaction	Requires improving interaction, networking and information sharing among different sectors (interaction between fisheries, universities, biologists in all 10 countries), and same sectors in different countries' (e.g. all 10 fisheries dept. interaction) individuals so that they benefit

ICM is globally recognized as an effective tool to address habitat loss, resolve conflicts between users, and realize a holistic and systems management view of the coastal environment. Commitment to ICM at the regional level has been affirmed by the region's governments through a series of inter-ministerial conferences and statements on ICM and through donor organization and government interest and funding of national, trans-boundary, and eco-regional natural resource management initiatives.

The countries in the WIO region are signatories to a legally binding framework, the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention). The Nairobi Convention, ICM initiatives and the inter-ministerial statements have all recognized the significance of capacity building for both the region's institutions and individuals to adequately meet the ICM challenge.

While commitment and capacity in ICM are needed in all sectors of society – from the political decisionmakers to fisherfolk – it is the region's current and future coastal practitioners – marine scientists, biologists, park wardens, conservationists, and city

planners – who must be the engine for progress in addressing the coastal challenges that the region faces.

As coastal management is primarily concerned with managing people and their activities, its goal is to influence the values and the behavior of society to elicit a positive response to an integrated management scheme. Successful coastal management programs need individuals with the ability to articulate a vision and inspire the collaboration required to achieve the program's objectives. For this reason, coastal managers must not only have good personal skills, but must also be skilled in the various technical aspects of the coastal environment. The ideal coastal manager is one able to draw knowledge and ideas from a range of sectors: legal, economic, scientific and sociological. These characteristics are especially relevant to the WIO region, in the light of the aforementioned environmental and management challenges that need urgent attention.

Besides being a good strategist and leader, the ideal coastal manager needs competency in four areas: professional skills; project/project management; ICM principles; and technical background. The core competencies tool (Figure 2) summarizes these skills, and is presented in its entirety in Appendix 4.

Professional skills

Coastal managers must deal with a range of situations that require specialized professional skills and knowledge. These are characterized as those skills that related to facilitation, communication and dispute resolution. These are the softer, process-focused skills that are essential to successfully deal with customers and clients, user groups and stakeholders.

Project/program management skills

Coastal managers are called upon to manage programs and projects at various institutions. This axis measures their skill level in areas related to running a project or program. These include: managing and conducting meetings, fundraising, organization and leadership, budgeting, supervising, and work planning.

Repertoire of ICM practice

This measures the individual's skill and knowledge as it relates to ICM repertoire range of coastal management tools and techniques available to solve coastal management problems. These include both "process" skills, such as understanding the project cycle

Integrated Coastal Management

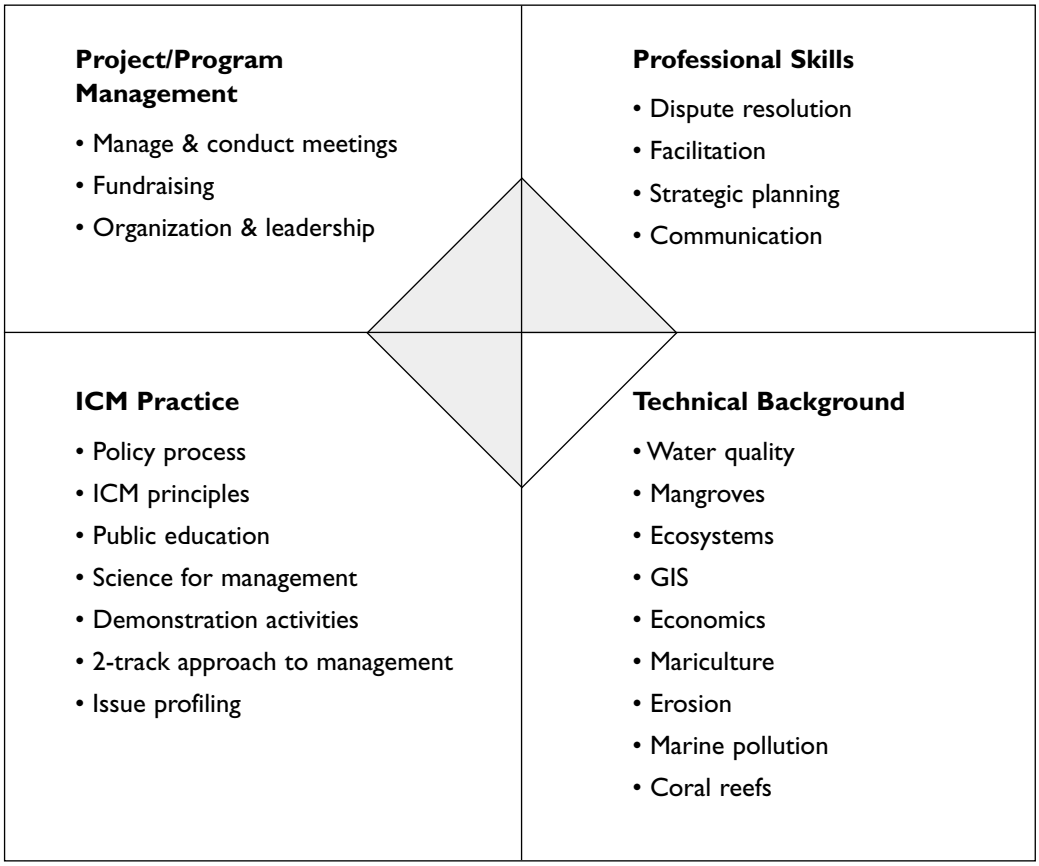
Integrated coastal management is a continuous and dynamic process by which decisions are made for the sustainable use, development, and protection of coastal and marine areas and resources. First and foremost, the process is designed to overcome the fragmentation inherent in both the sectoral management approach and the splits in jurisdiction among levels of government at the land-water interface. This is done by ensuring that the decisions of all sectors (e.g., fisheries, oil and gas production, water quality) and all levels of government are harmonized and consistent with the coastal policies of the nation in question. - Cicin-Sain and Knecht, 1998.

The goal of ICM is … to improve the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems. It is a process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources. - The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)

and "implementation tools" such as special area management planning. Repertoire includes: ICM principles, community participation, public education, science for management, demonstration activities, two-track approach to management, issue profiling, policy and legislation, site-based management plans, zoning, and issue-specific guidelines.

The reason why many coastal management programs are not implemented in the WIO region is because there is a lack of a constituency large enough to support such initiatives. An ideal coastal manager must be able to transcend a particular scientific specialization and view the processes that govern the functioning of an ecosystem and how it responds to anthropogenic and natural change. Many of the interconnections and the interdependencies between the coastal sea, estuaries and their watersheds are poorly understood. It is of the utmost importance to have the technical background that many in the region possess to assess the implications of the issues of ecosystem management, but being able to formulate a course of action and manage these activities is equally as

Figure 2
Core Competencies that Make the Ideal Coastal Manager



important. The current training in the region is not delivering the entire skills package that the ideal coastal manager needs.

Technical background

Coastal managers are drawn from a range of technical backgrounds and disciplines. This axis measures the individual's skill and knowledge level within the technical area that the individual received formal diploma/degree training in. This does not measure the level of training received, only the individual's perception of her/his skill and knowledge. Technical backgrounds of coastal managers include training in: water quality, mangroves, ecosystems, GIS, economics, mariculture, watersheds, erosion, marine pollution, coral reefs, planning, fisheries management, core sciences (biology, chemistry, physics), and law.

CHAPTER IV

Status of the Institutions Dealing With ICM-Related Aspects

4

GOVERNANCE STRUCTURES

Implementation of the ICM programs, projects and plans occurs on three main governance levels, namely: central administration; provincial/regional/state; and local. Each authority in these levels has different mandate/roles with respect to the implementation of ICM programs and related activities in the country.

The roles of central government, sectoral ministries and corresponding institutions include: development of plans and budgets; formulation of policies; development of legislation and its enforcement; collection of revenue; human resource development; research and research coordination; and training and extension services. All these roles are very relevant to the development and implementation of ICM in the country.

Local government authorities have roles to play in management of resources. In line with the decentralization process currently being pursued, most of the countries in the region are devolving regulatory and local development authority to local government units, leaving central government agencies to focus their role on policy formulation, planning, standard setting and coordination. In addition, local authorities have other roles such as:

- Issuing of licenses, e.g. mining, fishing
- Law enforcement and by-laws
- Revenue collection
- Involvement in management of protected areas such as marine parks and forest reserves

Non-governmental and community-based organizations are regarded as important actors, pressure groups, and partners in the management of coastal and marine resources. This is attributed to their design, which makes them more accessible, and closer to the local communities they serve. Significant numbers of funding agencies are increasingly working with NGOs and CBOs in activities related to the management of coastal and marine environment.

Different NGOs are involved in a number of activities related to management of the coastal and marine environment. These include: awareness-raising and extension

services, promotion of gender roles (particularly women empowerment), capacity building and technical assistance.

Many NGOs and CBOs in the region are facing significant constraints that affect their performance. These constraints include limitations in organizational capacity, technical expertise, financial resources and accessibility to the decisionmaking process.

In light of their different mandates, each of the governance levels has different capacity-building requirements. Thus, any initiative to develop and build capacity for ICM must take into consideration institutional framework as a key issue, in addition to human and financial resources.

In response to the problems that are occurring in the coastal zone, countries have actively undertaken programs/projects designed to sustainably manage the resources in

Table 2
Types of Capabilities that Each Governance Level Contributes to Implementation of ICM

General Roles	Governance levels/organizations	Types of responsibilities	Examples
Policies/plans	National government	• Specialized sectoral data and expertise (fisheries, erosion, water quality, etc.) • Capacity to "harmonize" various sectoral activities • Funding assistance • Ties to relevant global and regional ocean and coastal programs	
	Local government	• Detailed understanding of "on the ground" problems • Best understanding of constraints and limitation and possible solutions • Support of coastal user groups and of local communities	
Implementation of activities	Government institutions	The same as above	• All MPAs in Kenya – KWS • Inhanca Island Marine Park – University of Eduardo Mondlane • St. Anne Marine Park – Marine Parks Authority, Seychelles
	NGOs/CBOs	• Assist in organizing communities • Assist and provide services for education and training	• Cousin Island Marine Reserves – Birdlife Seychelles
	Project teams	• Management of projects • Provide technical advice	• Tanga Project • Bazaruto Marine Park
	Private sector	• Provide capital funds for investment • Increase operational efficiencies	• Chumbe Island Sanctuary • Mnemba Island Conservation Area

the coastal areas. However, the administrative authority concerned with coastal area management is dispersed among a number of government agencies at central, regional and local levels. It is common to find several agencies at various levels of government being responsible for the same aspects of coastal management, or several different projects that are being planned for the same site. Moreover these sectoral agencies are reluctant to cooperate in fear of losing their independent decisionmaking authority.

Many existing laws and regulations relevant to coastal affairs further hamper the effectiveness of coastal management because of their conflicting objectives and inadequacy. Most of them are aimed at facilitating the maximum exploitation of resources and not ensuring a sound management of the resources and environment.

Most of the officials working in the government agencies are trained in the single technical disciplines and may not be equipped with sufficient knowledge to understand and appreciate the interdependence and complexity of different activities taking place in the coastal areas.

