

**TANZANIA COASTAL MANAGEMENT  
PARTNERSHIP**

**NEEDS ASSESSMENT FOR CAPACITY BUILDING IN  
INTEGRATED COASTAL MANAGEMENT  
IN TANZANIA**

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**AUGUST, 1999**

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- *The designed training course of integrated coastal management will be of paramount importance if the topics to be taught/covered will relate to our actual/existing coastal environment. Likewise with other tools, this training course will help in both solving coastal area problems as well as developing indigenous people of coastal areas.*
- *Coastal management involves different sectors. Therefore, the training on this important new approach should be initiated as soon as possible. For the time being, there are no experts in coastal management but people trained in different professions, such as forestry, minerals, fisheries, etc.*
- *Efforts should be made right from the beginning to ensure that training programmes are sustainable and less donor-driven. Consultation process should be as wide as possible to reflect the multitude of stakeholders in the coastal zone.*

**Quotes from some of the questionnaires**

## **1 BACKGROUND**

In recent years, Tanzania has participated in a number of initiatives associated with integrated coastal management. In 1992, Tanzania actively engaged in discussions and deliberations of the United Nations Conference on Environment and Development (UNCED). In recognition of the fact that inadequate human capacity is one of the major limitations in the successful implementation of integrated coastal management, *Chapter 17 of Agenda 21* highlights the need for education and training in integrated coastal and marine management and capacity building including building of human resource capacity. Subsequently, Tanzania participated in and signed resolutions resulting from the regional Inter-Ministerial Conference in ICM in Eastern Africa and Island States held in Arusha (1993), Seychelles (1996) and ICM Practitioners Workshop (Tanga Workshop, 1996). As well, a National Workshop on Integrated Coastal Zone Management in Tanzania was held in May 1995. All these initiatives recommended, among other things that, the initiation of capacity building programme to address the problem of limited human capacity.

There are several institutions in the country offering training relevant to coastal and marine related issues. The awards offered by these institutions range from certificate up to a Masters/PhD degree. These include; University of Dar es Salaam, training institutions under the Division of Fisheries (the Mbegani Fisheries Development Center & Kunduchi Fisheries Training Institute) and Dar es Salaam Maritime Institute. None of these training institutions have a specialised course in ICM. Annex I provides the details on the courses taught by these institutions.

A number of national and regional workshops, seminars and conferences have been organised in Tanzania in the past few years. They involved different interest groups, including decision-makers, academicians, technicians, students, local community and the business community. These training activities covered a wide range of subjects including coral reefs, seaweed farming and beach erosion. However, at a national level, the National Workshop on Integrated Coastal Management in Tanzania, is one of the few workshops that have been organised with the main theme being ICM. Nevertheless, a small number of professionals have attended short courses training abroad. These courses are offering training in ICM and ICM-related topics. The Summer Institute, 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 most of the professionals have been trained. Furthermore, ICM programs at a local level have also been providing capacity building/training to resource users. One such program is the Tanga Coastal Zone Conservation & Development Program where, for example, the government senior officials at regional and district levels; magistrates; prosecutors; extension workers and villagers have been trained on different aspects of ICM.

Through these efforts there are more qualified marine experts now than in the past, but the problem of lack of human and institutional capacity is far from being addressed. The organisation of short courses was uncoordinated and covered few aspects that were of relevant to the ICM.

In 1997, an exploratory mission involving the Coastal Resources Center (CRC) of the University of Rhode Island (URI), the United States Agency for International Development (USAID) and the National Environmental Management Council (NEMC) was conducted in Tanzania. The purpose of this mission was to develop a strategy for articulating a national integrated coastal management policy that builds from existing policy and experience; building human and institutional capacity; and formulate an implementation plan for the proposed activities.

One of the major challenges identified was a lack of human and institutional capacity for integrated coastal management at all levels. Consequently, **Building Human and Institutional Capacity for ICM** is, but one of the five Life of Project Results (LOPR), that the Tanzania Coastal Management Partnership (TCMP) is striving to achieve. The TCMP is a cooperative initiative amongst the Government of Tanzania through the NEMC, the USAID and the URI's Coastal Resources Center. The goal of the Partnership is to establish the foundation for effective coastal governance. The TCMP is working with the existing network ICM programs and practitioners, to facilitate a participatory, transparent process to unite government and the community, science and management, sectoral and public interests to wisely conserve and develop coastal ecosystems and resources.

The successful implementation of the TCMP LOPRs as well as the sustainability of the projects depends to a large extent on the successful implementation of the LOPR4 (Human and Institutional Capacity for ICM). The training of ICM experts from a variety of institutions is essential for building a critical mass of expertise to promote and implement ICM initiatives.

- That existing training and research programmes be reviewed and multi-disciplinary curricula relevant for integrated coastal zone management (ICZM) be developed.
- That the capacity of the existing training and research institutions be strengthened
- That personnel responsible for coastal zone resource management be retrained so as to have a cadre of personnel having knowledge of ICZM

*Some of the Resolutions from the National Workshop on Integrated Coastal Zone Management in Tanzania, 1995*

For implementation of this result, the following stepwise tasks were planned:

- ICM short course designed
- Conduct training of trainers course

- Short-term training and professional skill building

The first step in the implementation of these tasks was to have a consultative process to oversee the design and delivery of a training needs assessment for the purpose of identifying the training needs, existing and supplemental training resources required and optimal training approaches to best meet the needs identified. The needs assessment survey was conducted and represents a cross-section of respondents along the coastal areas of the country. The findings will be instrumental in directing initiatives and efforts for capacity building in integrated coastal management in Tanzania.

The focus of the LOPR4 (Human and Institutional Capacity for ICM) has since May, 1999 changed as a consequence of the following developments:

- ❖ The approval of the Programme on the “Regional Capacity Building and Institutional Strengthening for Integrated Coastal Resources Management in the Western Indian Ocean Region” This Programme aims at building coastal resource management capacity by providing training opportunities to practitioners. The Programme will be implemented jointly by Coastal Resource Center of the University of Rhode Island and the Western Indian Ocean Marine Science Association.
- ❖ The Self Assessment of TCMP held from 17-19 May, 1999 recommended that:
  - capacity building needs in ICM at the national level be addressed through the CRC/WIOMSA Regional training course in ICM
  - to lay foundation for long-term ICM capacity building in Tanzania, short-term courses be linked to the appropriate academic institutions in the country

This document has been prepared to provide a summary of the results and major findings from the analysis of the data collected, as well as recommending a long-term strategy for building human and institutional capacity in integrated coastal management for Tanzania. The recommendations of the Self Assessment of TCMP have been taken into account when developing the long-term strategy.

## 2 INTRODUCTION

Tanzania has a coastline of over 800 km and currently possesses limited human capacity to sustainably manage the diverse resources within its coastal area. In light of this, training and education for coastal managers must be developed to meet the current and future needs of these very fragile resources. Short-term training can adequately address the gap in knowledge, skills and attitudes necessary for the exiting generation of coastal managers, who have their formal training and education behind them and, in some cases, many years of hands-on experience in the field. However, to address the needs of future generations, the establishment of a formal education program in integrated coastal management is essential. This of course will not eliminate the need for short-term training. Rather, it will allow short-term training to evolve into refresher courses--a tool for updating and upgrading coastal managers with new skills and techniques.

Coastal managers/experts have a major challenge: they have to work with people having a variety of academic background and personal goals or interests (sectoral). They could be planners, lawyers, administrators, communication specialists, researchers, and so on. As such, the coastal managers need training that will give them the skills and attitudes (tools and techniques), which will enable them to apply their disciplines to integrated coastal management. Such skills could include: resource assessment; planning and research evaluation; an ability to integrate a diverse array of technical information and issues; Geographic Information System (GIS); social preparation skills (e.g., community organizing, conflict resolution); legal, institutional, policy, and governance analysis; computer skills; communication with various stakeholders; resource economics; and many more. Similarly, the coastal managers require the right attitudes, such as adaptive management, transparency at all levels, participatory approaches etc. at all steps during the life of the program, for effective integrated coastal management.

The professionals required to effectively manage coastal ecosystems require a combination of knowledge, skills, and attitudes that are not efficiently provided by university curricula. When designing curricula for a profession requiring a sophisticated understanding of ecosystem and governance processes, the necessary integration across traditional disciplines should occur in the curriculum itself and not only in the heads of students. The defining features of a professional educated to meet the challenges of ecosystem management are described in terms of knowledge of strategic analysis and the policy process, knowledge of how ecosystem function, and cultural literacy.

*Stephen Olsen, Coastal Resource Center*

Traditionally, training and education in Tanzania, like in many other countries has primarily been delivered in a disciplinary manner. In recent years, it has become clear that this approach is no longer appropriate as the challenges of managing the coastal areas requires a cross-sectoral approach. At the same time, the job of coastal managers has become increasingly complex, requiring proficiency in a diverse array of knowledge, skills and attitudes. These knowledge, skills and attitudes are essential for the coastal manager.

### **3 NEEDS ASSESSMENT DESIGN AND DELIVERY**

#### **3.1 PURPOSE**

The needs assessment was designed to assess the existing human and institutional capacity for integrated coastal management in Tanzania. In the short term, the findings of this assessment will be used to design a training course in integrated coastal management and assist in charting the future of human and institutional capacity building for integrated coastal area management in Tanzania well into the 21<sup>st</sup> century.

## 3.2 DESIGN AND DELIVERY

To guide the process, TCMP established a Review Panel (Box I, detail information is attached as Annex II) consisting of a cross-section of experts in the capacity building field. On 1<sup>st</sup> October 1998, the first meeting of the Capacity Building Review Panel was held in Dar es Salaam. Panel members were brought together to review a draft needs assessment questionnaire and to compile a comprehensive list of recipients to ensure the broadest possible coverage.