TRAINING DELIVERY MECHANISMS IN THE REGION

Various capacity-building activities have been undertaken within the WIO region. Primary vehicles for delivering capacity have been short courses and training workshops (one to three weeks), and some longer-term degree courses (one to four years).

Short courses have mainly been delivered through organization of national and regional workshops, courses, and seminars. Different interest groups, including decisionmakers, academicians, technicians, students, local community, and the business community have attended these courses. These training activities covered a wide range of subjects ranging from general subjects (such as ICM, marine protected area (MPA) management and NGO capacity building) to very specialized technical subjects (such as coral reefs, seaweed farming, algal physiology and beach erosion). These short-term courses have been instrumental in laying the foundation for collaboration among national and regional institutions, promoting the use of the same or comparable techniques in field work and laboratory studies, as well as raising awareness and dissemination of information. Table 3 shows an illustrative list of workshops, seminars, and conferences related to coastal and marine issues that were undertaken in the WIO region between 1993 - 2000.

Long-term training leading to MSc and Ph.D degrees has been through:

- Training abroad through scholarships programs offered by various international organizations and bilateral arrangements from contries such as Sweden (SIDA), Canada (CIDA), Norway (NORAD), Autsralia (AusAid), Britian (Commonwealth), Germany (GTZ), Belgium (BADC), and Japan (JICA)

Table 3

Illustrative List of Workshops, Seminars, and Conferences Related to Coastal and Marine Issues Undertaken in the Western Indian Ocean Region 1993-2000

Title	Funding Agency/ Organizing Agencies	Date
Regional training course in marine protected areas management in the Western Indian Ocean region	IMS/KWS/CZMC/WIOMSA	7-19 Feb, 2000
Training course in integrated coastal management for practitioners in the Western Indian Ocean region	USAID/URI-CRC/WIOMSA	1-12 March, 1999
NGO capacity-building training course	SEACAM	Sept 98 - TZ Nov-Dec 98 - SA
Tourism environmental assessment training course	SEACAM	Oct 1998
Regional workshop on local and community integrated coastal zone management: Experiences from Eastern Africa		4-7 March, 1998
Experts and practitioners workshop on integrated coastal area management for Eastern Africa and the island states, Tanga	IUCN/URI/CRC/WIOMSA/UNEP Regional Seas Program/Sida-SAREC/UNEP The World Bank/ USAID/PRE-COI	12-16 August 1996
Workshop on cooperative use of research and training vessels in East Africa	FAO	May, 1996
Regional workshop on phytoplankton primary production and SAREC bacterioplankton secondary production methods	SAREC	26-29 March, 1996
Scientific data presentation course	SAREC	18-22 March, 1996
Regional course in ecology and physiology of tropical seagrasses	SAREC	12-18 Feb, 1996
Regional workshop on laboratory safety and "Good Laboratory Practice" (GLP)	SAREC	7-12 Jan, 1996
Regional workshop on social and cultural aspects of integrated coastal zone management in eastern Africa	SAREC	9-12 Oct, 1995
Workshop on socioeconomic and environmental impact of seaweed farming on the east coast of Unguja, Zanzibar	CIDA	3-5 Oct, 1995
Workshop on principal and methods of sciences and environmental education	CIDA	18-22 Sep, 1995
Marine sciences curriculum workshop	CIDA	12-15 June, 1995
Tanzania national workshop on integrated coastal zone management	SAREC/World Bank	8-12 May, 1995
Workshop on the conservation of Menai Bay	WWF	2-4 May, 1995
Training course on nutrient analysis and water quality monitoring	IOC/UNEP/FAO	21-26 Nov, 1994
Physical oceanography workshop	SAREC	12-13 Nov, 1994
Regional basic course in marine zooplankton and fish larvae ecology	SAREC	17-28 Oct, 1994
The third session of the editorial board of the international bathymetric chart of the Western Indian Ocean (IBCIWO)	IOC	3-7 Oct, 1994
Regional course on algal phycology, cultivation and nitrogen/ carbon metabolism	SAREC	19-23 Sep, 1994
Planning workshop on an integrated approach to coastal erosion, sea level changes and their impacts	IOC/UNEP/WMO/SAREC	17-21 Jan, 1994
Regional intercalibration exercise on nutrient analysis	SAREC/IOC	5-16 April, 1993

(Adapted from O. Linden & C.G. Lundin, 1996)

- Arrangements whereby students spend the majority of their time in their home countries working on a locally relevant research problem. There are two modes of training under such an arrangement. In the first, a candidate is registered at an overseas university and attends courses, does data analysis and thesis write-up at that university. The second mode is registration at a university in the region and part of the data analysis and thesis write-up is at an overseas university. Between 1989 and 1999, Sida/SAREC supported about 30 MSc and Ph.D students using these arrangements in Tanzania alone (Olsen, et. a., 1999).

A small number of ICM professionals from the region have attended short training courses abroad in ICM and ICM-related topics. The Summer Institute in Coastal Management, at the Coastal Resources Center of the University of Rhode Island in the USA, and the International Ocean Institute, at Dalhousie University in Canada, are among the leading training centers at which regional professionals have been trained. Table 4 summarizes some of the short-term training courses offered outside the WIO region. (Excerpted from Cicin-Sain et al. and Bryceson, I. 2000)

Table 4

Integrated Coastal Management Short-course Training Available Outside the Western Indian Ocean Region .

Title	Location
**The World Conservation Union (IUCN) Capacity Building Program (NETCAB)	IUCN-ROSA, Zimbabwe
**Southern African Development Community (SADC) Regional Environment Education Program (REEP)	Republic of South Africa
**Environmental Evaluation Unit, University of Cape Town - Coastal management capacity building for decisionmakers	Cape Town, Republic of South Africa
International Ocean Institute (IOI), Dalhousie University	Halifax, Nova Scotia, Canada
Coastal Resources Center, University of Rhode Island	Rhode Island, USA
Marine Science Institute, University of the Philippines	Philippines
Center of Tropical Marine Ecology, University of Bremen	Germany
Department of Biological Sciences, National University of Singapore	Singapore
*Coastal Resources Institute (CORIN), Prince of Songkla University	Hat Yai, Thailand
*FURG - Program Train-Sea-Coast, Brazil	Rio Grande, Brazil
*Ecocentrics Australia for Department of Natural Resources and Environment (Victoria)	Melbourne, Australia
*MEDCOAST, Middle East Technical University	Ankara, Turkey
*International Center for Living and Aquatic Resources Management	Makati City, Philippines
*Philippine Council for Aquatic and Marine Research and Development, Department of Science and Technology	Los Banos, Laguna, Philippines
*GEF/UNDP/IMO Regional Program for the Prevention and Management of Marine Pollution in the East Asian Seas	Quezon City, Philippines
*International Ocean Institute, Operational Centre (India), Indian Institute of Technology	Madras, India
*Institute of Estuarine and Coastal Research, East China Normal University	Shanghai, People's Republic of China
*National Marine Data and Information Service, State Oceanic Administration of China	Tianjin, People's Republic of China

ICM programs at the local level also have provided training to resource users. One such program is the Tanga Coastal Zone Conservation and Development Program where the senior government officials at regional and district levels, magistrates, prosecutors, extension workers and villagers have been trained on different aspects of ICM.

Learning by doing, on-the-job training and internships are a common way by which most professionals learn how to do their jobs better. These methods have been found to be conducive to adult learning. On-the-job training is an important method of skill acquisition, particularly for the longer serving staff. However, much of the on-the-job-training is not structured and is dependent on the individual's initiative.

At the moment there are no educational degree programs on ICM in the WIO region although there are several multi-disciplinary degree courses that have recently been initiated. One such example is the MSc degree in Environmental Sciences offered at the University of Dar es Salaam.

Different training techniques have been used in the short-term courses. They range from those that are trainer-centered involving mostly lectures (e.g. specialized technical training courses), to learner-centered techniques that are based mainly on principles of adult learning. The latter techniques have been applied with much success mainly in the ICM and MPA management training courses and include role-plays, case studies and small group discussions.

FUNDING MECHANISMS FOR ICM CAPACITY BUILDING AND TRAINING

In most of the countries in the region, budgetary allocations for capacity building by government institutions are insufficient and highly variable. This shortage of funds means most of the capacity-building initiatives in the region are fully funded by bilateral and multilateral funding agencies, international NGOs and foundations. Some of the main funding agencies in the region are shown in Table 5. The financial support is provided for, amongst others:

- Organization of training courses, workshops, and seminars
- Support of study tours and internships
- Acquisition of reference materials
- Institutional capacity building

The "Training Course in ICM for Practitioners in the Western Indian Ocean" organized jointly by CRC and WIOMSA was an exception to this general trend. In this course, USAID/REDSO provided the core funding to meet the direct costs for its organizations,

while the participants had to apply for funding (for their travel and per diem) from different sources including their own organizations or institutions. The response from ICM practitioners at large was encouraging and clearly indicated the commitment of institutions/organizations/projects to train their staff. Furthermore, such arrangements where participants pay their own way eases the financial burden for the organizations offering the courses thereby reducing the pressure on the organizers' worries about finances and freeing them up to concentrate more on the course curriculum.

Table 5

Illustrative List of Agencies Funding Integrated Coastal Management Initiatives in the Western Indian Ocean Region

Funding Agencies	Coverage	Aspect
Belgian Administration for Development Cooperation (BADC)	Regional through UNEP and IOC	Geographical Information Systems (GIS) and management of databases
	Kenya	Research support in marine science
Canadian International Development Agency (CIDA)	Tanzania, Mauritius and Kenya	Mariculture, GIS, education and extension services
Danish International Development Agency (DANIDA)	Mozambique	Institutional capacity building in ICM
Department for International Development (DFID)	South Africa	ICM
European Union	Regional	Research support through competitive programme
Government of Finland		
Food and Agricultural Organization (FAO)	Regional	ICM, assessment of LBA and public awareness, fisheries stock
Global Environmental Facility (GEF)	Tanzania, Comoros	Tanzania – Mnazi Bay Marine Park Comoros – Moheli
Intergovernmental Oceanographic Commission (IOC)	Regional	ICM, data acquisition and archiving
Irish Aid	Tanzania	ICM pilot project in Tanga
World Conservation Union (IUCN)	Kenya	Technical support: Kenya – Diani-Chale reserve
	Tanzania	Tanzania – Tanga CZC & D
	Comoros	Comoros – Moheli
Japan Government		
Netherlands Government	Regional through CZMC	MPA
	Kenya	MPA & wetlands
Swedish International Development Cooperation Agency (Sida/SAREC)	Regional	ICM, research support in marine science
	Tanzania and Mozambique	Research support in marine science
United Nations Environmental Program	Regional	ICM, marine pollution
United States Agency for International Development (USAID)	Tanzania, Kenya, Regional	ICM, capacity building
The World Bank		
Worldwide Fund for Nature (WWF)	Kenya	Kenya – Kiunga Marine Reserve
	Tanzania	Tanzania – Mafia Island Marine Park
	Mozambique	Mozambique – Bazaruto

CHAPTER V

What The Region Has Done To Address Capacity-Building Issues

5

In the past two decades, the WIO region has received significant international support for the development of environmental management capacity particularly in coastal areas. As a result, a number of initiatives have taken place at the local, national and regional level. In 1985, the Eastern African states adopted the convention for the protection, management and development of the marine and coastal environment, the Nairobi Convention.

In 1993, the ministers of environment and natural resources of the Eastern African countries met in Arusha, Tanzania and signed a resolution recognizing the importance and value of the coastal zone and emphasizing the need for sustainable development and integrated management of coastal areas for the benefit of coastal communities. As a follow-up to the Arusha Declaration, a Policy Conference on Integrated Coastal Zone Management (ICZM) in Eastern African and Island States was convened in Seychelles in 1996. Policymakers from the region assessed the successes and failures in ICZM since the Arusha Declaration, and discussed and agreed on actions needed to improve the situation.

Agenda 21 makes particular reference to the necessity to build capacity in individual and institutions if coastal management is to be sustained:

Coastal states should promote and facilitate the organization of education and training in integrated coastal and marine management… International organizations…should support (capacity building efforts of) coastal states… devoting special attention to developing countries.

POLITICAL PROCESSES

A number of recent international, regional and national initiatives recognize the fact that inadequate human capacity is one of the major limitations in the successful implementation of ICM, and endorse assigning priorities to capacity-building efforts in ICM.

A selection of key statements from these important international, regional and national initiatives that support the need to address the inadequacy of human and institutional capacity for ICM are highlighted in Table 6.

The governments of the WIO region agreed to adopt and implement the concept of ICM in their countries at the Policy Conference on ICM in Eastern Africa including Island States, held in Arusha, Tanzania, in April 1993. The Conference recognized the need for:

Table 6

Notable Regional ICM Advances (adapted from Bryceson 2000)

Event	Year
Nairobi Convention adopted	1985
Dar es Salaam regional workshop in coastal and marine environment issues	1989
RECOSCIX-WIO (Regional Cooperation in Scientific Information Exchange - Western Indian Ocean)	1989
Formation of WIOMSA	1992
Arusha Resolution on ICM in eastern Africa including the island states	1993
Tanga Workshop	1996
Seychelles Conference	1996
Formation of Regional Coordinating Unit (RCU) of Eastern African Regional Seas Program	1997
Formation of SEACAM	1997
African process on protection, management and development of the marine and coastal environment – Cape Town Declaration	1998
Workshop on experiences in local and community ICZM projects - lessons to date	1998
PACSICOM (Pan-African Conference on Sustainable ICM) – Maputo Declaration & portfolio of actions	1998
Cooperation for the Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa	1998

- Strengthening management capabilities of relevant agencies, particularly at the local level, for effective management of the overall environment, especially coastal areas
- Supporting the building of local capacity, *inter alia*, through establishment of centers of excellence for ICZM training in the region

The governments of the region met again in October 1996 in the Seychelles and recommended the following with respect to capacity building for ICM:

- Develop and implement a strategy for capacity building and identify institutional needs for ICZM that ensure establishment of a critical mass of personnel and appropriate incentives to retain them
- Promote awareness, education and continuing training at all levels, incorporating indigenous knowledge and using local expertise
- Optimize use of existing expertise and training facilities in the region including intra-regional sharing of experience, and establish centers of excellence for the various aspects of ICZM

The Pan African Conference on Sustainable Intergrated Coastal Management (PACSICOM) held in Mozambique in July 1998 identified priorities for action in Africa

within the framework of existing national, regional and international institutions. It emphasized the need to build and strengthen indigenous capabilities to cope with the full complexity of the problems facing Africa's marine and coastal environment by:

- Building human and technical capacities in natural and social sciences relevant to the need of the region
- Expanding curricula to include coastal and marine environment issues at all levels of education

In May 1995, the Principal Secretaries of several ministries of the Government of Tanzania, attending a meeting in Zanzibar, Tanzania on ICM agreed on and recommended that:

- Existing training and research programs be reviewed and multi-disciplinary curricula relevant for ICZM be developed
- The capacity of the existing training and research institutions be strengthened
- Personnel responsible for coastal zone resource management be retrained so as to have a cadre of personnel having knowledge of ICZM
- Capacity of the marine police unit and other actors to undertake surveillance and enforcement be strengthened

South Africa is the first country in the region to have an approved national coastal policy (1999). The South African Policy recognizes the importance of capacity building with one of its main goals calling for "building the capacity of coastal managers and interested and affected parties to promote coastal awareness and more effective coastal planning and management."

Tanzania has prepared a draft national coastal policy that presents a framework and range of mechanisms for addressing priority coastal management issues. The sixth statement of the policy calls Tanzania to "build both human and institutional capacity for interdisciplinary and intersectoral management of coastal resources." Three tools are proposed to build human capacity, namely: learning by doing; information exchange; and development of formal curriculum that incorporates coastal management-relevant material.

ASSESSMENT OF TRAINING NEEDS

A number of training needs assessments of capacity for ICM have been conducted at the national and regional level in the WIO region. These assessments have used a range of methodologies and sources including:

- Questionnaires only
- Questionnaires, interviews and expert meetings (Kyewalyanga, et. al., 1999; Francis, et. al., 1999 and PARCS, 1993a & b)
- Analysis of the institutional framework and job requirements (PARCS, 1993a & b; MICOA, 2000; and Kyewalyanga, 1999)

Through these assessments a broad range of training needs have been identified (Table 7).

Table 7

Training Needs Identified in Regional Reports

Project Report	Coverage	Priority
Integrated Coastal Zone Management in Mozambique – Training needs assessment	Mozambique	• Natural processes inherent to marine ecosystems • Evaluation, mitigation and management of impact • Skills for sustainable use of resources • Environmental planning
Indian Ocean Commission – PRE-COI Needs Assessment	Reunion, Comoros, Madagascar, Seychelles and Mauritius	• ICM general approach • ICM case studies • Environmental economics • Development and planning • Environmental impact assessments • Treatment of waste
Protected Area Conservation Strategy (PARCS): Assessing the training needs of protected area managers in Africa (PARCS, 1993a & b)	Kenya, Tanzania	• Community management • Resource conservation • Planning • Technical training such as remote sensing
Needs Assessment for Capacity Building in ICM in Tanzania (Kyewalyanga, et. al., 1999)	Tanzania	• An Introduction to ICM • ICM tools and techniques • Management of geographic areas of concern • Applying the coastal management tools
Capacity Building in Marine and Coastal Protected Areas Management in WIO Region	WIO region	• Introduction to marine environment and protected areas • Administration and management • Financial management • MPA field operations • Participatory processes • Sustainable utilization of resources and alternative resources • Monitoring and evaluation • Planning • Communication and public relations

Table 8

Illustrative List of Marine and Coastal Projects in the WIO Region.

Adapted from draft reports: Wells, S. 2000, (based on data originally compiled by Julius Francis, IMS), and Hewawasam, I. 1998.

Project/Program/Plan	**Country**	**Funding**	**Issue**				
			ICZM	**MPA**	**Marine resources**	**Mari-culture**	**Alien species**
Kiunga Marine Reserve	Kenya	WWF		X			
Nyali-Bamburi-Shanzu ICM	Kenya	UNEP/FAO/ USAID/URI	X		X		
Kisite Marine Reserve	Kenya	BMZ		X			
Diani Marine Reserve	Kenya	IUCN					
National ICM policy	Kenya	USAID/URI					
Tanga Coastal Zone Conservation and Development Programme	Tanzania	IRISH AID	X		X	X	
Kunduchi ICAM	Tanzania	Sida	X				
Mangrove Management Plan	Tanzania	NORAD	X			X	
Mafia Island Marine Park	Tanzania	NORAD/WWF		X	X		
Menai Bay Conservation Area	Tanzania	WWF		X	X		
Chwaka-Paje Coastal Zone Management Project	Tanzania	UNEP/FAO	X				
Tanzania Coastal Management Partnership	Tanzania	USAID/URI	X				
Mnazi Bay Proposed Marine Park	Tanzania	UNDP/GEF		X			
Mecufi CZM	Mozambique	NORAD/UNDP	X				
Coastal Zone Management Unit	Mozambique	DANIDA	X				
Xai-Xai District Coastal Area Project	Mozambique	UNEP/FAO	X				
Bazaruto National Park	Mozambique	WWF		X			
Olifany River Project	South Africa						
Ken Project (Kosy Bay)	South Africa						
ICM/MPAs national policy	Madagascar	WWF	X	X			
Traditional Fisheries in Southwest Madagascar	Madagascar	UNDP			X		
North Mananara Marine Park	Madagascar	Netherlands/ UNESCO		X			
Biodiversity Conservation /Moheli Marine Park	Comoros	UNDP/GEF/IUCN		X	X		
Indian Ocean Commission	WIO Islands	EU	X				
CORDIO (Coral reef degradation)	WIO Region	Sida					
Implementation of Jakarta Mandate	WIO Region	NORAD/IUCN					
Secretariat for Eastern Africa Coastal Area Management (SEACAM)	WIO Region	Sida/WB	X			X	
Madagascar - 2nd Environmental Program Support Project	Madagascar	GEF, UNDP, IFAD, USAID, Germany, Norway, France, Switzerland, Japan, EU, WWF	X				
Seychelles - Environment and Transport Project	Seychelles	GEF	X	X	X		
South Africa - Cape Peninsula Biodiversity Conservation Project	South Africa	GEF, WWF-South Africa	X		X		

Table 9

Regional Training Needs by Country

	Comoros	Kenya	Madagascar	Mauritius	Reunion	South Africa	Seychelles	Tanzania
General								
Number of existing MPAs	1	5	7	8	1	30	6	7
Number of MPAs with management staff on premises	1	5	3	5	1	17	5	3
Number of proposed MPAs	3	1	4	In process	0	5	0	8††)
Educational background of staff								
Technician		"O" level	Bachelor	"O" level/ G.C.E-"A" level	Variable	3-4 yrs diploma conservation/ oceanography	"O" level	Elementary
Mid-level staff		1st degree	MSc	1st degree	MSc	3-4 yrs diploma plus experience	"A" level	BSc
High-level staff		2nd-3rd degree (Masters-PhD)	Doctorate	MSc	PhD	Diploma or BSc plus experience	Diploma/ Degree	BSc + 5 or MSc +
Expected demand for training								
Short term (next 3 years)								
Mid-level staff	40*)	10	7	6	2	20	8	30
High-level staff	10*)	5	7	2	1	6	4	5
Long term (next 15 years); extra demand								
Mid-level staff	60	6**)	30†)	15	2	20	0	60
High-level staff	12	4 **)	15†)	5	2	5	0	10

*) In one MPA work approximately 1 co-coordinator and about 12 ecoguards/guides.

**) In near future, due to restructuring, these numbers might more than double.

†) It is expected that in 15 years time, the total number of MPAs will increase to 33.

††) Many of these will not have permanent full-time staff, as they are small island reserves.

Most of the needs assessments have identified an increasing need for ICM training in light of the increasing number of new ICM projects, national initiatives, and international projects (Table 8 and Table 9).

LIMITATIONS OF THE TRAINING

Few training courses have been preceded by regional needs assessment. There has been limited participation of beneficiaries of training in the design and implementation of the training courses. In many cases, the organizers and trainers assume learning needs of the target groups and go on to design the course content.