<b>Box 1: Capacity Building Review Panel Members</b>	
Chikambi Rumisha, Unit Manager Marine Park and Reserve Unit	Mary Shuma, Environmental Education Coordinator World Wildlife Fund
Zakia Aloyce, Honorary Treasurer AGENDA	Sadock Kimaro, Deputy Principal Kunduchi Fisheries Institute
Julius Francis, Director Institute of Marine Sciences	Margaret J. Wood, Manager, Education and Training, Coastal Resources Center, University of Rhode Island
Jeremiah Daffa, Support Unit Leader Tanzania Coastal Management Partnership	Bernard L.M. Bakobi, Director Research, EE and Documentation, NEMC
Dr. Yunus D. Mgaya, Senior Lecturer University of Dar es Salaam Department of Zoology and Marine Biology	Margareth Kyewalyanga, Research Fellow Institute of Marine Sciences University of Dar es Salaam
Captain Willian Mlesa Dar es Salaam Maritime Institute	Y.E.S. Mndeme Assistant Principal & Training Coordinator Mbegani Fisheries Development Institute
Baraka Kalangahe Project Manager PRAWNTAN Ltd.	Stephen Mwinuka Curriculum Development Specialist Tanzania Institute of Education

The type of information that was gathered can be put under the following broad categories (Annex III):

- Personal Information
- Institutional Responsibilities
- Academic and Professional Qualifications
- Level of Environmental Awareness in Tanzania
- Level of understanding of integrated coastal management concepts and their applicability to Tanzania
- Need for integrated coastal management training course(s) -- who should attend, duration, level and venue.



In early October 1998, 192 questionnaires were distributed—by hand and by post. Of the 192 questionnaires that were distributed, 80 arrived by the mid-December deadline and were included in the final data analysis. This represents a 43% rate of return.

The questionnaires were distributed to a large target audience on which the survey was conducted included individuals, organizations and institutions, both public and private, in Dar es Salaam, Zanzibar, Tanga, Lindi, Mtwara, Mafia, Bagamyo, Kibiti and Rufiji. Organizations and institutions that received copies of the needs assessment included *inter alia*, the University of Dar es Salaam (various departments), the Tanga Coastal Zone Management Program, the Dar es Salaam Maritime Institute, Mafia Island Marine Park, Tanzania Institute of Education, AGENDA, Menai Bay Conservation Area, PRAWNTAN Ltd., the National Environmental Management Council, Tanzania Harbours, Tanzania Fisheries Research Institute, and so on.

On 10<sup>th</sup> December 1998, the Review Panel reconvened to review the data, draw some conclusions and assist in mapping out the strategy for the first training course. The objectives of the meeting were:

- ◆ To review and discuss the needs assessment data
- ◆ To discuss trends – what is the data telling us?
- ◆ To give recommendations for course design and delivery
- ◆ To suggest follow-up actions and schedule

### **3.3 RESULTS AND DISCUSSION**

The needs assessment was completed by a cross section of professionals with expertise in various fields of training, ranging from natural resources management to marine biology. This fact is also reflected in their responses to the majority of the questions. Although not in all cases, the Needs Assessment Questionnaire target audience also represented the potential recipient of future training courses.

#### **3.3.1 Existing Capacity**

The key areas of responsibility for the majority of respondents are connected to management, research, coordination and teaching (*Figure 1*). Most of these are well trained (*Figure 2*) and have had a long experience on the jobs currently held (*Figure 3*). The key areas of study for these professionals varied widely, with the majority having qualification in marine biology, fisheries management, oceanography, marine affairs and environmental management, as illustrated in *Figure 4*. Only one indicated that the key area of study was coastal area management. This clearly indicates the training and education that they received was disciplinary in nature and lacked the inter-disciplinary and cross-sectoral training and education necessary for effective integrated coastal management. However, the roles and responsibilities these people bear, which were historically essentially in a sectoral capacity, have been expanded and require a cross-sectoral approach.

### 3.3.2 Skills and Training Needed

In assessing which skills are needed for effective integrated coastal management, the respondents identified the following as essential skills for such: working in/with groups; conflict resolution; communication with relevant stakeholders including community, the government and private sectors; as well as GIS application (*Figure 5*).

Responding to the type of training needed, the respondents indicated that training is required in all aspects/topics relating to integrated coastal management, with identification and assessment of issues; plan preparation; participatory approach (involving stakeholders as appropriate); adoption and funding; and plan implementation, accorded the highest priority (*Figure 6*).

### 3.3.3 Training Course in ICM (What Level, Who, Duration and Venue)

There was an overwhelming confirmation from the majority of respondents, who strongly feel that the establishment of formal human and institutional capacity building for integrated coastal management is urgently needed in Tanzania. This included both short-term training as well as formalized training. Most of the respondents felt that both certificate and degree programs are important to build human capacity for integrated coastal management (*Figure 7*). About half of the respondents thought that a certificate in ICM is not sufficient and thus a degree is essential, as shown in *Figure 7*.

The respondents felt that the course should target mid-career professionals working in coastal management. These included, coastal managers, extension workers, researchers, teachers/tutors, lawyers and planners etc. (*Figure 8*). According to the opinion of most respondents, the course should be two weeks long (*Figure 9*).

When asked to propose the venue where the course should be conducted, the respondents proposed various places along the coast. The areas that were accorded highest priority include Mbegani Fisheries Development Center, University of Dar es Salaam and the Institute of Marine Sciences in Zanzibar (*Figure 10*).

## 3.4 SUMMARY

The highlights of the needs assessment findings can be summarized as follows:

- ❖ The respondents have a wide diversity in their professional background and education levels; the background is clearly single-discipline oriented, with little or no knowledge on integrated coastal management. This calls for a training course in integrated coastal management for most of the practitioners.
- ❖ Various issues affecting coastal resources and dwellers were identified, with some given the highest priorities. People know what are the problems/challenges for effective integrated coastal management, and pointed out the gaps that need to be filled, if training has to take place. These include acquiring knowledge (through training) in various aspects of integrated coastal management and building necessary skills and attitudes that would help practitioners to better

implement ICM programs as well as making them sustainable. The identified issues, challenges and gaps will be used as a foundation upon which a short-term curriculum for ICM course will be developed.

- ❖ Given the issues pointed out, the existing limited knowledge and skills in ICM, and some of the responses to certain questions, it is clear that, although a short course in integrated coastal management is necessary, long-term capacity building is essential. That is to say, in addition to short courses, formal training particularly at the University level should be established. Furthermore, public awareness programs on relevant issues should be initiated.
- ❖ The Needs Assessment, as well as other sources of information, such as informal discussions with coastal management practitioners, clearly indicate that the extent of the inadequacy of the human and institutional capacity in ICM in Tanzania, can not be addressed through a one time short-term training course. Furthermore, training is a continuous process of learning and exchanging information and knowledge. In this regard, there is an urgent need to develop a long-term strategy to ensure that human and institutional capacity issues are adequately addressed as well as laying a corner stone for the foundation to sustain the activities initiated by TCMP.

## **4 A SHORT COURSE IN INTEGRATED COASTAL MANAGEMENT**

### **4.1 SHORT-COURSE FRAMEWORK**

As it was suggested by most of the respondents of the needs assessment questionnaire, as a first step a short course in integrated coastal management is essential for Tanzania. Since the proposed duration of the course is two weeks, only some of the elements necessary for developing the required knowledge and imparting the necessary (identified) skills and attitudes could be covered. To begin with, the short course should target those practitioners with little knowledge of the ICM as well as individuals from institutions that are **indirectly** involved in coastal issues. This is because such a course has to be taken, in a broad sense, as an awareness and introduction to ICM.

The respondents identified some of the topics in ICM as of highest priority. These topics include: identification and assessment of issues, plan preparation, adoption and funding, project implementation, monitoring and evaluation, and participatory approach to involving stakeholders. Furthermore, some of the skills were proposed as being very essential for effective ICM in the country. These include: communication with the community and the government, working in/with groups, giving feedback, GIS application and conflict resolution.

Based on the training need identified by the respondents for Tanzania, the following is the proposed short-course framework:

- ◆ An Introduction to Coastal Management

- ❑ For participants to recognize the different types of CM programs; to understand the CM process/cycle and how programs move through that cycle; and to recognize some common elements of them all: success factors, cross-program learning, sustainability. What are the ICM Issues and Approaches in Tanzania/regionally/globally?
- ◆ Coastal Management Tools and Solutions (*tools/techniques*)
  - ❑ For participants to learn more about common CM issues faced by other country CM programs (both developed and developing), and to gain a better understanding of the role of people in both creating and solving these issues, and to learn about and understand the value and use of specific tools and techniques for dealing with CM issues.
- ◆ Managing Geographic Areas of Concern (*more tools/techniques*)
  - ❑ For participants to learn about site management at different scales, to gain a better understanding of the policy cycle, and practice selected actions in that cycle.
- ◆ Applying the Coastal Management Tools (*application*)
  - ❑ For participants to work in groups to translate what they have learned in the course into a specific case study using the appropriate resources and tools available.

## 4.2 COURSE FOUNDATION

The course will be delivered based upon an adult learning approach. What that means is that participants:

- ❑ Are expected to actively participate--not passive.
- ❑ Establish an interdependence with each other--not on the trainer
- ❑ Share responsibility for the learning that occurs--not assume trainer totally responsible
- ❑ Share knowledge and power--not assume trainer is all knowing and powerful
- ❑ Learn how to learn--not only learning facts
- ❑ Seek and share information--not passively a transfer of information

The training methods used will vary from:

- ❑ lectures
- ❑ discussions
- ❑ field trips
- ❑ group exercises
- ❑ reflection

## 4.3 CONCLUDING REMARKS

Given the highlights of the major findings from the needs assessment, a framework for a short course in ICM to address the training needs was developed (previous section). Comparison between the contents of the proposed framework for national ICM training and the Regional training course in ICM held in Mombasa, Kenya in March, 1999, reveal minimal differences exist between the two.