Most of the trainings organized have been offered only once and it has not been possible to replicate them for two primary reasons: In most cases, training courses are instructor-dependent and are not adequately documented in terms of training manuals. In other cases, not much trainer capacity is built during the course, resulting in there being no one from the region left behind that can offer the course without outside assistance.

Some of the courses have been organized to meet the operational demands of projects and programs. Such courses have used international consultants to develop training courses within the context of the projects. While their competence is not questionable, some of them have not adequately transferred their knowledge and experience to their counterparts.

Few courses have been organized to take place on-the-ground at ICM field sites, which would contribute considerably to the transfer of experiences from one project to another and provide an opportunity for the project staff to interact with their peers.

CHAPTER VI

Assessing the Need For Capacity in the Western Indian Ocean Region

6

To deliver relevant and timely ICM training to WIO region practitioners, it was necessary to determine what projects were being planned or implemented in countries of the region through a needs assessment. The needs assessment team was made up of WIOMSA and CRC staff. It had three primary objectives. The first objective was to examine the ongoing coastal management capacity-building initiatives and training. This information would help identify the niche that WIOMSA needed to fill with its training activities and avoid replication of effort. The second objective was to examine the skills, knowledge and attitudes of the ICM practitioners. This information would help mold a course that would actually meet the needs of the people. Finally, the last objective was to build relationships with institutions and individuals that WIOMSA could potentially collaborate with to deliver training. This action would enhance WIOMSA's ability to deliver quality training and utilize the region's capacity to ensure a measure of sustainability to the training.

During the site visits, donors and ICM institutions were visited, training sessions attended, and individuals at mid-level management interviewed to obtain their input on the capacity gaps, ongoing ICM training efforts and potential partner institutions. Proposal funders, donors, project managers and supervisors were consulted for input on the aspects of capacity building that need attention and emphasis in the region.

METHODOLOGY

Capacity building in the context of this activity, and in this report, is regarded as building skills for professional development of individuals in order to enhance their ability to knowledgeably and competently achieve the development and management of coastal resources in a sustainable and consultative manner. The approach used to conduct this assessment involved reviews of ICM literature, and site visits where workshops and interviews were carried out. At the site visits, interviews and workshops, the core competency matrix was used to measure capacity of the individuals.

One of the preliminary activities of the needs assessment team was a literature review (detailed in the Bibliography) of ICM capacity-building efforts and initiatives in the WIO

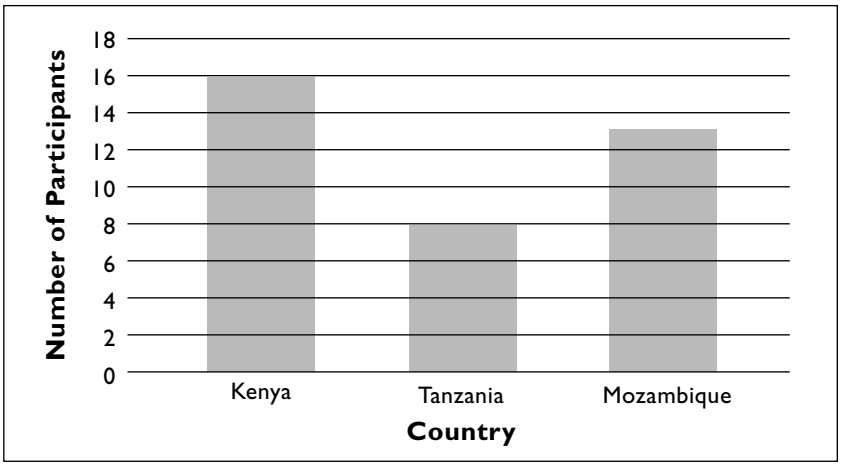
region. The information gathered revealed that there were short courses in the region, but these courses did not provide participants with any follow-up after the course was completed. Another key finding was that the courses were in specific technical aspects of ICM, and did not focus on participants improving skills or knowledge in the management of projects.

Much of the information used in this needs assessment was gathered during site visits to Kenya, Tanzania, Mozambique, and Madagascar. At each site, the team conducted interviews and held mini-workshops for prospective course participants. Country contacts (Appendix 1) assisted the needs assessment team to identify and make appointments with the target audience. Information on the training needs of island states was obtained from the Indian Ocean Commission (IOC) report on training needs as well as through written surveys.

The needs assessment team used an individual survey to measure individual capacity. Survey respondents rated themselves according to how they perceived their skills in the four core competency areas. Government offices, NGOs and academic institutions were also provided with copies of the survey to distribute to the target audience. In total, over 100 surveys were distributed in the region and 75 surveys returned.

One-day workshops were conducted in Kenya, Tanzania and Mozambique. This training reached 40 practitioners in the region (Figure 3). The audience were coastal practitioners on-the-ground and in touch with everyday coastal management issues,

Figure 3
Number of Participants that Attended Workshops



including those currently managing or supervising aspects of ICM projects. The workshop objectives were to: (i) provide training for people participating in the coastal management process that would not otherwise have received this training, and (ii) provide an opportunity for ICM practitioners in each country to report on progress in national capacity building and to give their input on their individual training needs by filling out an individual survey.

SAMPLE AGENDA FOR NATIONAL ONE-DAY WORKSHOPS

Western Indian Ocean Marine Science Association
Needs Assessment/Capacity Building Workshop

Objectives

- Present policy cycle and essential actions for coastal management
- Map country-specific projects and their placement on the policy cycle
- Describe the capacity that is available and needed to address the complexities of ICM in Kenya
- Identify individual training needs for coastal professionals and related those needs to moving the participant's country/project ahead on the policy process
- Identify ongoing and expected opportunities for building capacity for coastal professionals in Kenya
- Define possible delivery mechanisms for building ICM capacity within the region

Agenda

I. Welcome

II. Overview of Workshop Agenda

III. Workshop – Building Capacity for ICM

Session 1 – Introduction to the ICM Policy Cycle

Session 2 – Mapping Country/Project Placement in the Cycle

Session 3 – Mapping Complexity vs. Capacity

Session 4 – Identification of ICM Training Needs

Session 5 – Delivery of Training

IV. Overview of Kenya Design Strategy

V. Participant Discussion

LIMITATIONS OF THE SURVEY/METHODOLOGY

The methodology used in this needs assessment had some limitations. The sampling was done in four countries in the region. While input from the island states was present, differences in survey methodology may have introduced some differences in data collected.

CHAPTER VII

FINDINGS OF THE NEEDS ASSESSMENT

7

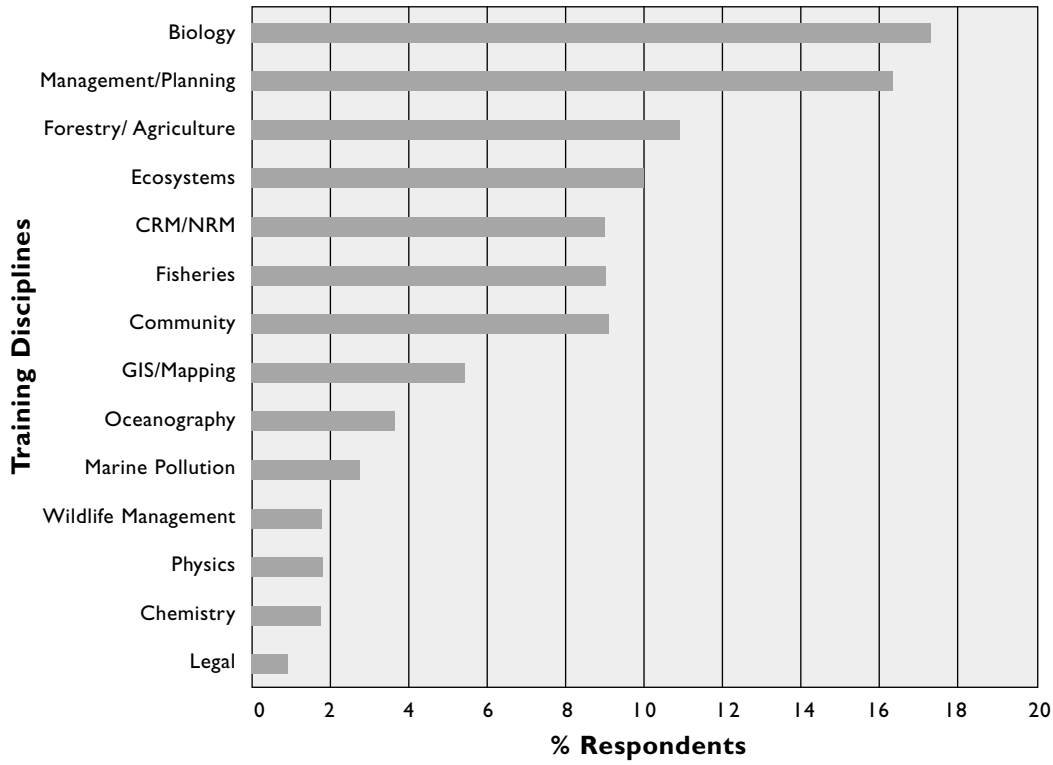
A number of key findings emerged from the survey returns and from workshops and interviews conducted. These findings relate to the type of capacity that needs to be built or enhanced, methods for providing training, and challenges facing those who conduct courses in the region.

EXISTING CAPACITY

Training backgrounds and years of experience in the field

The average number of years of experience as coastal practitioners that were indicated by the individual survey respondents was 5-10 years. Sixty-five percent of them indicated their training background was in biological science, agriculture and ecosystem/natural resource management. A smaller percentage (17 percent) had received management/planning training (Figure 4).