The already approved proposal for the Regional capacity building in ICM in the Western Indian Ocean Region include the following components amongst others:

- ❖ Build coastal resource management capacity and professionalism by providing capacity building opportunities for coastal resource management practitioners. Accomplish this by developing and delivering a blend of traditional (e.g. training) and non-traditional (e.g. exchange programs) capacity building techniques.
- ❖ Develop and begin implementation of a monitoring framework for tracking progress on capacity building for coastal resource management at the local, national and regional level.

In this regard, the Regional Training Course to a large extent could be used as appropriate to address the training needs in ICM for Tanzania. With the Regional Training Course providing an opportunity for training individuals requiring more general knowledge and skills necessary for planning and implementation of ICM programmes, it is important now that an alternative be found for training the districts and municipal officials who might have different training needs.

## **5 A STRATEGY FOR LONG-TERM CAPACITY BUILDING IN INTEGRATED COASTAL MANAGEMENT FOR TANZANIA**

The importance of development of necessary human capacity for successful implementation of integrated coastal management in Tanzania, cannot be over-emphasized. Capacity building involves building up national capabilities that will amongst others generate appropriate responses to pressing environmental issues such as pollution, over-exploitation of resources and reduction of critical habitats such as mangroves and coral reefs.

In Tanzania, there is lack or insufficiency of human resources trained in the broad spectrum of disciplines and cross-sectoral perspectives needed in the planning and implementation of coastal resources management programmes. Some capacities have been in different aspects of coastal management, however they are too spread to make any significant impact. Furthermore, there are also limited manpower and resources to produce courses and course materials.

Long-term capacity building will go a long way in addressing the problem of limited human capacity facing the majority of the institutions dealing with coastal issues in Tanzania. Such a strategy is a first step is improving co-ordination of training initiatives so that they do not evolve in isolation and their relevance to the specific training needs of national institutions.

In preparation of the long-term strategy, the following approaches have been used:

- ❖ results of the conducted needs assessment and other previous surveys;
- ❖ analysis of the national legal instruments to identify manpower requirements (Table 2) and
- ❖ analysis of the other TCMP Life of Project Results, to identify training requirements that will ensure their successful implementation.

Development of practical skills in policy planning, management, administration, finance and social issues in addition to the traditional focus on legal and technical aspects of environmental management, are essential to ensure successful planning and implementation of ICM in Tanzania.

Given the important roles played by local government authorities in coastal and marine environment management, training resources/opportunities should be decentralized and appropriate training offered to officials working in those authorities. Research institutes and universities should also be provided with training opportunities to enhance their capabilities in offering training in ICM.

## **5.1 CAPACITY BUILDING FOR ICM IN TANZANIA**

Successful implementation of the integrated coastal management programmes in the country can only be assured through simultaneous development of necessary capacities in terms of human resources and institutional means. Many government institutions (at both the central and local levels) and NGOs/CBOs involved in coastal and marine environment issues are poorly equipped with the capabilities necessary for successful implementation of ICM programs.

To address the extent of the inadequacy of the human and institutional capacity in ICM in Tanzania, long-term training programs for the important stakeholders, are required. Furthermore, long-term programs are important as they, amongst others, provide opportunities:

- to address the complexities of ICM training, which include, among others, training of individuals with different background and educational levels
- for offering practical training experiences.

Each of the relevant stakeholders (central and local authorities and NGOs/CBOs) has different mandate/roles with respect to the implementation of ICM programs and related activities in the country. This means that their capacity building requirements are different.

### **5.1.1 Strengthening of Human Capacity and Professionalism in Central Government Agencies/Institutions**

**Context:**

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

Needs assessment and other previous surveys have clearly shown that the relevant institutions do not have capabilities in critical aspects of ICM. These include capabilities in:

- Resource assessment (coastal resources assessment, rural appraisal surveys)
- Legal, institutional, policy and governance analysis
- Application of coastal development regulatory systems
- Application of pollution control systems
- Formulation of management instruments (development of zoning and management plans, guidelines for major coastal development activities)
- Application of technical tools for ICM such as GIS and remote sensing.

Capacity building is also important in environmental management tools and methodologies such as carrying capacity estimation, EIA and monitoring and assessment as well as on integration of environment and development through the use of economic instruments and natural resource accounting.

#### **Proposed/Planned Activities:**

- ◆ Sponsoring staffs to attend regional and international training courses in ICM related aspects. This include:
  - ❖ Regional Training Course in Integrated Coastal Management for the Western Indian Ocean Region
  - ❖ University of Rhode Island/Coastal Resources Center's Summer Institute in Integrated Coastal Management
  - ❖ Coastal Management Center (CMC) Regional Training Course on the Application of Integrated Coastal Management System for Marine Pollution Prevention and Management
- ◆ Conducting of advanced training in project preparation, implementation and monitoring and evaluation
- ◆ Conducting of short-term training courses in environmental economics
- ◆ Conducting of short-term training courses in relevant technical, scientific and management fields. These include: land and coastline mapping capabilities; monitoring and modelling capabilities for sea level variations; monitoring and control of land based sources of pollution, assessment and management of coastal erosion; and the preparation of databases.
- ◆ Learning by doing through participation in the multi-institutional Working Groups. This approach has proved to be effective particularly during the Year One of the Tanzania Coastal

Management Partnership (TCMP) and should be maintained. These Working Groups should be transformed on long-term into technical Working groups. These Groups could meet twice (or once) annually to plan joint activities, evaluate progress and exchange information and lessons learnt as well as preparing position papers on different issues relevant to ICM development in Tanzania.

- ◆ Identification and making use of the training opportunities existing in the global convention and programmes. These convention and programmes offer opportunities for capacity building through promotion of the acquisition, use, sharing and transfer of knowledge, information, experience, and methodologies across the participating countries.

## **5.1.2 Capacity Building at the District/Municipal and at the Programs Levels**

### **Context:**

Despite the fact that more expertise (in relative terms) exists at the central government institutions than at the local governments, it is impractical and uneconomical to only rely on them in management of coastal and marine resources. Local government authorities have roles to play in management of resources, and they currently lack expertise to effectively and efficiently perform their roles.

In line with decentralization process currently being pursued, Tanzania has recently devolved regulatory and local development authority to local government units, leaving the central government agencies to focus its role on policy formulation, planning, standard setting and co-ordination. Furthermore, the National Environmental Policy of 1997 calls for the local authorities to be responsible for overseeing planning processes and establishment of local environmental policies and regulations amongst others. In addition, local authorities have other roles such as:

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

Since local government officials are more familiar with local conditions, residents and projects, it is highly desirable that they are provided with appropriate specialized training to facilitate management of marine and coastal resources in their jurisdiction.

### **Proposed/Planned Activities:**

- “ Organization of the Training of Trainers (TOT) courses for district (planning, natural resources officers and primary school teachers) and programme officers so that they could be involved in the educational process, either by teaching courses in locally-organized training or by providing internships and practical experience to staff from other programs.



- .. Conducting of advanced training in project preparation, implementation and monitoring and evaluation
  - .. Regional Training Course in Marine Protected Areas Management for the Western Indian Ocean Region. This course is organized jointly by the Coastal Zone Management Center (CZMC) of the Netherlands, Institute of Marine Sciences and the Western Indian Ocean Marine Science Association (WIOMSA). The course will be targeting mid-level marine protected areas managers.
  - .. Conducting of basic and advanced training in key aspects of integrated coastal management such as environmental assessment activities (coastal resources monitoring and rural appraisal surveys), formulation of management instruments (development of zoning and management plans, involvement of various stakeholder including local communities in the plan formulation process and development of by-laws) and ensuring enforcement (education and public awareness campaigns and dissemination of planning reports).
- ◆ Field experience and on-the-job training of coastal management practitioners

### **5.1.3 Training of NGOs/CBOs Staffs**

#### **Context:**

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 designs which make them more accessible and close to the local communities, which they are supposed to serve. Significant number of funding agencies are increasingly working with NGOs and CBOs in activities related to management of coastal and marine environment.

Different NGOs are involved in a number of activities related to management of 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 Tanzania are facing significant constraints that are affecting their performance. These constraints include limitations in organizational capacity, technical expertise, financial resources and accessibility to decision-making process.

#### **Proposed/Planned Activities:**

- ◆ Conducting of training in project preparation, implementation and monitoring and evaluation
- ◆ Organization of training courses on communication skills

## **5.2 CAPACITY BUILDING FOR DEVELOPMENT OF MARICULTURE INDUSTRY**

### **Context:**

With exception of the seaweed cultivation, mariculture is not developed significantly, despite of its potential. Mariculture has potential to improve food security, nutrition and incomes particularly among the poor. The growing coastal population in Tanzania needs alternative income generating activities other than fishing and agriculture. Community-based mariculture schemes have the potential to reach many small-scale producers, including women. However, community-based aquaculture schemes (both freshwater and marine) are smallholder sector yields are low because of the lack of appropriate management methods and high feed costs, contributing to low adoption rates.

A core of well-qualified professionals in mariculture exists in the country, however they are far from being adequate. They can not meet the demand of expertise needed for both community-based as well as commercial mariculture activities.

### **Proposed/Planned Activities:**

- .. Conduction of detailed needs assessment for mariculture development to identify training needs for researchers and extensionists and existing and supplemental training resources required. Since mariculture is a growing industry and has a potential for expansion in the near-future, it is important that the needs assessment survey is conducted to identify the capacity building needs.

## **5.3 STRENGTHENING THE ROLE OF NATIONAL ACADEMIC INSTITUTIONS IN ICM TRAINING**

### **Context:**

Institutions of higher learning, universities in particular have obligation to the national social and economic progress through research, education and technical expertise (consulting). These institutions could contribute to building of capacity relevant for development of ICM through undertaking of relevant research, involved in policy formulation and offering short- and long-term courses on ICM.

There are several institutions in the country offering training relevant to coastal and marine related issues, at levels ranging from certificate to MSc/PhD degrees. These institutions include: University of Dar es Salaam, training institutions under the Division of Fisheries (the Mbegani Fisheries Development Center & Kunduchi Fisheries Training Institute) and Dar es Salaam Maritime Institute.