Figure 4
The Training Backgrounds of Individual Survey Respondents



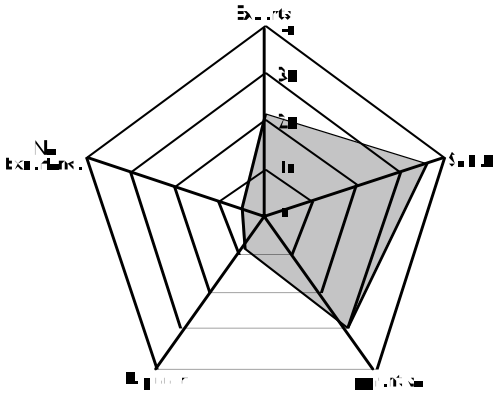


Figure 5
Project/Program Management

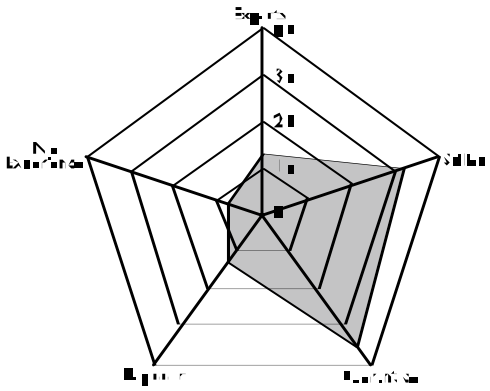


Figure 6
Professional Skills

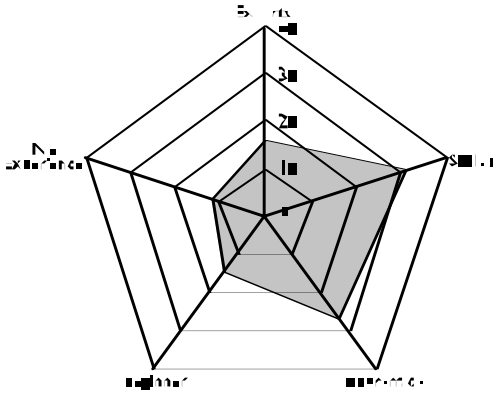


Figure 7
ICM Practice

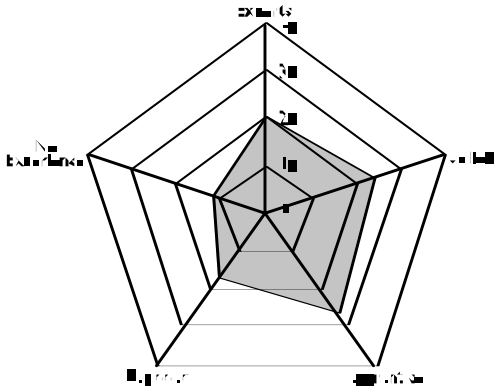


Figure 8
Technical Background

Core competencies

Most respondents rated themselves as skilled or apprentices in all four core competencies. There were few experts, beginners or inexperienced persons in the four areas. Although respondents rated themselves high in technical skills, few rated themselves as expert in the other three core compentency areas. Based on the core competency scale developed by the needs assessment team, a practitioner needs to be expert in all the core competencies in order to be considered a "model coastal manager." The assessment also indicated that many practitioners already have basic knowledge in all four core competencies, and that there is now a need to offer advanced courses in select topic areas that will round off their knowledge and competency in all four areas. The assessment confirmed the core competencies as the skills and knowledge required for successful coastal managers.

Figure 9
Summary Chart of Core Competencies

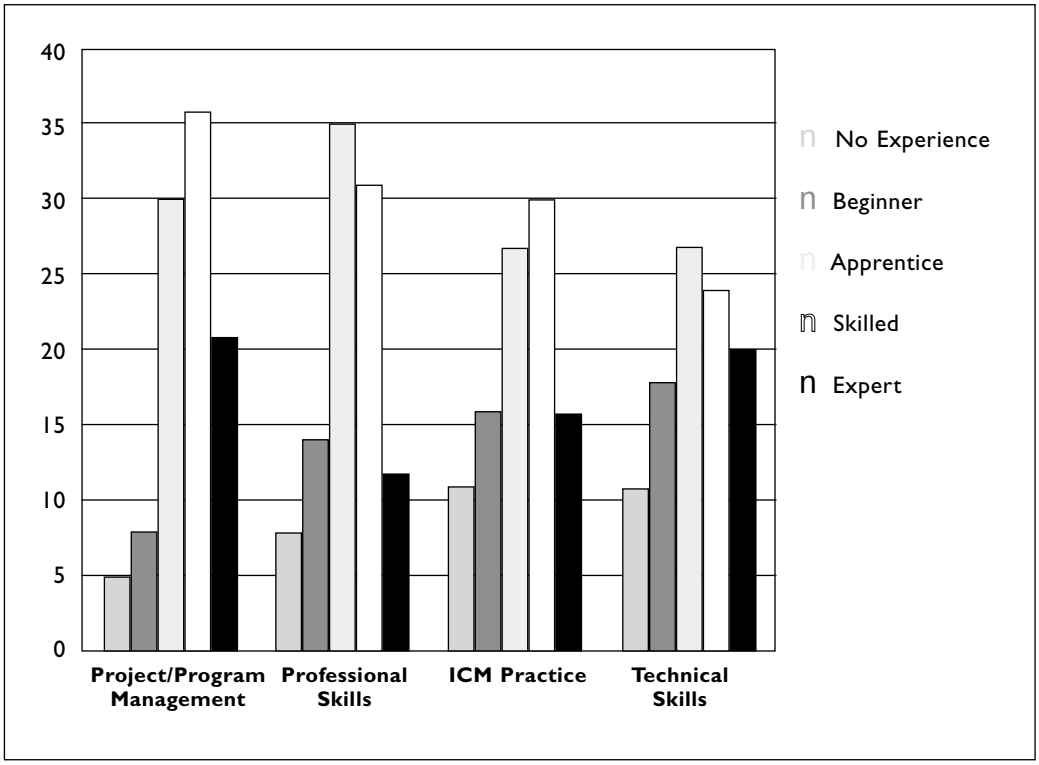
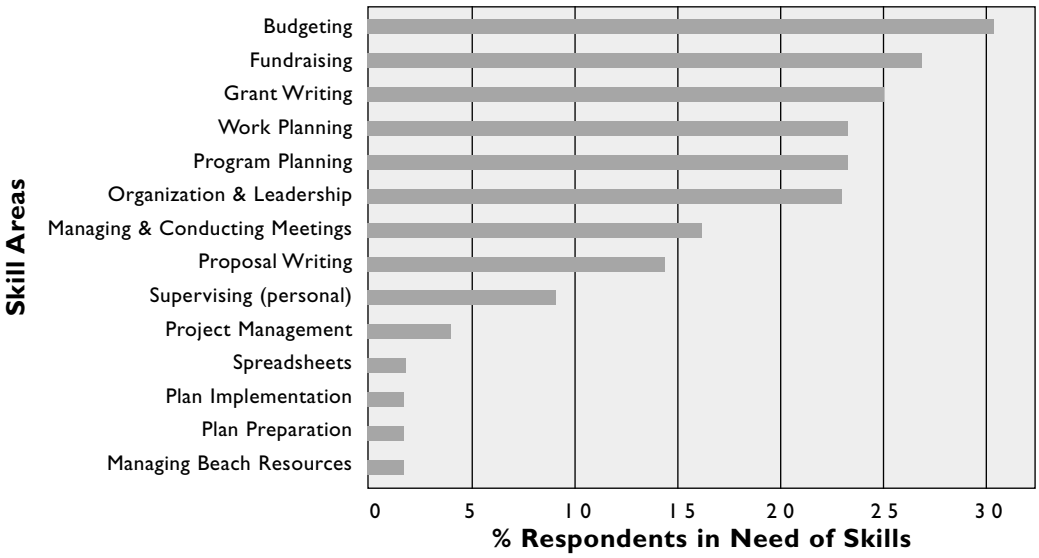


Figure 10
The Areas Identified by Survey Respondents as Needing Strengthening



AREAS TO ENHANCE

Practitioners were asked to indicate skills in which they felt they needed strengthening or additional instruction. Budgeting, fundraising, and grant writing were the most frequently selected skills (Figure 10). Due to prevailing funding frameworks, many projects are started as pilot projects that run for a year or two. To extend these projects, even when they have been successful, one must look for additional funding. There is keen competition for the relatively few available funding sources (especially for marine and coastal work), making innovation a necessity. Work and program planning were also identified because they are necessary to evaluate progress and to troubleshoot areas that are hampering progress, or help to re-think and restructure the strategy. Training in how to manage and conduct meetings was also identified.

PRIORITY TRAINING AREAS

A synthesis of information acquired from workshops, interviews, literature review, and WIOMSA-CRC's collective experience in ICM training and in the region, gives a picture of crosscutting training needs determined as top priority by WIO coastal practitioners. These needs fall into five general areas (not in order of relative importance): project and ecosystem evaluation; integration of sectors; communication; community participation; and valuation of resources.

Evaluation and monitoring of project and ecosystem

It is important to evaluate and monitor the progress of ICM projects using (and defining) useful indicators that help determine progress and effectiveness of management actions. In ecosystems, there is a need to track the status of resources in order to document the baseline and the effect of different management regimes on key resources. Practitioners must therefore be trained on how to develop indicators, monitor the state of key resources (coral reefs, mangrove forests, fish species), manage databases, do data entry, and conduct resource inventories.

Integration

The coastal practitioners interviewed during the needs assessment felt that integration was needed on two fronts. First, increased interdisciplinary understanding of coastal issues. Many ICM practitioners have a sectoral focus, e.g. a fisheries manager will usually manage just the fish stock and not their nurseries (seagrass beds and mangrove swamps). It was felt that needed training should emphasize a holistic ecosystem approach to ICM, encouraging practitioners to address coastal management in an integrated way.

Second, practitioners felt that there were several instances of duplication of effort where work that had already been done by one donor agency was repeated by another agency. This may have been caused by weak dissemination of project/survey documents. It was agreed that ICM coordination agencies were doing their best to coordinate coastal management activities, but that there was room for improvement in terms of dialogue and building on others' work instead of repeating it.

Community involvement

There was consensus that in order for measures recommended and implemented by coastal management projects to be successful and sustainable in the long-term, community ownership and stewardship are essential. Local communities are, in essence, the custodians of these coastal resources and it is unsustainable to carry out ICM projects without their support and buy-in. Coastal practitioners must be trained to be sensitive to the cultural practices, social context, needs and rights of communities they work with. They should also learn techniques to assist the effective interaction with these communities and work to enable these communities to articulate and implement their vision for their environment.

Communication

Practitioners, project managers, and donors interviewed indicated that there is a need to increase the capacity to write quality proposals and reports, as well as improve general writing skills. Report writing and recording of lessons learned are important parts of disseminating information about individual project experiences and results to a wider audience. There is a need to improve access and reliability of communication tools (fax, telephone and Internet) for ICM practitioners, especially those in the field. Field projects in particular experience communication problems because of their remoteness from urban centers. Many projects have found a way around the financial constraints by considering communication (setup and maintenance) costs in their budgets.

Valuation of resources

Training is needed in resource valuation in order to determine whether more benefit is derived from developing a resource, or from leaving it undisturbed or moderately developed. For example, will more benefit be derived by the community and nation at large in the long run from clearing mangroves for certain coastal activities, or from leaving the mangroves standing? With more training in this area, cost/benefit analyses shall increasingly be employed to determine the value of starting a project, or exploiting a resource.

CURRENT SOURCES OF TRAINING FOR PRACTITIONERS

Prevailing mechanisms for delivery of training include workshops, exchange visits, and on-the-job training. Examination found that:

- Availability and accessibility of training to coastal management practitioners is primarily limited by financial factors (budget limitations), weak information dissemination, weak institutional coordination, and a limited number of opportunities available
- Much training and learning in the region is effected through "learning by doing" (professionals at various levels and disciplines working to make ICM projects and programs work), and "learning by borrowing" (informal experience sharing through workshops, meetings and other information exchange programs). On-the-job training is especially important throughout the region, with different government departments and NGOs like IUCN and WWF holding short-course training for their employees, and supporting (in various ways) employee higher education (e.g. funding field research at their project sites in the case of WWF Mozambique)
- Each country visited had on-going university and private sector training opportunities available
- Formal certificate training was available in all countries. It tended to be more sectoral although there has been a recent increase in interdisciplinary resource management courses

OPTIONS FOR DELIVERING TRAINING IN THE REGION

During the assessment, the primary delivery modes employed in the region were examined, and the target audiences were asked to evaluate each for their advantages and disadvantages.

A two-week course held in one host country

Some advantages of a two-week short-course held in one host country is that practitioners from different countries share and disseminate experiences and information both formally and informally. The two-week courses provide an opportunity to deliver quick, comprehensive training that could assist in creating a regional outlook and a common framework for solving regional problems. It is also easier to organize, should take up less time, and cost less than the other two scenarios. There is also the possibility of a larger number of participants from the host country attending the course.

The disadvantages identified were that the number of participants from other (non-host) countries likely being small due to high costs of transportation and accommodation. A two-week course would be taxing in terms of heavy workload and preparation and facilitation time for the organizers and trainers. At the same time, there may be a lack of diverse sites/physical experiences to visit in the proximity of the training course venue.

One-week training in each country

One-week training events in each country of the region can reach a wider audience of participants. The trainers may be able to compare and learn more about the different coastal management contexts and approaches. Language-related impediments are minimized and teaching aids can be tailored to meet the needs and focus on issues of relevance to each specific country. Follow-up is relatively easy because all participants are in the same country and share the same official language. Low participant travel cost makes this the most inexpensive alternative.

There are disadvantages, however, and they include the limited time available to cover and digest course content. This delivery scenario does not offer possibilities for networking or sharing of experiences or ideas between coastal practitioners and scientists from different countries. A lot of pressure is put on the trainers, as they have to move from one country to another, customizing the training to each country's context. It is costly in terms of time and money for the trainers/resource people.

One-year "learning by doing" sandwich course (meeting for a week at a time on 4-5 occasions)

Oriented toward solving practical problems, the "learning by doing" approach has the advantage of providing a greater degree of understanding and practical skill building by combining training with practice. It can also provide a forum for sharing experiences and networking between the region's ICM practitioners. In addition, feedback and evaluation of participant performance over time can be enhanced if it focuses on follow-up, and learning from past experiences. Working together with other participants from the region and visiting several countries throughout the course, each participant will have diverse experiences. The participants' understanding of the differences and similarities in the national coastal management culture will improve.

The disadvantages are that the number of participants is limited, especially because the cost in terms of time and travel is high. Due to the small number of trained individuals it may take a longer time to realize the impact of this training course on the region's ICM. There are language impediments (among participants as well as between the participants and the projects that they would visit and learn from) that the training exercise would have to overcome.

NON-TRAINING METHODS FOR CAPACITY BUILDING

Respondents suggested several non-traditional ways other than formal courses or training programs to build coastal management capacity. These include:

- News media (newsletters, regular columns in newspapers and magazines, audio-visual presentations, television and radio),
- On-the-job training (e.g. WWF has online classes)
- Study tours and exchange visits
- Internships
- Electronic information exchange networks (e.g. E-Pwani in Tanzania and E-Kenya Coast in Kenya) and working groups
- Access to ICM literature (these are usually scarce or unavailable in Portuguese or French)
- Open/round-table debates
- Public awareness campaigns
- Dissemination of information (scientific publications)

CHALLENGES IN COURSE IMPLEMENTATION

Running a training program at the regional level will present some common challenges. Successfully dealing with challenges is key to the increase in regional human capacity. These common challenges are cross-cutting and should be considered regardless of what delivery method is selected. These challenges include:

Infrastructure

The status of telecommunication (access to and reliability of telephone, fax, email and Internet) varies among countries in the region, and it is usually best in the major cities. Many natural resource management projects are far removed from urban centers. This means the field staff are not in easy continuous contact with their headquarters. This constrained communication with headquarters calls for strengthening of field personnel so they are able to problem-solve should anything untoward occur.

Human complexities

It is sometimes difficult to get the right type of participants (with the right qualifications and attitude). The selection process is sometimes hampered by flaws in the identification of the proper course participants to be sponsored by institutions. This

often leads to institutions sending individuals who are not well suited or qualified to attend training courses.

Language

Language differences (three official languages - English, Portuguese and French) present a challenge to the sharing of experiences and networking among professionals and experts from the different countries. The language issue complicates delivery of training on the regional level. Sometimes, the best prospective participants are not fully conversant or comfortable with the language of instruction. Much of ICM literature is in English and translations of material to Portuguese, French or other local languages is limited.

Time away from work

Institution leaders and decisionmakers interviewed indicated that the longest period of time they would be able to release employees to attend a training course was a maximum of two to three weeks at a time. This is usually due to a shortage of equally competent personnel who can take over the duties in the absence of certain employees. This may be due to factors such as individuals working at various levels in the project are not being trained to move to higher levels. In addition, the recent restructuring and privatization exercise has especially affected government institutions by downsizing of staff with no new recruitment, while the workload, due to the ever-increasing human and industrial pressure, continues to increase. For this reason, although the department/project may badly need training (e.g. resource valuation) there will not be anyone to take care of day-to-day matters if one person goes away for an extended period.

When staff members attend one- to three-year degree courses which require them to be away from their office environments for prolonged periods of time, they lose touch with their work environment. Allowing participants to return to their respective institutions, at least periodically, would be preferable. As has already been discussed, however, employers of coastal practitioners cannot afford to have the employee away for longer than two to three weeks at a time, unless special arrangements are made. This is a factor that is sometimes costly and detrimental to the project, and in many cases, there are few people trained enough to take over from the project manager. This highlights the need to increase the number of practitioners able to competently/effectively design, implement and manage coastal management projects/programs. It is essential because the region cannot afford to have an otherwise sound project left unimplemented due to lack of project leadership.

Other challenges

Some gaps commonly identified by course participants in post evaluations should be addressed. These commonly identified gaps include:

- The limited time available to process and digest information and the material delivered
- Minimum hands-on experience during the course due to lack of time. Yet it is through learning by doing that one retains information
- Minimum moral and material support after the course. Participants are energized and have good ideas but nowhere to turn (either an individual or institution) for moral or financial support to implement them
- Relative lack of networking with others in the ICM field (lack of a forum to ask questions or share experiences)

Many of these issues are time-related, and would ideally be addressed by a longer degree program that offers adequate time to process and reflect upon material.

CHAPTER VIII

RECOMMENDATIONS

8

Priority ICM capacity-building and training agendas for the WIO region have been outlined in various regional fora and statements (Chapter V). The primary vehicles for delivering ICM training in the region have been degree courses, and one- to two-week general introductory short courses and/or training workshops. ICM is considered important at the regional scale because of the successful project management it brings about is expected (and has been shown to on the local scale) to lead to sustainable and wise use of coastal and marine resources. The present situation in ICM-mandated and related institutions within the government structures in the region is that departments are being downsized, leading to fewer staff that have to take on more and more responsibilities. Long periods of absence from these responsibilities are disruptive to these departments, and yet the staff must advance their professional skills and knowledge in order to become more effective practitioners.

Given this context and the findings of this needs assessment, with respect to ICM training we recommend:

- Basic introductory short courses and longer degree courses should be continued
- Short courses of an advanced and specialized nature
- Learning by doing courses
- Strengthening dissemination of capacity-building opportunities

Introductory short courses and longer degree programs

Short courses remain an effective and appropriate vehicle to advance the skills and knowledge of professionals while allowing them to return to their work environment within the shortest time possible. Basic introductory short courses have been instrumental in giving coastal practitioners basic ICM knowledge and should be continued due to the need to continuously inform and involve recent graduates and other professionals in ICM. Included in this category of training are study tours/visits with policy makers, new project staff, and community members; visits to different

projects and initiatives to get ideas and impressions of what is happening on the ground; and how different projects have achieved their objectives. Continuation of the longer degree courses is important in order to raise the level of professionalism and knowledge, and increase numbers of competent professionals in the WIO region.

The findings of this needs assessment indicate that coastal practitioners in the region already have a basic knowledge and understanding of ICM principles. Short courses of an advanced and specific nature should therefore be used as a vehicle to advance skills and knowledge in specific topics areas that are needed, such as monitoring and evaluation, and resource valuation. In such cases, participants would meet for an intensive one- to two-week period or longer, depending on the nature of material to be learned.

Learning by doing

The learning by doing approach, as described in the findings, involves giving participants a baseline introduction to specific topic areas and having them apply this knowledge right away by working at a real project site, and participating in real project activities to reinforce their learning. This type of training course may last for a consecutive one- to four-week period, or cover the same one- to four-week length stretched over several months. Courses such as the WIOMSA "Learning and Performing" course that address professional development of regional coastal practitioners should be repeated at least three to four times in order to build up a core group of ICM practitioners trained in a common framework for regional action.

Strengthen dissemination of capacity-building opportunities

It is important to strengthen the mechanisms used to inform the target audience of capacity-building opportunities. This may be done thorough providing advance notice in newsletters, networks and newsgroups, and key regional websites. Sharing the proceedings and reference materials from these training and other capacity-building events will go a long way in keeping practitioners well informed of on-going activities and individuals with expertise in different areas.

CROSS-CUTTING NEED AREAS AND RECOMMENDED TRAINING APPROACHES

The five cross-cutting areas identified as priority areas for training by this needs assessment are (not in order of relative importance): project and ecosystem evaluation and monitoring; integration of sectors; communication; community participation; and valuation of resources. What follows are recommendations on how these areas can best be addressed.

Evaluation and monitoring

Evaluation and monitoring should be addressed in two areas: ecosystems and projects. Ecosystem evaluation, monitoring activities and training in the region are on-going and planned as part of the biennial workplan 2000-2001 of the Nairobi Convention, by the Coral Reef Conservation Project (CRCP), Coral Reef Degradation in the Indian Ocean (CORDIO), and a number of other NGOs and national-level projects. With respect to projects, CRC has developed a project monitoring and evaluation publication, A Manual for Assessing Progress in Coastal Management, useful for monitoring the stages of ICM projects and initiatives. The methodology used in the manual will be employed by WIOMSA and CRC in tracking progress in select regional ICM projects, and it should be used as the starting point of a common framework for WIO region project monitoring evaluation.

Learning by doing is an effective training approach for both project and ecosystem monitoring and evaluation as its actual application in real-life situations reinforces training methodology and mechanics, and is more conducive to adult learning. Attention should also be paid to ensuring the methodology applied is relevant in the long term, and that data collected is comparable and can be integrated across the region. Project and ecosystem monitoring and evaluation both involve a great degree of technical information requiring supervised practice before trainees can confidently conduct activities on their own.

Integration of sectors

Two areas of integration should be addressed in regional capacity building:

- Integration among different ICM-related disciplines (fisheries, marine biology, urban planning, research)
- Integration of activities among different funding/donor agencies that are players in WIO region ICM

ICM practitioners' sectoral focus should be addressed using the one- to two-week introductory course, as well as study tours, and the longer-term degree programs. Study tours and one- to two-week introductory courses should demonstrate that resource management is essentially management of resource use involving multiple disciplines. In the longer degree programs, integration should take place in the classroom, where interdisciplinary interactions and concepts should be taught and encouraged. Donor agency integration should be addressed through wide dissemination of project documents and reports, thus ensuring that the ICM community is kept well appraised of different ICM initiatives in the region.

Communication

Three areas of communication should be addressed:

- Capacity to write successful proposals and reports, and to capture the learning process that is the project
- Capacity to produce public awareness material: leaflets, brochures, articles in newspapers, magazines, "public open houses"
- Improved connectivity and accessibility via Internet, fax and telephone

Ways in which communication capacity can be built is through training on the basics of good writing (getting your message across), effective information dissemination, and marketing of project outputs. Subject-specific short intensive courses should adequately address writing skills, and public awareness or information dissemination. Award schemes for competitions on different environmental issues (e.g. beach cleaning) raise environmental awareness as well as public awareness. Improvement of Internet, fax and telephone accessibility is an issue that requires equipment and infrastructure. Projects should include, as much as possible, the cost of getting connected in their annual budgets.

Community participation

Coastal practitioners must be sensitized to the cultural practices, social context and attitudes of communities they work with, in order to get their support. They should therefore learn techniques to enhance input and participation of community members, assist the effective interaction with these communities, and work to enable them to articulate and implement their vision for their environment.

The participatory approach and facilitation of interactions with and among communities should use the learning by doing approach. Project staff should also be willing to live with the community in order to gain acceptance and an understanding of the community's reality. The two-week intensive course approach training in a specific subject area can also be effective, as long as what is learned is applied immediately for increased familiarity with methodology.

Valuation of resources

Resource valuation training is a highly technical field with its own techniques and methodologies. There are already competent regional networks that have expertise in resource valuation and should therefore be called upon to collaborate with or do the actual training for the ICM practitioners. These networks include Environmental Economics Network of Eastern and Southern Africa (EENESA) and SANESA.

LEARNING AND PERFORMING: DEVELOPING SKILLS FOR COASTAL MANAGEMENT PRACTITIONERS IN THE WESTERN INDIAN OCEAN REGION

The learning by doing approach to provide advanced ICM training and develop project/program management skills in the region is recommended by WIOMSA-CRC, and a training course based on this approach will be taught between March and September 2001. There are several target groups for ICM capacity building, and their training needs differ according to their roles and responsibilities. ICM project and program management staff, decisionmakers and the other involved parties outlined are all target audiences, and slightly different capacity-building delivery mechanisms are effective for reaching these diverse groups. These groups are all important, and it is due to limited resources that they are not all addressed directly in the "Learning and Performing" training course which will be delivered by WIOMSA with assistance from CRC.

The target group for this course is the staff responsible for implementation of projects on the ground. Their ICM skill needs as found by this needs assessment and supported by other assessments conducted in the region shall be addressed through this training course. (See Appendix 5 for the course description.)

A summary of the training course features of the "Learning and Performing" course include:

- A clear definition of objectives and level at which action will be taken
- Target audiences
- Use of adult-based, hands-on practical training focused on the individual
- Focus on a core group of practitioners to get the multiplier effect
- Employer support of the participant's attendance in the training course.

Recommendations for Attributes of Future Capacity-Building and Training Programs in the Western Indian Ocean

The capacity-building program should have attributes drawn from the following attributes:

- Holistic look at ICM, across the entire ICM policy cycle
- Experiential, drawing from adult learning techniques
- Link scientists to ICM managers to better understand how to connect science and management
- Draw from the region's diverse experience
- Built around several core field experiences, with activities to keep the participants connected when they are not together in the field.
- A mentor system wherein participants are paired with an experienced practitioner for the duration of the intervention
- Developing curriculum based on the essential core competencies highlighted in the needs assessment reports. Wherever possible, use nationals vs. expatriates as course trainers and resource persons, and for those competencies that focus on scientific knowledge use WIOMSA scientists as instructors
- Finding mechanisms to connect this regional capacity-building effort to existing academic institutions, experts and facilities for training in ICM. Connect long-term education to short-term training
- Testing of innovative technologies, including distance learning, web-based information exchanges and list-servers, to keep participants intellectually engaged and connected to the instructors and mentors. This should include peer-to-peer learning, as being tested by URI/CRC, Brown University and IOI/South Africa

CHAPTER IX

CONCLUSION

9

The growing number of ongoing and planned coastal management projects in the region makes it imperative to increase the number of competent coastal managers and their skill levels. Given the financial and personnel constraints facing institutions and projects, innovative ways to maximize learning and increase the knowledge of coastal managers must be used.

This report identifies specific areas of training needed in regional ICM, and outlines different training delivery mechanisms to improve effectiveness of future regional ICM training. The learning by doing approach that will be used by WIOMSA and CRC to create a cadre of coastal practitioners who can lead future ICM initiatives in the region is also outlined.

It is recommended that at least three to four cycles of the "Learning and Performing" course be taught, in order to build adequate baseline capacity in the WIO region. The traditional degree courses, and the one-time short courses should be continued because they have addressed, and continue to address, an important gap in knowledge.

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APPENDIX I

List of Institutions and Donors Visited in Each of the Four Countries

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Nancy Gitonga
Acting Director
Department of Fisheries

APPENDIX 2

Donor Survey

Name: Date:

Organization:

Function of your organization:

Investments

What investments has your organization made toward coastal issues? (i.e., resources, poverty, governance, etc.)

What investments has your organization made in training environmental/natural resource professionals?

Training Issues

Please list areas within the field of coastal management where training is needed. Also, note if outside support is needed to address these training needs.

a.

b.

c.

Based upon your past experience, please identify modes of training that would be useful in this country.
Is the management capacity of this country sufficient to address large-scale coastal management programs?

☐ YES. ☐ NO. What is lacking?

Funding

To what extent is your organization interested in funding capacity-building programs?

What resources does your organization have to commit to a capacity-building effort in the region?

Additional Comments

APPENDIX 3

INSTITUTION SURVEY

Name: Date:

Institution:

Mandate of institution:

Years in existence:

Type of institution: ☐ Government ☐ Non-government (specify)

☐ Parastatal ☐ Other (specify)

Supervising ministry/department/institution:

GENERAL BACKGROUND

Have you had any previous experience working with the Western Indian Ocean Marine Science Association (WIOMSA)?

What formats does your organization use for education of its employees, i.e., formal certifications, workshops, conferences, seminars? (Please give examples)

How do you involve your employees in information exchange with other institutions and programs, and to what extent?

How has your organization (or individual employees) been involved in delivering capacity to the region?

TRAINING

The demand for trained and experienced coastal resource management practitioners to participate and lead the pioneering coastal management work now underway in the Region's countries far exceeds the supply of skilled Integrated Coastal Management (ICM) practitioners. The number of practitioners who can design and manage major coastal management field programs needs to be increased significantly.

What are the gaps you perceive in ICM training, specifically with respect to project management?

List one or two challenges that your institution faces with respect to offering training opportunities for your employees:

Distance Learning

What ability does your organization have to participate in distance learning activities, i.e. do you have the funds and infrastructure necessary to take part in such programs?

Future Opportunities for Training

Identify the most effective ways for your institution to build management leadership skills in employees:

What is the maximum time period that you would allow your employees to be absent from work to attend a training course?

☐ 1-2 weeks ☐ 3 weeks ☐ 4 weeks ☐ Twice a year for 2-week intervals ☐ 3 times a year ☐ every other month

Would your institution be interested in collaborating (sending participants, using your organization as a case study, sending trainers) with other regional agencies to offer a certification course on coastal management?

☐ YES.

☐ NO. Please explain.

Additional comments

APPENDIX 4

INDIVIDUAL SURVEY

Name: Date:

Organization/Institution:

Business Address:

Phone: Fax: Email:

Position you currently hold:

Key areas of responsibility in current position:

Areas of responsibility in your current position that relate to coastal management:

Total years of professional experience (check only one):

☐ less than 1 year ☐ 1-4 years ☐ 5 – 10 years ☐ 10 – 15 years ☐ more than 15 years

INSTRUCTIONS

Please complete the questionnaire based upon your current skill level by placing the number (1 to 5) that best describes your skill level in the box to the left of the skills presented in the following form.

SCALE:

1 – Expert. I am knowledgeable and skilled in this area, and can competently teach the subject. An expert is a person having, involving, or displaying special skill or knowledge derived from training or experience; one with the special skill or knowledge representing mastery of a particular subject.

2 – Skilled. I am proficient in the practice, but not skilled enough to teach a course. A skilled person uses his/her knowledge effectively and readily in execution or performance of his/her duties and assignments. A skilled person possesses a learned power of doing something competently.

3 – Apprentice. I have some knowledge and skills in this area, but could do better with more training. An apprentice is a person who is learning by practical experience under skilled workers a trade, art, or vocation.

4 – Beginner. I have heard about this subject, and may have some modest experience. A beginner is an inexperienced person.

5 – No experience. I have no knowledge or skills in this area. An inexperienced person lacks any practical experience.

For each skill, an *example* is provided to clarify what is meant. Your answer should not be limited to the example.

RATE YOUR CURRENT SKILL LEVEL FOR EACH EXAMPLE:

1 = Expert 2 = Skilled 3 = Apprentice 4 = Beginner 5 = No Experience

Project / Program Management	
	Managing and conducting meetings: You have been asked to organize and run a meeting of various stakeholders to discuss the preliminary plans for a new conservation project in your area.
	Fundraising: You know how to write a grant proposal to get financial support funding for funding a new locally based ICM program.
	Organization and Leadership: If placed in charge of a project to remove litter from a beach, you could organize and lead a group of volunteers to execute the clean-up exercise. **Budgeting:** You have been asked to write a budget for production of a newsletter for your organization. You know what items that the budget should contain.
	Budgeting (Balance Sheets): Your supervisor has assigned you the task of keeping track of monies received by your organization and monies spent by your organization. You know how to keep a balance sheet and detect when there are expense overruns.
	Supervising: You are the supervisor of a small unit of employees working on a beach renourishment (replenishing sand in parts of beach where it has been eroded away) project. You are responsible for evaluating the performance of the people that you are supervising. You know how to review and evaluate their performance.
	Leadership: You are able to set a long-term agenda and convince people to support that agenda. You are able to redirect tension between individuals or groups and get them to cooperate in productive ventures.
	Grant Writing: An international donor organization would like your program to write a proposal to study the coastal policies of your country. You know how to write a proposal that will secure your program the contract to complete the study.
	Work Planning: You are head of a project implementation unit that is responsible for developing district resource management plans; you have to submit your annual work plans to the donor. You know how to develop and organize a work plan for a multi-faceted project.
	List two (2) priority areas under this category that you would like to get training in: 1) ..... 2) .....

_____ **TOTAL**

Professional Skills	
	Dispute Resolution: If people you work with disagree, you are familiar with techniques that will help to resolve their dispute.
	Facilitation: The Director of your office has decided that it is a good idea to support the development of a technical institute to train new coastal managers. You know how to develop and lead a group though a consensus-building exercise that uses current facilitation techniques.
	Strategic Planning: You are the leader of a resource protection NGO. The board of directors has requested that you and your staff prepare a ten year organizational plan. You are able to develop this plan and to position the organization so that it will continue to be successful for the next decade.
	Communication: You have been asked by your supervisor to conduct a national awareness raising campaign about the newly approved national coastal management policy. You know what different tools can be used to raise awareness, and how to successfully apply the correct tools in order to reach the target audience.
	Fundraising: A local public beach needs financial assistance to install a potable (uncontaminated) water pipeline. Your organization does not have the funding to support this activity, but you know how to contact diverse sources to solicit funds.

_____ **TOTAL**

Integrated Coastal Management (ICM) Practice	
	Policy Process: You have been given a ten-year grant to develop a national policy for your country. You are familiar with the basic ICM policy steps and essential actions.
	ICM principles: You have been given a ten-year grant to develop a national policy for your country. You are familiar with the key principles of coastal management and would be able to include them in a meaningful way in a grant proposal.
	Community Participation: Local leaders in a coastal community have decided to institute a local law for fishermen. Your director asks you to define what the appropriate level of participation should be while the law is in the developmental stages, and what tools should be used to ensure participation at the level you select.
	Public Education: A local coastal community is concerned with the decline of its fish stock. The community realizes the value of protecting their local fishery, but does not know what to do about it. You know how to implement a community education program that will help reduce the loss of fishing. **Science for Management:** You know how to build a bridge between the scientific and management community to ensure that reliable knowledge is used in the policy process.
	Demonstration Activities: You can define the value of demonstrating and testing implementation strategies; you can define criteria for selecting demonstration activities.
	Two-Track Approach to Management: You can define the value of connecting national and local management actions and present options for connecting these two tracks.
	Knowledge/List of Tools and Methods: You have been appointed to head a national coastal management office for your government. The office has the responsibility to manage the nation's coastal resources, but doesn't have an overall plan. You have to develop the plan. You have a range of tools and methods for addressing coastal management issues and are competent in matching tools to problems.
	THESE TOOLS MAY INCLUDE THE FOLLOWING:
	ISSUE PROFILING: You are able to develop a document that describes the issues of a place. This document is drawn from good science and accurate records, perceptions of stakeholders and political realities.
	POLICY AND LEGISLATION: Your country has decided to decentralize the management of its coastal resources. You know how to develop a legal framework for community-based coastal management through lobbying and assisting governments to draft and adopt enabling legislation, thus giving local communities essential user and ownership rights over their coastal resources.
	SITE-BASED
	MANAGEMENT PLANS: You are able to develop and implement a document that describes the issues of a place and appropriate actions and interventions. You understand that a planning document's focus can range from comprehensive to strategic.
	ZONING: You are able to develop and implement a zoning scheme for an area that is undergoing rapid growth.
	ISSUE-SPECIFIC GUIDELINES: Your country has decided to plan for and manage a major economic activity (e.g. mariculture, tourism, etc) in an integrated way. You are able to guide a process to develop new permit review procedures, best management practices, and support material for officers who will implement the activity.
	SPECIAL AREA MANAGEMENT PLANS: You are able to define what types of areas are best suited for special management attention and to develop and implement a document that describes the issues of a place and appropriate actions and interventions. You understand that a planning document's focus can range from comprehensive to strategic.

_____ **TOTAL**

Technical Background	
	Water Quality: You are able to make a general assessment about the causes of the current water quality problems in a specific area.
	Mangroves: You are able to identify different species, can define the impacts of mangrove clearing and can offer ways to mitigate destructive mangrove cutting practices
	Ecosytems: You can explain what an ecosystem is and how the importance of maintaining the integrity of an ecosystem plays a significant role in the physical stability of the coastline.
	Geographic Information Systems (GIS): You know what GIS is and how to use it to find answers to difficult coastal management issues.
	Economics: The free market and the profit motive are dominant paradigms of modern society. You can describe how these paradigms tie into ecosystem processes.
	Mariculture: You can define mariculture, select appropriate sites for mariculture activities, select which mariculture activities are most suitable for an appropriate area and can present good practices for mariculture operations.
	Watersheds: You know how to define and describe what a watershed is.
	Erosion: You are able to make a general assessment about the causes of the erosion problems in a specific area.
	Marine Pollution: You understand the sources of marine pollution and can offer solutions and preventative steps for reducing marine pollution. **Coral Reefs:** You are able to identify different species, can define the impacts of degrading the reef habitat and can offer ways to mitigate destructive activities in reef areas
	Planning: You understand the basic guidelines of urban and rural planning and can match planning situations with planning tools.
	Fisheries Management: You are able to identify different fish species, can define the impacts of over-fishing and can offer ways to mitigate destructive fishing practices. **Core**
	Sciences (biology, chemistry, physics): You are familiar with scientific methods and key theories related to your particular scientific field.
	Legal: You understand how laws and policies are developed, adopted and enforced.
	Eco-tourism: Several local tour operators would like to begin conducting eco-vacations in the coastal area of your country. You know how to advise them on sustainable practices for their tours.

_____ **TOTAL**

FOLLOW-UP QUESTIONS

Areas where I have the most expertise (please list 2):

1) _____

2) _____

Areas where I have the most training (please list 2):

1) _____

2) _____

Scoring—If Your Total Score Is Between:

Project/ Program Management	Professional Skills	Integrated Coastal Management (ICM) Practice	Knowledge/ List of Tools and Methods	Technical Background	
9 – 17	4 – 7	7 –13	6 – 11	15 – 29	You are an expert in this core competency area. You have all the necessary skills in this competency area and we may request your assistance in the delivery of training to mid-level integrated coastal project managers in the region.
18 – 26	8 –11	14 – 20	12 – 17	30 – 44	You are skilled in this core competency area. With a little more training and experience, you can become an expert, able to teach and disseminate knowledge on project management.
27 – 35	12 – 15	21 – 27	18 – 23	45 – 59	You are an apprentice in this core competency area. With more training and experience, you could potentially become an expert.
36 – 44	16 – 19	28 – 34	24 – 29	60 – 74	You are an beginner in this core competency area. With more training and experience, you could potentially become an expert.
45	20	35	30	75	You have no experience in this core competency area. If you have the interest, and with more training and experience, you can become skilled in project/program management.

APPENDIX 5

Course Announcement and Application Form

LEARNING AND PERFORMING:
A Skills Course for Coastal Management Practitioners* in the Western Indian Ocean Region

Number of meetings: 4-modules over a period of 6 months
Frequency: every other month **Location:** Different sites in WIO region
Start: 18 March 2001 **End:** 30 September 2001

This course is being offered by Western Indian Ocean Marine Science Association (WIOMSA), in partnership with the University of Rhode Island's Coastal Resources Center (URI/CRC).

Core funding is provided by United States Agency for International Development, Regional Economic and Development Service Office/East and South Africa (USAID/REDSO-ESA)

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Background: Experience and literature indicates that the number of integrated coastal management (ICM) practitioners in the Western Indian Ocean region is limited. It also indicates these practitioners need to learn or improve on skills not only in ICM and project management, but also in areas of professional development and leadership.

Course Objectives: This course is being offered to strengthen the capacity for management and leadership of integrated coastal management (ICM) projects in the WIO region. This course will train a small group of managers to improve their professional, project management and ICM practice skills. Over a period of time, it is anticipated that this course of training will build the critical mass required to effectively implement coastal management activities and benefit the various coastal stakeholders in WIO countries. The objectives of this course are to:

- Build a critical mass of capable coastal management practitioners that can cause a ripple effect (catalyze ICM) in their home countries
- Develop a pool of coastal managers that can lead the region into the future
- Extract from and share amongst practitioners, the emerging coastal management experience in the WIO region
- Present key components ("nuts and bolts") of ICM and why they are important
- Maximize individual learning (emerging technology and innovative training techniques will be used to assist in reaching this objective)

Target Group: This course targets present and "up and coming" practitioners currently engaged in coastal projects and initiatives in the region, who need to improve their ICM project/program management and professional/leadership skills.

* A practitioner is a person involved in improving management and understanding of coastal/marine-related activities. This includes but is not limited to: marine scientists, biologists, park wardens, conservationists, and city planners.

Eligibility: Any national of countries within the Western Indian Ocean region— Somalia, Kenya, Tanzania, Mozambique, South Africa, Comoros, Madagascar, Seychelles, Mauritius, and La Reunion-France—may apply. To participate in the course participants must have:

- Two to three years experience working in marine science (Marine science in this context is defined as: " both natural and social sciences related to matters having direct impact on coastal and marine environments") or a related field.
- Diploma (or higher certification) in marine science or related field
- Affiliation with an institution within the region
- Employer permission/release to attend the course and post-course mentoring sessions

Training Approach: This course uses an experiential, adult-learning approach. It comprises five one-week sessions spread over nine months. Course participants will meet at several locations within the region, obtain intensive baseline training on project management and/or ICM skills for two to three days, and spend another three to four days applying what they have learned to assist a project on the ground. Trainers and experienced coastal managers will backstop participants in all exercises.
Further, this course will:

- Use a learning-by-doing approach (participants apply skills learned to real-life situations) and the "sandwich " approach (brief periods of training—one week per month—are interspersed with longer periods on-the-job).
- Expose participants to the emerging body of regional ICM knowledge and experts
- Reflect on the need for and ways to link management and policy to science
- Provide follow-up, support and communication among course participants, mentors, and trainers during and after the course

Participant Commitment: Course participants will:

- Complete periodic evaluations of the training course and applicability to their own work.
- Develop a personalized follow up action plan for sustaining and applying the skills, tools and techniques acquired through the training.
- Serve as a mentor to the next class of course participants.

Course Program:

Dates (2001)	Material	Location
March 18 – 23	1st module: Fundamental Keys of ICM	Zanzibar
May 6 – 13 2nd	Module: Site-based ICM	Kenya
August 3 – 10 3rd	Module: National ICM	Madagascar
September 16 – 22 4th	Module: Linking local to national programs	Tanzania

Between modules participants will:

- Interact electronically with each other, trainers and mentors
- Complete assignments/problem solving of case-studies
- Apply/adopt what has been learned to their work

Course HIGHLIGHT! At end of the course, participants will synthesize the information and skills acquired during the four weeks, add it to their personal experience, and develop a proposal to promote a new coastal management initiative within the WIO region. The author of the best proposal ("best" will be defined by a panel of regional ICM experts who will select the winning proposal) will win grant funding to implement their proposed project.

Language of Instruction: The training course will be conducted in English, and participants should ideally demonstrate a good knowledge of English. However, concessions will be made for French and Portuguese speakers who have a working knowledge of English.

Funding and Scholarships: Core funding (which covers all course design costs and some delivery costs) is provided by the United States Agency for International Development's (USAID) Regional Economic and Development Service Office/East and South Africa (REDSO/ESA) and Global Office, Environmental Bureau (G/ENR). Participants will pay a registration fee, travel and accommodation costs, and personal expenses.

The fee for the four one-week trainings is: USD$2,000 plus travel.

A limited number of scholarships are available. However, most participants (and/or their organizations) will be responsible for securing their own financial support. Candidates should apply early to donor agencies or the national scholarship office for funding.

Deadline: Applications to the course and applications for scholarships should be received no later January 23, 2001. Applications may be submitted by post, fax or email (original signature pages should be sent by post) to:

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To apply, please submit:

1. Completed application form (attached)
2. Request for scholarship (attached)
3. Letter of interest indicating (1) your interest in the course, and (2) reasons for attending the course, and (3) a description of how you will apply the training
4. Reference letters from two supervisors (former or current) which vouch for your professional skills and work experience.
5. Current Curriculum Vitae
6. Consent of employer. Your current employer must write a letter, releasing/permitting you to (1) attend all the five modules of the course and (2) participate in the post-course mentoring program

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