To ensure sustainability of capacity building initiatives for ICM, to be initiated, they should be based at the University of Dar es Salaam. Despite having highly trained professionals in most of the

natural and social sciences fields, these professionals need new orientation in thinking and training approaches applicable to the ICM training.

**Proposed/Planned Activities:**

- .. Organization of the Training of Trainers (TOT) courses for selected individuals from institutions of higher learning to strengthen their ability in teaching courses, conducting research, policy development and planning in coastal management.
- .. linkages between planning training programs and existing/emerging educational degree programs through introduction of training courses into existing/emerging programs that are offered for technical specialists. This will provide a common framework for integration with specialists from other disciplines. Initially, these courses could be offered as optional.
- .. material development to support training and educational programs. There exists significant amount of information on planning and implementation of ICM in Tanzania. This information should be used as appropriate to support the development of training manuals that could be used in as reference materials for the planned training courses.

## **6.0 ACTION PLAN**

This Action plan provides a programme for the proposed implementation of the long-term capacity building strategy for Tanzania. To implement the proposed activities, the Action Plan proposed institution(s) that could take a leading role in initiating or implementing the particular proposed activity (Table 3).



**Roles and responsibilities of central and local governments as specified in some of the policies and legislations**

<b>Legislation</b>	<b>Central Government</b>	<b>Districts/Municipalities</b>	<b>NGOs/CBOs</b>
Livestock	<ul style="list-style-type: none"> <li>Development and introduction of new technologies to increase productivity of labour and land</li> </ul>		
Fisheries Sector Strategy	<ul style="list-style-type: none"> <li>Allocation and utilisation of fisheries resources in favour of rural community</li> </ul>		<ul style="list-style-type: none"> <li><b>Involvement of fisher co development and ma resources</b></li> </ul>
1970	<ul style="list-style-type: none"> <li>Policy &amp; legislation formulation, enforcement &amp; surveillance, sectoral planning, budgeting &amp; performance monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Artisanal &amp; small scale fisheries operations licences</li> <li>Law enforcement &amp; issuing by-laws</li> <li>Revenue collection</li> <li>Propose biodiversity conservation areas for gazettelement as protected areas</li> </ul>	
Coastal and 1994	<ul style="list-style-type: none"> <li>establishes, monitors, controls, manages and administer marine parks and reserves</li> </ul>		
Forest	<ul style="list-style-type: none"> <li>Joint management agreements between central government and local communities</li> <li>Management and control of mangroves forest as terrestrial forest reserves</li> </ul>		<ul style="list-style-type: none"> <li><b>Community-based and ownership of forests</b></li> </ul>
Coastal Policy	<ul style="list-style-type: none"> <li>Development in the coastal areas shall be done after Environmental Impact Assessment has been carried out</li> </ul>	<ul style="list-style-type: none"> <li>District Councils in collaboration with Village Councils develop local land use plans</li> </ul>	<ul style="list-style-type: none"> <li><b>Promotion of local com planning, integrating : actions and resources implementing agencies</b></li> </ul>
Local Government	<ul style="list-style-type: none"> <li>Role of central government and sectoral ministries is policy making, regulation, monitoring, and intervention to ensure legality of public service provision</li> </ul>	<ul style="list-style-type: none"> <li>Local government councils to be most important political body within its jurisdiction</li> </ul>	
Environmental	<ul style="list-style-type: none"> <li>Build human capacity to assess and articulate needs and develop technical and management solutions for environmental issues</li> <li>Capacity is required to analyse data and information, to generate policy options and design management measures</li> </ul>	<ul style="list-style-type: none"> <li>Local authorities will be responsible for overseeing planning processes, establishing local environmental policies and regulations</li> </ul>	<ul style="list-style-type: none"> <li><b>Wards and villages co committees to coordi implementation of env programmes</b></li> </ul>

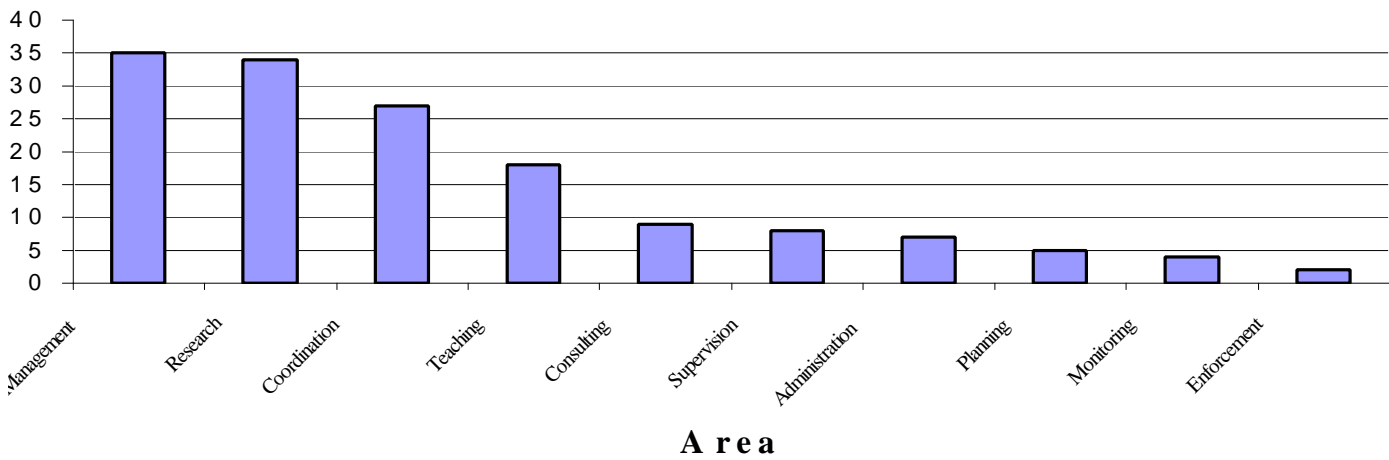
Proposed Action Plan

Strategies/Activities		Proposed Leading National Coordinating Institution(s)	
Training for ICM	Strengthening of human capacity and professionalism in central government agencies/institutions	Supporting staff to attend regional and international training courses in ICM related aspects*	
		Conducting of advanced training in project preparation, implementation and monitoring and evaluation	TCMP/NEMC
		Conducting of short-term training course in environmental economics	“
		Conducting of short-term training courses in relevant technical, scientific and management fields	Relevant institutions
		Learning by doing through participation in the multi-institutional Working Groups*	TCMP/NEMC
		Identification, and making use of, the training opportunities existing in the global conventions and programmes	Department of Environment
	Capacity building at the district/municipal and at the programs levels	Organization of the Training of Trainers (TOT) courses for district and programme officers	TCMP/NEMC
		Conducting of advanced training in project preparation, implementation and monitoring and evaluation	TCMP/NEMC
		Regional Training Course in Marine Protected Areas for the Western Indian Ocean Region	Institute of Marine Sciences
		Conducting of basic and advanced training in key aspects of integrated coastal management	TCMP/NEMC
		Field experience and on-the-job training of coastal management practitioners*	WIOMSA
	Training of NGOs/CBOs staff	Conducting of training in project preparation, implementation and monitoring and evaluation	TCMP/NEMC
Organization of training courses on communication skills			
Training for mariculture		Conducting of detailed needs assessment for mariculture development to identify training needs for	TCMP/NEMC & Department of Fisheries

		researchers and extensionists and supplemental training resources required	
the role of academic M training		Organization of the Training of Trainers course for selected individuals from institutions of higher learning	TCMP/NEMC
		Linkages between planning programs and existing/emerging educational degree programs	University of Dar es Salaam
		Material development to support training and educational programs	“

ties have already been initiated through TCMP Project.

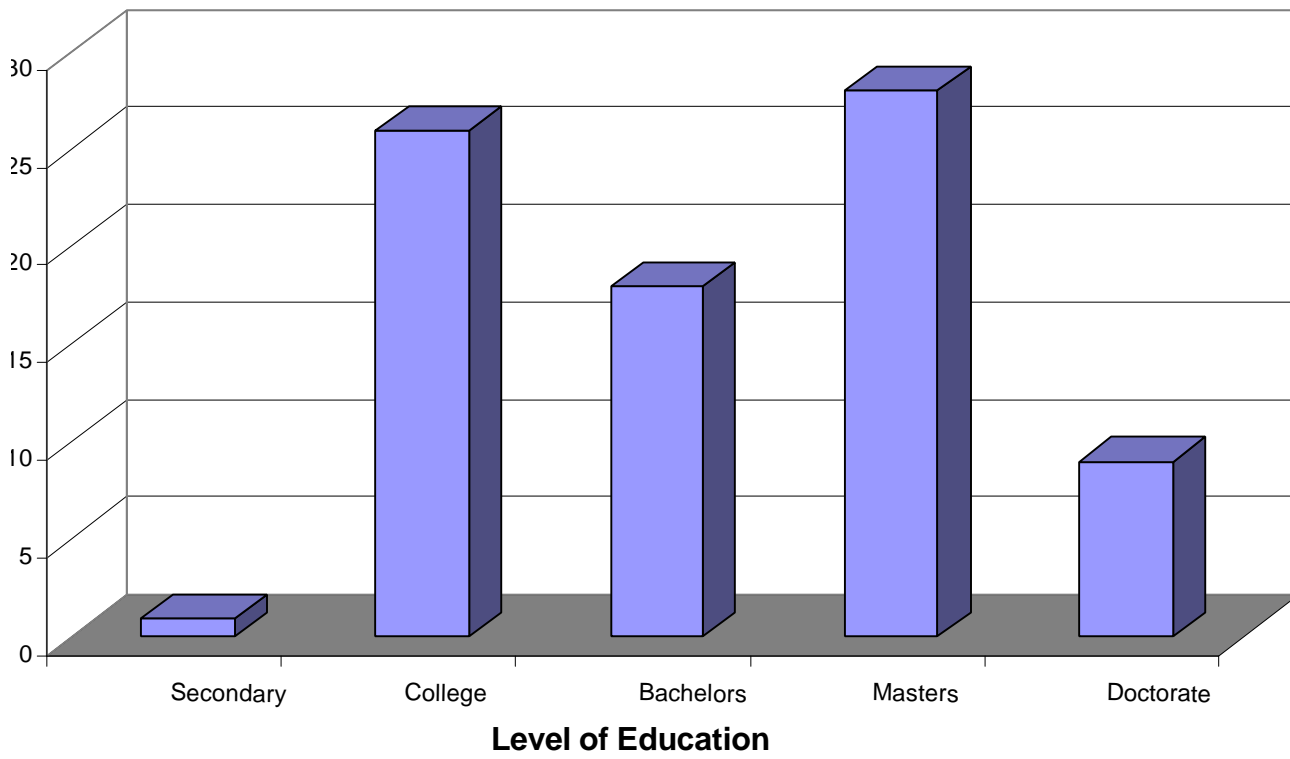
**Figure 1: Key Areas of Responsibility**





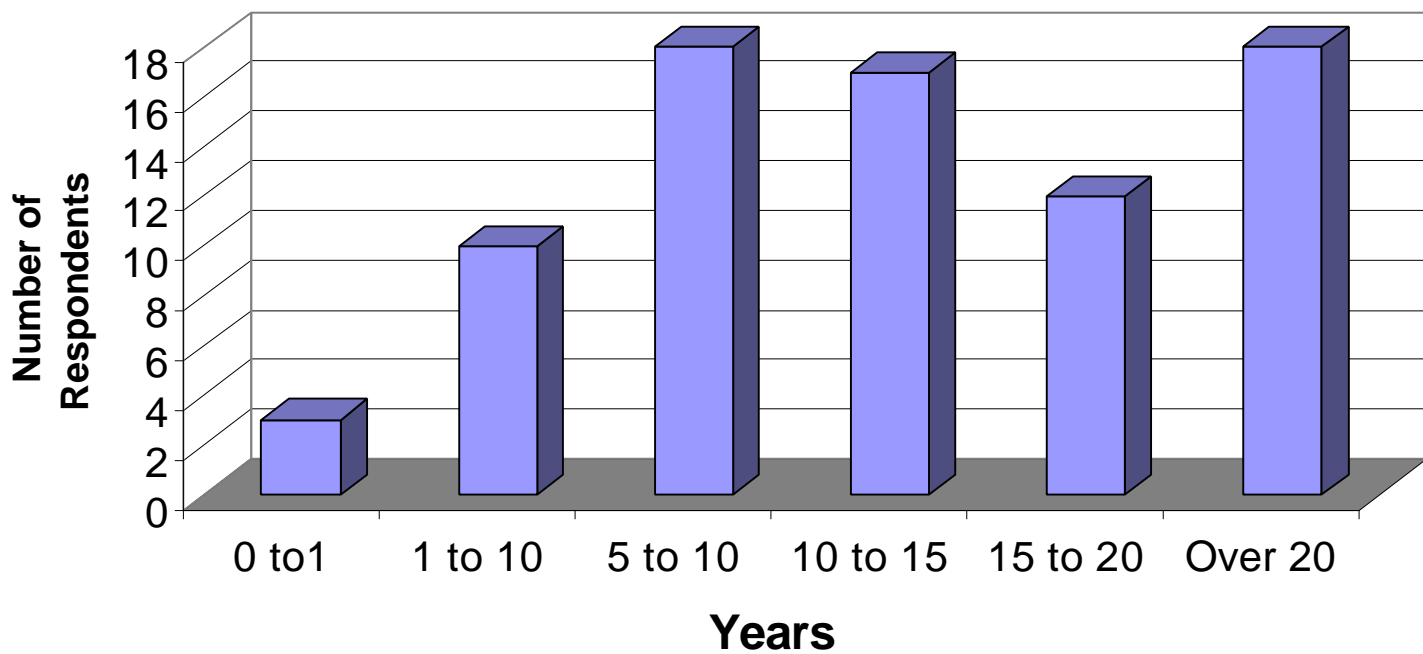
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**Figure 2: Level of Education**



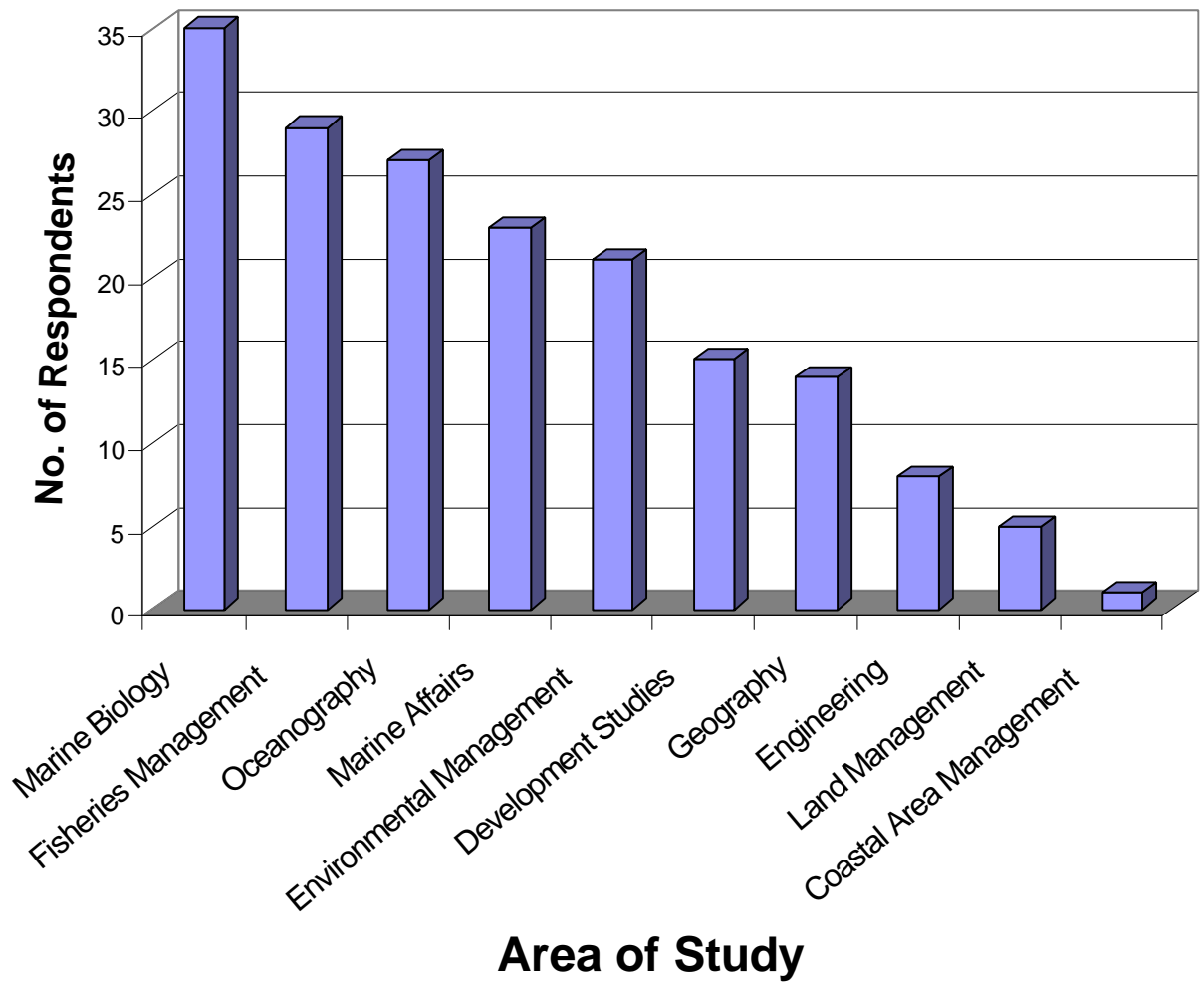
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### Figure 3: Total years of Professional Experience



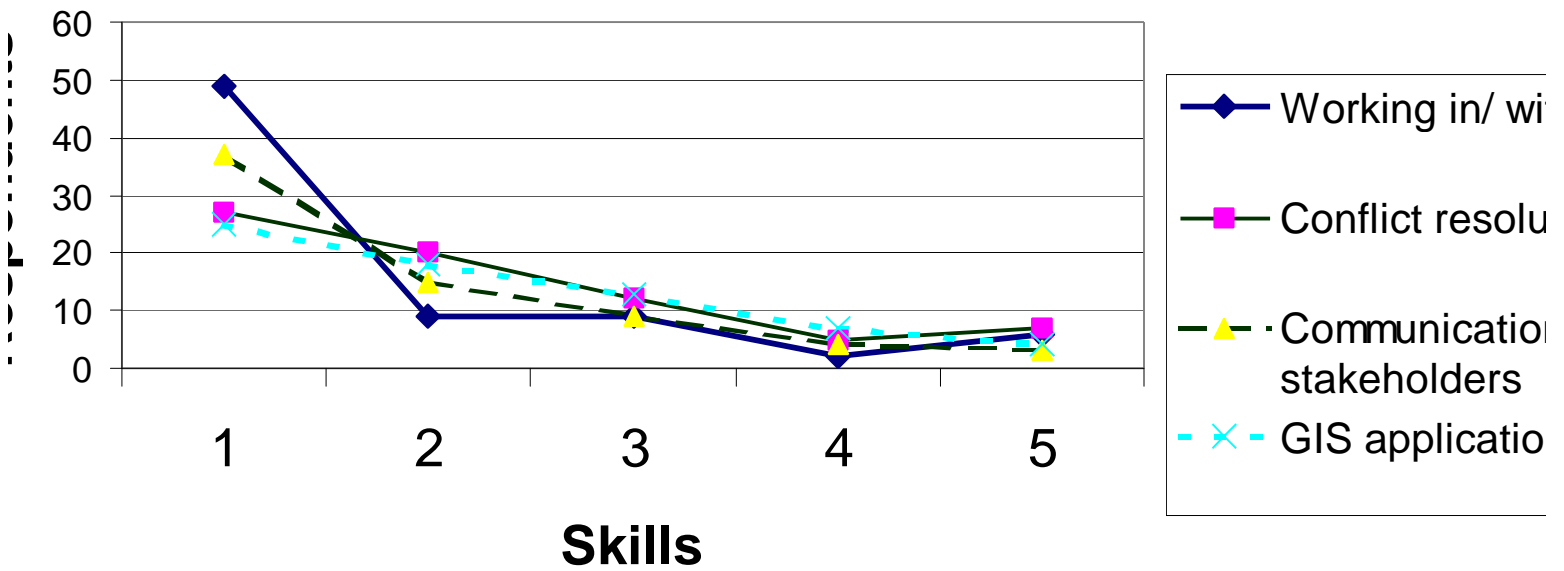


# Figure 4: Key areas of Study

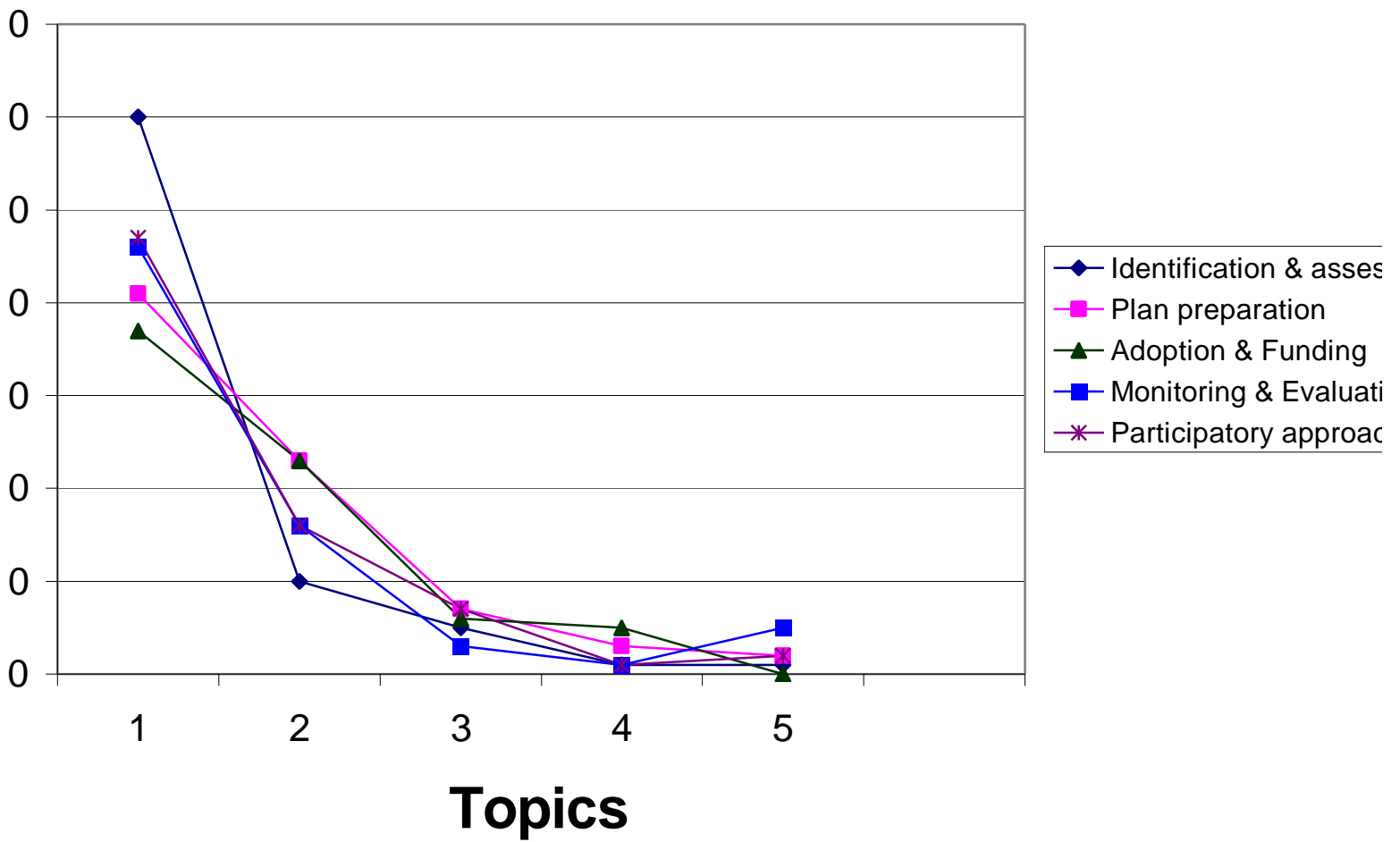


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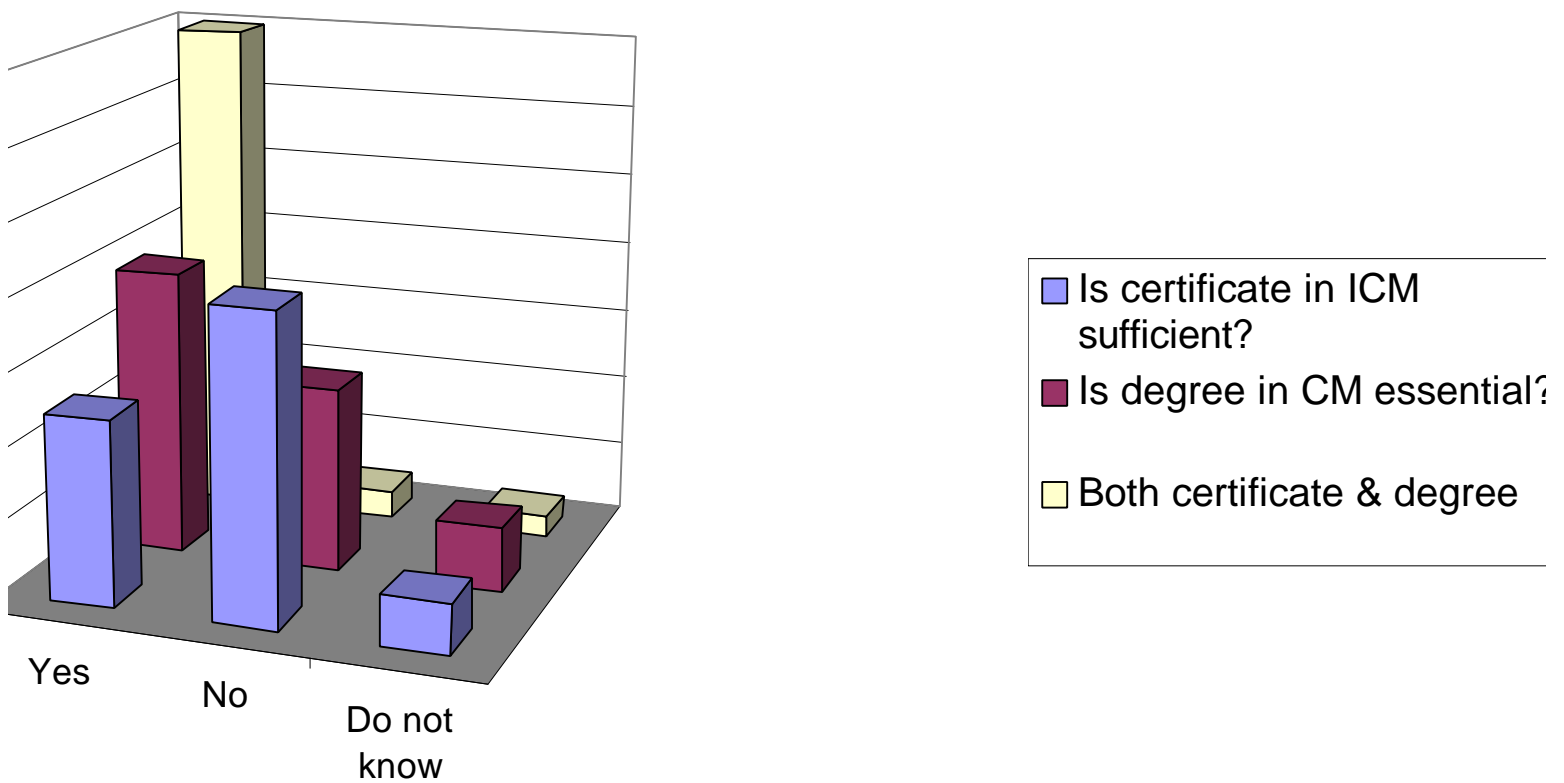
**Figure 5: Skills for Effective ICM**



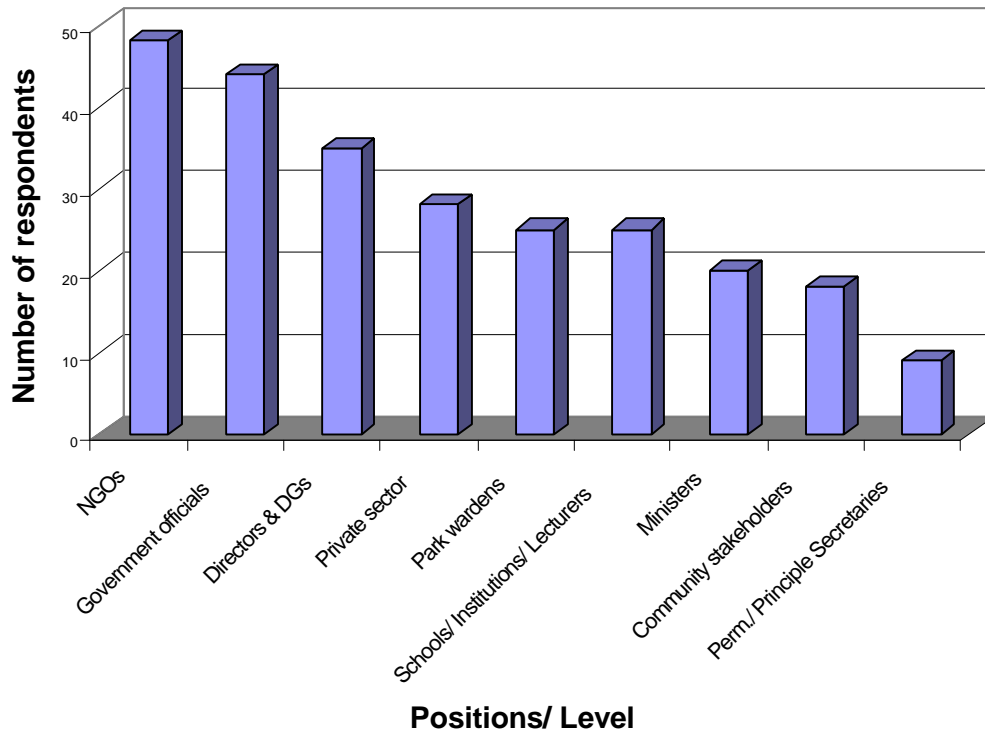
# Figure 6: Type of Training Needed



# Figure 7: Capacity Building

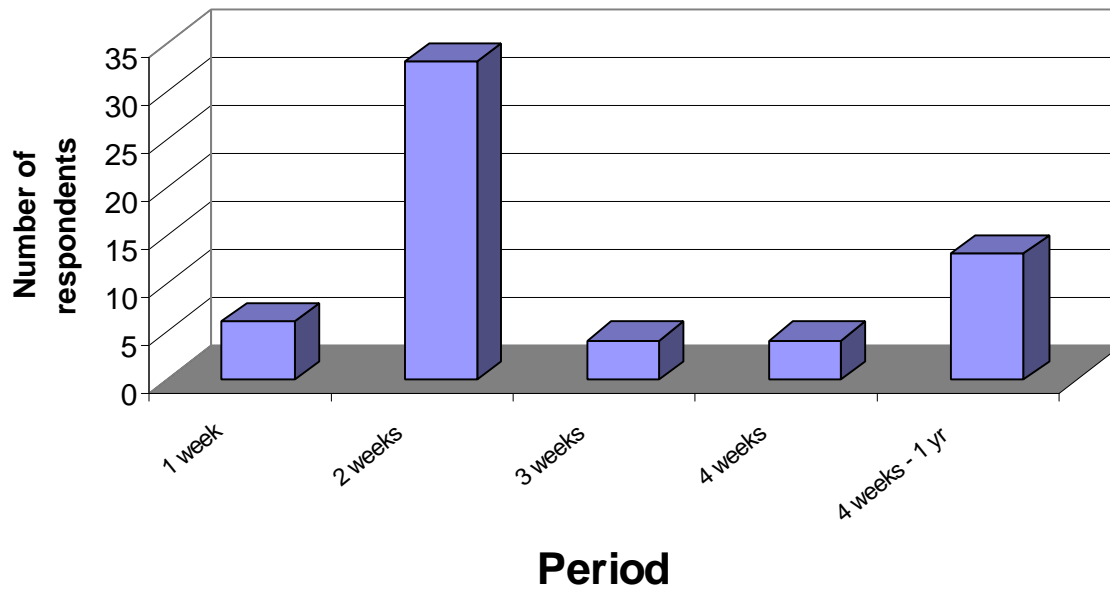


**Figure 8: Who should receive training?**

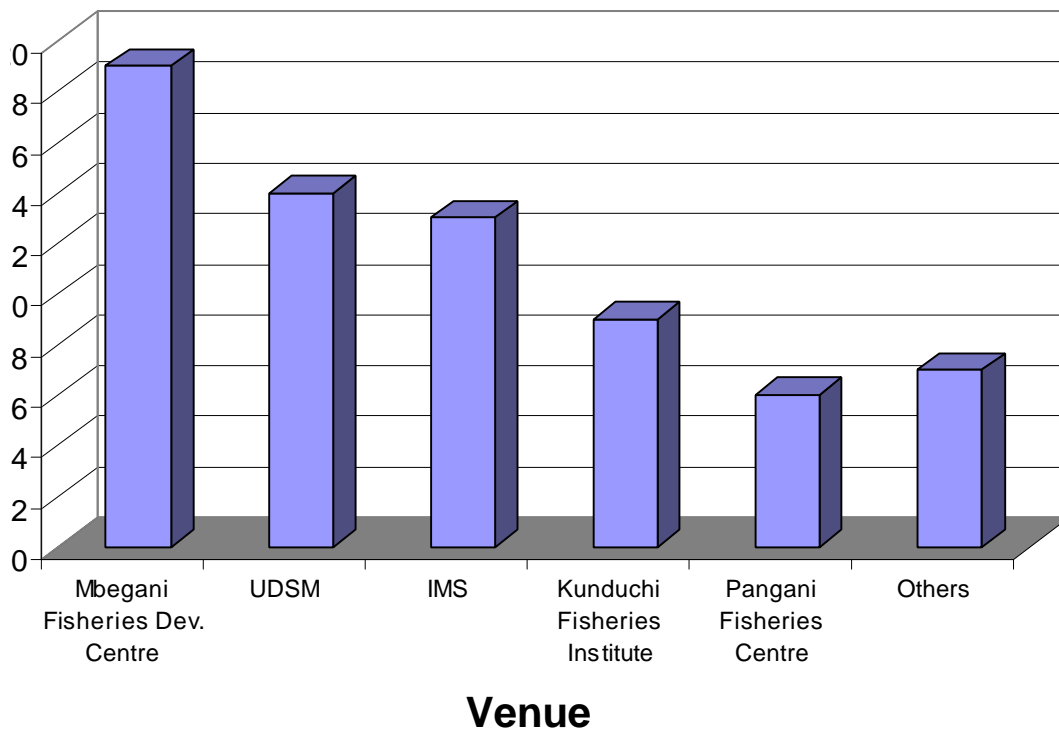




# Figure 9: Length of Training Course



**Figure 10: Where the course should be held**



# ANNEX I: CAPACITY BUILDING EFFORTS IN TANZANIA

## 1. UNIVERSITY OF DAR ES SALAAM

There are several departments from different faculties of the University involved in coastal and marine studies. These include: Department of Zoology and Marine Biology, Department of Botany, and Department of Geology, from the Faculty of Science; and the Department of Civil Engineering of the Faculty of Engineering, as well as the Faculty of Law. Table 16 lists the courses related to coastal and marine issues run by different departments. These courses are part of the general BSc. degree.

**Table 1: Selected Research and Training Institutions relevant to Coastal Management**

<i>INSTITUTION</i>	<i>FIELD OF SPECIFICATION</i>	<i>AWARD</i>
<i>a) Mbegani Fisheries Development Centre Bagamoyo</i>	<ul style="list-style-type: none"> <li>• Fisheries Science</li> </ul>	<b>Diploma and Certificate</b>
<i>b) Kunduchi Fisheries training and research Institute-DSM</i>	<ul style="list-style-type: none"> <li>• Fisheries Biology</li> <li>• Food technology</li> <li>• Marine Engineering</li> <li>• Nautical Science</li> <li>• Fisheries Management Administration</li> </ul>	<b>Diploma and Certificate</b>
<i>c) University of DSM Through the Institute of Marine Sciences, Zanzibar; Faculty of Science; the Institute of Resource Assessment; and Faculty of Law</i>	<ul style="list-style-type: none"> <li>• Marine Biology/Sciences</li> <li>• Environmental Science (Course: Marine Ecology)</li> <li>• Marine Geology</li> <li>• Natural Resources</li> <li>• Law of the Sea</li> <li>• Civil Engineering (Course: Port Engineering)</li> </ul>	<b>BSc. M.Sc. and Ph.D</b>
<i>d) Tanzania Fisheries Research Institute (TAFIRI)</i>	<ul style="list-style-type: none"> <li>• Fisheries Research</li> </ul>	

The Faculty also offers MSc. studies either by course work and dissertation or MSc. in Fisheries and Aquatic Sciences and in Environmental Sciences, or by thesis. The MSc in Fisheries and Aquatic Sciences has been suspended for several years now due to lack of qualified lecturers.

## **2. DIVISION OF FISHERIES**

There are two training institutes under the Division which run courses relating to coastal and marine environments. These are Kunduchi Fisheries Institute and Mbegani Fisheries Development Centre.

### **Kunduchi Fisheries Institute**

*The Institute has three main objectives:*

- to train fisheries personnel to diploma level in fisheries science.
- to carry out applied fisheries research in all aspects of the fishing industry
- to provide consultancy services in all aspects of the fishing industry, i.e., stock assessment, fish processing, fisheries management and export of fisheries products.

The Institute has five departments namely; Nautical Sciences, Engineering, Fisheries Biology, Food Technology and Management.

### **Mbegani Fisheries Development Centre**

The Centre has six departments: Finance and Administration, Maintenance, Marine Engineering, Nautical Sciences, Boat Building and Fish Processing. It offers professional training in nautical and marine engineering, applied fishes, as well as providing extension services for fishermen.

### **Tanzania Fisheries Research Institute (TAFIRI)**

TAFIRI was established in 1980 with the aim of promoting, conducting and co-ordinating fisheries research in the country and disseminating research findings to government agencies, public institutions and private companies engaged in the fishing industry. Research priorities are fisheries statistics and fish stock assessment, fish biology, fish diseases, fishery management, fish processing and marketing, water pollution and aquaculture.

## **3. DAR ES SALAAM MARITIME INSTITUTE**

The Institute has two training departments: the Department of Navigation and Department of Engineering.

The Institute offers long term courses such as Engineering Class 3, 4 and 5 and Marine Cadet Course Engineering for Deck Officers of Class 5, 4, and 3 and Cadets. Short course are offered on the following: Survival at Sea, Fire Fighting, First Aid at Sea, Efficient Deck Hand, Electronic Navigation Systems, Radio Telephone, Advanced Fire Fighting, Navigational Control and Ship Captain Medical Guide.

#### **4. RESEARCH INSTITUTIONS (UNIVERSITY OF DAR ES SALAAM, UDSM )**

Two Institutes within UDSM concerned with research on coastal and marine resources are:

##### **Institute of Resource Assessment (IRA)**

The Institute was established to address a range of issues related to resource use in Tanzania. The Institute has among others the following objectives:

- to carry out research projects pertinent to the social, cultural, environmental and economic development of Tanzania, and develop research capacities in these fields.
- to co-operate with government, public authorities and other organisations on special issues of interest.
- to offer advisory services to government, public and other organisations.
- to arrange conferences, seminars or postgraduate courses on resources and land use planning matters.

##### **Institute of Marine Science (IMS)**

IMS was established in 1979 and its main objectives are:

- to undertake research in all aspects of marine sciences
- to provide postgraduate training, and to establish undergraduate training in accordance with the manpower requirements of Tanzania
- to provide advisory and consultancy services in marine affairs.

The research program of the Institute is mainly based on projects undertaken by its staff as well as collaborative activities with different institutions in the country, overseas universities and international research, education and development organisations. The type of research undertaken covers most of the spectrum of marine science.

The Institute has four sections: Living Resources and Ecology, Chemical and Environmental Marine Sciences, Physical and Applied Marine Sciences and Marine Affairs. The Institute has 16 scientists and 51 supporting staff.

## **Annex II: List of Review Panel Members**

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# Annex III: Needs Assessment (Questionnaire Form)

## Integrated Coastal Management Capacity Building for Tanzania

### NEEDS ASSESSMENT

1. Full Name: \_\_\_\_\_

2. Contact details ( *mailing and street address/tel/fax/e-mail* ):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Organization/Institution: \_\_\_\_\_

4. Mandate of organization/institution:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

5. Position \_\_\_\_\_ currently \_\_\_\_\_ held:

\_\_\_\_\_

6. Key areas of responsibility in current position:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

7. Areas of responsibility in current position related to coastal management:

- \_\_\_\_\_



- \_\_\_\_\_
- \_\_\_\_\_

8. Previous positions held in the past five (5) years:

Organization/Institution	Title
1.	
2.	
3.	
4.	

9. Total years of professional experience (**Ö** *only one*): less than 1 year

- 1-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- more than 20 years

10. Highest Level of Education Attained (**Ö** *only one*):

- Primary
- Secondary
- College/Institution of Higher Learning
  
- Bachelors
- Masters
- Doctorate
- Other: \_\_\_\_\_

11. Key areas of Study (**Ö** appropriate box[es] ):

- Marine Affairs
- Geography
- Meteorology
- Development Studies
- Geology
- Engineering
- Oceanography
- Land Management
- Tourism
- Marine Biology
- Law
- Economics
- Business Administration
- Public Administration
- Wildlife Management
- Fisheries Management
- Forestry
- Agriculture
- Social Sciences
- Environmental Management
- Area: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

12. Key areas of Professional experience (**Ö** appropriate box[es] ):

- Marine Affairs
- Geography
- Meteorology
- Development Studies
- Geology
- Engineering
- Oceanography
- Land Management
- Tourism
- Marine Biology
- Law
- Economics
- Business Administration
- Public Administration
- Wildlife Management
- Fisheries Management
- Forestry
- Agriculture
- Social Sciences
- Environmental Management

- Area: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

13. List all training courses or workshops, on issues related to coastal management (e.g., land use planning, environmental education), that you have attended. Also include the event theme/topics, who organized or delivered the event, the venue, the dates and whether you found the event helpful in your coastal management related work.

Theme/Topics Covered:	Type <i>training course/ workshop</i>	Organized/Delivered by:	Venue <i>country</i>	Dates <i>From-to</i>
1.				
2.				
3.				
4.				
5.				
6.				

14. Rank the following coastal management issues facing Tanzania in terms of importance ranging from 1 being very important to 5 being not important ( *circle the appropriate number* ):

<i>1 = very important « not important = 5</i>	Issue
1 2 3 4 5	Mangrove and coastal destruction
1 2 3 4 5	Coral reef mining
1 2 3 4 5	Sand mining
1 2 3 4 5	Over-fishing
1 2 3 4 5	Destructive fishing practices (e.g., dynamite)
1 2 3 4 5	Beach erosion
1 2 3 4 5	Lack of inter-agency cooperation/coordination
1 2 3 4 5	User conflicts (e.g., tourism vs. coastal communities, artisanal vs. commercial fisheries, aquaculture/mariculture vs. tourism)
1 2 3 4 5	Poor agricultural practices
1 2 3 4 5	Poor land use planning (e.g., unplanned urbanization)
1 2 3 4 5	Poverty
1 2 3 4 5	Inadequate monitoring
1 2 3 4 5	Inadequate enforcement
1 2 3 4 5	Inadequate public awareness
1 2 3 4 5	Inadequate political will

- |           |   |
|-----------|---|
| 1 2 3 4 5 | Inadequate human capacity                                     |
| 1 2 3 4 5 | Inadequate relationship between local and national government |
| 1 2 3 4 5 | Pollution   |
| 1 2 3 4 5 | Natural disasters   |
| 1 2 3 4 5 | Other: _____  |
| 1 2 3 4 5 | Other: _____  |
| 1 2 3 4 5 | Other: _____  |

15. The following are considered important skills for effective integrated coastal management. Keeping your training needs in mind, rank the following skills from 1 being a high priority and 5 being a low priority:

- |   |   |
|---|---|
| <i>1 = high priority « low priority = 5</i> | Skill   |
| 1 2 3 4 5                                   | Working in/with groups                          |
| 1 2 3 4 5                                   | Running meetings                                |
| 1 2 3 4 5                                   | Making presentations                            |
| 1 2 3 4 5                                   | Conflict resolution                             |
| 1 2 3 4 5                                   | Giving feedback                                 |
| 1 2 3 4 5                                   | Communication with the media                    |
| 1 2 3 4 5                                   | Communication with the community                |
| 1 2 3 4 5                                   | Communication with the government               |
| 1 2 3 4 5                                   | Communication with the private sector           |
| 1 2 3 4 5                                   | Geographic Information System (GIS) application |
| 1 2 3 4 5                                   | Computer applications: e-mail                   |
| 1 2 3 4 5                                   | Computer applications: internet                 |
| 1 2 3 4 5                                   | Computer applications: word processing          |
| 1 2 3 4 5                                   | Computer applications: spread sheets            |
| 1 2 3 4 5                                   | Other: _____                                    |
| 1 2 3 4 5                                   | Other: _____                                    |
| 1 2 3 4 5                                   | Other: _____                                    |

16. Rank the importance of the following topics to coastal management in Tanzania from 1 being very important to 5 being not important ( *circle the appropriate number* ):

- |   |   |
|---|---|
| <i>1 = very important « not important = 5</i> | Topic   |
| 1 2 3 4 5                                     | Identification and assessment of issues (environmental, social and institutional)                                 |
| 1 2 3 4 5                                     | Plan preparation (identify and establish necessary infrastructures to support plan activities)                    |
| 1 2 3 4 5                                     | Adoption and funding (secure government approval/ endorsement and funding)  |
| 1 2 3 4 5                                     | Implementation (doing the work outlined in the plan)  |
| 1 2 3 4 5                                     | Monitoring and evaluation (of implementation progress and results)  |
| 1 2 3 4 5                                     | Adaptive management (flexibility to plan implementation based on unforeseen changes in circumstances e.g., flood) |
| 1 2 3 4 5                                     | Interpreting and applying science for management purposes   |
| 1 2 3 4 5                                     | Monitoring, enforcement and compliance (regulatory/non-regulatory)  |

1 2 3 4 5

Legislation/policy formulation

1 2 3 4 5

Participatory approach (involving stakeholders as appropriate)

1 2 3 4 5

Other: \_\_\_\_\_

1 2 3 4 5

Other: \_\_\_\_\_

1 2 3 4 5

Other: \_\_\_\_\_

17. What do you consider the top three challenges for effective integrated coastal management in Tanzania?

1.
2.
3.

18. List positions/level (e.g. park warden, minister, director general, NGO, private sector) that you feel should receive training in integrated coastal management:

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

19. Does your current work or that of your organization have an impact/depend on the coastal zone? (circle one)

Yes No Do not know

20. Does your current work requires an understanding of integrated coastal management? (circle one)

Yes No Do not know

21. Do you feel that you or a member of your staff should attend a training course[s] on integrated coastal management topics? (circle one)

Yes No Do not know

22. Do you think that a certificate program in integrated coastal management is sufficient to build human capacity for integrated coastal management in Tanzania? (*circle one*)

Yes    No    Do not know

23. Do you think that a degree in coastal management is sufficient to build human capacity for integrated coastal management in Tanzania? (*circle one*)

Yes    No    Do not know

24. Do you think that both certificate and degree programs are essential to build human capacity for integrated coastal management in Tanzania? (*circle one*)

Yes    No    Do not know

25. Do you feel that training courses in integrated coastal management should be open to a wide range of institutions e.g., Government, NGO, Private Sector? (*circle one*)

Yes    No    Do not know

26. Do you feel that a training course in integrated coastal management should be open to a wide range of seniority e.g., minister, park warden, field officer? (*circle one*)

Yes    No    Do not know

27. How long would you be willing to attend an integrated coastal management course?  
(*Ö only one*):

- 1 day
- 2 days
- 1 week

2 weeks

Other: \_\_\_\_\_

28. Do you think that the course should be divided in sections and taught at different times (e.g., one section per month for 6 sections)? (*circle one*)

Yes    No    Do not know

29. Where do you think the course should be held (mention region and center, e.g., Dar es Salaam, at Kunduchi Fisheries Institute)

---

30. List existing organizations/colleges/universities that currently offer training or education in topics related to coastal management:

Organization/Institution	Faculty/Department/Section
1. <i>University of Dar es Salaam</i>	<i>Faculty of Law</i>
2.	
3.	
4.	
5.	
6.	
7.	
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31. Other comments:
