

One page Summary of:

Training for the Sustainable Management of Marine Protected Areas

A Training Manual for MPA managers

Ed: Julius Francis, Ron Johnstone, Tom van't Hof, Carien van Zwol and Dianeetha Sadacharan

By: Coastal Zone Management Center, The Netherlands, Western Indian Ocean Marine Science Association, University of Dar es Salaam, The World Bank.

This training manual has been prepared to assist the delivery of regional courses in MPA management in the western Indian Ocean region. The Western Indian Ocean Marine Science Association (WIOMSA), the Institute of Marine Sciences of the University of Dar Es Salaam, the IUCN Eastern African Region Office and the Worldbank have been involved in the development and production. The manual contains relevant information from the region, and, where necessary, information and experiences from other parts of the world. Most of the modules were prepared by experts from the region and are based upon regional experiences and contain regional case studies. The training manual contains material for lectures as well as group exercises, and all training sessions are meant to be participatory. It also includes overheads, hand-outs and task instruction sheets.

The manual is comprised of the ten following modules :

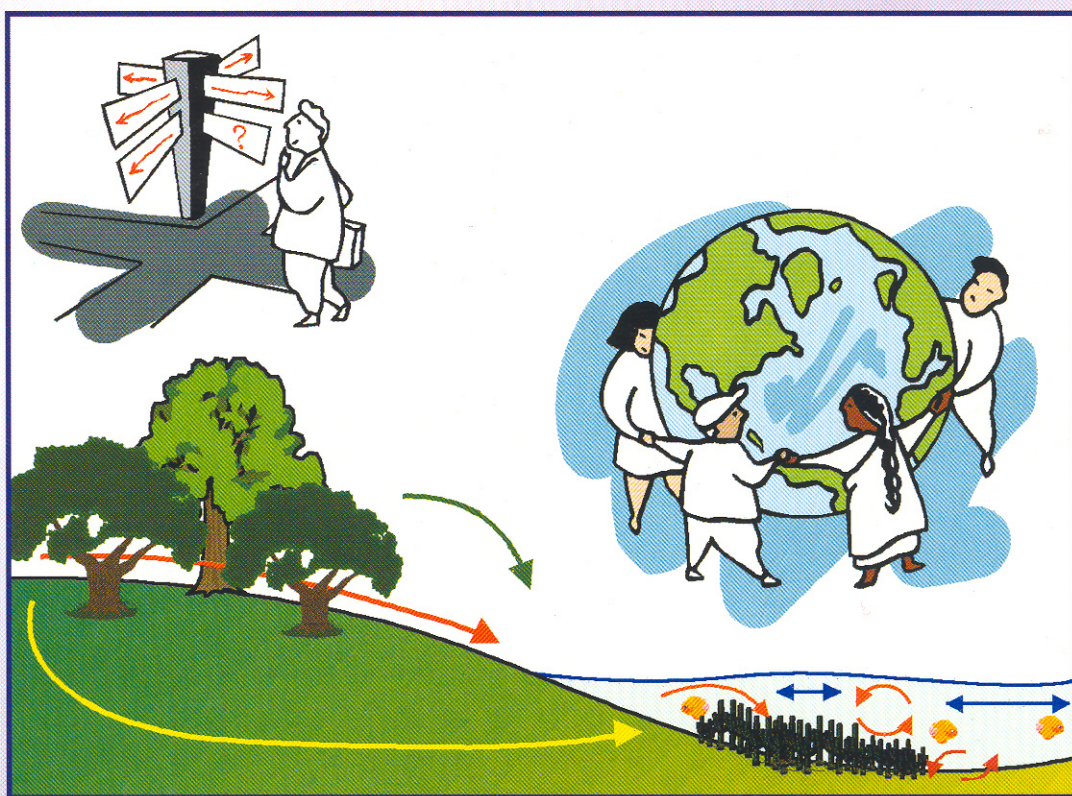
- *The Marine Environment*, provides info on the main coastal and marine ecosystems,
- *Planning for MPAs*, introduces different types of planning tools
- *MPA Operations*, an overview of requirements for smooth and efficient MPA operations
- *Participatory Processes*, how to involve stakeholders in MPA management
- *Communication and Public Relation*, how to present your MPA
- *Administration and Management*, personnel and office management tasks
- *Financial Management*, including financial records, generation of revenues and fundraising
- *Sustainable Utilisation of Resources and Alternatives*, identifies the various uses of marine and coastal resources
- *Monitoring and Evaluation*, introduces different techniques for ecological and social parameters
- *Assessing Management Effectiveness*, explains the concept and the necessary processes, tools and skills for this undertaking.

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Coastal Zone Management
Center, The Netherlands



Western Indian Ocean Marine
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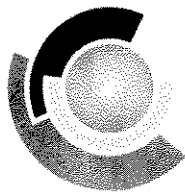


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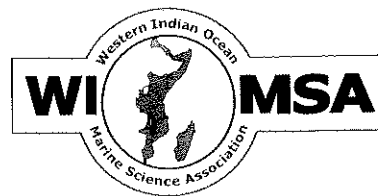
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Association



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Training for the Sustainable Management of Marine Protected Areas: A Training Manual for MPA Managers

Published by Coastal Zone Management Center, the Netherlands and Western Indian Ocean Marine Science Association

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Background

In the recent past, there have been repeated calls for the strengthening of the management of marine protected areas (MPAs), with several international conventions making specific reference to the need for improved management in MPAs in order to achieve sustainable development of coastal and marine areas. At the first meeting of experts on Marine and Coastal Biodiversity (1997), under the Convention of Biological Diversity, it was endorsed that regional and national training courses for capacity building in MPA management should receive high priority, as the lack of trained personnel was seen as a major constraint to effective MPA management.

In response to such calls, the Coastal Zone Management Centre (CZMC) of the Netherlands launched a step-wise programme for capacity building in MPA management under the Netherlands Government Programme to support the implementation of the Convention on Biodiversity. In 1997, at an international workshop held in Manila, Philippines and organised by the CZMC in collaboration with the International Centre for Living Aquatic Resources Management (ICLARM), a framework for future training in MPA management was developed. Short-term regional training programmes, training-of-trainers programmes, development of training materials, and the strengthening of regional networking mechanisms were among the key imperatives identified at this workshop.

As a follow up to these recommendations, the CZMC developed a project for capacity building in MPA management in the western Indian Ocean (WIO) region. Project activities were directed towards the preparation of a training manual tailored to the needs of the region, short-term regional training programmes, and the strengthening of links with existing regional programmes, conventions and information networks.

Through this project the CZMC has supported the following, amongst others:

- the organisation of the 'Regional Planning Workshop on the Training Needs for Marine Protected Areas Management' which, among other things, developed a detailed outline for this training manual;
- the coordination of the preparation, revision and updating of this manual by the Institute of Marine Sciences (IMS) of the University of Dar es Salaam and the Western Indian Ocean Marine Science Association (WIOMSA); and
- the organisation of the first and second 'Regional Training Courses in MPA Management for the WIO region'.

Through these efforts, initiated by CZMC and supported by a number of regional organisations, a solid foundation has been laid for long-term capacity building in MPA management in the WIO region.

Acknowledgements

Many individuals and institutions have applied their time, talents and resources towards the development, preparation, writing, editing and production of this manual. To them all we say “Thank you”. More specifically, we would like to acknowledge the support of the following:

- (i) The authors of the modules in the manual;
- (ii) the authors of the case studies, namely: Nirmal Jivan Shah, Peter Fielding, Pippa Gravestock and Jack McCanna;
- (iii) the reviewers, particularly Paul Siegel, Lynne Hale and Sue Wells, who diligently reviewed each module as it was produced and provided many useful comments;
- (iv) the participants and trainers at the Regional Training Courses in Marine Protected Areas, who provided useful feedback, inputs and comments, which have been incorporated in the manual;
- (v) IUCN-Eastern African Region Office (EARO) for supporting the preparation of Module 10; and
- (vi) Daisy Ouya, for her diligent attention to detail during the production work of the manual.

The Coastal Zone Management Centre (CZMC) of the Netherlands, in collaboration with the Western Indian Ocean Marine Science Association (WIOMSA) and the Institute of Marine Sciences (IMS) of the University of Dar es Salaam coordinated the preparation as well as revision and updating of the manual, for which we are very grateful.

The preparation of this manual was jointly funded by the World Bank through the World Bank/ Netherlands Partnership Programme (first draft) and the CZMC (revision and updating).

Introduction

This training manual has been prepared to assist the delivery of regional courses in marine protected area management in the western Indian Ocean region. The first course was held in Malindi, Kenya in February 2000, and the second one in St Lucia, KwaZulu Natal, South Africa in June 2002. The manual contains up-to-date and relevant information from the region and, where necessary, information and experiences from other parts of the world. Most of the modules for this manual were developed by experts from the region and therefore have incorporated regional experiences as well as case studies from the region. Its application in the first and second training courses provided the resource people and participants an opportunity to 'test' the manual; their comments have been used to update and improve the manual. Since then, additional comments from different experts have also been incorporated.

The importance of having a self-contained manual cannot be over-emphasised. Most MPA managers in the region do not have access to current, relevant reading material, so it was imperative that the manual contain sufficient information for MPA managers to undertake effective training with little or no dependence on significant external information resources. In this regard, the manual (including the cited reference materials) is intended as a stand-alone document to be used in both short-term (e.g. two-week) and long-term (e.g. one-year) training courses. It has been made as extensive and detailed as was deemed appropriate by the contributors, and it contains a variety of analytical and problem-solving exercises. Furthermore, the manual provides many examples and case studies from the region, to maximise local context and relevance.

It is intended that the training courses run using the manual be based on lectures and facilitated discussions as well as small group exercises. This is in recognition of the varied educational and professional backgrounds of the likely participants in such courses. Through these approaches, it is hoped that participants will become stimulated to bring their own experiences to the discussions and group exercises.

Each training session has a number identifying its sequence and an introduction, objective, estimated duration, materials needed, and outline of the process. Because all the training sessions are participatory and experiential, the process for each outlines detailed facilitator steps or instructions. The training sessions also include overheads, handouts and task instruction sheets.

The manual is comprised of the following 10 modules:

Module 1: *The Marine Environment and Protected Areas.* Provides information on the main coastal and marine ecosystems of the western Indian Ocean region, their importance and vulnerability as well the importance of marine protected areas in the management of coastal and marine resources.

Module 2: *Planning for Marine Protected Areas.* Introduces different types of planning tools, their strengths, shortcomings and implications for MPA management.

Module 3: *Marine Protected Areas Operations.* Provides an overview of the requirements for smooth and organised MPA operations. It also highlights maintenance and services requirements for different equipment and infrastructure in an MPA.

Module 4: *Participatory Processes.* Introduces the concept of participation in MPA management, highlighting the importance of participatory processes in stakeholder involvement and team strengthening. It also highlights likely causes of conflicts in MPAs and discusses methods for conflict management.

Module 5: *Communication and Public Relations.* Introduces guidelines for effective oral presentation, production of effective written publicity materials and how to involve all stakeholders in decision-making, thus strengthening partnerships.

Module 6: *Administration and Management.* Provides an overview of the personnel and office management tasks associated with the administration of a marine protected area.

Module 7: *Financial Management.* Introduces the financial management tasks associated with the administration of a marine protected area, including maintenance of financial records, generation of revenues and fundraising.

Module 8: *Sustainable Utilisation of Resources and Alternatives*. Identifies the various uses of marine and coastal resources as well as alternatives that can reduce pressure on these resources.

Module 9: *Monitoring and Evaluation in a Marine Protected Area*. Introduces monitoring and evaluation techniques for different ecological and social components relevant to MPAs.

Module 10: *Assessing Management Effectiveness in a Marine Protected Area*. Introduces the concept of assessing management effectiveness of MPAs as well as the processes, tools and skills necessary for this undertaking.

Editors' Note

The modular format adopted for this manual offers the opportunity for a flexible training programme that can be modified with the changing needs and demands of the region. In this light, the editors would be very grateful to receive your comments on the respective modules and the manual as a whole. The editors would also appreciate being informed and the source acknowledged when the manual is used in any training course.

MODULE 1

The Marine Environment and Protected Areas

AUTHORS: JULIUS FRANCIS AND TOM VAN'T HOF

Objectives

- To describe the main natural coastal ecosystems of the western Indian Ocean (WIO) region and to emphasise the importance of these ecosystems to continued human development in the coastal zone.
- To outline the features which make these ecosystems vulnerable to impacts of human activities.
- To introduce the concept of marine protected area (MPA) and its importance in coastal and marine resource management.
- To emphasise the need to place MPAs in their wider context and the international, regional and national legislative frameworks within which MPAs are established and managed.

Summary of Training Sessions

This module will be presented in two sessions as follows:

1.1: Marine Ecosystems

To describe the main coastal and marine ecosystems of the western Indian Ocean region and their importance.

1.2: An Introduction to Marine Protected Areas

To provide an understanding of the scope of Marine Protected Areas concept and its relevance to the management of coastal and marine environment issues.

Background and Sequence of Module

The marine environment is critical to the natural and cultural heritage of the world. Not only do many marine areas support a great diversity of plants, animals and natural habitats, but the oceans play an essential role in climatic cycles and other global processes. Marine ecosystems and resources are fundamental to the sustainable development of coastal countries, providing food, minerals, pharmaceuticals, construction materials and a vast range of other products.

They often support growing tourism and recreation industries and play a vital role in

transport and in the culture and lifestyle of coastal people. However, marine ecosystems throughout the world face increasingly serious threats from pollution, over-exploitation, conflicting uses of resources, damage and destruction of habitat and other harmful consequences of human development.

Marine Protected Areas are recognised as a practical way of conserving marine biodiversity, maintaining productivity of marine ecosystems and contributing to the economic and social welfare of human communities.

Trainer's Note

Open the session with a brief summary of the training session, outlining its objectives and significance. Then go over the course content and schedule.

References and Additional Reading Material

- Attwood, C.G., Harris, J. and Williams, A. 1997. International Experience of Marine Protected Areas with Relevance for South Africa. In: Marine Reserves Task Group (eds) Towards a New Policy on Marine Protected Areas for South Africa. South African Network for Coastal and Oceanic Research Occasional Report No. 2. 13–53.
- Best, B. 2003. Biodiversity Conservation and Integrated Coastal Management: Looking Beyond Marine Protected Areas. A paper presented in the International Workshop on Integrating MPA Management with Coastal and Ocean Governance: Principles and Practices, 12–14 July 2003, Baltimore, MD, USA.
- Francis, J., van Zwol, C., Sadacharan, D. and Mohamed, S. (eds) 1999. Marine Protected Areas Management: A Framework for Capacity Building in the Western Indian Ocean Region. Proceedings of the Regional Planning Workshop on the Training Needs for Marine Protected Areas Management, Zanzibar, Tanzania, 31 May–3 June 1999. 49pp.
- Hockey, P.A.R. and Branch, G.M. 1997. Criteria, Objectives and Methodology for Evaluating Marine Protected Areas in South Africa. In: Marine Reserves Task Group (eds) Towards a New Policy on Marine Protected Areas for South Africa. South African Network for Coastal and Oceanic Research Occasional Report No. 2. 13–53.
- Humphrey, S. and Francis, J. (eds) 1997. Sharing Coastal Management Experience in the Western Indian Ocean. Proceedings of the Experts and Practitioners Workshop on Integrated Coastal Area Management for Eastern Africa and the Islands States. Tanga, Tanzania, August 1996. WIOMSA. 142pp.
- IUCN, 1994. Guidelines for Protected Area Management Categories. CNPPA with WCMC, IUCN, Gland, Switzerland and Cambridge, UK. 261pp.
- Kelleher, G. 1999. Guidelines for Establishing Marine Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK, xxiv + 107pp.
- Kelleher, G., Bleakey, C. and Wells, S. (eds) 1995. A Global Representative System of Marine Protected Areas. Vol. III – Central Indian Ocean, Arabian Seas, East Africa and East Asian Seas. GBRMPA, World Bank, IUCN. 147 + supplement.
- Kelleher, G. and Kenchington, R. 1992. Guidelines for Establishing Marine Protected Areas. A Marine Conservation and Development Report. IUCN, Gland, Switzerland.
- Kelleher, G. and Recchia, C. 1998. Marine Protected Areas. Parks 8(2). (theme issue). IUCN, Gland, Switzerland.
- Linden, O. (ed.) 1995. Workshop and Policy Conference on Integrated Coastal Zone Management in East Africa including the Island States. Coastal Management Centre, Manila. Conf. Proc. 1 371pp.
- Moffat D. and Kyewalyanga M. (eds), 1998. Local and Comity Integrated Coastal Zone Management: Experiences from Eastern Africa. Proceedings of the Regional Workshop: Experiences in Local and Community Integrated Coastal Zone Management—Lessons to date: March 4–7, 1998.
- Partnership for Interdisciplinary Studies of Coastal Ocean. 2002. The Science of Marine Reserves. <http://www.piscoweb.org>. 22pp.
- Richmond, M. (ed.) 1998. A Guide to the Seashores of Eastern Africa and the Western Indian Ocean Islands. Sida. 448pp.
- Salm, R. and Clark J.R., 1984. Marine and Coastal Protected Areas for Planners and Managers. IUCN. 302pp.
- Salm, R.V., Clark, J. and Siirila, E. 2000. Marine and Coastal Protected Areas: A Guide for Planners and Managers. IUCN. Washington DC. xxi+371pp.
- Sandwith, T., Shine, C., Hamilton, L. and Sheppard, D. 2001. Transboundary Protected Areas for Peace and Cooperation. IUCN, Gland, Switzerland and Cambridge, UK. Xi+ 111pp.
- White, A.T. 1987. Coral Reefs: Valuable Resources of Southeast Asia. ICLARM Publication.

Training Session 1.1: Marine Ecosystems

Objective

This session is intended to provide an overview of the main coastal and marine ecosystems of the western Indian Ocean region, as well as their importance and vulnerabilities to human activities.

Training Sessions

- 1.1.1 Shore and Beaches
- 1.1.2 Estuarine Environment
- 1.1.3 Mangroves
- 1.1.4 Seagrass Beds
- 1.1.5 Coral Reefs

Background and Sequence of Sessions

The western Indian Ocean (WIO) region is comprised of both coastal (Somalia, Kenya, Tanzania, Mozambique and South Africa) and island (Mauritius, Comoros, Seychelles and Madagascar) nations. The coastal environment of this region is characterised by diverse and productive ecosystems such as estuaries, deltas, barrier islands, sandy beaches, sand dunes, mangroves, mudflats and coral reefs. These natural ecosystems are very important to the integrity and productivity of the coastal and marine environment. They contribute to the **biodiversity** of the region and all are vital for the **continued human existence** in the coastal zone.

Biodiversity is the sum of coastal and marine plant and animal species, their genetic variety, the habitats and ecosystems they form part of, and the ecological processes that support them all. In very simple terms, biodiversity is reflected by the number of species in the given area. For example, the biodiversity of marine life larger than 1 millimetre in size, for the shallow waters of the western Indian Ocean, is reflected by at least 11,000 species.

Healthy and diverse marine ecosystems are important for four main reasons:

- (i) they are more productive and therefore provide more resources (fish, mangrove wood, etc.) for the users. Each species has a specialist way of using different resources and adapting to changes (e.g. in water salinity or temperature). Thus, by having more species the productivity of the habitats and ecosystem is maximised;
- (ii) through having more species, they are also more stable. This helps protect against environmental changes (e.g. sea level rise, flooding, hurricane and cyclone damage);
- (iii) they allow species that depend on different habitats at certain stages of their life cycles (e.g. larval period, growth period, reproduction and nesting) to continue to exist. Keeping only one habitat may not be sufficient to retain all species, but keeping all habitats in a healthy condition again maximises productivity;
- (iv) the quality of life for coastal people and visitors relies on the marine biodiversity for aesthetic reasons.

However, widespread poverty, rapid population increase, destructive resources exploitation practices and inappropriate or poorly planned development activities among other factors, have contributed to the growing environmental degradation observed in a number of places in the region. The greatest stress on the coastal ecosystems is apparent in areas adjacent to urban and industrial centres.

It is important to understand the basic structure, functions and vulnerability of these ecosystems, to give a clear sense of why they should be managed effectively. This session will introduce the main coastal and marine ecosystems of the region.

Presentation: Small groups discussions and lecture

Duration: 2 hours of small groups discussion and 1 hour of lecture

Equipment and Materials: Flip charts and stand
Marker pens
Overhead projector

Process

- (i) Open the session with questions to determine the participants' awareness on the main ecosystems in the region and on productivity
 - Why is the water in the tropics so clear?
 - Name several important coastal and marine ecosystems.
 Note their responses on flip chart.
- (ii) Based on their response divide participants into five groups corresponding to the main coastal and marine ecosystems.
- (iii) Provide the participants with the guiding questions
 - What are the main features/characteristics of the ecosystem (consider the physical, chemical and biological aspects), using handout/overhead 1.1.1, "Processes in the Marine Environment"
 - What are their value—economic, social and political
 - Linkages to other ecosystems
 - What are their main environmental threats— consider the alternatives and approaches.
- (iv) The Group Leader of each group should present the outcome of the group discussions in the plenary session and with assistance from the members of the group, respond to the questions raised.
- (v) Take the participants through the overheads highlighting only those aspects that they might have missed.
- (vi) Conclude the session by summarising the main threats to the integrity of coastal ecosystems.

1.1.1: Shore and Beaches

Seashores, also known as shorelines, coasts or beaches, are the interface or meeting zones between land and sea. They are dynamic features and are often under the combined influence of many factors/ processes which themselves are subjected to change. These include geological, climatical and oceanographic processes.

Seashores are rich in flora and fauna. Most of the organisms that live on the seashore need special adaptations to be able to survive well in this unstable environment.

Shorelines are important both economically and ecologically. For example, sandy beaches are important as nesting habitats for marine turtles. They also offer recreational areas for tourists and local people alike. Muddy beaches support a variety of benthic fauna which are fed upon by a diversity of resident and migratory birds. Moreover, beaches offer a range of facilities to people, including: relaxing and attractive environments, a source of income through tourism, and working places for coastal communities.

Some of the islands, islets and rock cliffs in the WIO region are important breeding grounds for seabirds. These include: Aldabra, Bird Island and Cousin Island (Seychelles), Tromelin Island (Réunion), Latham Island (Tanzania) and Kiunga Island (Kenya).

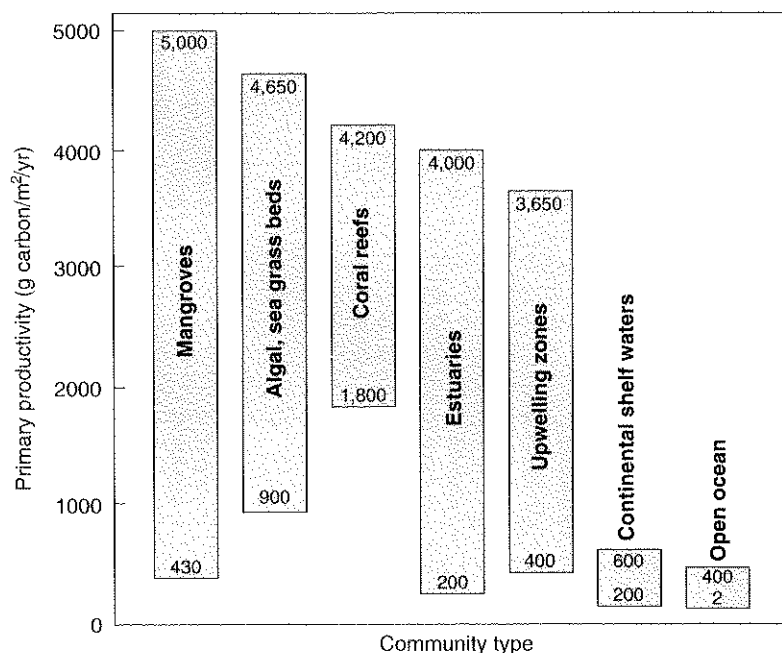


Figure 1.1.1. Ranges of primary productivity of some major marine communities (White, 1987)

TABLE 1.1.1: DIFFERENT TYPES OF SHORELINES

Type	Description
Exposed cliffs, steep rocky coasts	Near vertical walls with undercut notches or steeply dipping; exposed to wind and wave action
Fine-grained sand beaches	Generally sheltered beaches inside lagoons or behind the protection of coral reefs; subjected more to wind than wave action
Gravel, pebble, cobbles and boulder beaches	Exposed to wave action
Beach rock beaches	Lithified sediments consisting of calcareous sandstone, which are generally coarse and pebbly; with gently dipping shoreline, and in some parts masked by modern beach sand
Deltaic beaches	Protected from wind and waves action; low lying coastal areas that receive a large supply of terrestrial sediments; associated with river and tidal deltas. Mangrove swamps and marshes also fall into this category.
Sand dunes	Accumulated sand which are usually open to wind and wave action

The classification of shorelines adopted here is based on coastal geomorphology and degree of exposure.

TABLE 1.1.2: COMMON BREEDING AREAS FOR TURTLE

Species	Breeding Areas
Hawksbill	Cousin and other small islands in the region
Green	Mainland, Aldabra and island beaches
Olive Ridley	Northern Mozambique
Loggerhead	Mozambique and South Africa
Leatherback	Northern Natal, South Africa

The five species of marine turtles that have been recorded in the region, namely hawksbill, green, olive Ridley, loggerhead and leatherback, are dependent on availability of beaches for successful reproduction. Female turtles lay their eggs on sandy beaches some distance above the spring high-tide mark. Once turtle nesting beaches are established, the females often return to the same beach to lay eggs. Seashores, and beaches in particular, are affected by a number of human activities, which lead to phenomena such as beach erosion, or non-accessibility and disruption of traditional turtle nesting sites.

1.1.2: The Estuarine Environment

Estuaries are the buffer zones between sediment-laden freshwater of river systems and the sea. An estuary is defined as a semi-enclosed coastal body of water which has a free connection with the open sea and within which sea water is measurably diluted with freshwater derived from land drainage. Estuaries are generally sheltered from high energy waves and receive fine-grained sediments from inflowing rivers. In the WIO region the shores of most estuaries are colonised by mangroves and associated plants.

Estuaries are productive areas providing both ecological as well as socioeconomic benefits. Their high biological productivity is attributed to the combination of circulation patterns, nutrient supply and the changing salinity gradient. Because of their socioeconomic importance, estuaries are under ecological pressure.

Estuaries maintain high levels of productivity in a dynamic balance which revolves around the frequency and the amount of river discharge. The estuarine circulation pattern transports nutrients, influences a wide variety of habitat types, flushes away wastes, controls salinity distribution, and disperses and nurtures larval stages of a number of coastal organisms.

TABLE 1.1.3: MAJOR TYPES OF ESTUARIES	
Type	Description
Completely flushed	<ul style="list-style-type: none"> In river floods Salt water is found offshore only
Salt wedge	<ul style="list-style-type: none"> A lens of freshwater flowing over a salt water wedge Sharp halocline between salt water and freshwater in the vertical
Partially stratified	<ul style="list-style-type: none"> Diffused boundary between the freshwater on top and the salt water below Reduced river inputs or increased turbulence from tidal currents
Vertically homogeneous	<ul style="list-style-type: none"> Salinity constant from top to bottom Strong mixing from tidal turbulence

1.1.3: Mangroves

Mangrove ecosystems are rich in biodiversity and play a key ecological role in the coastal environment. Mangroves are salt-tolerant trees which flourish on salty, anaerobic and acidic soils. Mangroves grow in sheltered areas of brackish water, where freshwater mixes with seawater. These areas include estuaries, lagoons, bays, tidal creeks and inlets.

Mangrove forests occur along many stretches of the coast of East Africa, from southern Somalia to the KwaZulu-Natal coast of South Africa, and along the west coast of Madagascar. Small, isolated mangrove forests are also found on the islands of Mauritius, Réunion and the Seychelles.

The main species found in the region are *Rhizophora mucronata*, *Ceriops tagal* and *Bruguiera gymnorrhiza*. Other species include *Avicennia marina*, *Avicennia officinalis*, *Heritiera littoralis*, *Lumnitzera racemosa*, *Sonneratia alba*, *Xylocarpus granatum* and *Xylocarpus moluccensis*.

Mangroves are under threat from a number of activities including pollution, conversion to agricultural lands and over-exploitation of resources in that ecosystem.

Coastal geomorphology, availability of water, salinity, and the degree of exposure to wave energy all influence the zonation of mangroves.

While mangroves are found scattered along much of the region's shoreline, the most significant stands occur in Kenya, Tanzania, Madagascar, Mozambique and Somalia. The largest expanses of mangroves are in estuaries of large rivers, such as Zambezi River in Mozambique and Rufiji in Tanzania.

Mangrove ecosystems are rich in biodiversity and play a key ecological role in maintaining productivity in the coastal and marine environment.

Mangroves provide a variety of products of direct use to people. Coastal communities in the region have traditionally exploited these rich products, as well as various parts of the mangrove trees themselves.

In recent years, an increase in the rate and variety of human influences on mangroves has increased to the extent to which these ecosystems are threatened with destruction. One of the most pressing issues is the loss of mangroves forests coverage due to conversion for different purposes.

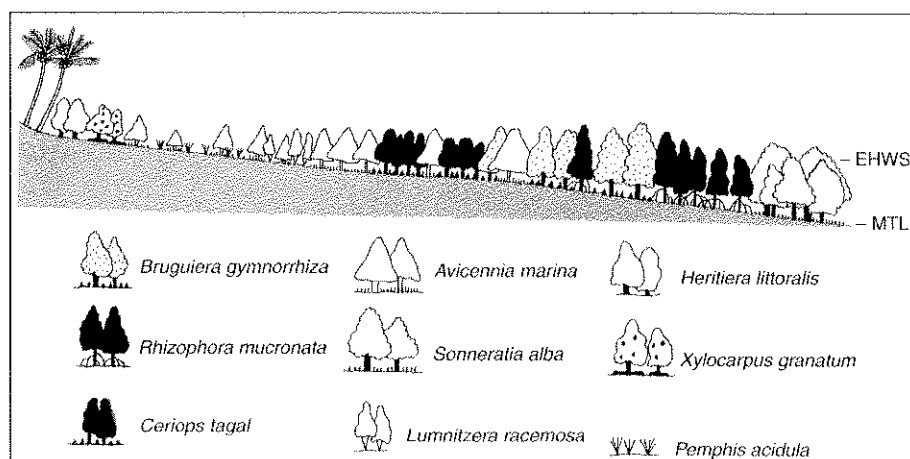


Figure 1.1.2. Example of zonation of mangrove forests (Richmond, 1998)

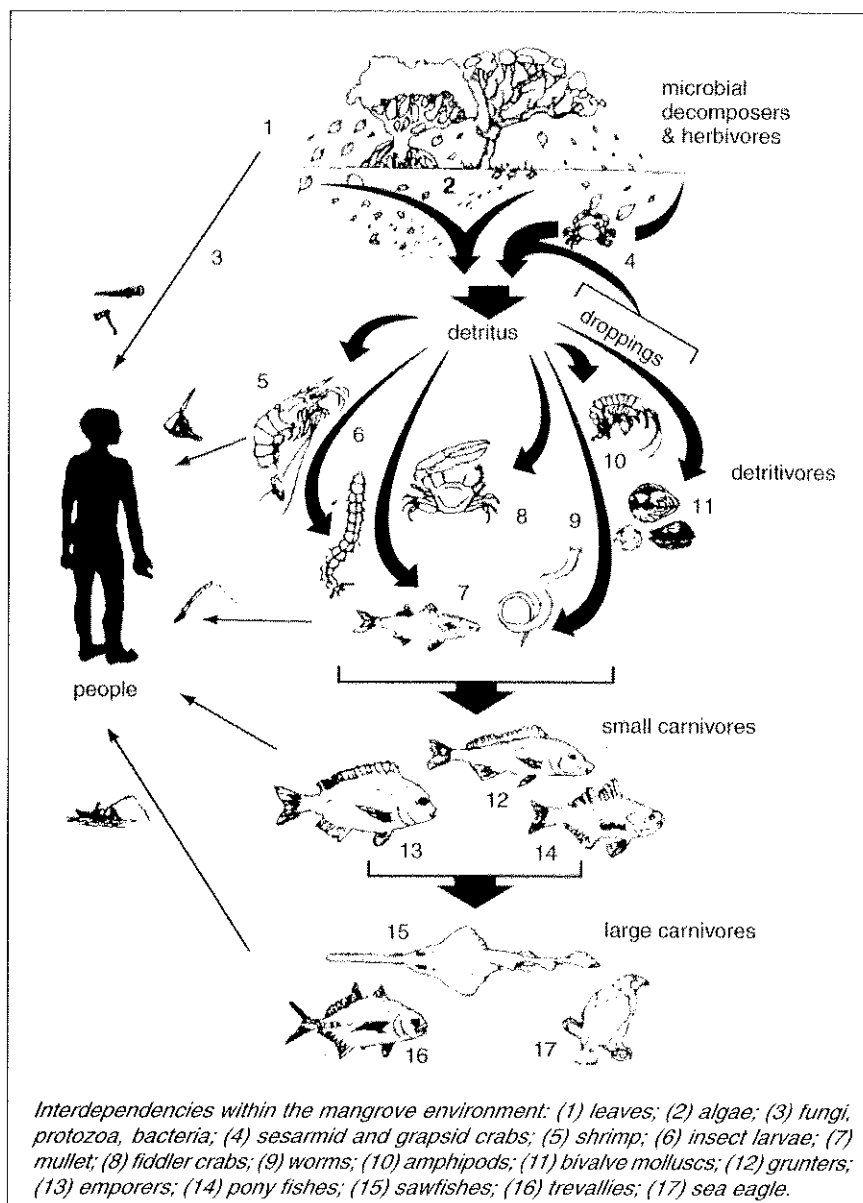


Figure 1.1.3. Ecological relationships within mangroves

TABLE 1.1.4: MANGROVE COVERAGE IN THE WIO REGION	
Country	Mangrove Area (ha)
Comoros	108
Kenya	500
Madagascar	420,000
Mauritius	100–200
Mozambique	400,000
Seychelles	Negligible
Somalia	No data
Tanzania	133,500

TABLE 1.1.5: USES OF MANGROVES	
Uses	Products
Fuel	Firewood for cooking and heating, firewood for lime making, charcoal
Construction	Timber, scaffolds, heavy construction timber, beams and poles for building, boat-building materials, fence posts
Fishing	Poles for fish traps, fishing traps, fishing floats, tannins for net preservation
Food and medicinal	Medicines from bark, leaves and fruits, fish smoking
Household items	Furniture, tool handles
Textiles and leather	Synthetic fibres, dye for cloth, tannins for leather preservation

1.1.4: Seagrass Beds

Seagrass beds are a common feature in intertidal mud and sands flats, coastal lagoons and sandy areas around the bases of shallow fringing and patch reefs. Seagrasses are commonly associated with coral reefs, to which they are linked both physically and in terms of energy flows.

They are found in most of the countries in the region, with the most extensive beds being found around the Bazaruto Archipelago in Mozambique. In Tanzania seagrass beds are found in all bays and the western side of Pemba, Unguja and Mafia islands. In Kenya seagrass beds are prominent in Mombasa, Diani and Malindi, while in Seychelles they are dominant in Platte and Coetivy and Aldabra.

In the region, there are at least 10 common species of seagrasses and the most common genera include *Thalassia*, *Halodule*, *Syringodium*, *Halophila*, *Cymodocea* and *Thalassodendron*.

Muddy substrates on the seaward edges of mangrove forests are generally more conducive to single-species seagrass meadows with high biomass, whereas multi-species meadows occur in the lower intertidal and shallow subtidal areas.

Seagrass beds are highly productive and serve many ecological functions. For instance, in Mozambique the distribution of dugong and green turtle is closely associated with that of seagrass beds.

Because seagrass beds are mainly found in shallow water close to shore and human activities, they are very vulnerable to pressure from those activities. The major threats to the survival of seagrass beds comes from excessive sedimentation of coastal waters resulting from different activities and natural processes. Increased turbidity tends to limit light penetration.

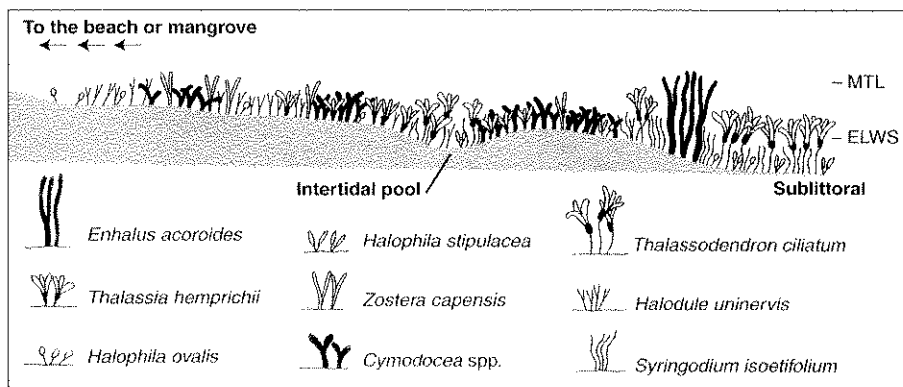


Figure 1.1.4. Zonation of seagrass beds (Richmond, 1998)

1.1.5: Coral Reefs

Coral reefs are shallow water ecosystems, which rank among the most biologically productive and diverse of all natural ecosystems. They support a diversity of marine organisms including fish, crustacea, molluscs, sponges, algae and seagrass.

Coral reefs are massive deposits of calcium carbonate, which are built over centuries by living polyps, coralline algae and other marine organisms, such as sponges. Corals are made up of small animals called polyps, which obtain food from capturing food drifting in the water currents as well as from small plant cells (called zooxanthellae) which live inside their tissues. The zooxanthellae use sunlight and nutrients in the sea water to produce food which is shared with the coral, while coral provide the zooxanthellae with shelter and protection. This is an example of a symbiotic relationship—two different organisms which live together for the benefit of both organisms.

A coral reef is made up of the skeleton of coral polyps. As polyps die, new ones grow on top of the old empty skeleton and over time, the collection of skeletons left behind by dead coral polyps and dead coral colonies builds large groups of a rock-like structure called a coral reef.

In the western Indian Ocean region, there are four types of coral reef formations. These include: the fringing reefs, barrier reefs, atolls and the patch reefs.

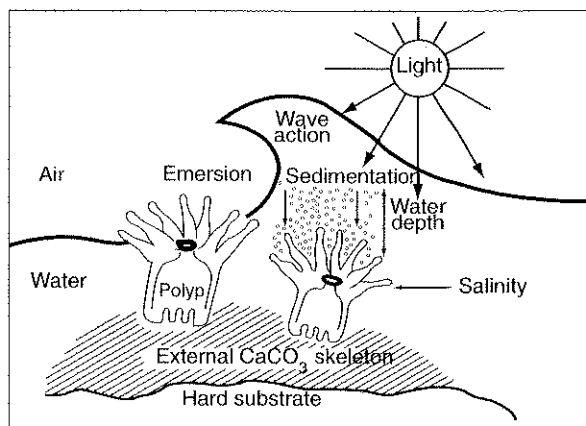


Figure 1.1.5. Reef growth (coral polyp) physical restraints

Map 1.1. Distribution of coral reefs and mangroves in the eastern African region

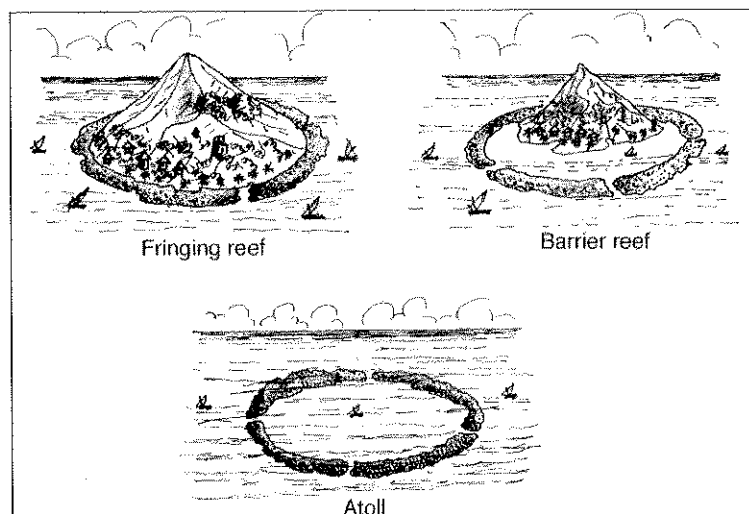


Figure 1.1.6. Different types of coral reef formation

Coral reefs are an important resource base for many coastal communities throughout the region. They provide many benefits including food from reef fish, recreation for tourists and coastal protection.

Coral reefs of the region are being affected by both natural factors and anthropogenic activities. The anthropogenic disturbances include direct physical destruction, pollution and over-exploitation. Crown-of-thorn outbreaks and coral bleaching are the leading natural disturbances.

1.1.6: Linkages Among Coastal Ecosystems

Coastal ecosystems are not independent or discrete units. They are linked together by a complex web of direct and indirect interactions such as nutrient exchange, transfer of energy, and other mechanisms such as migration, competition, symbiosis, etc. Disruption of any one of these processes / interactions affect the others. When mangroves, seagrass beds and coral reefs ecosystems are in proximity to one another, then these ecosystems are associated with each other both physically and in terms of energy flows.

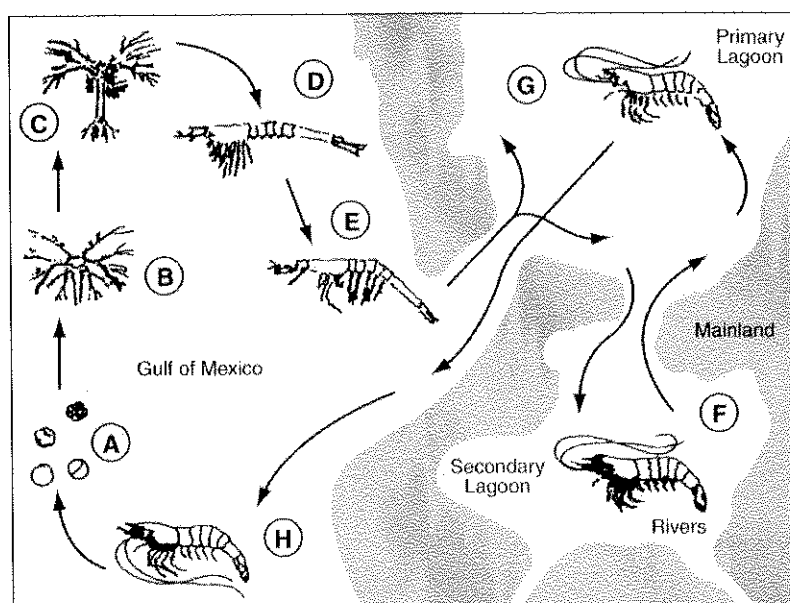


Figure 1.1.7. Generalised life history of a shrimp

In concluding, stress the importance of:

- Science in management (science is the backbone of management);
- What an MPA manager can do regarding alternatives and approaches beyond their direct control; e.g. to lobby with ministers (for transboundary parks), NGOs, visitors to the park (many of whom are from donor countries), and donors; and
- looking beyond your own protected area.

Overhead 1.1.1: Processes in the Marine Environment

There are physical, chemical and biological movements, reactions and actions that occur in the marine environment. Often these processes are not visible, nor are they obvious. Some of them are linked.

A few examples of the three main categories of processes are:

Physical: tides, currents, waves, temperatures profiles, substrate topography and composition

Chemical: water quality, dissolved gases, pH and turbidity

Biological: feeding, growth, metabolism, reproduction and species interactions

Overhead 1.1.2: Characteristics, Uses and Values of Seashores

- They are an interface between land and sea
- They include a range of types, from rocky boulders (Seychelles) fossil coral cliffs (Kenya and Tanzania), coral sand beaches (Kenya and Tanzania), volcanic rocky and boulders (Comoros and Mauritius) and sand dunes (Mozambique and South Africa)
- They act as a buffer against wave action
- They are important recreational/tourism resources
- They serve as working and living sites for human communities, e.g.
 - cities
 - harbours
 - boat launching and landing sites
 - disposal sites (?)
- They provide ecological services (e.g. nesting sites for birds and turtles)

Overhead 1.1.3: Main Threats to Shores and Beaches

- Sand removal/obstruction
- Degradation of protective ecosystems
- Beach construction

Overhead 1.1.4: Main Characteristics of an Estuarine Environment

- It has the following three unique features
 - it is coastal
 - it involves the mixing of seawater and fresh water
 - its circulation is strongly influenced by the presence of boundaries.
- It is very productive (in terms of variety and volume of organic matter)
- Due to temporal and spatial variability in salinity, it provides a specialised habitat for aquatic organisms
- There is usually a high concentration of human activity in and around estuaries

Overhead 1.1.5: Ecological and Socioeconomic importance of estuaries

ECOLOGICAL BENEFITS

- Highly productive, supporting high benthic biomass, high plankton densities and high fisheries production
- Nursery areas for a number of species
- Support migratory fish and crustaceans
- Can be retentive nutrient systems
- Provide filtering systems and settling basins for fine-grained sediments

SOCIOECONOMIC BENEFITS

- Provide a variety of products of direct use to people: fishes, crustaceans, birds, mammals, timber and wood products
- Provide opportunities for research, education, eco-tourism development and recreation
- Provides for anchorages and harbours

Overhead 1.1.6: Main Threats to Estuarine Environment

- Changes in river discharge/siltation that can result in saltwater intrusion and beach erosion
- Pollution
- Changes in circulation and drainage
- Construction around and encroachment into the estuary

Overhead 1.1.7: Characteristics of Mangrove Ecosystems

- Mangroves are salt-tolerant trees, found in estuaries or along the shore. At least nine species have been identified in the region
- They provide habitats to many organisms. In the western Indian Ocean region about 650 species of algae, molluscs, crustaceans and fish of economic importance are associated with mangroves.
- Zonation of species is a main feature, resulting from differences in tolerance ranges to saltwater immersions and freshwater inputs
- Mangrove forests produce large amounts of organic matter: one hectare of mangrove forest can produce over 23 tonnes of leaf litter, buds, flowers and branches per year

Overhead 1.1.8: Important Ecological Functions of Mangrove Ecosystems

- Serve as a shelter for different species
 - permanent homes: for species such as fiddler crabs and oysters
 - nursery ground especially for penaeid shrimp

- breeding sites for fish
- roosting sites for birds such as herons
- Protect and contribute to shoreline stability
 - act as natural breakwaters, thus reducing erosion from storms, currents and flooding
 - help stabilise river banks, preventing erosion and protecting adjacent lands
 - stabilise shorelines and promote coastal accretion
- Contribute organic matter to the adjacent ecosystems
- Help maintain quality of coastal water
 - functioning as sediment trap
 - filter contaminants and nutrients
- Can be harvested sustainably over 10-30 year cycles
- In Malaysia, forest and fish (prawns not included) are valued at US\$ 280,000/km²/yr

Overhead 1.1.9: Main Threats to Mangroves

- Loss of mangrove coverage due to conversion to:
 - agricultural lands: clearing of mangroves for rice farms in Tana Delta in Kenya; Zambezi in Mozambique and Rufiji Delta in Tanzania
 - salt pans
 - aquaculture ponds
 - urban and industrial developments
- Alteration of the hydrological conditions
- Pollution
 - rubbish dumps
 - oil pollution
- Over-exploitation of resources
 - clearing of mangroves for fuel and construction

Overhead 1.1.10: Main Characteristics of Seagrass Beds

- Comprise 12 species of salt-tolerant flowering grass-like plants
- These grow best in sheltered, sandy, shallow and sun-lit depths
- Predominantly in shallow sandy or muddy areas, including the intertidal
- Restricted by light availability, hence depth and water turbidity are important limiting factors
- Most species demonstrate marked tidal height zonation
- All propagate through flowers, fruits and tiny seeds
- Propagation through vegetative growth also very important
- Often associated epiphytic seaweed and epizoids (e.g. hydrozoans and other sessile invertebrates) contribute greatly to biomass and diversity of seagrass ecosystems, especially in the subtidal environment.

Overhead 1.1.11: Ecological Functions of Seagrass Beds

- Serve as shelter for many different species against predators
- Provide feeding grounds for fish
- Are a food source for some fish (often visible fish bites on the blades)
- Are a food source for turtle and dugong
- Are a nursery ground for many fish and invertebrates (e.g. crustaceans)
- Produce organic matter
- Recycle nutrients, often trapping nutrients from inshore systems before these are carried offshore
- Filter and trap sediments, also preventing these being carried offshore
- Living beds protect shorelines from erosion, wave action, and flooding
- Filter sediments and therefore reduce sedimentation over coral reefs
- Washed up blades help consolidate sand against erosion
- In Australia, 1 km² of seagrass was valued at US\$ 3,000,000

Overhead 1.1.12: Main Pressures on Seagrass Beds

- Pollution from land-based sources/activities
 - Sediments from poor land use practices in watersheds (e.g. Madagascar)
 - Eutrophication from sewage and farming nutrients causing seaweed blooms and smothering
- Physical damage from trawling and beach seining
- Removal by coastal hotels

Overhead 1.1.13: Characteristics of Coral Reefs

- Coral reefs are limited to the tropical and sub-tropical regions, extending about 35° north and south of the equator. They flourish best at temperatures between 25 and 30 °C
- Basic physical structure is based on successive growth of calcium carbonate skeletons which form rigid platforms over long periods of time
- Main contributors to reef development are hermatypic corals and coralline algae
- Basic units of reef growth are coral polyps and associated microscopic, symbiotic zooxanthellae which live in the coral tissues
- Significant coral reef development is restricted to water depth ranging from 2-30 m because:
 - the reef-building coral need sufficient light for photosynthesis to grow well, and
 - most corals cannot tolerate extended periods of exposure to air and their distribution on the shore begins at the sublittoral fringe.
- Clear water and low availability of nutrients are essential for reef growth

Overhead 1.1.14: Requirements of Coral Reefs

- High concentration of dissolved oxygen in the overlying water column
- Warm temperatures not exceeding upper thermal limits of reef-building corals
- Salinity between 32 and 36 parts per thousand
- pH between 7.5 and 8.5
- High water clarity
- Low concentration of inorganic nutrients
- Low phytoplankton biomass with high diversity
- Low concentration of suspended sediments of terrigenous origin or resuspended marine sediments
- Low frequency of freshwater land runoff
- Water free of pollutants

Overhead 1.1.15: Types of Coral Reefs

- Fringing reefs - grow at the edges of continents and islands, with the reef front containing actively growing corals, with a shallow lagoon separating the fringing reef from land. Most common types occurring along the coast of Kenya, Tanzania, northern Mozambique and around many of the islands
- Barrier reefs - are offshore structures separated from the shoreline by a deep channel. The Grande Recife of SW Madagascar and the Mahebourg Reef of SE Mauritius are examples of barrier reefs
- Patch reefs - occur close to shores without significant reefs, for example in Mauritius and the Zanzibar channel
- Atoll - are coral reefs growing in the shape of a circle, with the reef, which often has small islets on it, surrounding a lagoon. Aldabra is one example of an atoll

Overhead 1.1.16: Ecological and Economical Importance of Coral Reefs

- Provide food and shelter for many species from various taxa
- Produce carbonate sediments that contribute to substrate and beaches
- Act as "living breakwaters" protecting shorelines from erosional forces, e.g. in the Maldives; 1 km of concrete breakwater costs US\$ 10,000,000
- Are a net sinks for carbon in the form of calcium carbonate
- Support important diverse fish and invertebrate fisheries (ca. 5-15 tonnes/km²/yr; South Pacific = US\$ 15,000 km²/yr)
- Provide opportunities for education and research
- Provide valuable tourism attraction, e.g. in Zanzibar, Seychelles and Kenya
- Provide valuable pharmaceutical (bio-active) products

Overhead 1.1.17: Main Pressures on Coral Reefs

- Direct physical destruction
 - Destructive fishing methods: dynamite fishing, seine netting and the setting of traps
 - Irresponsible anchor usage as well as tourist activities such as diving, snorkelling and reef walking
 - Live coral mining
 - Coral collection
- Pollution
 - Sedimentation
 - Nutrient enrichment: Any increase in nutrients (nitrogen and phosphorus) normally from sewage, can upset the normal balance of the reef community
- Overexploitation - The overexploitation of key species (predators and herbivores) is causing a decline in the exploited species and ecological shifts leading to an abundance of undesirable organisms such as sea urchins and algae
- Reduction of salinity - Corals survive well in restricted, usually high salinities and therefore any reduction in salinity caused by increased rainwater or altered hydrological regimes, might affect the reef communities
- Coral bleaching—Is the expulsion of the symbiotic zooxanthallae by the coral. Bleaching is a process corals undergo when they are stressed and it is caused by increased temperatures, exposure to freshwater and siltation

Overhead 1.1.18: Interlinkages in Coastal Ecosystems

- Coastal ecosystems are linked and interact with each other in a variety of ways. Therefore, these should be considered as sub-ecosystems, vital parts to the wider coastal ecosystem
- Various processes link the various ecosystems, e.g. cycling of nutrients and the flow of energy
- Numerous mechanisms regulate the systems. Examples, some discussed earlier, include:

Physical

Tidal action
Wave action
Sediment sorting
Topography slope
Temperature
Current
Wind action

Chemical

Salinity
Dissolved oxygen
Sediment composition
Nutrient availability

Biological

Competition
Herbivory,
detritivory
Bioturbation
Symbiosis
Reproduction

Overhead 1.1.19: Processes Which Link Coastal Habitats

- Cycling of nutrients
- Flow of energy
- Mechanism regulating the systems

Overhead 1.1.20: Examples of Interlinkage Among Mangroves, Seagrass Beds and Coral Reefs

- Coral reefs serve as breakwaters, contributing to the low energy conditions required for mangrove development
- Through the production of calcareous sediments (*Halimeda* and parrotfish), coral reefs contribute to the formation of substrate and beach sand
- Mangroves and seagrass beds reduce the offshore transport of sediments onto corals
- Mangrove and seagrass detritus serve as energy and nutrient subsidies to coral reef communities
- Faunal overlaps exist between coral reef, seagrass beds and mangroves (e.g. blacktip sharks, barracuda, snappers, butterfly fish)

Training Session 1.2: An Introduction to Marine Protected Areas

Objective

To provide an understanding of the scope of the concept of marine protected areas (MPAs) and its relevance to the management of coastal and marine environment issues.

Training Sessions

- 1.2.1 Overview of Marine Protected Areas: Functions and Objectives
- 1.2.2 Design of Marine Protected Areas
- 1.2.3 Concepts of Integrated Coastal Management and MPAs
- 1.2.4 Policy, Legislation and International Treaties Relevant to MPAs
- 1.2.5 Information Needs and Sources of Information

Background and Sequence of Sessions

Three essential components of sustainable development of coastal and marine environment are:

- the conservation of marine biodiversity
- maintenance of productivity of marine ecosystems and
- contribution to the economic and social welfare of human communities.

These are best achieved through the establishment and management of marine and coastal protected areas (MPAs). MPAs offer opportunities for creation of institutional frameworks for the management of marine resource in response to increasing human pressure.

Different factors or criteria are used by different countries in determining the functions, size, shape and location of individual MPAs. These factors include, amongst others, the ecological, socioeconomic and scientific importance of the area.

The establishment of MPAs is one technique of marine conservation that is applied in a defined area and normally integrates many approaches/mechanisms, including but not limited to: species population protection, fisheries management, integrated coastal management, land use planning and adherence to international conventions.

Presentation: Small groups discussions and lecture

Duration: 2 hours of small groups discussion and 1 hour of lecture

Equipment and Materials: Flip charts and stand
Marker pens
Overhead projector

Process

- (i) Open the session with a question to determine the participants' understanding of the concept of Marine Protected Areas and related aspects
 - What is a marine protected area?
 - What is a biosphere reserve?
 - What is a marine reserve?
 - How has the concept evolved over the years?

Note their responses on flip chart and if necessary provide more clarifications using relevant overheads.

It is necessary to decide on a definition of marine protected area for the purpose of the course. For this course, an MPA will include any protected area that has a marine component.

- (ii) Divide the participants into five groups with each group assigned to discuss matters related to the training sessions. Guiding questions will be provided for each group.

Group 1. The objective and functions of MPAs

- Why do we need MPAs?
- What is the difference between terrestrial and marine environments in relation to the concept of protected areas?
- What are the main categories of MPAs? Assign some of the MPAs in each country represented in the group to a category.
- What are the outstanding problems/issues facing MPAs in the region?

Group 2. Design of marine protected areas

- What are the criteria used in selection of MPAs?
- Which is more effective: large MPAs or small MPAs, and single large or several small?
- What are the main principles applying to MPAs?
- What are purposes of zonation?
- How are MPAs established?

Group 3. Concepts of integrated coastal management and MPA

- What is integrated coastal management?
- What are the functions of integrated coastal management?
- What is the relationship between integrated coastal management and marine protected areas?

Group 4. Policy, legislation and international treaties relevant to MPAs

- What are the international and regional conventions and agreement on marine protected areas?
- Describe the legal framework and institutional arrangements in the countries of the region in relation to MPAs management.
- What are the advantages of transboundary MPAs?

Group 5. Information needs and sources of information

- Identify the information needs for different stages of MPAs development. Why is the information required and how best can it be obtained?
- Identify the main sources of information in the region.

(iii) Each group should present the outcome of the group discussions in the plenary session and respond to the questions raised.

(iv) Then take the participants through the overheads highlighting only those aspects that they might have missed.

(v) Conclude the session by summarising the aspects of MPAs management.

Case Study 1.1: Why Mafia Island Marine Park in Tanzania Was Established

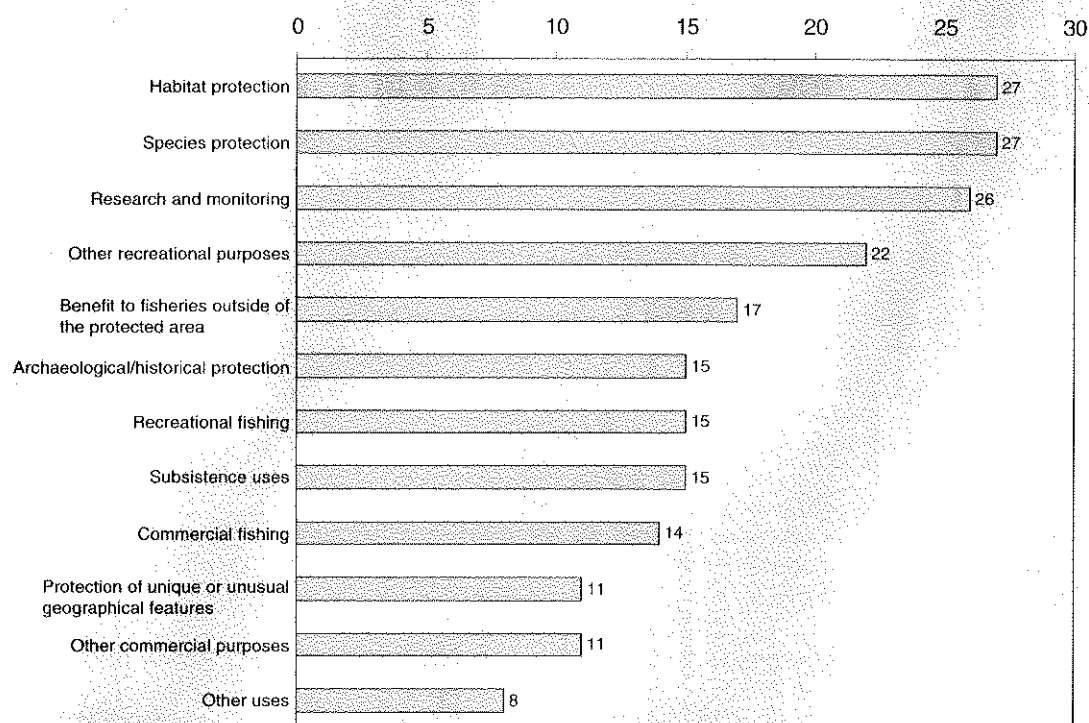
The reasons why Mafia Island was considered important enough to be set aside as a Marine Park encompass a range of global, national and local perspectives.

- The Marine Park area forms one of the finest complexes of tropical marine and coastal habitats in the region
- The Park area is one of the few remaining relatively pristine marine ecosystems in Tanzania
- The Park's relatively unusual topographical structure means that expansive areas are sheltered and shallow or inter-tidal, which provides conditions conducive to highly productive fisheries
- The Park's geographical location, coupled with its topography, endow it with a relatively high diversity of marine habitat types and in turn relatively high overall species richness
- The Park contains an important remnant of coastal forest with relatively high biodiversity
- The Park area provides nesting grounds for two endangered species of sea turtle
- The Park area provides feeding grounds for wading birds, as well as important nesting areas for open billed stork and fish eagles
- The Park area has a large colony of the fruit bat *Pteropus seychellensis comoransis*, which may be an endemic subspecies
- The Park area coral reefs offer some of the best snorkelling and scuba diving in the region
- The Park area is relatively undeveloped and retains clean sea and an uncontaminated environment
- The Park area contains cultural and historical resources, some of which date back almost 1000 years that encompass Shirazi, Arab, Portuguese, German and Swahili occupation and reflect the diverse cultural history of the East African coast.

Case Study 1.2: Purposes of Indo-Pacific MPAs

The majority of MPAs in the Indo-Pacific¹ have a broad range of objectives. Not only do they have environmental goals but they also cater for an assortment of human uses. Chart 1 shows the range of different uses mentioned by the MPAs and the number of times the purpose was selected by the respondents.

As the chart shows, habitat and species protection are the most popular purposes, along with research and monitoring. Recreational activities follows closely behind with most of the references relating to water sports (scuba diving being amongst the most widespread). The MPAs that included commercial activities as a purpose were often also referring to tourism.



Purposes of Indo-Pacific MPAs (number of times a purpose was selected)

How do MPAs in the Indo-Pacific compare to those in the rest of the world?

The profile of objectives of MPAs across the world varies relatively little, with one or two key exceptions. One of the most striking of these differences is the importance that MPAs in the Indo-Pacific attach to protecting fisheries outside of their boundaries. Protecting adjacent fisheries is a relatively unusual objective for MPAs in the rest of the world. Another difference is the importance that the Indo-Pacific MPAs (along with a number in the USA), attach to subsistence activities.

¹Based on a sample of 27 MPAs situated in the Indo-Pacific region who responded to a survey undertaken in 2002 on the Income Requirements of Marine Protected Areas.

TABLE 1.2.1: MATRIX OF MANAGEMENT OBJECTIVE AND PROTECTED AREA MANAGEMENT CATEGORIES

Management Objective	Ia	Ib	II	III	IV	V	VI
Scientific research	1	3	2	2	2	2	3
Wilderness protection	2	1	2	3	3	—	2
Preservation of species and genetic diversity	1	2	1	1	1	2	1
Maintenance of environmental services	2	1	1	—	1	2	1
Protection of specific natural/cultural features	—	—	2	1	3	1	3
Tourism and recreation	—	2	1	1	3	1	3
Education	—	—	2	2	2	2	3
Sustainable use of resources from natural ecosystems	—	3	3	—	2	2	1
Maintenance of cultural/traditional attributes	—	—	—	—	—	1	2

Key: 1 Primary objective; 2 Secondary objective; 3 Potentially applicable objective; — Not applicable

1.2.1: Overview of Marine Protected Areas: Functions and Objectives

Marine Protected Areas serve three main purposes—conservation of marine biodiversity, maintenance of productivity of the coastal ecosystems and contribution to the socioeconomic welfare of human communities. Creating protected areas can help counter threats to sensitive ecosystems such as coral reefs and mangroves, from pollution and destructive fishing methods.

Also importantly, the existence of MPAs provides a natural laboratory for testing the effectiveness of different management approaches.

Marine conservation has evolved over the years, from the management of individual activities (e.g. fisheries management) to the management of multiple use in protected areas.

An area may be designated a Marine Protected Area because of the functions that that particular MPA may contribute towards either the conservation of habitat, the conservation of species or the management of resources. Other functions include research, education and tourism.

Based on the management objectives and criteria for protection and exploitation, the World Conservation Union (IUCN) has proposed six categories of marine protected areas. Each of these categories have a legal structure under national laws and have their own management requirements and objectives.

Trainer's Note

Introduce the topic on MPA objectives by asking:

- Do you have clear objectives for your MPA?
- Were the objectives clear when the MPA was set up?

TABLE 1.2.2: CRITERIA FOR ESTABLISHMENT OF MPAS

Criteria	Elements
Ecological	Diversity, Naturalness, Representativity, Uniqueness, Integrity, Productivity, Vulnerability, Research opportunity
Economic	Fishery yield, Tourism
Social	Social or political acceptance, Public health, Recreation, History and heritage, Culture, Aesthetics, User conflicts, Education
Pragmatic	Urgency, Size, Degree of threat, Effectiveness, Uniqueness, Integrity

Case Study 1.3: Criteria Used in Selecting Mnazi Bay Marine Park in Tanzania

The process that finally culminated in the selection of the Mnazi Bay as a priority site for the establishment of the second MPA in Tanzania involved four other sites. These were Jange Reef/ Sudi Bay and Kilwa Archipelago in Lindi, Mbegani Bay and Mwamba Kuni in Bagamoyo District. The process involved four main steps:

- Collection of data both environmental and socioeconomic parameters from literature reviews, interviews and field studies.
- Data analysis and synthesis of the data collected
- Identification of three priority sites namely: Jange Reef/Sudi Bay (Lindi); Mwamba Kuni (Bagamoyo); and Mnazi Bay (Mtwara)
- Application of criteria to the three priority sites

Comments on the criteria used:

- The overall objectives of the conservation programme for the three priority sites were similar and therefore, all criteria applied to the sites were given equal weight
- Some of the standard selection criteria (compare with (Salm, et. al., (2000)) were interpreted differently. For example, while the criteria on scientific importance means value of site for research and monitoring in Salm et al. (2000), in this case study, this criteria means the availability of research and monitoring data and information.
- Human judgement played a major role in selecting Mnazi Bay as the priority site than numerical weighting as can be seen from the total scores of Mnazi Bay and Bagamoyo

Table 1.2.3 and Figure 1.2.1 summarise the evaluations for three sites.

TABLE 1.2.3: SUMMARY OF THE RESULTS ON THE ASSESSMENT AND RESPONSES TO THE CRITERIA FOR SITE SELECTION FOR MPA

CRITERIA	DESCRIPTION	REGIONS WHERE THE PROPOSED SITES ARE LOCATED	
		LINDI	BAGAMOYO
ECONOMIC IMPORTANCE	Economic and private sector activities	<ul style="list-style-type: none"> • Gas field • Hotel Projects 	<ul style="list-style-type: none"> • Commercial prawn fisheries • Visiting fishermen • Hotel Projects
	Recreational activities	Low	Medium
SOCIAL IMPORTANCE	Villages and other features	<ul style="list-style-type: none"> • 7 villages • Siliu river • Sudi (historical and cultural site) 	<ul style="list-style-type: none"> • 6 villages • Ruvu river <p>Kaole (cultural and historical)</p>
ECOLOGICAL IMPORTANCE		Ecological components	
	Main habitats	Coral reefs, mangroves, seagrass	Coral reefs, mangroves, seagrass
	Shallow/protected areas	Small	Large
	Integrity (complete ecosystem)	Coral reefs and mangroves separated	Coral reefs separated from mangroves and seagrass belt
	Habitat and genetic biodiversity	Medium biodiversity	High biodiversity
SCIENTIFIC IMPORTANCE	Resources abundance	High	High
	Scientific information	None	Frontier
	Environmental/resource monitoring	Fisheries statistics?	Fisheries statistics?/Frontier
PRACTICABILITY OR FEASIBILITY		Knowledge about MPAs	
	District officials	High	High
	Local communities	High (elders>young)	High (elders>young)
	NGOs	High	High
		Attitude/Interest on MPA	
	District officials	Positive	Positive
	Local communities	Positive (elders>young)	Positive (elders>young) (local>visitors)
	NGOs	Positive	?

		Willingness to establish MPAs	
	<p>District officials Local NGOs Degree of insulation from External destructive forces Socio-political acceptability of MPA Accessibility for education Accessibility for tourism Compatibility with existing resource exploitation methods/uses Ease of management or compatibility with existing management</p>	<p>High High High Medium High Medium Medium Conflicts with destructive fishing methods High</p>	<p>High High High Medium High High High Conflicts with destructive fishing methods High</p> <p>Non-committal Moderate ? Low Low High High Conflicts with destructive fishing methods High</p>
NATURALNESS	<p>Habitat destruction (dynamite, poisoning, juya) Main issues Resource abundance Possibility for recovery</p>	<p>Medium destruction Medium Dynamite High High</p>	<p>Medium destruction Dynamite, beach seine High High</p> <p>Medium destruction Dynamite, beach seine, Fish bycatch Medium High</p>
BIOGEOGRAPHIC	<p>Presence of habitat for and or rare/ endangered species</p>	<p>Turtles Medium biodiversity</p>	<p>Turtles, sea horses, nudibranch High biodiversity Cyanobacteria Low biodiversity</p>
NATIONAL INTERNATIONAL SIGNIFICANCE		<p>Moderate</p>	<p>Moderate</p>
PARTICIPATION	<p>Participating/interested partners in MPAs</p>	<p>Local community, DED, TRIPS, SOZOCO, ZASCO, Mangrove project Police Judiciary</p>	<p>Local community, DED, TRIPS, SOZOCO, Mangrove project, Kingsway Int, TPDC Gas Project FRONTIER, Hoteliers Police Judiciary</p> <p>Local comm. DED, Mangrove Project Hoteliers, Police Judiciary</p>
SITES	<p>Suggested sites for establishment of MPAs</p>	<p>Jange reef – Sudi Bay</p>	<p>Ruvuma estuary-Mnazi Bay Bagamoyo-Ras Mbegani- Mwamba-Kuni (No consensus on location)</p>

1.2.2: Design of Marine Protected Areas

The design (the size, shape and location of individual MPAs) is an important issue and requires careful practical considerations. These considerations which are dependent of the functions of individual MPAs include among others: boundary demarcation; the zoning of activities, threats from human activities, and potential use conflicts.

For example, the criteria for choosing MPA size to maximise catch in surrounding waters are different from those used to design a MPA for conservation. Small MPAs generally have little positive effect on surrounding fisheries, because the number of animals that eventually swim or drift out of the MPAs becomes diluted in the large area around the MPA. If a MPA is large enough and includes the necessary habitats to support various species, it can become a 'source' of these species for surrounding waters.

The design (the size, shape and location) of individual MPAs is an important issue and requires careful practical considerations. These considerations, which are dependent on the functions of individual MPAs include among others: boundary demarcation; the zoning of activities, threats from human activities and potential use conflicts.

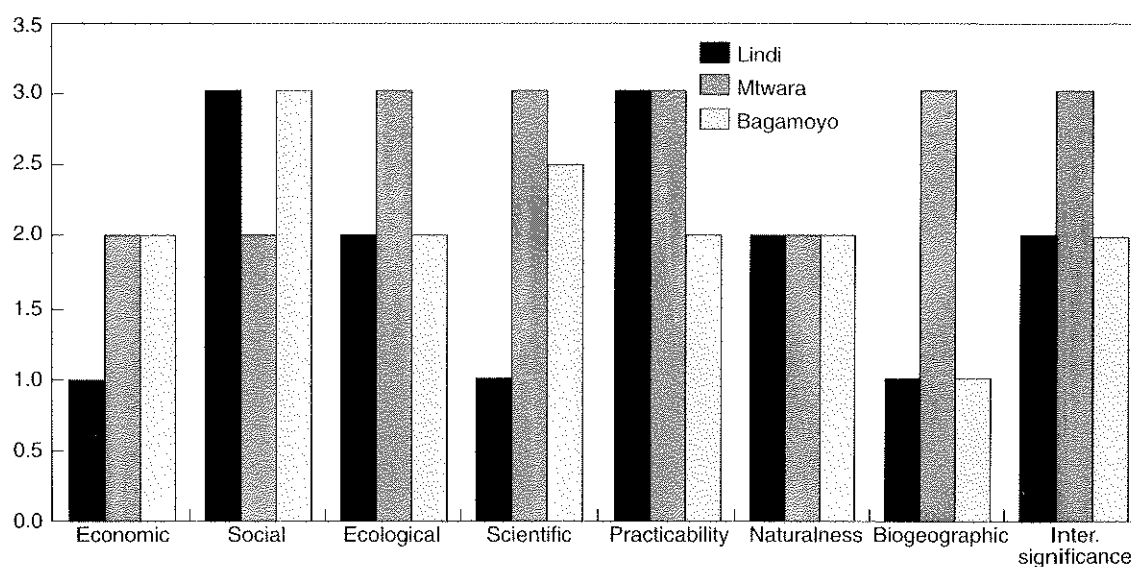


Figure 1.2.1. Scores for each criteria at the three sites: Lindi, Mnazi Bay (Mtwara) and Bagamoyo

Case Study 1.4: The Methodology Adopted in South Africa for MPA Evaluation and Selection

Hockey and Branch (1997) have developed a methodology known as Criteria and Objectives for Marine Protected Area Evaluation (COMPARE) (Table 1.2.4) that allows:

- (i) A qualitative comparison between existing MPAs to assess their relative success in meeting identified objectives
- (ii) objective evaluation of the relative merits of proposed MPAs
- (iii) an assessment of how legislative or managerial changes will improve or reduce the efficacy of a MPA.

Case Study 1.5: Demarcation of Boundaries of the Menai Bay Conservation Area, Zanzibar, Tanzania

Prior to the declaration of an area as marine protected area, the determination of its boundaries is essential. For the Menai Bay Conservation Area (MBCA) the boundaries were based mostly on location of fishing sites and involved three major steps:

Continued

Case study 1.4 continued.

Identification of Guiding Features

The MBCA Management Team and fisheries officer conducted consultative meetings with key stakeholders including fishermen and village leaders, aiming at identifying guiding features that could be used in determining the boundaries. These discussions also determined where the boundaries should be and why. It was agreed that the boundaries markers should be placed at least 500 m from the outer distribution limit of a sensitive ecological site.

Preparation of a Hypothetical Map of the MBCA

The features identified in the consultative meetings were then marked on a UTM grid map and the map of MBCA drawn. The geographical co-ordinates (UTM units) of all the important points were deduced and entered into a Geographical Positioning System (GPS).

Ground Truthing

A field trip involving the MBCA Management Team, fisheries officers, fishermen and scientists from the Institute of Marine Sciences, University of Dar es Salaam was conducted to identify (ground truthing) the reference features. The reference features and fishing grounds were searched, locations verified and/or actual location of reference point taken. Additional guiding references not originally considered were taken into consideration and their positions taken. Depth readings were also taken.

TABLE 1.2.4: MATCHING OBJECTIVES FOR MPA AGAINST CRITERIA RELEVANT TO THE SELECTION/EVALUATION OF MPA

TOTALS	OBJECTIVE			CRITERION
	UTILISATION	FISHERIES MANAGEMENT	PROTECTION	
	14. Exploitation 13. Education 12. Low impact reaction	9. Research 10. Monitoring 11. Ecotourism	1. Biogeography 2. Habitat diversity 3. Rare/endemic species 4. Vulnerable stages (exploited spp.)	
				1. Regionally representative?
				2. Not conserved elsewhere?
				3. Habitat diversity high?
				4. Includes fragile habitats?
				5. Houses vulnerable species?
				6. Protects rare/vulnerable stages?
				7. Pristine or restorable?
				8. Special natural features?
				9. Supports exploited spp.?
				10. Supplies adjacent areas?
				11. Large enough?
				14. Adjacent terrestrial reserve?
				15. Aesthetically appealing
				16. Accessible to people?
				19. Effective management?
				20. Satisfies social needs?
				21. Preserves historical sites?
				TOTALS
				TOTALS
				PERCENTAGE

TABLE 1.2.5: COMPARISON OF MARINE RESERVE REGULATIONS IN TANZANIA AND KENYA

	Tanzania	Kenya
Fishing	Fishing prohibited unless specifically authorised by the Marine Parks and Reserves Unit Manager	Only the use of destructive fishing methods is prohibited
Residence in the reserve	Entry and residence is prohibited except to: persons who ordinarily reside at any place within the boundaries of the marine reserve; persons engaged in any work being lawfully carried out within the boundaries of the marine reserve and tourists	Residence not allowed at all
Collection of marine organisms	Collection of any fish or other marine organism within a marine reserve prohibited	Collection of shells, aquarium fish and corals prohibited
Modification of ecosystem	Cutting, carving, injuring, mutilation, removal, displacement or breaking off of any undergrowth or formation or other flora; except for scientific studies, is prohibited. Digging of holes within a marine reserve or any other damage or impairment to any natural habitat or underwater scene is prohibited	
Swimming and diving	Swimming, wading, diving or using any diving equipment except for any purpose connected with scientific study or in areas specifically designated in the General Management Plan are prohibited, unless specifically authorised by the Unit Manager	Goggling, water skiing, and diving are allowed as long as prescribed fees are paid
Dredging, excavation and drilling	Except with the written permission of the Unit Manager after consultation with the Board any operation involving dredging, excavation, drilling or filling of any kind, is forbidden	
Anchoring of marine vessel	Operating, anchorage, casting or dragging of any vessel, water crafts or mooring devices, in such manner as would likely strike, injure or otherwise cause damage to any marine life or underwater feature is prohibited	
Fishing equipment	All types of fishing equipment, save with the permission in writing of an officer in charge of that Marine Reserve, are prohibited in the reserve	
Building in the Reserve		The building of any structure except with special authority from the Director of Kenya Wildlife Services, is prohibited
Marine mammals		The killing, harassment, disturbance or taking away of marine mammals or turtles is prohibited

Zonation is a very important feature of MPAs. This is a restrictive management tool, which aims at separating activities which are in conflict with each other when operating in the same area and permitting the most appropriate activities. MPAs could be zoned into general use zones—habitat protection zones and buffer zones.

The processes for establishment of MPAs vary depending on the social and political characteristics of the country.

Case Study 1.6: Tips for Developing Marine Boundaries

—David Stein – MPA News 4:7

In order to map marine or maritime boundaries, it is important to adequately interpret the relevant law and its spatial context. Maritime boundaries are often difficult to map as often there are no physical evidence to mark them. To assist practitioners in drafting and developing digital marine boundaries for MPAs, the following tips are recommended:

- The legal or authoritative description of an MPA must be clearly written so that it can be easily and accurately translated into a digital boundary
- When describing or developing a digital marine boundary, it is advisable to reference fixed features that will not move over time
- Prior to publication, have your boundary reviewed by mapping, legal and enforcement staff
- When developing a digital marine boundary, use the official source for boundary information
- When developing a boundary from a hard copy document, use the most detailed chart or map available
- Develop a set of instructions for developing boundaries within your organisation
- Share your marine boundary data through a data clearinghouse and notify all appropriate authorities of the existence of new or modified boundaries.

Case Study 1.7: The History of the Goukamma Nature and Marine Reserve, South Africa

The Reserve was established in 1960 but formally proclaimed in 1990. The period from 1960 to 1997 saw the intertidal zone utilised by commercial oyster gatherers and for bait collection. From 1977 to 1980, the marine area of the Reserve coastline was under the temporary jurisdiction of the Cape Nature Conservation, but there was no legislation to go with this jurisdiction. During this period concession holders were allowed to continue removing oysters and bait could be removed for use on the spot.

From 1980 to 1990, the intertidal zone remained under the jurisdiction of Nature Conservation, but the living marine organisms were under the Sea Fisheries jurisdiction. Regular marine patrols by field rangers along the coastline started in 1986 and have continued until the present.

During 1989 all access to the Reserve beaches was closed to vehicles including concession holders. During this period a concerted effort was made by commercial companies to harvest oysters from the mother-beds offshore; however, permission was finally denied.

On 27 May 1990, without any prior discussions with reserve staff, the Goukamma Marine Reserve was proclaimed through a notice in the Government gazette. No removal of marine organisms or fishing of any kind was allowed. However, following complaints from shore anglers the Government Notice was amended on the 26 October 1990, to allow fishing only using a rod and line from shore.

Case Study 1.8: Bird Reserve Protects Turtles and Reef Fish

—Nirmal Jivan Shah

In 1968, BirdLife International, then called the International Council for Bird Preservation (ICBP), purchased Cousin Island in the Seychelles archipelago to rescue a highly endangered endemic bird called the Seychelles warbler. The bird's population had dropped to less than 29 individuals and found only on that island. The island was declared a Nature Reserve under Seychelles law that same year.

Over a period of two to three years the importance of Cousin as nesting site for seabirds and hawksbill turtles was noticed. In 1972, the status of the island was upgraded to a Special Reserve, which included the sea area 400 metres from the High Water Mark all around the island. The marine area has received the same protection as the land since that time.

Cousin, which is now managed by Nature Seychelles, is today considered by turtle specialists to be the most important nesting site for hawksbill turtles not only in Seychelles but also the entire western Indian Ocean. Before the Reserve was designated, most of the turtles nesting on Cousin were killed during their first breeding season. Scientific data collected from an ongoing monitoring programme established in 1973, has shown that nesting activity of hawksbill turtles on the beaches of Cousin has more than tripled. The monitoring programme is believed to be the longest running one of its kind for this species in the world.

Unknown to most, the surrounding reef and associated marine fauna which had not been fished since the designation of the Special Reserve has also thrived. In 1996, a study showed that the reefs in the Cousin reserve contained 60% more of the commonly fished species than any other marine reserve in the granitic islands of Seychelles. Species such as groupers, emperors and snappers, which are the target of Seychellois fishermen, are more abundant in numbers as well as species. The bumphead parrotfish which sleeps in the reef and has been exterminated in many parts of the world, can still be seen around Cousin.

Cousin wardens carry on a long tradition of fiercely protecting the Reserve. Cousin wardens have the power to arrest or stop people suspected of carrying out illegal activities. In the last decade enforcement has mostly given way to advocacy, education, and forging good relationships with neighbouring groups, tourism operators and other businesses, fishers, police and local authorities.

1.2.2.1: Institutional and Legal Framework

In most countries in the region, the enabling legislation that provides a framework for the establishment of MPAs may either be a specific protected area legislation, fisheries or other relevant legislation. Different national authorities are charged with the establishment and management of MPAs in the region.

1.2.3: Concepts of Integrated Coastal Management and MPAs

Marine Protected Areas are affected by the larger ecological, social, economic, and political context of the coastal/ocean areas of which they are a part. A wide variety of economic and social activities taking place in the coastal zone and ocean affect the functioning of MPAs. In addition to economic and social activities taking place in the coastal zone, activities further inland and upland can have significant impacts on coastal/ocean areas and MPAs.

To manage these challenges in an appropriate manner while preserving essential ecological processes, life support systems and biological diversity, the Integrated Coastal Management (ICM) approach was identified by Agenda 21 of the United Nations Conference on Environment and Development (UNCED) in 1992 in Brazil as potentially being the most effective mechanism for addressing them.

The main goals of ICM are to: (i) improve the governance process that is supported by and benefits communities and nations; (ii) improve the economy, health and social well-being of people who depend upon coastal resources; and (iii) improve environmental quality to maintain biodiversity and ecosystem productivity.

MPAs are one of the tools used by the ICM practitioners and are as 'learning sites' or as 'demonstration sites'. As 'learning sites' MPAs are used for developing context-appropriate programmes within a country or region while as 'demonstration sites' they are used for: engaging and empowering the community; demonstrating early returns and benefits from the ICM process; achieving both community and government buy-in for ICM; and demonstrating that social, economic and environmental benefits can be mutually accrued.

TABLE 1.2.6: NATIONAL LEGISLATION AND AUTHORITIES RELEVANT TO MPAS IN THE REGION

Country	Key Legislation/Policies	Principal Authorities
Kenya	Wildlife Conservation and Management Act	Kenya Wildlife Services
Madagascar	Chartes de l'Environnement	Association National pour La Gestion des Aires Protégées Office National de l'Environnement
Mauritius	Fisheries and Marine Resources Act	Ministry of Fisheries and Cooperatives, Marine Parks and Reserves Services Division
Mozambique	Environmental Act 1998	Ministry of Environmental Affairs, Coastal Zone Management Unit
Seychelles	Environmental Protection Act 1994	Marine Parks Authority Bird Life, Seychelles
South Africa	<ul style="list-style-type: none"> • The Sea-Shore Act • Marine Living Resources Act 1998 • The Seabirds and Seals • The National Parks Act 	<ul style="list-style-type: none"> • Directorate of Sea Fisheries • Directorate of Environmental Management
Tanzania	Marine Parks and Reserves Act	Marine Parks and Reserves Unit, Ministry of Natural Resources and Tourism
Zanzibar	Fisheries Act	Sub-Commission of Fisheries

TABLE 1.2.7: MAJOR FUNCTIONS OF INTEGRATED COASTAL MANAGEMENT

Functions	Activities
Area Planning: Plan for present and future uses of coastal and marine uses	Zoning of uses <ul style="list-style-type: none"> • Anticipation of and planning of new uses • Regulation of coastal development projects • Regulation of public access to coastal and marine areas
Promotion of Economic Development: Promote appropriate uses of coastal and marine areas	<ul style="list-style-type: none"> • Industrial and artisanal fisheries • Tourism • Mariculture • Marine transportation and port development • Ocean research
Stewardship of Resources: Protect the ecological base of coastal and marine areas and ensure sustainability of uses	<ul style="list-style-type: none"> • Establishment and enforcement of environmental standards • Protection and improvement of coastal water quality • Establishment and management of coastal and marine protected areas • Protection of marine biodiversity • Conservation and restoration of coastal and marine environments
Conflict Resolution: Harmonise and balance existing and potential uses and address conflict among uses	<ul style="list-style-type: none"> • Application of conflict resolution methods • Mitigation of unavoidable adverse effects of some uses
Protection of Public Safety: Protect public safety in coastal and marine areas prone to natural and man-made hazards	<ul style="list-style-type: none"> • Regulation and development in high-risk areas through such methods as establishment of 'set-back' lines • Construction of coastal defence measures

Case Study 1. 9: How are MPAs Addressed in Tanzania's National Integrated Coastal Environment Management Strategy and South Africa's Coastal Policy?

Tanzania National Integrated Coastal Environment Management Strategy

Policy Statement 3. Conserve and restore critical habitats and areas of high biodiversity while ensuring that *coastal people continue to benefit from the sustainable use of the resources.*

The authority to be responsible to the implementation of the policy, in collaboration with relevant authorities, will identify critical coastal areas and areas of high biodiversity that should be included within Tanzania's existing or new protected area programmes.

District Integrated Coastal Management Plans will identify locally important critical coastal areas and areas of high biodiversity, and specify actions that provide for their conservation, restoration and sustainable use by coastal residents.

Coastal Policy of South Africa

Goal D2: Coastal Protected Areas

To establish and effectively manage a system of protected areas to maintain the diversity of coastal ecosystems

Objective 1: An adequate and representative system of protected areas shall be established and managed to maintain the diversity of coastal ecosystems, habitats and species

- Areas deserving protected status shall be identified and acquired by appropriate means
- Internationally and nationally significant sites should receive priority attention
- Protected areas shall be managed as 'bench marks' or base-line indicators for regional resource management efforts
- Protected areas shall be managed to contribute to the regeneration of fish stocks
- Protected area management practices shall involve the public and be informed by both scientific and local knowledge.

Objective 2: Coastal protected areas shall be integrated across both the land and sea, where practicable

- Coastal protected areas shall include adjacent land and sea components where practicable
- Neighbouring human activities shall be compatible with protected areas management objectives

Objective 3: The intensity of human use in protected areas shall vary according to the appropriate level of protection required to meet ecological objectives, local needs and the compatibility of activities

- Appropriate applied research shall be undertaken
- Compatible resource uses and educational activities shall be promoted
- Compatible traditional uses shall be promoted

An MPA can only be effective when it exists under a broader management framework in the form of an integrated management programme wherein externalities could be dealt with effectively through an interagency management co-ordination body.

1.2.4: Policy, Legislation and International Treaties

Despite their demarcated boundaries, marine protected areas are closely linked with larger natural, social, economic and political spheres. Species migrations and pollution problems respect no national boundaries. Furthermore, many MPAs provide benefits to the entire world as well as to individual countries. For these reasons, international cooperation regarding MPA management is essential.

Marine protected areas provide a mechanism for countries to meet the commitments called for by a number of international and regional agreements. These include the United Nations Law of the Sea; Chapter 17 of Agenda 21 of the United Nations Conference on Environment and Development; the United Nations Convention on Biodiversity; and the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention).

Countries are not bound to create MPAs under international law, however, there are numerous international conventions and agreements calling on countries to establish MPAs.

In the region, every country has its own set of laws governing how its MPAs are to be designated, managed and protected. The legal authority to establish MPAs is anchored in legislation and is either vested in the relevant Minister, Cabinet or Parliament. However, the legal authority and procedures for designation of MPAs vary widely in the region, depending on the political systems.

TABLE 1.2.8: INTERNATIONAL AND REGIONAL CONVENTIONS AND AGREEMENT ON MARINE PROTECTED AREAS

Conventions/Agreements	Relevance to MPAs
United Nations Law of the Sea	Calls upon states to protect and preserve the marine environment, to prevent, reduce and control pollution, and to protect rare and fragile ecosystems and species
United Nations Conference on Environment and Development	Calls upon states to identify marine ecosystems exhibiting high levels of biodiversity and productivity and other critical habitat areas and provide necessary limitations on their use, and properly manage these areas through inter alia designation of protected areas
United Nations Convention on Biodiversity	Identifies the establishment of MPAs as one of the five thematic areas for implementation of the Convention
Convention on Wetlands of International Importance especially waterfowl (Ramsar Convention)	Calls upon states to designate site(s) within their territory for conservation of waterfowl and shorebirds through protection of wetland habitats
World Heritage Convention	Calls upon states to protect the natural features for which the area was considered to be of world heritage quality
Nairobi Convention	The Protocol concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region, calls for the establishment of a regional programme to coordinate the selection, establishment and management of protected areas with a view to creating a representative network of protected areas in the Eastern African region.

The Strategic Action Programme for the Marine and Coastal Environment of the Western Indian Ocean calls for the establishment of transboundary MPAs along the coast of eastern and southern Africa. It is recommended that transboundary MPAs be established in the border areas of Kenya/Tanzania, Tanzania/Mozambique and Mozambique/South Africa.

Transboundary Protected Area is defined as “an area of land and/or sea that straddles one or more boundaries between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limits of national sovereignty or jurisdiction, whose constituent parts are especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed cooperatively through legal or other effective means.”

The establishment of Transboundary Protected Areas has many benefits including creation of opportunities for enhanced cooperation and reduction of tension in border areas.

1.2.5: Information Needs and Sources of Information

Information is the foundation for effective and efficient planning and management of MPAs. The success of MPAs depends among others, on the availability of good baseline information and understanding of the relationships between key factors/processes for the purpose of identifying and prioritising management issues.

There are a number of sources nationally, regionally and internationally available to MPAs managers, decision-makers and researchers to access up-to-date information on MPAs.

Data and information on land use, legal protection, social, economic and biological and other parameters, are needed for effective management of MPAs.

Case Study 1.10: Application of Science in MPA Design and Management

—MPA News 3:9

The workshop on "Improving Applications of Science in MPA Design and Management" held in the Turks and Caicos Islands, in November 2001 made some useful suggestions for better integration of science in MPA management.

I. Establish explicit and realistic protocols for measuring effectiveness

- Managers: Provide explicit goals for measuring effectiveness. Scientists: Work with managers to develop measurable attributes of the key goals.
- Consider a broad array of metrics, familiar to both scientists and managers. Identify the ones that are critical, and monitor these over appropriate time scales.
- Recognise the confounding effects of both natural and anthropogenic variables. This task is complicated as political timelines (e.g., election cycles, sunset clauses) are commonly incompatible with biological response timelines needed to identify management results in the presence of many confounding variables.
- Recognise that management effectiveness may not always be best measured at typical confidence levels, particularly in the face of 1) 500 years of prior marine anthropogenic impacts in the Caribbean and the many generations of shifting—i.e., lowered-management baselines, and 2) extremely disconnected cause-and-effect response from management actions over short time scales.

II. Identify key population linkages

- Consider long-term research on populations and habitats, including the collection of basic biological information, much of which is often limited (e.g., home ranges of adults and younger life stages; habitat dependency, opportunism, and shift timing with maturation across the shelf; growth variation correlated with fecundity; details of trophic patterns; and geographic variations within all of these attributes).
- Find the resources (financial and otherwise) to conduct and process vertically stratified plankton surveys. Direct empirical information on larval behaviour is almost non-existent.
- Standardise commercial fisheries data at the species level.
- Evaluate impacts of commercial fishing gear, recreational fishing gear, and recreational diving on habitats.

III. Build political insight to accommodate scientific time and spatial scales

- Better educate managers and fishermen on cascade effects over multiple time and spatial scales, and the difficulties and delays in predicting outcomes.
- Provide adaptive management alternatives upfront and educate managers that it is not a failure to modify the alternative as new information becomes available.
- Bring commercial and recreational fishermen more directly into the information-gathering process.
- Develop ways to standardise monitoring and enforcement within and among MPAs, allowing for easier determination of effectiveness.

Case Study 1.11: Make Science More Applicable: Bonaire Perspective

—MPA News 3:9

Of the myriad research projects conducted in MPAs around the world, relatively few may be of direct value to the management of those sites. Kalli De Meyer, former manager of the Bonaire Marine Park (BMP), would like to see science made more applicable to MPA management. She says "Science is most useful when it is providing support for resource management and addressing management issues".

De Meyer cited three studies that had proven to be very useful to BMP, in terms of both aiding management and steering local governmental response to threats. These studies, she said, had the following qualities:

- Management-related conclusions were clear;
- Results were delivered to the park in a timely fashion;
- The science did not necessarily have to be rigorous to be valuable; and
- The park was involved throughout, so that the resulting discussion and presentation had the maximum impact on policy.

There is plenty of room for improved collaboration between managers and scientists, said De Meyer, including in the choice of subject matter and experimental design. She estimated that in her nine years at BMP, less than 5% of the research conducted there by external scientists was of value to the MPA.

Overhead 1.2.1: Definitions of Protected Areas

MARINE PROTECTED AREA (MPA)

"Any area of intertidal or subtidal terrain, together with its overlying waters and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means to protect part or all of the enclosed environment" (IMO, 1991).

"An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (IUCN, 1994).

BIOSPHERE RESERVE

"A protected area of representative terrestrial and coastal environments which has been internationally recognised under the UNESCO man and the biosphere programme for their value in conservation and in providing the scientific knowledge, skills and human values to support sustainable development".

MARINE RESERVE

"An area of marine water from surface to bottom that is subjected to substantially reduced harvest pressure and other forms of ecological stress than other areas in the vicinity because of restrictions on human activities".

Overhead 1.2.2: Background of Marine Conservation

- Management of individual activities e.g. commercial fishing
 - done by sectoral specialist institutions
 - little coordination with relevant stakeholders
 - based on a top-down approach
 - for fisheries, it was based on restrictions on gear, catches and effort.
- Establishment of specialised MPAs (e.g. MPAs in Kenya and Seychelles)
 - small in size to conserve certain areas such as coral reefs and mangroves, or endangered species such as turtles or sea birds
 - no coordination with management of adjacent areas
 - minimal involvement of local communities.
- Establishment of multi use MPAs (e.g. Mafia Island Marine Park in Tanzania)
 - based on principles of integrated coastal management.

Overhead 1.2.3: Categories of Protected Areas

- i. *Strict nature reserve/wilderness area*: Protection area managed mainly for science or wilderness protection
 - Strict nature reserve: Protected area managed mainly for science
 - Wilderness area: Protected area managed mainly for wilderness protection
- ii. *National park*: Protected area managed mainly for ecosystem protection and recreation
- iii. *National monument*: Protected area managed mainly for conservation of specific natural features
- iv. *Habitat/species management areas*: Protected area managed mainly for conservation through management intervention
- v. *Protected land/sea scapes*: Protected area managed mainly for landscape/seascape conservation and recreation
- vi. *Managed resource protected area*: Protected area managed mainly for the sustainable use of natural ecosystems

Overhead 1.2.4: MPA Objectives

- To protect and manage substantial examples of marine and estuarine systems to ensure their long-term viability, and to maintain genetic diversity
- To protect depleted, threatened, rare or endangered species and populations and, in particular to preserve habitats considered critical to the survival of such species
- To protect and manage areas of significance to the life cycles of economically important species
- To prevent outside activities from detrimentally affecting the marine protected area
- To provide for the continued welfare of people affected by the creation of marine protected areas
- To preserve, protect and manage historical and cultural sites and natural aesthetic values of marine and estuarine areas, for the present and future generations
- To facilitate the interpretation of marine and estuarine systems for the purpose of conservation, education and tourism
- To accommodate within appropriate management regimes a broad spectrum of human activities compatible with the primary goal in marine and estuarine settings
- To provide for research and training, and for monitoring the environmental effects of human activities, including the direct and indirect effects of development and adjacent land-use practices

Source: IV World Congress on National Parks and Protected Areas. Workshop III.2.

Overhead 1.2.5: Comparison of Small and Large MPAs

Large MPAs have the following advantages:

- they are easier to manage than several single small reserves of equivalent total size
- have a good buffering capacity, which dampens the influence of natural and human-induced events
- can be zoned to accommodate a variety of uses and various levels of protection
- effective in protecting threatened species
- are likely to protect a high diversity of habitats
- effective in protecting ecosystems in their entirety
- have less 'edge effect'.

Small MPAs have the following advantages:

- They are more likely to enjoy public support
- Are easier to establish, manage and enforce
- Offer opportunities for comparative studies.

Overhead 1.2.6: Principles of MPAs

- Limitation of particular activities through zoning
- Enforcing closure systems
- Setting of size limits and harvest limits
- Prohibiting or limiting the use of destructive gear
- Licensing or issuing of permits
- Limiting access by setting a carrying capacity.

Overhead 1.2.7: The purpose of zonation

Zonation is the spatial or temporal allocation of specific uses and activities to well-defined areas within a protected area.

FUNCTIONS OF ZONING ARE TO:

1. Protect the ecosystem, species, or habitat critical to the survival of species
2. Provide a buffer between managed and unmanaged areas
3. Manage resources uses
4. Reduce or eliminate conflict between resource users
5. Reserve areas for specific purposes such as research and education.

Overhead 1.2.8: The Common Steps in the MPA Establishment Processes

Need for MPA (through local and/or government initiatives)



Identification of an MPA



Drafting of management plans and legislation



Designation of the MPA

Overhead 1.2.9: What is Integrated Coastal Management?

...a continuous and dynamic process that unites government and the community, sciences and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources.

The goal of coastal management

...to improve the quality of life of human communities which depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems.

Overhead 1.2.10: Relationship between ICM and MPA

- MPA are established and managed through legal or other effective means while ICM is a conceptual framework that is not necessarily based on legal framework
- category VI of MPAs, i.e. managed resource protected area by definition have similar management objectives as an integrated coastal zone management programme
- MPAs, particularly those in category vi, incorporate the basic principles of ICM such as
 - local ownership of MPA
 - stakeholder participation in all phases of establishment and management of MPAs
 - integration across sectors and scales of management.

Overhead 1.2.11 Basis for Establishment of MPAs: Policy Framework

INTERNATIONAL:

- IUCN
- Convention of Biodiversity/Jakarta mandate
- World Heritage Convention
- Ramsar Convention

Elements of IUCN policy

1. Integrated management strategies to achieve objectives of WCS
2. Stakeholder involvement in developing these strategies
3. Co-operative action to develop national systems of MPAs

CBD/Jakarta Mandate Thematic Issues:

1. Integrated marine and coastal area management
2. Sustainable use of marine and coastal resources
3. Marine and coastal protected areas
4. Mariculture
5. Alien species

Overhead 1.2.12: Advantages of Transboundary Marine Protected Areas

- Promote peace, since through co-operation between governments, border conflicts are reduced
- conserve integral ecosystems that span national borders
- preserve the cultures of indigenous people who live on both sides of the border
- facilitate more effective research
- bring economic benefits to local and national economies
- ensure better cross-border control of problems such as fire, pests, poaching, and marine pollution

Overhead 1.2.13: Information Needs for Planning and Design of MPAs

1. What is the extent and distribution of different ecosystems and habitats in the area?
2. What is the condition of these systems and habitats?
3. What are the most important functions of these systems and habitats?
4. How are they being used, by whom and when?

Overhead 1.2.14: Process of Information Gathering and Analysis

1. Determine the information needs
2. Compile available information from published literature and unpublished reports
3. Identify information gaps
4. Determine the most suitable data collection methods
5. Collect data
6. Analyse and map data.

Overhead 1.2.15: Social and Economic Information Needs

1. Fishing (methods, location, number of fishers, number of boats, species targeted)
2. Recreation and tourism (types of activity, numbers, location)
3. Traffic (ship movements, both commercial and recreational)
4. Waste disposal (solid and liquid, location, type)
5. Sand mining (location, extent)
6. Industrial activities (type, location)
7. Traditional use rights (type, location)
8. Identification of stakeholders.

Overhead 1.2.16: Physical Information Needs

1. Water quality (especially when water quality is suspected to be affected by sewage or industrial pollution)
2. Current regimes (may determine distribution of species, dispersal of larvae and recruitment of certain species).

Overhead 1.2.17: Resource Information Needs

1. Occurrence and characteristics of coral reefs and coral communities (location, extent, number of hard coral species, percent live coral cover)
2. Occurrence and characteristics of seagrass beds (location, extent, number of species, percent cover)
3. Occurrence and characteristics of mangroves forests (location, extent, number of species, tree height and diameter)
4. Characteristics of reef fish populations (census of commercially important species, presence of indicator species, calculation of biomass)
5. Occurrence of endangered species (what species, location)
6. Occurrence of migratory species (what species, location, period)
7. Occurrence of habitats critical to the survival of species (breeding, feeding, nesting, roosting, nursery)
8. Occurrence of archaeological and historical resources (shipwrecks, artefacts).

MODULE 2

Planning for Marine Protected Areas

AUTHORS: JOHN KAREKO AND PAUL SIEGEL

"In preparing for battle I have always found that plans are useless, but planning is indispensable."
- Dwight D. Eisenhower, US general, politician, president

Objective

This module provides an overview of different types of planning tool, their strengths, shortcomings and implications for Marine Protected Areas management. Upon completion of this module, trainers will be able to develop, assess and modify their own use of planning tools.

Summary of Training Sessions

This module contains four brief training sessions, with the following aims:

2.1 Introduction to Planning

To introduce the MPA managers to the various types of management plans required for MPA management and their importance. This Session will give an overview and definition of various types of plans required for marine protected area management. The plans range from short-term to long-term, with the long-term plans being more general than the typically much more detailed and descriptive, short-term plans.

2.2 Planning Methods

To introduce the MPA managers to the methods and the process for development of the management plans putting the logical framework into consideration. The Session explains the application of the logical framework on project planning and includes an exercise on development and implementation of a resource monitoring programme for a marine park. It also gives a brief description to the limits of acceptable change (LAC) methodology, highlighting its benefits and advantages, and describes the logical framework definitions.

2.3 General Management Plan

To give an overview of a general management plan, including the process of its development. The Session includes an exercise in the preparation of an annotated outline for a general management plan.

2.4 Zoning

To introduce the MPA managers to the importance of zoning marine protected areas and the zoning process itself. It provides a brief introduction of zoning plans and is concluded with a case study in developing a zoning plan for Utopia Marine Park.

Background and Sequence of Module

This module is concerned with the various types of planning required for marine protected area management and their development process. It gives an overview of a general management plan, and guidance on the steps to follow in its development. The Module will involve a combination of brief lectures using overheads, and group tasks.

References and Additional Reading Material

- Barrett, M. G. (1992). Coastal zone planning and management.
- Clark, J. 1996. Coastal zone management handbook. CRC/Lewis Publ., Boca Raton, Florida (USA). 694pp.
- Dobbin, J. A. (1976). Planning, design, and management of marine parks and reserves.
- Eagles, P.F.J., McCool, S.F. and Haynes, C.D.A. 2002. Sustainable Tourism in Protected Areas: Guidelines for Planning and Management. IUCN Gland, Switzerland and Cambridge, UK. xv + 183pp.
- FAO, 1988. National parks planning: A manual with annotated examples.
- IUCN, 1991. Guidelines for establishing marine protected areas, protected landscapes—A guide for policy makers and planners. PHC Lucas.
- Kelleher, G. (1999) Guidelines for establishing marine protected areas. IUCN, Gland, Switzerland and Cambridge, UK, xxiv+ 107 pp.
- McCool, S.F., and Stankey G.H. (1992). Managing for the sustainable use of protected wildlands: The Limits of Acceptable Change framework. Paper presented at IV World Congress on National Parks and Protected Areas, Caracas, Venezuela, February 10–21, 1992. 11 pp.
- SEACAM (1999). From a good idea to a successful project. A manual for development and management of local level projects. Secretariat for Eastern African Coastal Area Management. Maputo, Mozambique.
- Stankey, G.H. (1990). Conservation, recreation and tourism in marine setting: The good, the bad and the ugly? pp. 11–17. In Millon, M.L. and J. Auyong (eds) Proceedings of the 1990 Congress on Coastal and Marine Tourism, Hawaii 25–31 May 1990.
- United Republic of Tanzania, 2000. Mafia Island Marine Park. General Management Plan. 68pp.

Training Session 2.1: Introduction to Planning

Objectives

To familiarise the MPA manager to different types of planning tools, their strengths, shortcomings and implications for marine protected area management.

Significance

The success of MPA management depends on the management techniques applied. Planned projects save time and resources, and gives room for continuity. A management plan gives the stakeholders and the community a chance to give their inputs in MPA management.

Background and Sequence of Sessions

Presentation: The session starts with a brief lecture using overheads.

- Commence the session with the quotation from General Eisenhower—explaining its significance to MPA management
- Provide a definition of planning, common features and types of plans provided
- Give an overview of the strategic planning process
- State that objectives and targets should be 'SMART'
- Pose the questions: Management Plans – how important are they? Do we need them?
- Introduce the concept of Business Plans

Duration: Half a day

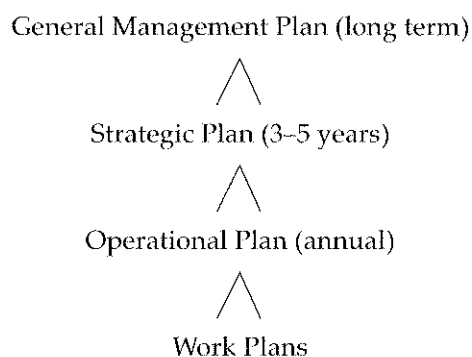
Equipment and Materials: Overhead projector
Overhead transparencies with matching handouts
Flip charts
Marker pens

2.1.1: Introduction

Marine protected areas require tools and specific resources to achieve their stated conservation objectives. The goal of MPA management is to ensure that those resources are used effectively and efficiently. Planning is the road map used by managers to guide park activities.

Plans can be tailored to specific time frames (monthly, annually, 5 years, etc.) or specific issues (e.g. emergency plan, business plan, etc.). In general, the longer the time frame of a plan, the less detailed its content. Three keys to good planning are **Logic, Realism, and Flexibility**.

MPAs need a variety of plans ranging from the broadest (the General Management Plan, GMP) to the most specific (weekly or monthly work plans). Each level nests within the next so there is a logical flow. Weekly or monthly activities are programmed to achieve the objectives set out in the annual work plan. The annual workplan consists of those parts of the 5-year strategic plan that will be implemented over 12 months, while the strategic plan identifies key mid-term steps towards achieving the goals set out in the GMP.



Realistic plans not only help MPA managers to stay focused, but also provide measuring tools to assess progress. In the absence of good plans, MPA managers can find themselves and their staff uncomfortably adrift with no clear vision on where (or how) to go next.

2.1.2: General Management Plan

The General Management Plan (GMP) clearly states why the protected area was implemented and the basic operational ground rules. Every MPA is unique and so no two GMPs are identical. However, common features include a clear statement of “park regulations” (gazettement legislation etc.), boundaries, administrative structures, relationship with local communities and other stakeholders, zoning plan, building codes, codes of conduct, and monitoring/evaluation criteria. Some include environmental impact assessments (EIA) requirements and elements of financial, material and human resources management. By reading the GMP, someone unfamiliar with the area should get a good overview of why the PA exists, how it is structured, and how it functions. A more detailed look at structure and content GMPs and Zoning Plans is given in Annex I.

2.1.3: Strategic Plan

Achieving the goal(s) for which the MPA was established usually depends on coordinating diverse stakeholders, a variety of logistical, financial and human resources, and implementing an array of strategically chosen activities—each of which moves the whole process forward. Strategic planning is a process whereby a logical path is defined to move the MPA from its current situation to the desired one. It is based on the identification of specific objectives, realistic targets and the necessary activities to meet them. Strategic planning experts have developed a particular vocabulary (goal, purpose, objective, target, etc.) which can be confusing, but suffice it to say that the role of a strategic plan is to identify the chain of events and activities that needs to take place in order to achieve the ultimate goal. Whereas the GMP provides the ‘big picture’ view, strategic plans generally address the MPA needs over a 3–5 year timeframe—sometimes called a planning horizon. The strategic plan is derived from the general management plan. It is an intermediate programme whose objectives, targets and expected outputs also assist in assessing the general management plan.

Strategic planning usually incorporates some data analysis, dialogue, and broad stakeholder participation to define objectives, identify options and set targets.

The planning process entails:-

- Investigation of issues and needs
- Review of policies and regulations
- Formulation of objectives and targets
- Establishment of monitoring and evaluation protocols
- Review of activities and reports (resources, legal/institutional, social economic, plan boundaries, etc.)
- Drafting, consulting and redrafting a final plan.

The strategies to be implemented must remain flexible within the broad limits of the overall management objectives to meet the changing human and environmental needs. Flexibility is best maintained through periodic reviews of the strategies and keeping in mind that plans are only guidelines—not commandments.

If everything works according to plan, each objective is achieved through the successful attainment of specified targets as per their chosen indicators. The status of objectives, targets and indicators figure into the MPA’s annual report and by tracking them over the life of the strategic plan, gradual improvements and trends can be followed. Trend analyses provide important and consistent data for managers, decision makers, and funders.

Strategic planning can be seen as a two-stage process—the first being an analysis of the challenges/problems affecting the MPA and identifying possible strategies to approach them. This is primarily an exercise in clarifying cause and effect relationships. The second focuses on designing and implementing activities. Both steps should include as broad a constituency as possible to get as many ideas as possible on the table and to establish a broad-based sense of ownership, understanding and participation.

Strategic plans not only map out a way forward but also indicate how to measure progress towards achieving targets. Targets should always be SMART, that is:

Specific: Clearly stated and well focused
 Measurable: Objectively verifiable and quantitative
 Achievable: Can realistically be accomplished
 Relevant: Clearly linked to MPA goals
 Time defined: Within a given time horizon (e.g. XXX will happen within one year).

Choosing the right indicators can help measure activity impacts and provide objectively verifiable data for implementing agencies, managers, sponsors, and other stakeholders. Following how indicators change over time (monitoring) and interpreting them (evaluation) are critical to keeping the PA on track. Coming up with a few “right” indicators is not as easy as it seems. There are ‘process’ indicators (x number of workshops held, y number of posters distributed etc.) and ‘impact’ indicators (changes in average fish catch, species diversity indices etc.). Impact indicators are generally preferable to process indicators as they measure real change. However, impacts may be long term, too complex, or too costly to measure and process indicators may be the only choice. Process indicators are also important when reporting on annual activities as anticipated in an annual operations plan. Indicators are chosen during the development of a strategic plan. The best indicators are those for which baseline data exists. Otherwise, initial data must be collected which will serve as a baseline. The same indicators are measured periodically throughout the life-span of the strategic plan.

The strategic planning process also brings out the underlying assumptions upon which successful implementation is based, e.g. budget allocations, political stability, minimal levels of tourism or other revenue, etc. Such assumptions (that adequate budgets will be allocated, political stability maintained, etc.) are beyond the control of MPA managers but have potentially far reaching consequences. It is important to identify these assumptions, to track them and to plan for contingencies.

2.1.4: Annual Operational Plan

The 3–5 year strategic horizon is long enough to provide useful, practical guidance without getting bogged down in too much detail. However, when planning for specific activities, the strategic plan is not detailed enough. Budgets, for example, are often submitted annually so it is critical to know which activities are anticipated. The Annual Operational Plan specifies which activities are to be carried out, in what order, by whom, by when, and with what resources over the course of a year. The output of activities carried out under the Annual Operational Plan can be measured by the indicators previously defined.

Operational plans should be developed as a team effort—bringing together a broad spectrum of MPA staff to identify reasonable and integrated goals and objectives. Once agreed, it also becomes an objective measuring stick against which to assess the PA’s progress and provides the basis for annual personnel evaluation.

2.1.5: Business Plan

This gives a pragmatic overview of the marine protected area structure, function and the financial situation. It gives an analytical organisational structure giving the legal status, location, and internal and external structures of the marine protected areas. The infrastructure and the human resources are included in the budgeting, all taking into consideration the funding source, current year income and expenditure projections, as well as future plans.

2.1.6: Short-term Work Plans

For some aspects of MPA operations, even the Annual Operational Plan is too coarse. Periodic vehicle and infrastructure maintenance, patrols, community development activities, workshops, etc. are often planned on the order of weeks or months. Weekly or monthly plans provide structure where necessary and are particularly important when scheduling is tight.

2.1.7: Emergency Plans

MPAs also need emergency plans to deal with the unexpected. When an oil slick threatens, a diver goes missing, a storm is on the way, MPA managers will find themselves asked to react quickly and efficiently. Thinking out the ‘what if’ scenarios can save valuable time and even lives. Specialist training (first aid,

search and rescue, cardiopulmonary resuscitation [CPR], etc.) will be necessary, and should be included into annual work plans, and periodic drills might be part of the monthly routine. Some emergency equipment (first aid kits, radios, etc.) are essential. Emergency phone numbers (police, fire, hospital, doctor, warden or in-charge, etc.) should be clearly posted and all park staff aware of their location. The key to dealing with emergencies is to have planned and practised enough, so that park staff know how to deal efficiently and professionally with a crisis.

2.1.8: Summary

MPAs exist in an ever-changing biological and socioeconomic environment—new ideas develop, old ones are proven right or wrong, new issues and opportunities are constantly emerging. Adaptability is critical for successful management. While plans provide useful frameworks at different levels, they are of little use if not periodically reviewed, updated, and modified as necessary. Remember:

- Flexibility is the key to good management.
- Planning is a means not an end.
- Planning is not a religion.
- Plans are not set in concrete.
- Planning is a tool which, if used properly can be creative, satisfying and consensus-building.

Overhead 2.1.1: Plans

"in preparing for battle I have always found that plans are useless, but planning is indispensable." -General Dwight D. Eisenhower

Overhead 2.1.2: Definition of Planning

Planning is a process of defining a desired future state and then designing strategies and actions to achieve that state.

Global plans are guidelines:

- **Logical**—Well-thought-out from start to finish
- **Reality-based**—Realistic, achievable
- **Flexible**—Allow room for adaptive management

Plans provide

- Focus
- The basis for monitoring and evaluating
 - Project activities
 - Personnel

Overhead 2.1.3: Types of Plans (The Framework Within Which the MPA Sits)

Long-term high-level strategic plan (e.g. ICM, NEAP)



General management plan

Long term

Rules of the game

MPA structure & function

Zoning

Limits of acceptable use/change



Strategic plan (3–5 years)

Goals, objectives and targets



Operational plan—1 year

Annual activities



Work plans—short term

Weekly, monthly or quarterly activities



Emergency plans

Pollution plan, storm plan, search and rescue, etc.

Overhead 2.1.4: Strategic Planning Steps

Scoping: Investigation of issues, needs, history and resources.

Review: Policies and regulations

Formulate: Objectives and targets

Establish: Monitoring and evaluation protocols

Draft → **consult** → **redraft** → **consult** → **redraft**...

Overhead 2.1.5: Objectives Should be SMART

Specific: clearly stated and well focused

Measurable: verifiable and quantitative

Achievable: can realistically be accomplished

Relevant: clearly linked to MPA's goals

Time-defined: within a given time horizon.

Overhead 2.1.6: Management Plans: Do We Need Them?

Management Means: decisions, actions and activities to achieve objective of the MPA. Effective and efficient management requires planning (effective management is doing the right job, efficient management is doing the job right).

Questions to be Answered by the Management Plan

- What tasks need to be carried out?
- By whom?
- How?
- When?
- What resources need to be allocated to carrying out these tasks?

Why do Management Plans Fail?

- MPA staff have not been involved in preparing the plan and therefore have no sense of 'ownership'.
- The users have had no input or opportunity to comment on the provisions of the plan.
- The plan has no legal status and can therefore be over-ridden or ignored at a variety of decision-making levels in the organization.
- The plan has been written to satisfy a legal requirement and not a management need.
- The plan has no built-in procedures for review and evaluation.

Overhead 2.1.7: The Business Plan

Purpose: to present a pragmatic overview of MPA structure, function and financial situation.

Organizational Structure

- Legal status
- Location
- Internal structure
- External structure

Infrastructure and Resources

- Personnel
- Facilities and equipment

Budgets

- Funding sources
- Current year income and expense projections
- Future plans and budget projections
- Fundraising goals

Training Session 2.2: Planning Methods

Objective

To give a description of the logical framework definitions, terms and limits of acceptable change (LAC) planning process.

Significance

This Session will familiarise the MPA managers with terms and definitions used in the logical framework planning process, and introduce them to project development and implementation.

Presentation

A lecture introduction to the logical framework and the terms and definitions used, group exercise and discussion.

Duration: 2 hrs

Equipment and Materials: Overhead projector
Overheads with matching handouts
Flip charts
Marker pens

2.2.1: Logical Framework

The logical framework uses the **SWOT** analysis criteria to analyse the **Strengths** and activities that promote the programme or project, and which help in capitalising on **Opportunities** or fight **Threats**. It also attempts to determine **Weaknesses** that might impede success in any project. Any opportunity from any external forces should be capitalised on, while the external threats and challenges that may work against the project should be analysed prior to the implementation of the project. Below are defined some of the terms used in LFA.

Mission/ Vision/ Goal: Long-term aim to which the MPA contributes but will not necessarily achieve on its own. (Coastal Biodiversity and Ecological Processes Conserved). The Goal is an indication of the long-term impact the MPA is expected to achieve.

Priorities/Objectives: Results that the MPA could achieve—reflects key regional, sub-regional or national conservation issues: Priorities provide an indication of successful MPA management (e.g. Biodiversity and ecological processes of XXX maintained.)

Targets: Specific, sustainable, and reasonable results that can be expected within the time frame of the strategic plan.

Outputs: Results of activities that contribute to achieving a target. Outputs are linked to specific performance or impact indicators.

Activities: Individual, detailed actions flowing from the annual operational plan that produce a given output.

Logical framework has the following advantages:

- It is a participatory planning tool
- clarifies purpose and justification
- identifies information requirements
- clearly defined key elements
- analyses the project's setting at an early stage
- identifies in advance how to measure success or failure
- summarises key elements on one or a few sheets of paper
- ensures fundamental questions and analysis of weakness
- provides systematic and logical analysis of the interrelated key elements
- highlights linkages between project elements and external factors
- provides basis for monitoring and analysis of effects
- develops a common understanding and better communication
- often required by (and impresses) donor and partner

Task 1: Logical Framework Analysis

The exercise will take one and a half hours (1 hour group work and ½ hour presentation)

Log frame for development and implementation of a resource monitoring programme for XXX marine park.

The trainer explains the logic in the frame stressing on vertical and horizontal integration, definition of assumptions and risks.

Trainer's Note

- Divide the trainees into three groups
- Give a blank log frame to each group

Each group develops a log frame for one of the following topics allocated to them;

- Public education plan for Marine Protected Area XXX
- Fund raising and financial administration
- Surveillance and enforcement

All the three log frames should have the same overall objective e.g. "ensure sustainable utilisation of coastal and marine resources"

EXAMPLE OF A LOG FRAME

Project:

Country/Region:

Target groups:

Intermediaries

	Intervention Logic	Objectively Verifiable Indicators (OVI)	Sources of Verification	Important Assumptions
Overall objective	Objectives wider than the project itself	Operational of description overall objectives	Where and in what form information on OVI can be found	
Project purpose	Objectives directly related to the local problem of the project	Operational description of the project purpose	Where and in what form information on OVI can be found	External factors influencing achievement of overall objective
Results	The results of undertaken activities	Operational description of results	Where and in what form information on OVI can be found	External factors influencing achievement of overall objective
Activities	Things to be done to achieve the results	See workplan	See workplan	External factors influencing achievement of results
Inputs:				Preconditions:

PROJECT: XXX

	Intervention logic	Objectively verifiable indicators (OVI)	Sources of verification	Important assumptions
Overall objective				
Project purpose				
Results				
Activities				

2.2.2 Limit of Acceptable Change (LAC)

This is a carrying capacity model instituted to resolving the debate over appropriate types and levels of use in the coastal and marine environments. It is basically a technical planning system, but recognises social political nature of planning and obtains social consensus in order that plan implementation can occur.

LAC provides a systematic framework within which a series of activities and decisions can be made to define a set of desired conditions.

The LAC procedure involves the following steps (McCool and Stanley, 1992):

Step1: Define issues and concerns

This step focuses on defining both problems and opportunities that require attention as well as the role the area might play in the region and the political and institutional constraints that must be taken into account.

Step 2: Define and describe opportunity classes

This step involves identifying zones or classes in which different resource, social, and managerial conditions will be maintained. It serves as a mechanism to provide diversity in recreational and environmental conditions.

Step 3: Select indicators of resource and social conditions

Indicators are specific elements of the resource and social setting whose condition is taken to be representative of the area's overall 'health'. They provide a way of assessing the area's condition without attempting to take into account all possible variables.

Step 4: Inventory existing resource and social conditions

The inventory of conditions is driven largely by the selection of indicators. It provides a measure of the current status of each indicator and also serves as a database from which standards can be set.

Step 5: Specify standards for each opportunity class

In this step, we identify the range of conditions for each indicator judged as acceptable and appropriate in each opportunity class. Standards define the "the limits of acceptable change" in objective, measurable terms.

Step 6: Identify alternative opportunity class allocations

There are variety of ways in which most areas can be managed, e.g. there could be a mix in terms of the emphases given to nature conservation objectives or the type and level of recreational development. These different alternatives will be founded in the issues and concerns identified in step 1.

Step 7: Identify management actions

For each alternative, a different set of management actions might be necessary to achieve or maintain the conditions appropriate to proposed opportunity classes. This step calls for a broadly defined estimate of the costs that must be incurred for a given alternative to be implemented.

Step 8: Evaluation and selection of alternative

With the various costs and benefits of the alternatives displayed, it becomes possible for citizens and managers to evaluate each and select which one (or some negotiable compromise) will be implemented. A variety of criteria are employed to help the evaluative process, e.g. how responsive the alternative is to the concerns raised in Step 1 or how it relates to regional supply considerations.

Step 9: Implement and monitor

Following selection of an alternative, the necessary management actions are put into effect and a monitoring programme, focused on the condition of the indicators selected in Step 3, is instituted. The results of monitoring indicate the success rate of the management actions and point to the possible need to implement different actions to maintain the desired outcomes.

Overhead 2.2.1: SWOT Definitions

Strength	Any internal asset (knowledge, skills, motivation, etc.) that promotes success (help to capitalise on opportunities or fight off threats).
Weakness	Any internal condition that impedes success
Opportunity	External circumstance that will promote success
Threat	External challenges that work against success.

Overhead 2.2.2: Logical Framework Terms

Mission/Vision/Goal: Long term aim to which the mpa contributes but will not necessarily achieve on its own (e.g. coastal biodiversity and ecological processes conserved). The goal is an indication of the long term impact the MPA is expected to achieve.

Priorities/ Objectives: Results that the MPA could achieve—reflects key regional, sub-regional or national conservation issues: Priorities provide an indication of successful MPA management (e.g. biodiversity and ecological processes of xxx maintained).

Targets: Specific, sustainable and reasonable results that can be expected within the time frame of the strategic plan.

Outputs: Results of activities that contribute to achieving a target. Outputs are linked to specific performance or impact indicators.

Activities: Individual, detailed actions flowing from the annual operational plan that produce a given output.

Overhead 2.2.3: Log Frame Advantages

- Participatory planning tool
- Clarifies purpose and justification
- Identifies information requirements
- Clearly defined key elements
- Analyses the project's setting at an early stage
- Identifies in advance how to measure success or failure
- Summarises key elements on one or a few sheets of paper
- Ensures fundamental questions and analysis of weakness
- Systematic and logical analysis of the interrelated key elements
- Highlights linkages between project elements and external factors
- Provides basis for monitoring and analysis of effects
- Builds common understanding and better communication
- Often required by (and impresses) donors and partners.

Overhead 2.2.4: Example of log frame

Project: Target groups: Intermediaries		Country/Region:		
	Intervention Logic	Objectively Verifiable Indicators (OVI)	Sources of Verification	Important Assumptions
Overall objective	Objectives wider than the project itself	Operational description of overall objectives	Where and in what form information on OVI can be found	
Project purpose	Objectives directly related to the local problem of the project	Operational description of the project purpose	Where and in what form information on OVI can be found	External factors influencing achievement of overall objective
Results	The results of undertaken activities	Operational description of results	Where and in what form information on OVI can be found	External factors influencing achievement of overall objective
Activities	Things to be done to achieve the results	See workplan	See workplan	External factors influencing achievement of results
Inputs:				Preconditions:

Overhead 2.2.5: Example of log frame

	Intervention logic	Objectively Verifiable Indicators (OVI)	Sources of Verification	Important Assumptions
Overall Objective	Ensure sustainable utilisation of coastal and marine resources	Improvement of marine resource use	Data from monitoring programme	
Project purpose	Determine if and to what extent management interventions achieve stated objectives of the MPA	State of resources and ecosystems maintained at current level and/or enhanced	1. Data from reef fish census 2. Fish landing data 3. Data from coral reef census	1. Poaching can be effectively controlled. 2. Reliable landing data are collected by fisheries officers 3. No natural vents or calamities beyond the control of MPA management occur
Results	1. Parameter for monitoring identified 2. Monitoring sites identified 3. Personnel trained in monitoring techniques 4. Technical resources for monitoring mobilised 5. Monitoring programme developed and initiated.	1. Fish biomass in no-take zones increases by 10% per annum. 2. Catch outside the no take zone increase by 10% per annum. 3. Broken coral in recreational zones not exceeding 5% with percentage of live coral remaining unchanged	1, 2 and 5: quarterly progress report by independent expert 3. Quarterly progress reports; report by independent expert 4. Inspection report	Trained staff remains in position
Activities	1. Determine uses and activities and their current/potential impact on resources 2. Determine monitoring parameter that will detect impacts 3. Determine sites for monitoring including control sites. 4. Assess training needs for monitoring and provide necessary training 5. Procure equipment for monitoring . 6. Develop monitoring protocol (method and frequency for each parameter and site) 7. Start monitoring	1, 2 and 5: evaluation by independent expert 1. Field testing of capacity expert 2. Physical inspection.	Workplan	Trained staff remains in position. Monitoring equipment can be maintained in functional state
Activities	1. Assessment of level of awareness and provide relevant training 2. Determine training centres 3. Procurement of materials (training) 4. Recruit and select trainees	See work plan	See work plan	

Overhead 2.2.6: Characteristics of Limit of Acceptable Change (LAC)

- Applied in Protected Areas especially IUCN Category 1b (Protected Area managed mainly for wilderness protection)
- Able to assess and/or minimize visitor impacts
- Considers multiple underlying causes of impacts
- Facilitates selection of a variety of management actions
- Produces defensible decisions
- Separates technical information from value judgments
- Encourages public involvement and shared learning
- Incorporates local resources uses and resource management issues

Overhead 2.2.7: Limits of Acceptable Change (LAC) Planning Process

- Identify the special values of the area
- Formulate goals to protect these values
- Identify concerns related to the area
- Inventory existing resource and social conditions and management
- Identify prescriptive management zones
- Select indicators of resource and social conditions
- Specify standards for resource and social conditions for each indicator
- Define management actions (preventive and corrective)
- Design monitoring plan.

Training Session 2.3: General Management Plan

Objective

To familiarise the managers with the outline and development of a management plan, the procedures and the process undertaken in management plan development.

Significance

Management plans are important for MPA management as they act as guidelines for protected area management. The managers should be able to develop a management plan through the recommended procedures and process.

Presentation

Lecture introducing the general MPA and the process for their development. The session will conclude with a group exercise.

Duration: 2 ½ hrs

Equipment and Materials: Flip charts

Markers and tape

Overhead projector

Overhead transparencies with matching handouts

2.3.1: General Management Plan

A general management plan (GMP) provides a comprehensive picture of the challenges and opportunities in the protected areas as a whole, an analysis of its physical, financial and human resources, and a phased programme of implementation with its associated costs. It describes the organisation, services, facilities, and management of the land and resources under its jurisdiction. A GMP can be developed before or after a protected area is gazetted.

A general management plan:

- sets forth a management concept and approach for the protected area.
- identifies strategies for resolving issues and achieving management objectives.
- establishes a role for the protected area within a national/ regional context (conservation, recreation, transportation, economic development, etc.)
- ensures that all stakeholders are given a chance to contribute.

It is essential to have clear objectives and policies for the management of each protected area and to have these available to guide all concerned parties.

The plan sets out policies for management such as:

- to conserve the character and qualities of the protected area for present and future generations.
- to have respect for the social, economic and cultural needs of the local community.
- to provide for public use and enjoyment of the area.

The plan should include proposals for any land the management body owns and should set out the ways in which it aims to influence the management of the surrounding lands. The GMP forms the basis for cooperation with other public and private landowners and with statutory and voluntary organisations with interests in the area. The management plan is a public document that may be circulated to a wide range of outside bodies. Transparency and clarity are keys to public acceptance and cooperation.

No new development or rehabilitation should be undertaken before the approval of the general management plan and/or environmental impact assessment (EIA). The MPA management is held to the same (or more rigorous) standard as any other entity working within the park and so must respect all GMP and EIA guidelines. The GMP should be reviewed periodically and revised or amended as necessary to reflect new issues, lessons learned, or changes in management objectives.

2.3.2: Development of a Management Plan

The development of the plan should focus on a broad programme of action, specifying:

- the objectives and targets;
- the expected outcome;
- the time scale;
- the groups to be involved in the process of the management plan development;
- the criteria to be used in measuring progress.

The authority steering the development of the plan should ensure that all stakeholders are aware of the management plan process, including:

- why the plan is being prepared;
- the topics to be covered by the plan;
- the modalities and arrangements for consultation.

Most management plans have adopted an integrated approach that is accepted to both the users and implementers.

- Drafting the plan involves as broad a spectrum of stakeholders as possible including:-
- local communities
- local governments and organizations
- local and specialist non-governmental organizations
- national authority
- technical and scientific experts.

Different marine protected areas adopt different kinds of management plans depending on their status and needs.

Task 2.1: Preparation of Annotated Outline for a General Management Plan

Time: The task will take two hours, (1 hr discussion and 1 hr presentation)

Note to Trainer

Choose three MPAs for which the trainees would like a General Management Plan developed.

Divide the trainees into three groups,

- ensure that each group has persons familiar with developing GMPs
- each group should have at least one person familiar with the park for which their group is developing a GMP.

Each group will then develop an annotated outline of a GMP for the selected MPA. In the example provided in Case Study 2.3.1, the Malindi and Watamu Marine National Parks and Reserve are under pressure from tourism activities, development and encroachment by the urban dwellers. The two parks share one reserve hence they share some management activities and issues.

The management plan below should be compared with Annex I to analyse the strengths and the weaknesses of each outline.

Task 2.2: Annotated Management Plan Outline Adopted by Malindi And Watamu Marine Parks and Reserve

The Malindi and Watamu Marine National Parks and Reserve are under pressure from tourism activities, development and encroachment by urban dwellers. The two parks share one reserve hence they share some management activities and issues.

(The Management Plan outline below should be compared with Annex I to analyse the strengths and weaknesses of each outline.

PART I: DESCRIPTION AND BACKGROUND OF A PROTECTED AREA

Summary

Acknowledgment

This section acknowledges all persons who have contributed to the development of the plan, as well as the organisation(s) that will provide financial support to the plan development.

Introduction

This section should briefly introduce the purpose and the subject matter of Parts I and II of the management plan. It should also address the governing body or institution's mission statement, and provide a brief history of the institution or authority.

History of the protected area, gazettelement and boundaries

This should address the criteria in which the MPAs were established, dates of designation, boundaries, references to gazette notices, and boundary plans.

Physical characteristics

This should include the climate, oceanography, and the geology of the MPA. The information should be obtained from the published literature and unpublished reports. It should not be an intention that new data be collected. Most emphasis should be given to temperatures, precipitation, sea surface temperatures, salinity and currents. Geological information will only be included as far as it is relevant to the marine protected area.

Biodiversity (Resources)

A brief description of the available resources should be given. These may include:

- Coral reef communities
- Seagrass beds
- Mangroves
- Fish stocks
- Intertidal mud/sand flats
- Endangered species and critical habitats
- Islands

Most of this information should be obtained from the existing literature. The section should give a clear picture of the biodiversity of the area.

Cultural characteristics

This section should describe any cultural features of the area, including the cultural norms of the people living close to the conservation area. In this regard, input from existing museums would be of much importance.

PART II: MANAGEMENT ISSUES AND ACTIONS

Mission statement and goals for marine protected areas

A **mission statement** will be given for each protected area. A general statement could read "The mission of the X Marine Park and Reserve is to strictly conserve all biodiversity in the Park and Reserve, while providing for the enjoyment of this biodiversity in ways that are compatible with the primary conservation objective"

Goals will further elaborate on the mission. These should be specific; e.g. "to promote sustainable tourism", "to provide opportunities for public education and conservation awareness", etc.

Objectives for management

The emphasis here should be on the management, e.g. “to ensure safety of visitors”, “to increase public conservation awareness”, “to enforce regulations”, “to carry out research and monitoring in support to management”, etc.

Review of current management framework

This section will establish a baseline of the current arrangements for management in terms of the legal framework, institutional arrangements, infrastructure, equipment and human resources available for management.

- Current legal framework for management
- Current institutional arrangements for management
- Infrastructure, equipment and human resources available for management (including organograms)
- Summary of constraints in management.

Management issues: Tenure, resource uses, impacts and user conflicts

This section should address the various management issues in the area being conserved. The activities that take place in the area, whether legal or illegal should be identified, and the following analysis undertaken, what are their impacts, what are the conflicts between user groups, and what management problems are associated with these activities?

- Existing and potential conflicts between resource users
- Land-based activities with impact to the marine environment
- Beach recreation
- Security
- Fishing
- Tenure
- Scuba diving and snorkelling
- Jet skiing, etc.

Management actions

This section should translate the management issues and problems as identified in the above section into management action. What management actions do we require to address these issues and problems?

- Additional legislation required for management
- New / additional institution arrangement required for management, linkages with other departments, agencies, NGOs and conservation groups
- Land tenure
- Zoning plans and regulations
- Control of land-based activities
- Licensing procedures
- Liaison with other agencies and organisations
- Infrastructure and equipment needs for management
- Human resources and training needs (desired organograms) for good and comfortable management
- Public awareness, education and interpretation
- Research and monitoring
- Community relations
- Laws and regulations enforcement.

Time schedule for actions (based on priority ranking)

In this section, the management actions identified above should be prioritised and an implementation schedule prepared for the period of the management plan lifetime.

Budget, revenue generation and ‘creative financing’

A complete and realistic budget for each area should be prepared, based on the most recent annual budget. Protected area managers should seriously look into the possibilities of raising funds (creative financing mechanism) to increase direct revenue. There should be constant writing of proposals to attract donor funds for special projects.

Evaluation and review

A management plan needs to be dynamic in order to respond to changing circumstances. This section will describe the procedures for evaluation and review of the management plan; this should be a continuous process as the marine environment is very dynamic, hence the need for regular review.

PART III: DAY-TO-DAY HANDBOOK

This is the practical guide to all day-to-day management activities, to be consulted by all park wardens and staff, to guide them in their daily activities.

2.3.3: Conclusion

The management plan provides the basis for success in MPA management, it is the key tool to achieving the management goals. A well developed plan should have taken the following points into consideration:

- Plans must have a vision and be part of an integrated vision.
- Plans should have a purpose, not just fulfil obligations.
- Management plans should strengthen links with development plans, hence should not work in isolation.
- A management plan should be area-specific but should reinforce those of other protected areas wherever possible.
- They should consider the past but be forward-looking.
- Whenever possible all the stakeholders and other interested parties should be involved in the plan's preparations.
- The implementation should be a consideration during the plan's preparation, it should not wait to be addressed after the plan has been prepared.
- All plans prepared should be user-friendly and transparent.

Overhead 2.3.1: General Management Plan

WHAT IS A MANAGEMENT PLAN?

A management plan can be described as a comprehensive picture of the problems, conflicts and opportunities in the protected areas as a whole, an analysis of its physical, financial and human resources, and a phased programme of implementation over a number of years (typically 5) with its associated costs.

A general management plan is aimed at:

- Setting forth a management concept for the protected area.
- Identifying strategies for resolving issues and achieving management objectives.
- Establishing a role for the protected area within the context of regional trends and conservation plans, recreation, transportation, economic development and other regional issues.

Overhead 2.3.2: Goals on Management Plans

The plan sets out policies of the management body with such goals as:

- To conserve the character and qualities of the protected area for present and future generations.
- To have regard for the social, economic and cultural needs of the local community.
- To provide for public use and enjoyment of the area.

The plan should include proposals for any land the management body owns and should set out the ways in which it aims to influence the management of the surrounding lands.

Overhead 2.3.3: Development of a Management Plan

The development of the plan should focus on a broad programme of action specifying the following:

- Objectives and targets
- Expected outcome
- Time scale
- Groups that may be involved in the process of the management plan development
- Criteria to be used in achieving the objectives.

The authority steering the management plan development should then introduce the plan and information to the target audience explaining to them as to:

- Why the plan is being prepared
- The topics to be covered by the plan
- The modalities and arrangements for consultation with the audience.

Overhead 2.3.4: Stakeholders Involvement in Plan Development

Consultation in the plan development should involve:

- Local people (stakeholders)
- Local governments and organisations
- Local non-governmental organisations
- National authority.

Training Session 2.4: Zoning Plans

Objective

To introduce the managers to MPA zoning and the zoning process

Significance

Resource use conflicts are common in MPAs that have multiple resource use; some of these conflicts can be resolved by zoning the MPA, with each zone being allocated a particular use and activities.

Presentation

Lecture on zoning and the zoning process, explaining the importance of zoning

Time: 1 ½ hours

Equipment and Materials: Overhead Projector
Transparencies with matching handouts
Flip charts
Markers (various colours)

2.4.1 Zoning

A zoning plan provides guidance whenever there is more than one allowable use of an area. The Plan should be part of the GMP or attached to it as an annex.

Zoning serves two main purposes in a marine protected area;

- **Custodial:** to nature reserves, sub-dividing them into particular use allocation zones, e.g. diving areas, breeding sites, water sports areas, fishing areas, etc.
- **Regulatory:** this may go beyond the MPA, involving the coastal land use planning to designate certain areas for particular uses, e.g. commercial fishing, hotels, nature reserve, etc.

Zones are established in space or time, where certain uses with minimal impact are allowed while others are either prohibited or subjected to special conditions. Zonation may also include definition of the means of access, e.g. size, type, or speed of vessel. Some of these limitations are imposed because of impact on the resource, but majority are imposed to minimise the user conflict of which some uses would be prohibited. Other than only basing the zoning to the utility of the resources, a zoning scheme may consist of the following areas:

- **Reef appreciation area:** An area of a reef in which fishing and collection are excluded to enable the public to observe reef life relatively undisturbed by human activities;
- **Replenishing area:** Areas that may be closed for a period, for experimental purposes or to increase productivity of an area;
- **Seasonal closure areas:** This could be a seasonal breeding area, hence closed during the breeding seasons;
- **Scientific research zone:** Areas set aside for scientific research;
- **Preservation zone:** With specific provision for management of an island reef and a lagoon reef as far as possible unaffected by human use;
- **Marine park zone:** Conservation management primarily for tourism purposes, where no fishing or collection is allowed;
- **Marine reserve:** An area where only restricted activities are allowed, e.g. artisanal fishing.

The main reasons for zoning a marine protected area are to:

- reserve suitable areas for particular human uses, while minimising adverse impacts;
- provide protection for critical or representative habitats, ecosystems and ecological processes;
- protect natural and/or cultural qualities of the MPA while allowing a variety of human uses;
- separate conflicting or incompatible human activities;
- preserve some areas of the MPA in their natural state undisturbed by human activity except for the purpose of scientific research or education.

Detailed zoning plans need to take a number of practical matters into consideration. These include accessibility of reefs, shipping lanes, all-weather anchorage and the provision of a range of zone types near each major population centre.

Key

- A** Core natural area, it serves as a central conservation area.
- B** Buffer or contiguous area managed for conservation and used for observational research.
- C** Secondary core natural areas which may serve as (a) experimental reserves for manipulative research and comparison with other areas; (b) recreation zones; (c) education zones; (d) strict preservation zones.
- D** Secondary or fringing buffer area managed for conservation but allowing activities such as recreation/education.

In addition to the broad zones outlined above, the zoning plan provides for the establishment of smaller areas which can be applied more flexibly. These 'designated areas' include the following :

- Seasonal closure area: seasonally closed to protect breeding sites from human intrusion;
- Replenishment area: temporarily closed for replenishment of living natural resources;
- Defence area: notified closure or public safety;
- Shipping area: special provisions to facilitate the navigation and operation of ships;
- Special management areas: provides for areas to be specially managed for conservation, research, public safety or public appreciation.

- A** Marine park
- B** Marine reserve

The marine reserve acts as a buffer zone allowing controlled resource use; Marine park is the core conservation area where many activities are restricted or prohibited.

Most MPAs in Kenya fall under this category, with further activity based zoning in the park (e.g. snorkelling area, dive sites, coral gardens).

There are some MPAs that have a linear scheme of zoning e.g. the marine reserve at Hometown, Barbados. This is an easy way of zoning which assists in minimising user conflicts rather than for conservation purposes.

Key

- A** Scientific zone
- B** Water sport zone
- C** Recreation zone
- D** Water sports zone

2.4.2: The Zoning Plan Process

There are several stages in the development of an MPA zoning plan.

1. *Initial information gathering and preparation.* Information on the nature and the use of the areas to be zoned, and materials for public participation developed.
2. *Public participation and consultation.* Public comments on the accuracy and adequacy of review materials should be sought before the preparation of the plan.
3. *Preparation of draft plan.* Preparation of a draft zoning plan and materials explaining specific rationale for each zone.
4. *Public participation.* The draft plan should be circulated to the public for comment.
5. *Plan finalisation.* The executing agency adopts a revised plan incorporating the comments received in response to the published draft plan. Translation of the plan into local language(s) should be considered.

The following are some general guidelines for developing a workable zoning plan.

1. Keep the zoning plan as simple and understandable as possible for users; refrain from complicated schemes.
2. Endeavour to minimise interference with customary uses and rights. Make sure that users—e.g., anglers, villagers, tour boat operators, scuba diver operators—are consulted before any implementation of a zoning scheme.
3. Where existing uses are prohibited in one zone, make provisions for these in other parts of the protected area; that is, avoid eliminating any existing uses from the protected area.
4. Zoning of the marine protected area must be consistent with adjacent areas.
5. Avoid sudden transitions in zones, such as having a strict conservation zone adjacent to a general use zone.
6. Resource protection zones must incorporate a range of linked habitats within one unit.

7. Where possible, use discrete attributes to delineate zones (e.g. a reef, an island, etc.)
8. The zoning should be consistent with existing fisheries closure areas and navigation zones and should complement management regimes in the region.

A cornerstone of coastal conservation programmes is the strategic use of strictly protected 'core area' zones, each sheltered by adjacent buffer areas and surrounded by multiple use zones. This arrangement, which is embodied in the United Nations' Biosphere Reserves program, is often more practical to administer and less likely to provoke massive resistance than non-zoned reserves because a wider multiplicity of uses can be allowed.

The zoning plans must:

- Comply with all statutory and constitutional requirements and any international obligations
- Be technically sound and based on adequate data
- Be capable of administration (including enforcement and surveillance)
- Involve and educate the public
- Develop effective, incremental approaches to use allocation decision making while recognising the cumulative impact of development
- Provide certainty for future use while remaining flexible to consider individual uses and area
- Balance the interests of competing user groups to achieve political acceptability
- Be supported by adequate levels of expertise or administration and enforcement
- Be cost effective
- Incorporate monitoring and enforcement to ensure implementation and ongoing assessment of policies.

and should also:

- Consider local, regional, state, and national interests
- Build upon existing use and resource management programmes
- Balance public interests and private expectations and options
- Ensure fair treatment for users, procedural due process, and expeditious review of permits

Case Study 2.1: The Zoning Scheme of Mafia Island Marine Park, Tanzania

The Zoning scheme present in Mafia Island Marine Park divides the multiple-use area into use-zones that have different levels of protection depending on their respective conservation and economic importance.

The aim of the zoning scheme is to:

- Protect critical and species-rich habitats including sub-tidal areas, mangroves, forests, bird-nesting, fish spawning, and turtle-breeding grounds
- Protect the diversity and quality experiences available to visitors to Mafia
- Recognise traditional/local community fishing grounds and provide a means for continued but controlled use
- Notwithstanding the above, inevitably conform to certain natural features of the seascape, land formations and important ecological features
- Provide a geographical basis against which to evaluate resource use and to monitor and review the effectiveness of the management plan
- Provide a framework for surveillance and patrolling activities by focusing enforcement in zones with higher levels of protection.

There are three types of zone within MIMP namely: Core Zone; Specified-use Zone and General-use Zone. The type of activities permitted in each zone and their boundaries are described in Annex II and Figures 2.4.1 and 2.4.2.

Case Study 2.2: The Zoning Scheme of the Goukamma Nature and Marine Reserves, South Africa

The aim of the zoning scheme is to ensure that the core area near the Oysterbeds remains in a pristine state. Other zones are:

- Snorkelling Area: The Eastern shore of the Walker Point area is ideally suited for snorkelling and is relatively safe. Little or no rock and surf fishing takes place here. The area has a reasonable species diversity and is not too sensitive.
- Bathing: The two bathing areas are relatively safe, with lifeguards stationed on both beaches during the holiday season.
- Rock and Surf Fishing: At present the whole reserve area is open to shore fishing
- Exclusion Zone for Skiboat Fishing, Jetskis, Boat-based Whale-watching and Spearfishing. Only scuba diving with permit and the right of passage (boats, not jetskis) are allowed throughout the reserve.
- Goukamma River estuary. Goukamma River is also included in the exclusion zone, making it the first no fishing estuary along the entire South African coast.

TABLE 2.4.1: ZONATION SCHEMES OF SELECTED MPAS IN EASTERN AFRICA.

Marine Protected Area/Zone	Restriction
Blue Bay & BalACLava Marine Parks (Mauritius)	
Multiple use zone	Only line and basket trap fishing and recreation permitted
Conservation zone	Most recreational activities and line fishing from shore are permitted
Strict conservation zone A	No fishing is allowed, limited motorized traffic is permitted
Strict conservation zone B	No motorized traffic is allowed. Line fishing is permitted from shore in a designated area
Traffic lanes	Fishing and recreational activities are not permitted
Ski lane	No other activities are permitted while skiing is in progress
Swimming zones	
Aldabra Special Nature Reserve/World Heritage Site (Seychelles)	
Restricted zone	Sensitive areas for non-manipulative research and monitoring only, with some areas closed seasonally
Protected zone	Major part of Aldabra, set aside for research and monitoring but with limited access for photographic and other special visitors
Tourist access zone	
St Anne Marine National Park (Seychelles)	
Underwater diving zones	Areas to be used by glass bottom boats and for snorkeling
Protected zones	Areas with reefs, sea grasses, turtle nesting beaches
General use zones	Picnics, boating, swimming and other soft leisure activities are allowed
Mafia Island Marine Park (Tanzania)	
Core zone	Extractive resource use is prohibited. Controlled tourism and scientific research are permitted
Specified-use zone	Extractive resource-use in <i>Specified-use Zones</i> is restricted to residents of the marine park
General-use zone	Extractive resource-use is permitted
Buffer zone	
Misali Island Conservation Area (Tanzania)	
Core protected area (a non-extractive use zone)	No extractive uses are allowed. Activities such as diving, snorkeling, swimming, boating and scientific research are permitted
Extractive use zone	All legal fishing techniques are permitted

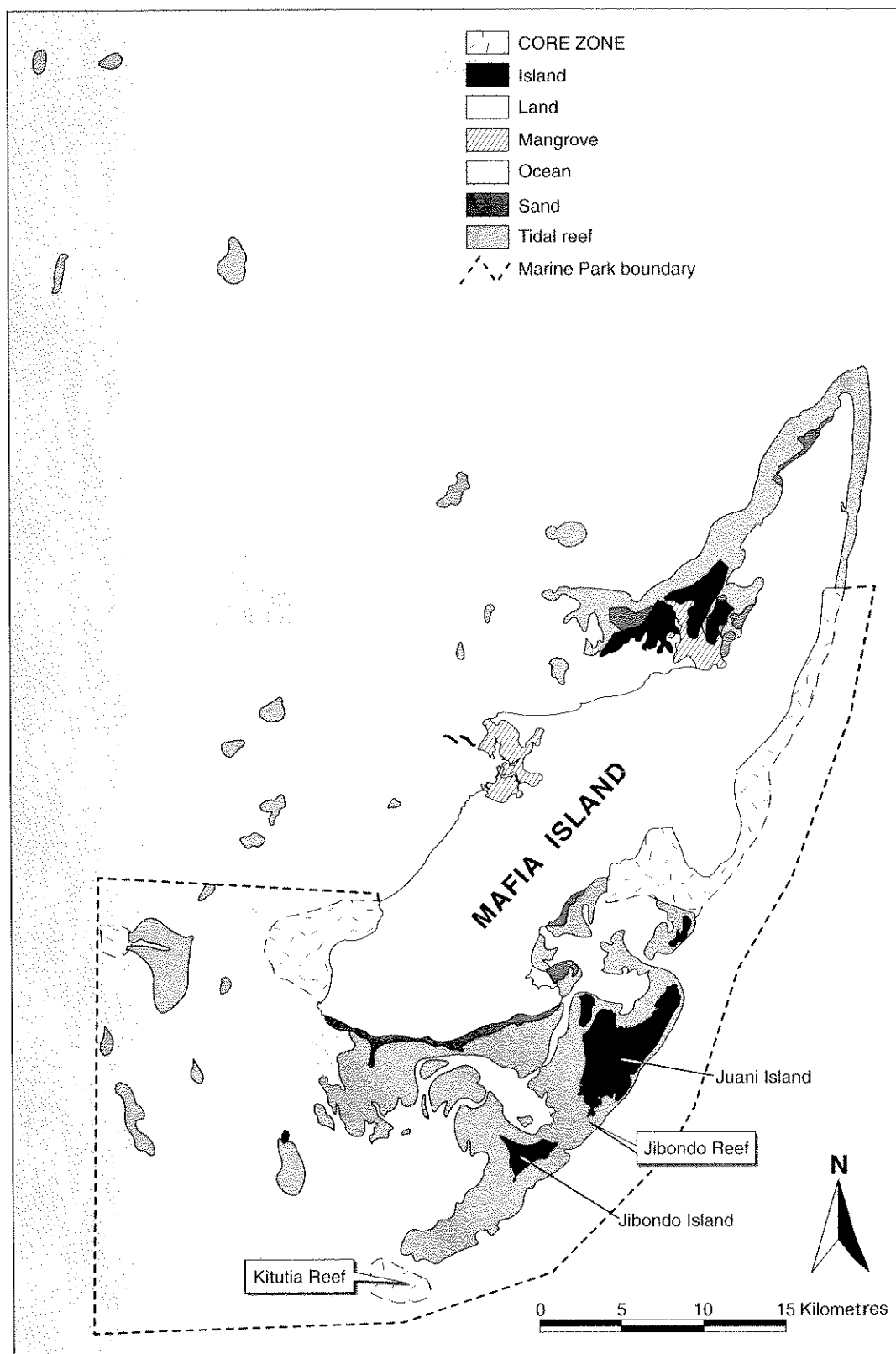


Figure 2.4.1: Core zones of the Mafia Island Marine Park (MIMP), Tanzania

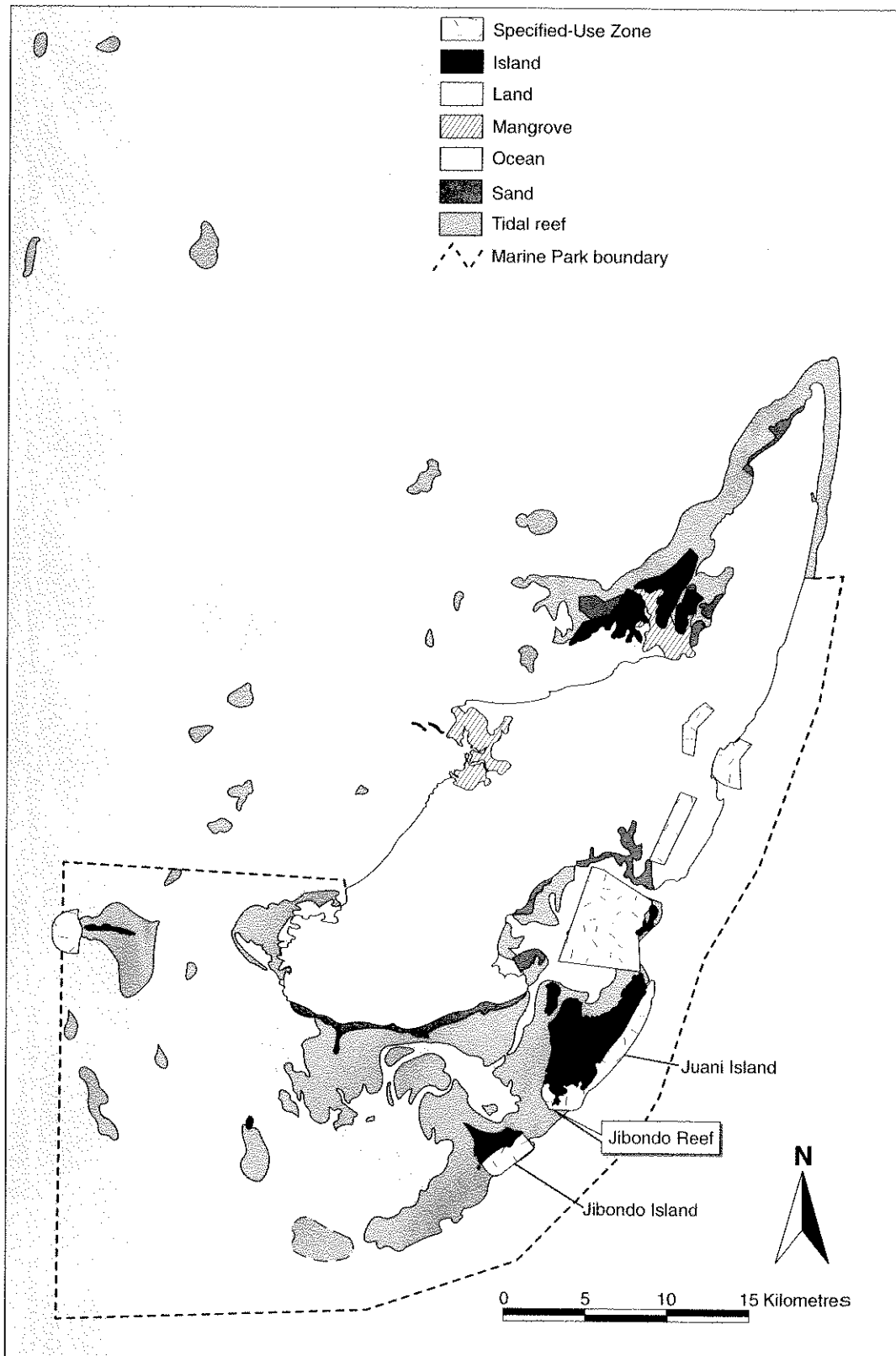


Figure 2.4.2: Specified-use zones of the Mafia Island Marine Park (MIMP), Tanzania

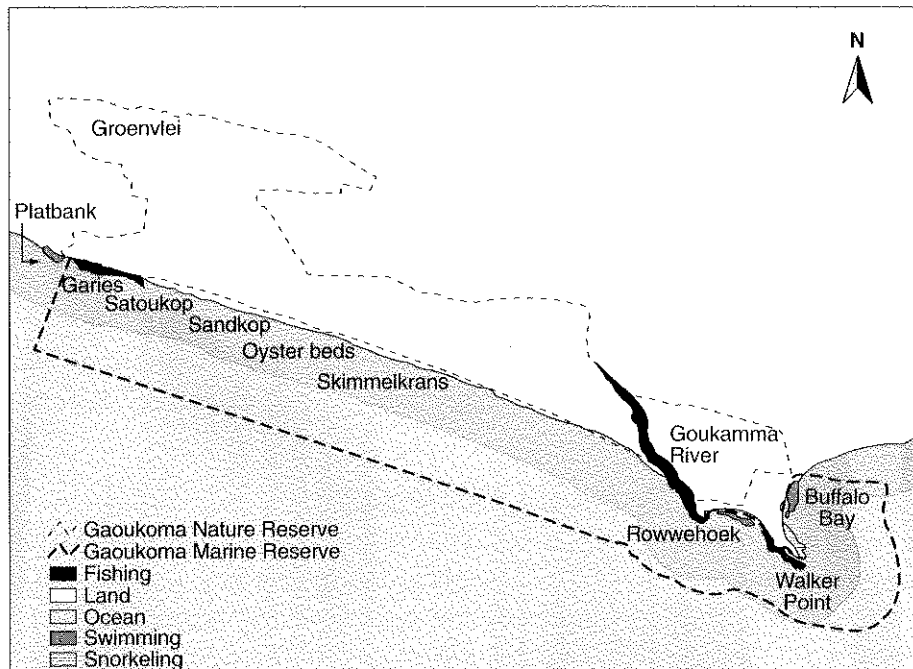


Figure 2.4.2: Zoning scheme of the Goukamma Nature and Marine Reserves, South Africa

Task 2.4: Developing a Zoning Plan for Utopia Marine Park (Overheads 2.4.3 and 2.4.4)

The trainer will explain the exercise to be undertaken and how to get along with the zoning depending on various activities being undertaken within the MPA.

- The class will be divided into four groups
- Each group will be given the transparencies in Annex III each with a different marked activity to undertake the following:
 - Overlay resource and use maps in different combinations to identify incompatible uses and activities, and conflicts.
 - Identify critical areas that require strict protection.
 - Develop a zoning scheme that accommodates 'acceptable' uses and activities and minimises conflict.
 - Specify regulations for each zone.
 - Be realistic: Plan must be acceptable to all users (participants to assume roles of commercial operators, fishers and MPA manager).

Overhead 2.4.1: Zoning

The main reasons for zoning a marine protected area are to:

- reserve suitable areas for particular human uses, while minimising adverse impacts
- provide protection for critical or representative habitats, ecosystems and ecological processes
- protect natural and/or cultural qualities of the MPA while allowing a variety of human uses
- separate conflicting or incompatible human activities
- preserve some areas of the MPA in their natural state undisturbed by humans except for the purpose of scientific research or education.

Overhead 2.4.2: Zoning Process

A resource use inventory of the area should be carried out, identifying all conflicts and constraints in the area. This will lead to the development of a resource and activity map:

- users of the MPA should be alerted before commencement of the exercise, this will assist in soliciting opinions on provisions to be included in the zoning plan;
- preparation of a draft plan, stating clearly the objectives of each zone, and the guidelines for each zone taking into consideration multiple use;
- the draft plan should then be reviewed through public participation, to obtain the views of the resource users—this is a good forum to iron out the user conflicts that may exist;
- the public comments should then be analysed and incorporated into the draft plan during finalisation.

Overhead 2.4.3: Description of the Utopia Marine Park

- The offshore island has a population of 100,000 people
- There are no permanent habitations, only snack shops, bars and souvenir shops
- Gazetted in 1989 to "conserve marine biodiversity while providing sustained economic and spiritual benefits to the local community"
- Barrier reef is in near pristine condition with moderate fishing pressure
- Patch reefs partly degraded by tourism activities and over-fished
- Seagrass beds partly degraded by anchoring and seine fishing
- Moorings installed at diving/snorkelling sites
- Tourism rapidly increasing, resulting in conflict between commercial operators and artisanal fishers.

Limited park regulations:

- No spearfishing
- No dynamiting
- No anchoring in coral
- Tourist operators require licence from MPA management.

Overhead 2.4.4: Utopia Zoning Exercise

- Overlay resource and use maps in different combinations to identify incompatible uses and activities, and conflicts.
- Identify critical areas that require strict protection.
- Develop a zoning scheme that accommodates 'acceptable' uses and activities and minimises conflict.
- Specify regulations for each zone.
- Be realistic: Plan must be acceptable to all users (participants to assume roles of commercial operators, fishers and MPA manager).

Annex 1: Detail of Content of an MPA Management Plan (Kelleher, 1999)

The following generalised outline shows the type of information and structure that can be included in a GMP depending on site specific needs. The final format will depend upon legislation and the government-specific processes.

In large, multiple use MPAs, the zoning plan may be the primary management document; however in this example, the GMP is the primary document and the zoning plan is subordinate to it. In many cases, the items 1–4.1 may form a preliminary document that establishes the initial case for protection of the area in question.

All the information listed in the following example should be provided in one document or another.

Title Page

This includes:

- The name of the area subject to the plan and its status (e.g. Salaama Bay Marine Park);
- The words - MANAGEMENT PLAN;
- The name of the agency/agencies responsible for implementing the plan;
- The date when the plan was prepared and the expected date for review.

Executive Summary Page

On this page are summarised:

- the reasons why the plan was prepared;
- the period of time for which it applies;
- any special conditions which controlled its preparation including the legislative basis and authority for plan development;
- the principal provisions of the plan
- the estimated budget; and
- acknowledgements

Contents Page

The headings of the body of the plan are listed here against the appropriate page numbers. It may be preferable to list only the main headings, but sub-headings are usually included.

Body of the Plan

1. Objectives for Management

The goal and objectives for management are stated in this section. They will reflect the purpose(s) for which the area is protected and the use(s) which will be permitted

2. Resource Description

This section provides information on the categories of areas to be protected. Maps will be an important feature of this section.

2.1 Name of the Area and Location

Includes the geographical location (state, district, etc.); latitudes and longitudes (preferably on a map) and surface area (square kilometres, hectares or other units of area)

2.2 Geographical and Habitat Classification

The area should be categorised according to a habitat classification scheme to identify its geographic zone, substrate type(s), and major biological feature(s).

2.3 Conservation Status

This should indicate the area's degree of naturalness, aesthetic values, degree and nature of threats (if any), jurisdiction(s) and present ownership.

2.4 Access and Regional Context

The regional land and sea surroundings and access routes to the area are described, in addition to the character and use of contiguous areas, emphasising their effectiveness as buffer zones.

2.5 History and Development

This section contains a summary account of direct and peripheral human involvement in the area. This section may be divided into several sub-sections for example-

2.5.1 Archaeology

A summary of the people who used the area before historical times, including any known areas of religious significance, species taken and if closed seasons or closed areas were ever used as management techniques. Archaeological information could also provide clues to species that were found in the area.

2.5.2 Historical Relics

This sub-section should identify submerged wrecks, structures, or coastal constructions of historic importance.

2.5.3 Recent Developments

Give a brief history of fishing and other human use of the area and developments on the land that may have had a major influence on the area.

2.5.4 Current Human use and Development

In this section, the current use of the area by subsistence, artisanal, commercial and recreational anglers, tourists, and others is discussed. It is most important to establish who the users are, where they conduct their activities, at what times of the year, and for how long, and the social and economic importance of their use. A user survey may be helpful. This information is just as important as biophysical data.

2.6 Physical Features

In this section, the non-living features of the area are described. Maps in addition to descriptions should be included. Depending on the specific MPA, important physical features can include;

2.6.1 Coastal Landforms

Nearby landforms should be described together with islands and underwater formations.

2.6.2 Bathymetry

A map showing isobaths is needed. The depth of water can provide an important insight into the dynamics of the system. Major trenches, canyons and shallows should be described in as much detail as is available.

2.6.3 Tides

A description of the tidal regime and resultant currents and water movements associated with phases of the tidal cycle.

2.6.4 Salinity and Turbidity

Measurements of salinity and turbidity in all seasons are desirable.

2.6.5 Geology

A description in geological terms about how the area was formed and current erosional or depositional status.

2.6.6 Dominant Currents

A description of physical oceanographic features of the area, wind-driven, tidal and residual currents, on a seasonal basis.

2.6.7 Freshwater Inputs

Major river and estuarine areas should be noted.

2.7 Climate

2.7.1 Precipitation

Annual precipitation figures and a chart to indicate average precipitation on a monthly basis should be included.

2.7.2 Temperature

Monthly charts for both air and average sea temperatures (surface and at given depth). If possible include a monthly chart of solar radiation received.

2.7.3 Winds

Monthly charts of rose diagrams (average wind direction and velocity) plus a description of any unusual feature of the local winds.

2.8 Plant Life

This section should contain at least a description of dominant marine plant life, and wherever possible a summary of plant communities and related environmental factors such as the depth of occurrence, together with any botanical features that may have special scientific, recreational, ethnobotanical or other interest. Phytoplankton and coastal species could be included if information is available. Plant species identified in the area should be listed in an appendix.

2.9 Marine Fauna

As a minimum, a description of the dominant marine or estuarine fauna is required, with an account of their ecological relationships if known. Include sections on Mammals, Reptiles, Amphibians, Fish, Birds, Invertebrates, and Plankton as appropriate. A separate appendix should list the species.

Note:

Sections 2.8 and 2.9 could be amalgamated to one section entitled “Marine Wildlife”. Wildlife would be defined as animals and plants that are indigenous to its shores, coastal sea, continental shelf or its overlying waters; migratory animals that periodically or occasionally visit its territory; and other non-domesticated animals and plants.

2.10 Miscellaneous

This can be a varied section that includes those matters that do not fit under any of the other descriptions of the plan. Each plan will be site specific and could therefore have features of problems which are not encountered in other plans.

3. Description of Management Issues

A summary of past, present and possible future challenges should be included. It is however important to keep the tone of the GMP positive.

3.1 Historic and Current Conflicts

A brief non-judgmental statement of any historic or current conflicts between uses and user groups.

3.2 Pollution

Include point and non-point sources of external pollution within the area and in nearby areas, especially those up current, e.g. runoff, sewage inputs, fish processing, industry, agriculture, tourism and shipping.

3.3 Future Demand

Estimate future demand for recreational and other uses, and if applicable, future pollution loading and proposed developments.

3.4 Potential Conflicts

Potential conflicts specific to the area within and close to the boundary of the MPA should be described. Any potential conflicts due to more distant regional influences should also be identified. This should include review of sectoral development plans and propose projects for, or likely to influence, the area in question.

4. Management Policies

4.1 Objectives

The goal of protecting the area is briefly reiterated. The objectives of management are stated clearly. If the area is to be subdivided, sub-objectives should be stated for each zone or subdivision of the managed area.

4.2 Resource Units

It could be useful to divide the area into resource units.

4.2.1 Natural areas

Each MPA will have unique characteristics such as beaches, islands, deep-water trenches, turtle or seal rookeries etc..

4.2.2 Development areas

Areas that are either developed or proposed to be developed.

4.2.3 Areas of Impact

Areas showing marked impact from human activity could be identified.

4.3 Zoning

The resource units defined above may provide a basis for zoning, which should be kept as simple as possible, consistent with avoiding unnecessary restriction on human activities. Zoning must be easy to understand both from the point of view of the manager and resource users. This section should explain why a particular area has been given a zone classification, what activities are permitted and prohibited within each zone, and a procedure for reclassification.

Special habitats or wildlife areas such as seagrass beds or turtle rookeries, may require additional management provisions such as seasonal closures or permanent restrictions to human access. Unusual prescriptions may be needed in the short term and these should be described in this section.

4.4 Management Policies for Resource Units

In the draft management plan a list of management options can be presented in this section and a choice made between them in the final version of the plan.

5. Surveillance

This section should describe any programmes proposed to assess movement of people, vessels and aircraft within and through the area and the use made of the area.

6. Monitoring

This section should describe any biological, environmental and usage-monitoring programmes proposed for the area, and how they are to be used for management purposes and in reviewing the management plan. It may also identify other monitoring programmes to be initiated during the first stage of the plan and who could carry them out. Some of the results from monitoring may eventually be included in the appendices.

7. Education and Interpretation

This section should describe programmes and cooperative arrangements with/for visitors, educational institutions, public associations, and community groups to promote protection, wise use, public understanding, and enjoyment of the MPA.

8. Enforcement

This section should outline the arrangements which will need to be made to detect apparent offences and to apprehend and prosecute offenders in order to achieve an acceptable level of adherence to MPA regulations. However, it is impossible to manage an MPA on the basis of enforcement in the face of general public hostility or to apprehend every breach of regulation so education and public awareness are therefore essential. This section may address informal or formal conflict resolution mechanisms.

9. Maintenance and Administration

A section will be required to address the subjects of budget, staffing, etc. and will differ significantly between MPAs. In many cases, the GMP is designed to be too general for realistic budgeting although a separate Business Plan might be drafted.

9.1 Budget

If included, this section outlines anticipated costs for budget submissions to government or funders.

9.2 Staffing

The management plan should indicate staffing needs and identify major functions. Volunteers, consultants and head office staff involved in the planning process should also be identified, as this will provide a more accurate indication of staffing levels. Staffing deficiencies can be predicted and recommendations suggested. Section 9 should be updated and released as part of an annual report.

10. Information Sources

Information regarding the area will come from sources outside the manager's regular information base. These should be identified and listed wherever possible, and include those other government agencies, non-government organisations, individuals, consultants, overseas sources etc. that were consulted.

A bibliography should be appended.

11. Appendices

Appendix 1: Boundary and Area Description

This should provide the legal description of the area including any outstanding legal tenure or matters of existing interest which might have become clear during the development of the management plan. In most systems of government, there are complex and sometimes unresolved questions of jurisdiction between levels of government especially in the intertidal environment. These problems should be highlighted and, if appropriate, solutions

suggested. One solution is to have complementary legislative, planning and management provisions on each side of that jurisdictional boundary.

Appendix 2: Legislation

All legislation and regulations relating to the area and their interactions, should be noted and explained. Where feasible, the legislation that prevails in case of conflict between the provisions of different enactment should be identified. Implications for the protective status of the area should be identified.

Appendix 3: Plant Species

A comprehensive list of plant species should be attempted for the first management plan. As the process continues over the years, it is very likely that new plant species will be discovered in the area. Plant names should be listed in broad taxonomic groups, with botanical and common names where possible.

Appendix 4: Animal species

Animal species should be listed in broad taxonomic groups: e.g. Mammals, Reptiles, Amphibians, Fish, Birds and Invertebrates and common names provided where possible.

Appendix 5: Special Features

This section could describe unusual or outstanding features of the area and could range from whale strandings, waterspouts, oil slicks to spiritual revelations and cultural beliefs.

Appendix 6: Past, Present, and Proposed use

This section should attempt to provide more details on uses, identify key user groups, and assess the social and economic significance of areas.

12. Maps

The following are suggested as a minimal number of maps required.

Map 1	Location
Map 2	Land / Water tenure and jurisdiction
Map 3	Land topography and seabed bathymetry
Map 4	Geology
Map 5/6	Dominant plant and animal communities
Map 7/8	Major uses
Map 9	Major use conflicts and threatened resources
Map 10	Zoning

Where practicable the use of overlay presentation is recommended in order to illustrate the associations between such factors as topography, biological communities, and uses.

(Source: *Guidelines for Establishing Marine Protected Areas*, IUCN)

Conclusion

The GMP should be a plan for the protected area, not just a plan for the protected area authority, hence it is important that all the main stakeholders are involved in the plan-making process. The management plan should establish the vision, set out the general strategy to achieve this vision, and present the key policies. Excessive details and lengthy descriptions should be avoided.

The final draft should answer the following:

- Does the plan describe a vision for the protected area, and is it consensus driven?
- Does it set out a clear strategy?
- Does it distinguish between policy and actions?
- Does it establish the key targets and is it clear how they will be monitored and measured?
- Does the plan enjoy the support of the protected area authority's partners and interested organisations/ communities?
- Does the plan cover all the important activity areas of the protected area?
- Have the alternative strategies been included?
- Has the plan monitoring system been put in place?

Annex II: The Zoning Scheme of the Mafia Island Marine Park (Government of Tanzania, 2000)

Zone	Provision	Criteria	Resource-use strategy
Core	Core Zone status provides the highest level of protection within the park. It is intended to include all areas of the park that both warrant primary conservation status and that local resource-users can afford wholly to relinquish.	<p>Areas are selected for designation as Core Zones if they qualify for one or more of the following criteria:</p> <ul style="list-style-type: none"> • areas that are in relatively pristine or intact condition, that are also representative of the main types of natural habitat found within the marine park; • areas containing relatively high levels of locally representative biodiversity; • areas considered to be important breeding or spawning grounds, or otherwise important to the productivity and regeneration of the park's natural resource base; • areas whose protection is considered important for the survival of locally rare or threatened species; • areas of special cultural significance. <p>Within MIMP, both marine and terrestrial forest habitats are represented within Core Zones</p>	Within Core Zones all biological resources, non-biological resources and ecosystem processes are, as far as practicable, protected from the direct adverse effects of human activity. Accordingly, extractive resource use is prohibited entirely. Controlled tourism and scientific research are permitted.
Specified-use	Specified-use Zone status provides intermediate level protection within the park. It is intended to include areas of the marine park that warrant primary conservation status but which are also important to local resource-users.	<p>An area may be designated as a Specified-use Zone where it qualifies broadly to the same criteria as those given for Core Zone status, but either</p> <ul style="list-style-type: none"> • its greater importance in sustaining the livelihoods of local human communities makes it impractical to prohibit extractive resource-use entirely; • or it qualifies to one or more of the criteria for Core Zone status, but to a lesser degree of importance than other Core Zone status. 	<p>The strategy in Specified-use Zones is to prohibit activities likely to cause significant alterations to the environment. This may be defined as:</p> <ul style="list-style-type: none"> • significant change or damage to benthic or terrestrial habitats not likely to self-regenerate from year to year; • significant depletion of the abundance or biodiversity of representative species assemblages; • significant depletion over time of species that are considered locally rare or threatened. <p>In acknowledgement of section 10 of the Marine Parks and Reserves Act, No. 29 of 1994, extractive resource-use in Specified-use Zones is restricted to residents of the marine park.</p>
General use	General-use Zone status are intended to provide for sustainable resource-use for MIMP residents, thereby relieving resource-use pressure from Zones with	<p>General-use Zone status is accorded to areas that do not fulfil the criteria set for Core Zone status or Specified-use Zone status.</p>	<p>Extractive resource-use is permitted in General-use Zones.</p> <p>The objective of regulation in General-use Zones is to ensure that fish catches and other resource</p>

Zone	Provision	Criteria	Resource-use strategy
	lower protection status. Some General-use Zones also play an important role in maintaining ecosystem processes and the overall productivity of the marine park area.		<p>notwithstanding natural variations in breeding and recruitment. A certain level of permanent habitat alteration is acceptable only provided that the overall productivity of the environment is not significantly undermined and that adjacent areas with a higher protection status do not deteriorate significantly.</p> <p>This entails excluding from General-use Zones methods of resource-use likely to damage benthic habitats or otherwise adversely affect the breeding and recruitment of commercial species, as well as methods that remove an unsustainable number of juvenile or adult organisms. It also entails restricting the number of resource-users of each type to a sustainable level.</p> <p>MIMP residents will have priority access to resources in General-use Zones. Nonetheless, other Mafia residents and resource-users from outside Mafia may undertake certain resource-use activities under permission from the Marine Park and where relevant from local village councils.</p>

Scheme of designated areas

Areas designated as Core Zones

Buffer	<p>The Buffer Zone is an area outside and adjacent to the marine park boundary that serves as a cushion against impacts from activities outside the park. All new developments and land allocations within the Buffer Zone are obliged to undergo the same EIA scrutiny as developments within the marine park boundary, following the official EIA Guidelines of the Marine Parks and Reserves. This is provided in the Marine Parks & Reserves Act, 1994 (Section 16) which further provides that the marine park must be informed in writing 30 days in advance of preparation of an EIA.</p> <p>The Marine Park has no other direct jurisdiction over activities in the Buffer Zone.</p> <p>The Buffer Zone boundary has initially been set, by agreement with the Mafia District authorities, at 800 m in all directions outwards from the MIMP outer boundary. However it is recognised that the marine park environment could be affected by developments in a considerably wider area, within Mafia District or even beyond.</p>
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Scheme of designated areas

A. Areas designated as Core Zones

Area	Boundary	Justification
Outer Kinasi Pass Mchangani	The northern terrestrial boundary is the mean high high-water mark. Bounded in the west by a line running from the west side of the Mchangani mangroves to the north end of Miewe Kubwa, from the southern tip of Miewe Kubwa to the northern tip of Juani Island. Bounded in the east by a line running 1 km parallel to the mouth of Kinasi Pass/the line of the outer reef.	Contains the Dindini-Mchangani and Kinasi reef walls that constitute unique reef habitat within MIMP with significant biodiversity value, and also popular SCUBA diving sites. Fish eagles and other sea birds nest on the islets around Kinasi Pass. The creek at Mchangani is one of the two most extensive mangrove stands within the park, but the mangroves are under threat from local cutting. The outer Kinasi Pass area is thought to provide a refuge for commercially important pelagic fish migrating in and out of Chole Bay tidally
Kitutia	This zone encloses a sand cay surrounded by a circular reef, the boundary is a line 1km outward from the mean low low-water mark.	Notwithstanding considerable coral bleaching damage in 1998, it is prime example of <i>Acropora</i> spp.-dominated shallow fringing reef habitat. Considered locally to be a fish spawning area. In view of its southerly location in relation to the main northerly current, it is possibly an important source of coral and reef-fish larvae for other reefs on Mafia. The reef has hitherto been an important fishing ground for Jibondo fishers, for fin-fish and octopus, but was coming under significant pressure from seine nets. Prior to the 1998 coral bleaching, the reef was a valued snorkeling site and subject to recovery, may be again in the future.
Kijiwenyara	Kijiwenyara is a small rocky islet situated off the western end of Bwejuu Island. The zone covers the islet itself bounded by the mean low low-water mark, and marine area described by a semi-circle of radius 200 metres with the centre of the circle at the westernmost end of the islet.	The marine area described is traditionally recognized as a fish spawning ground and refuge, though in recent years local fishermen have started to fish the site. The islet is a nesting site for fish eagles.
Mlola Forest	The main part of Mlola Forest lying within the marine park, running from the northern boundary of the park in Jimbo village, south along the eastern seaboard to Mchangani, bounded in the east by the mean low low-water mark and in the west by the Mlola Forest Specified-use Zone and the official forest boundary.	A large portion of the intact part of the extant lowland coastal forest on Mafia. The forest has relatively high biodiversity, contains several species confined to a few sites in Tanzania, and provides a refuge for duiker and elephant shrews. The forest provides protection for agricultural land, from hot, saline easterly winds. The forest has come under severe threat over the course of several decades, from clearance for shifting cultivation and from the extraction of trees for timber and poles.
Kua Ruins	A continuous area surrounding all the Kua ruins on Juani Island extending 100 m in all directions from the outer ruins.	Kua is the site of a 16th century town thought at one time to have been the headquarters of the Sultanate of Kilwa. The ruins remain of high cultural significance.
Kizani Channel	The water channel at the south-western corner of Juani Island known locally as Mto wa Kizani, extending up to the high-water mark in the channel itself, plus the beach areas and shallow waters on either side of the east end of the channel	A site of scenic beauty used for tourism. The channel is lined with mature mangroves which have begun to suffer from uncontrolled cutting. Large flocks of waders and small seabirds utilise the inter-tidal area.

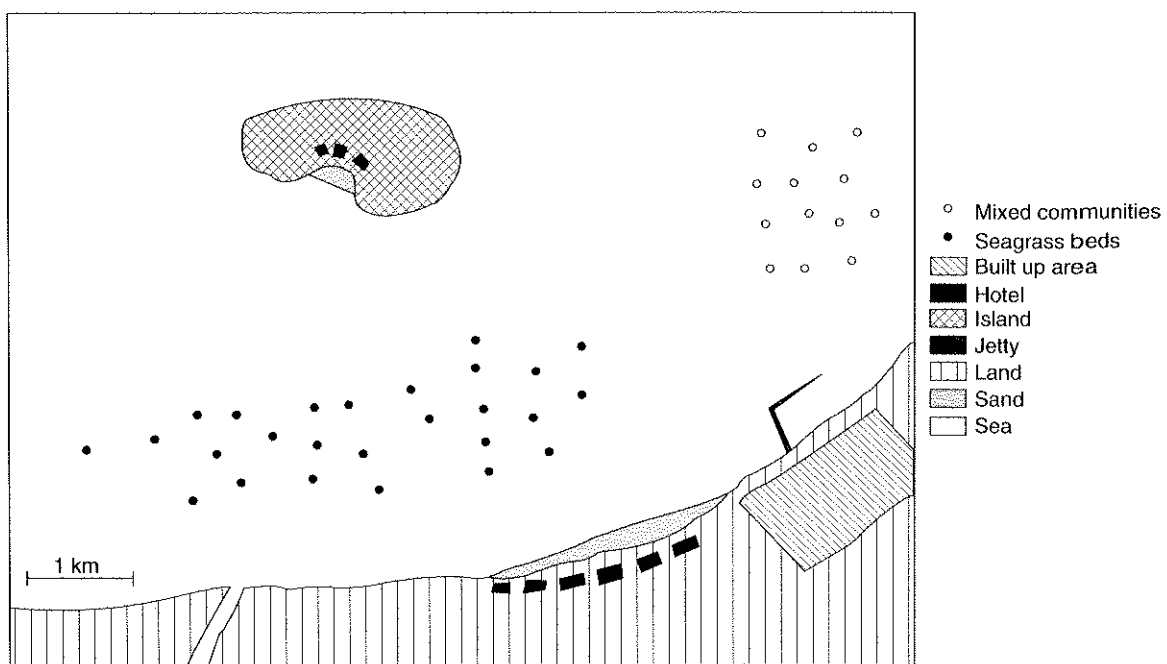
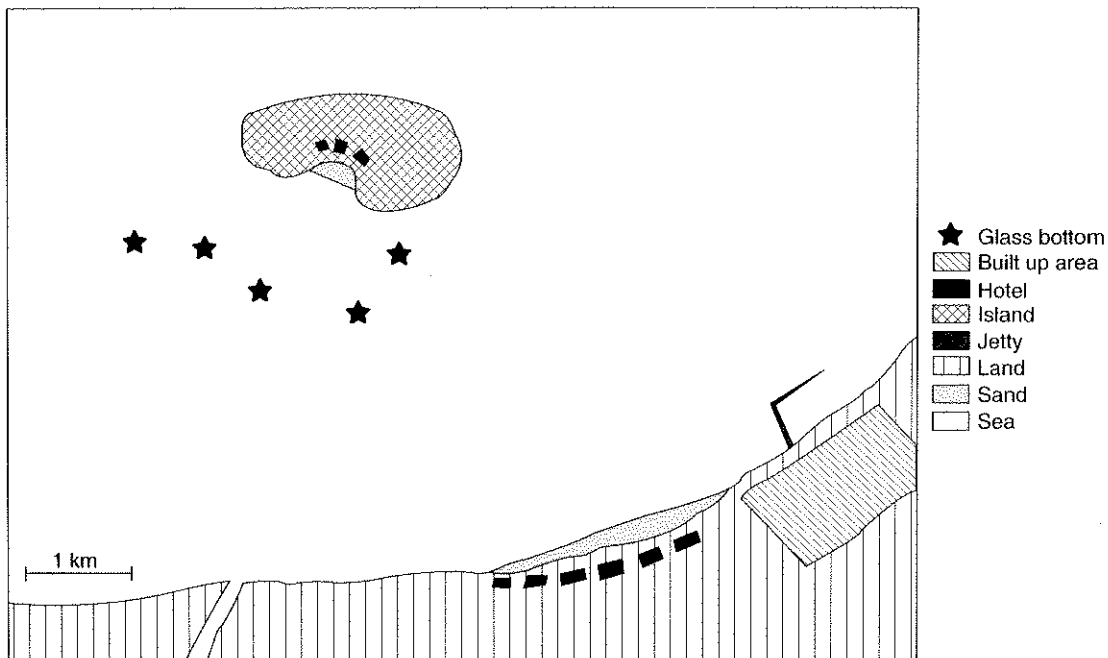
Area	Boundary	Justification
Ras Kisimani	The entire tidal islet of Ras Kisimani and the channel separating the islet from the main Mafia island. The boundary runs along the mean low low-water mark of the west and northern sides of the islet facing away from Mafia Island, and by a line 200 m inland from the mean low low-water mark on the main Mafia Island side of the Kisimani channel.	The site of the earliest settlement on Mafia dating back at least to the 13th century and possibly earlier and is therefore of high cultural significance. Kisimani channel also contains some of the best remaining areas of mangrove habitat within MIMP and is a site of scenic beauty for day visitors.

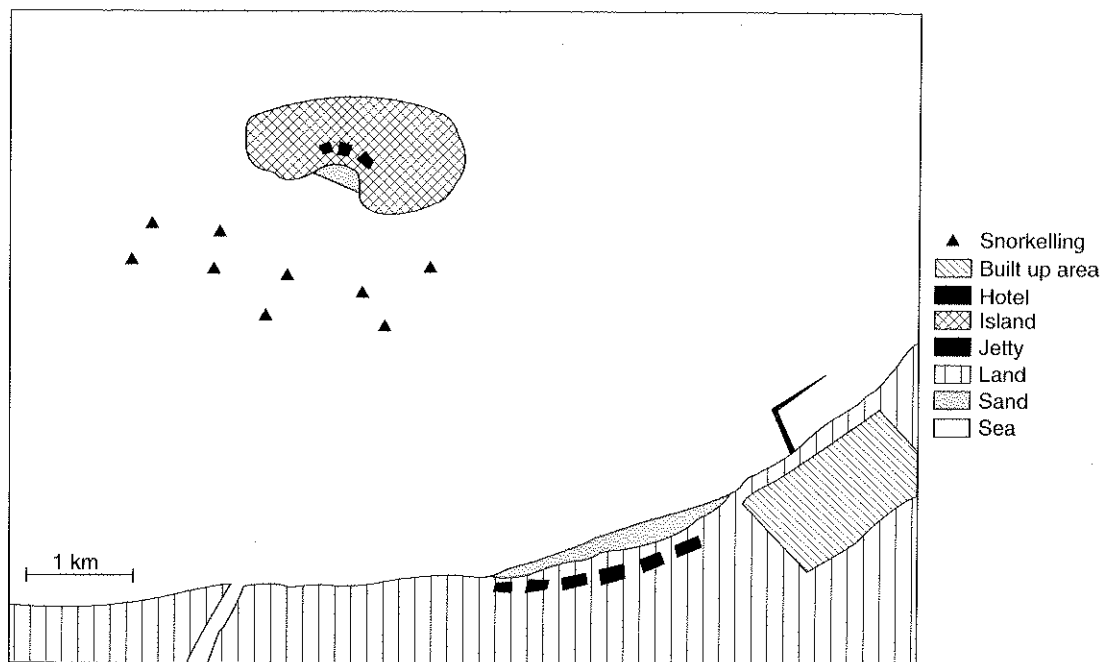
B. Areas designated as Specified-use Zones

Area	Boundary	Justification
Chole Bay	An extensive section of the north eastern and central part of Chole Bay encompassing Kulawe reef to the west and Msumbiji reef to the south. Bounded from a point on the northern shore of Chole Bay east of Mchangani, running south west towards Chole Island to a point south-west of Kulawe reef, running east to the northern tip of Juani. On the east side the boundary is adjacent to the boundary of the Outer Kinasi Pass Core Zone.	Contains all the significant reef habitats within Chole Bay including those around Miewe Ndogo Islet, the reefs along Kinasi Pass known as Utumbi reef and Chole and Kinasi Walls, and the relatively shallow reefs between Kinasi Pass and Juani Island including Milimani and Mlime reefs. Collectively these are the most species-rich coral reef habitats in the marine park. Highly important fishing ground especially for fishing communities on Juani and Chole Island, but also other communities around Chole Bay. These reefs have come under increasing pressure over the past two decades, first from dynamite fishing and more recently from the use of bottom-dragging seine nets.
Kifinge Bay	A coastal/marine strip running the full length of the sand beach at Kifinge Bay. Bounded in the west by the mean low low-water mark, adjacent to the Mlola Forest Core Zone, in the east by a line 1 km from, and parallel to, the low low-tide mark.	Kifinge Bay is an important turtle-nesting site. Turtles are vulnerable to capture by shark nets in the waters off the bay especially during the nesting seasons. The area is also an important fishing ground during the northeast monsoon and is reputedly popular for sharks.
Juani Outer Reef	A coastal/marine strip running the full length of the eastern seaboard of Juani Island including the islet known as La Kasa at the southern end of Juani. Bounded inland by a line 50 meters above the mean high high-water mark and in the east by a line 1km from, and parallel to the mean low low-water mark.	Beach areas on the outer side of Juani provide important turtle-nesting sites. Turtles are vulnerable to capture by shark nets in the waters off the outer reef especially during the nesting seasons. The area is also a significant fishing ground during the northeast monsoon.
Jibondo Outer Reef	A coastal/marine strip running the full length of the eastern seaboard of Jibondo Island. Bounded inland by a line 50 metres above the mean high high-water mark and in the east by a line 1 km from, and parallel to, the mean low low-water mark.	Beach areas in the outer side of Jibondo provide important turtle-nesting sites. Turtles are vulnerable to capture by shark nets in the waters off the outer reef especially during the nesting seasons. The area is also a significant fishing ground during the northeast monsoon.
Mange Reef	A circular reef exposed at low spring tides. The zone boundary extends 1km out from the mean low low-water mark.	A well developed reef structure providing one of the main fishing grounds for Jibondo fishers. The reef has come under increasing threat in recent years, mainly from over-fishing and also from the use of bottom-dragging seine nets.
Mlola Forest	Two narrow strips running 250 m along the inside of the official forest boundary of the Mlola Forest Reserve. One runs from Beacon 90 south to Kitotoni River (Beacon 54). The other runs from the Mlola Forest Post (Beacon 43) in Kungwi south to Chole Bay (Beacon 1).	In part of the Mlola Forest, these limited use zones provide for controlled extraction of building poles for a limited period of five years specifically until the maturation of trees planted from 1998. Also provides controlled extraction of medicinal plants, firewood and raffia fibre. The use zone is divided so as to avoid the most intact areas of forest between the Mlola Forest Post and Kitotoni River and at Krongwe north of Beacon 9.

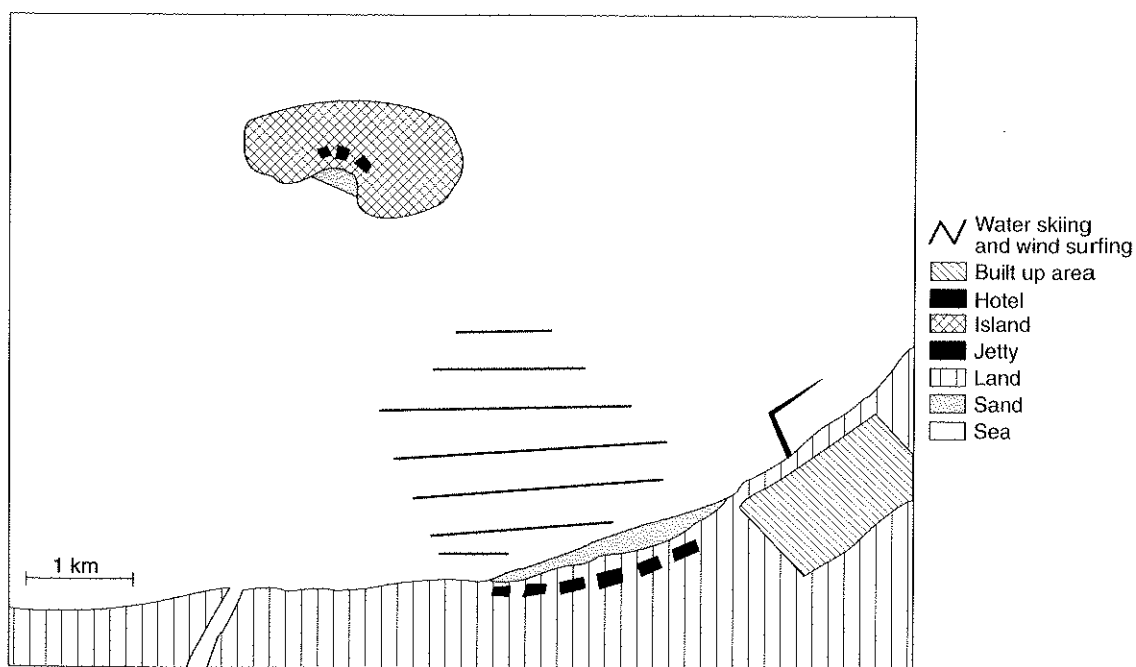
All areas within the marine park boundary not designated above as either Core Zones or Specified-use Zones are designated as General-use Zones.

Annex III: Resource and Use Maps of the Utopia Marine Park

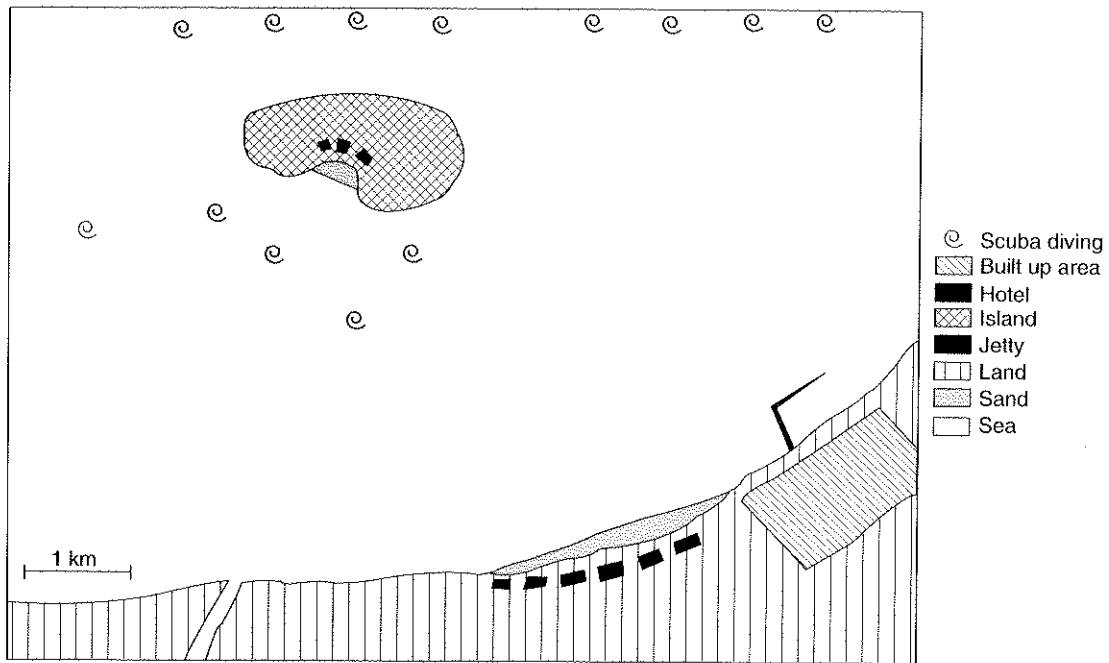




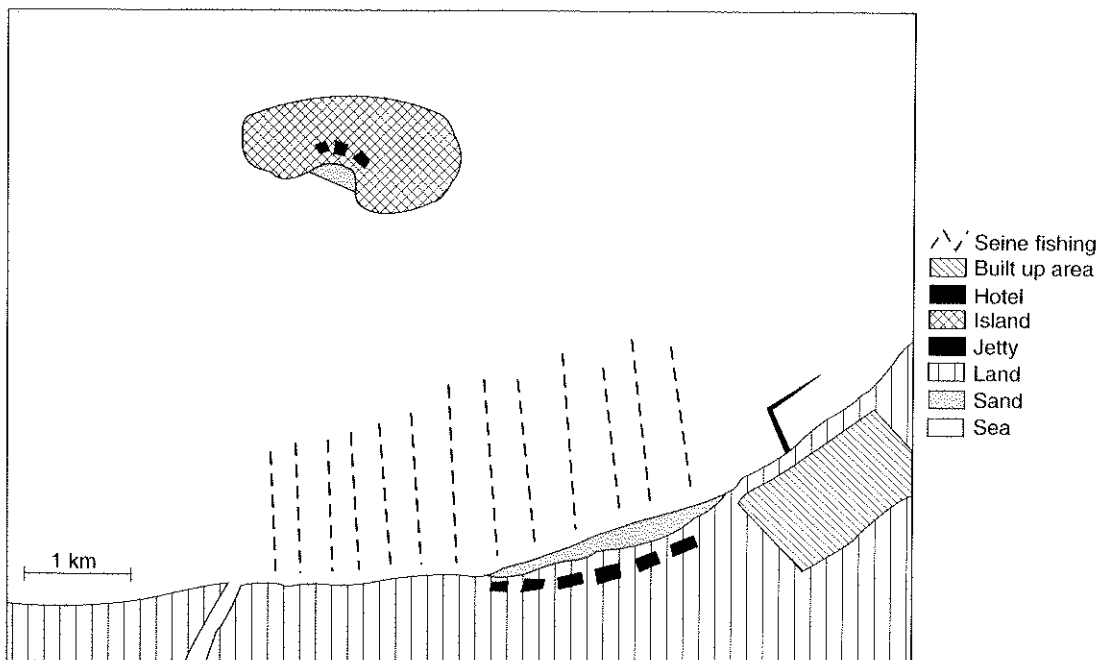
3. Snorkelling



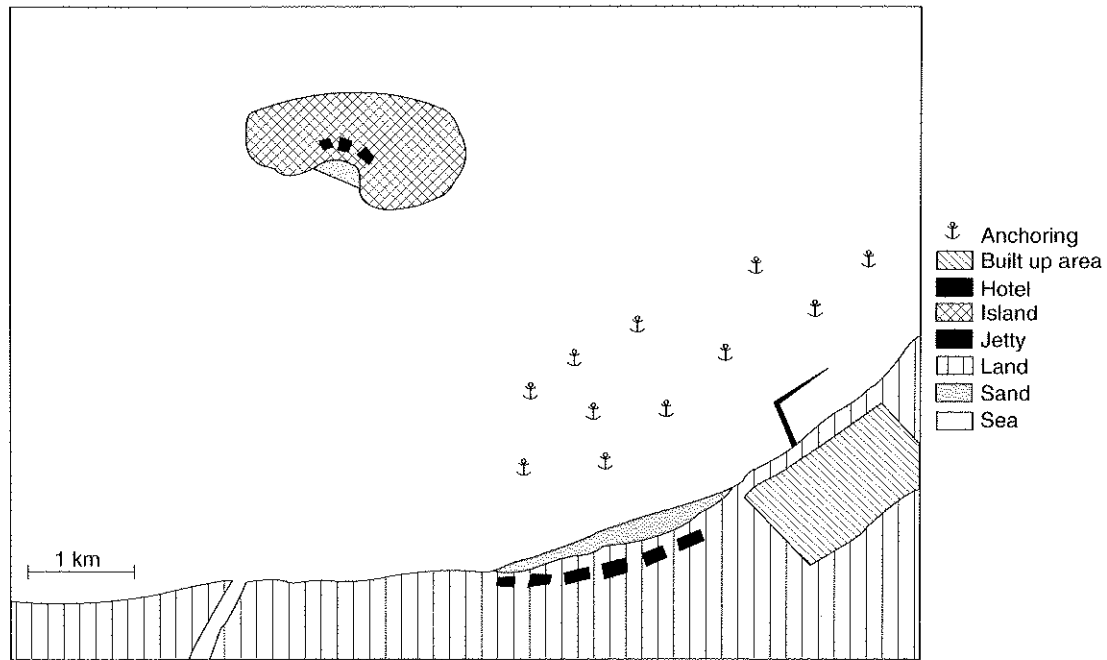
4. Water skiing and wind surfing



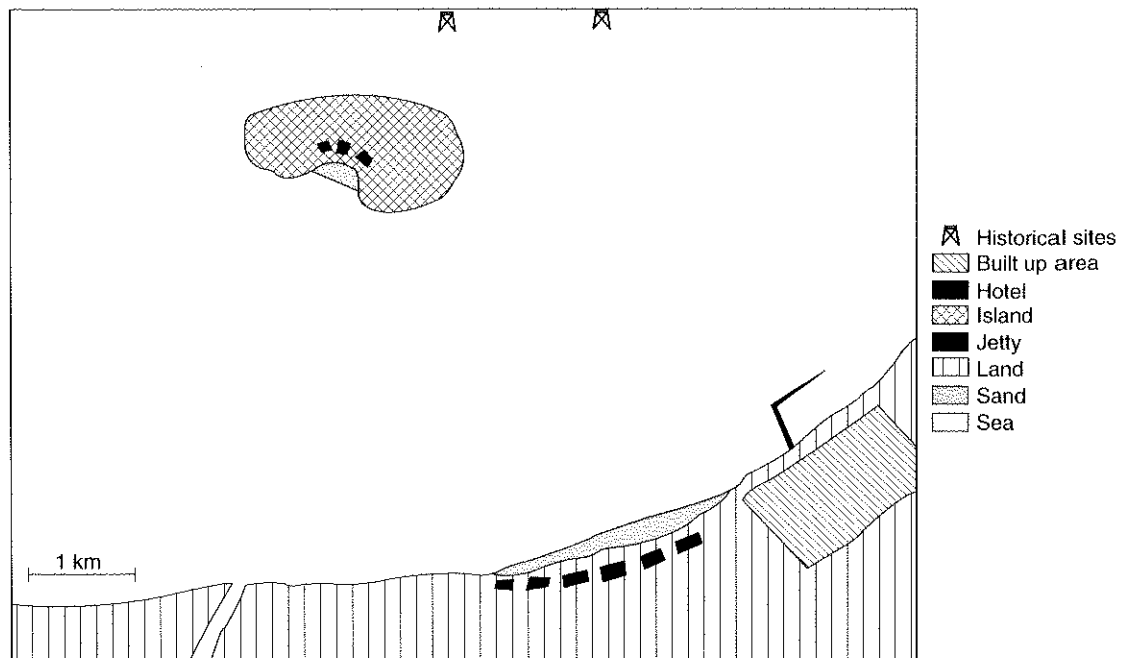
5. Scuba diving



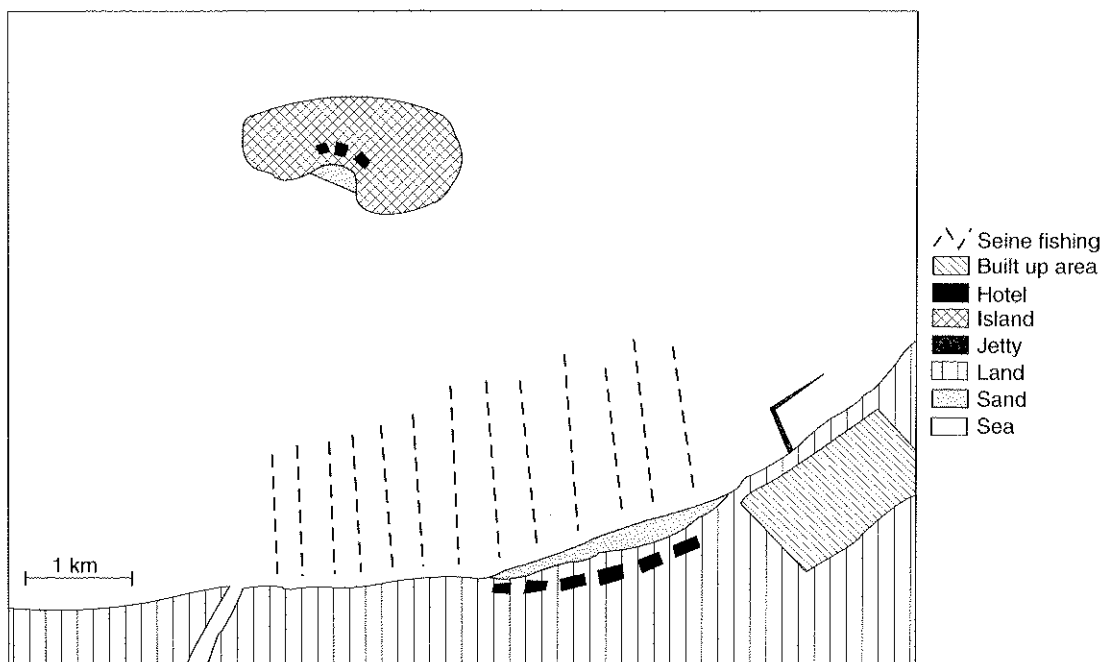
6. Seine fishing



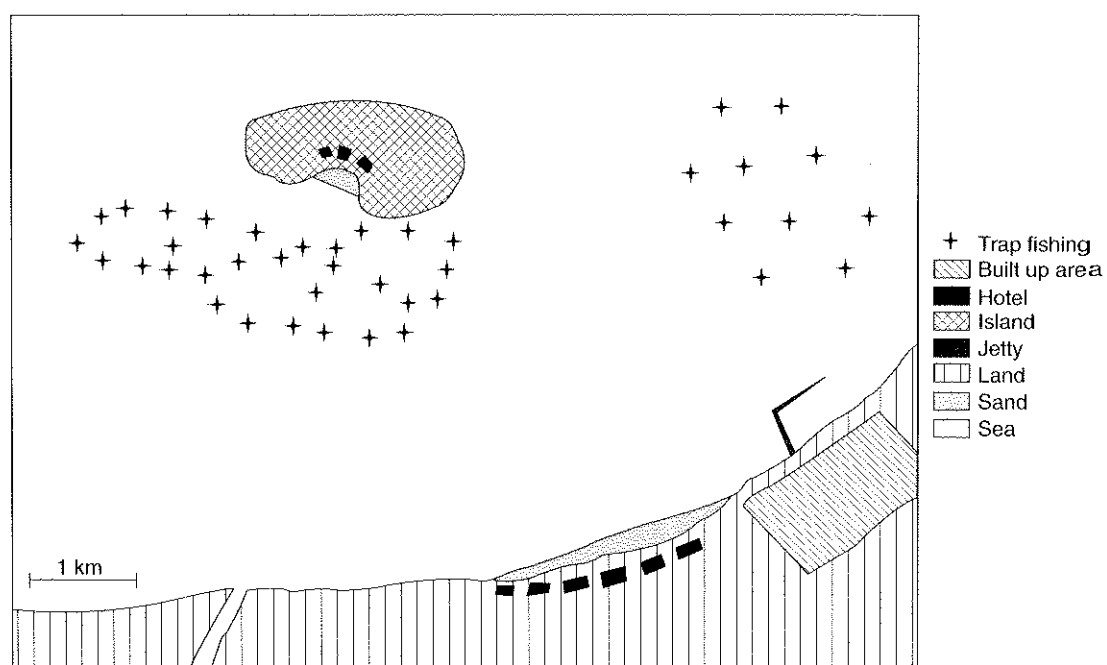
7. Anchoring



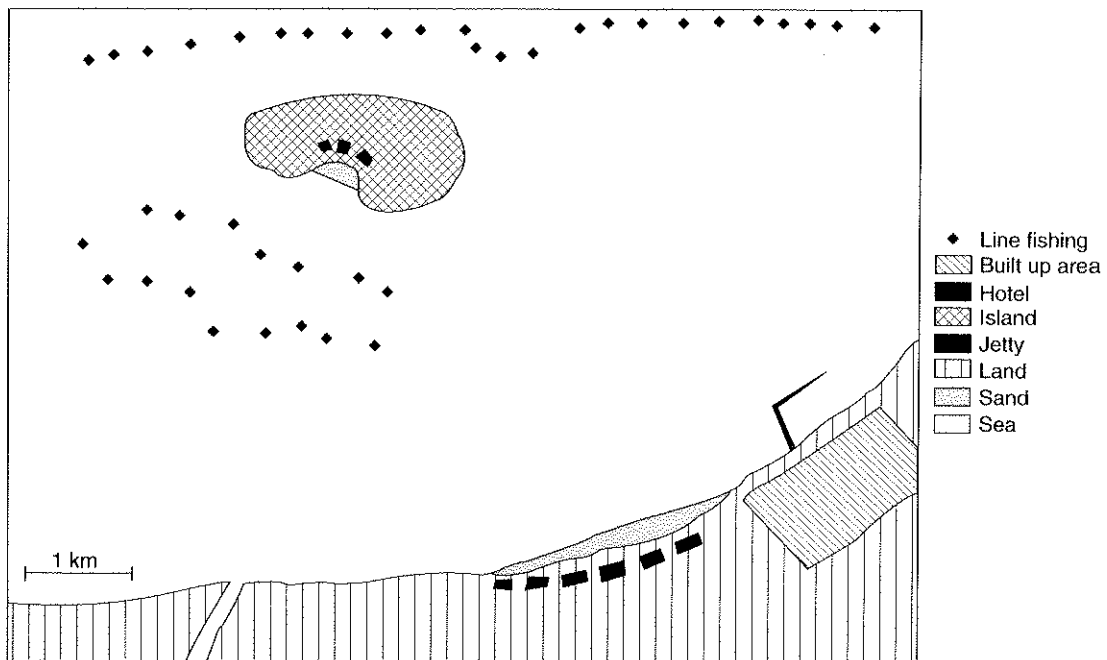
8. Historical sites



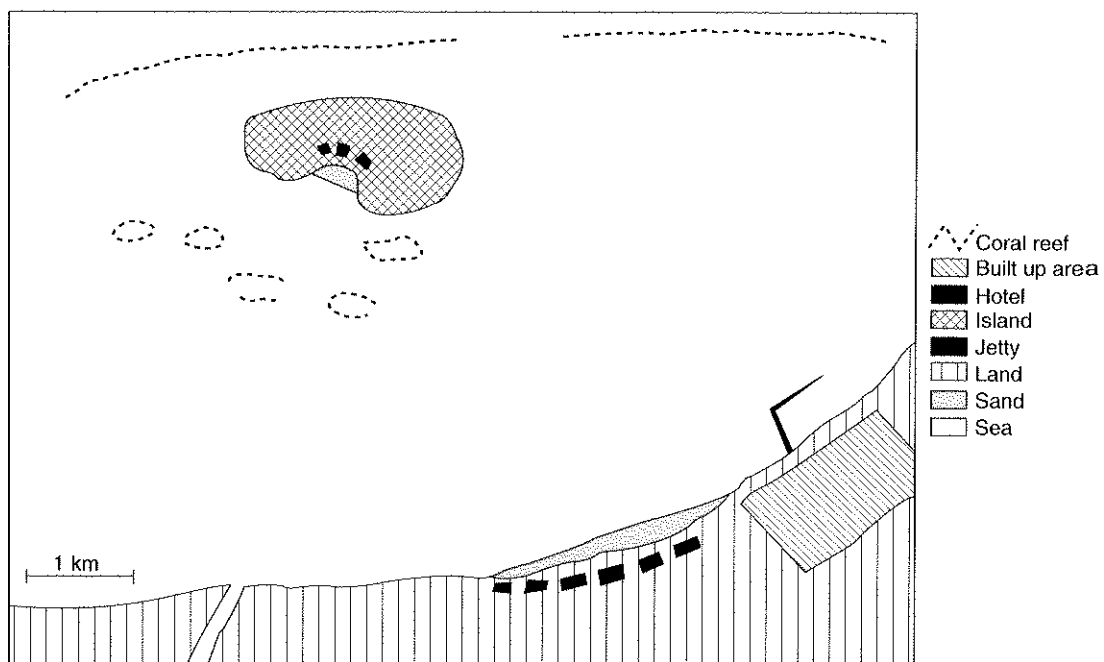
9. Ship traffic



10. Trap fishing



11. Line fishing



12. Coral reef

MODULE 3

Marine Protected Area Operations

AUTHORS: JOHN KAREKO AND BEN MUSYOKI

Objectives

This module will provide marine protected area (MPA) managers with an overview of the requirements for smooth and organised MPA operations. It also creates awareness on the maintenance and services required for the MPA equipment and the infrastructure. The actual maintenance skills (technical aspects) should be instilled in the operation team. Also in this module MPA managers will be equipped with the knowledge and skills to work with a wide variety of visitors and to ensure that the visitor experience is a positive one, and that negative impacts are kept to a minimum.

At the end of the course, participants should be able to:

- understand the relevance of operations and service schedules for the sustainable management of an MPA;
- be able to identify and appropriately assess operational components that directly support management, and that support the larger MPA's function;
- monitor and supervise the regular care and preventive maintenance of equipment such as boats and engines, as well as other key infrastructure components;
- be able to construct a management system that correctly identifies defects in equipment such as boats and engines, as well as in other key infrastructure components;
- plan and undertake patrols in a public and visitor-friendly manner.

Summary of Training Sessions

This module consists of three training sessions covering the major areas of operations for an MPA.

3.1: Daily Management Operations and Activities

This session examines the regular operational activities undertaken within an MPA in support of the areas management. In the Session 3.1.1, the session then identifies the equipment and the infrastructure required to perform the daily operational activities of an MPA together with the key aspects of their maintenance and organization.

3.2: Monitoring, Assessing, and Scheduling Operations

Within the general discussion and context of the key operational activities for MPAs, and the role each plays in management, this session contains two sub-sessions. Session: 3.2.1, 'Enforcement and Outreach', familiarises the participants with the role enforcement plays in MPA management, how to undertake the enforcement, and also how to create awareness through outreach. Session: 3.2.2, 'Safety', identifies the essential safety requirements for an MPA and shows how to develop a safety checklist. Both of these

sessions contain a strongly integrative perspective to focus attention on the need to have such core activities well planned and tightly integrated into the overall MPA management cycle.

3.3: Visitors/Tourism Management

This session brings out the fact that an MPA manager must understand the dynamics of tourism to be able to mitigate its negative impacts. Typically, an MPA manager must appreciate that he/she is dealing with a tourist destination and tourists and tourism management principles must be employed.

Background and Sequence of Module

Characteristically, an MPA involves a range of daily activities and operations that are essential for its maintenance. Similarly, there are various items of equipment and a certain basic infrastructure that are required for an MPA to be effective. As a manager, it is essential that the participants in this course are able to identify, assess, and respond to the characteristic needs of any given operation and the equipment that is required for its undertaking. This involves the production of tasking and service schedules for equipment, as well as work schedules for the individuals or teams involved in different tasks. It is not intended here that the participants be given straight technical information on equipment. It would reasonably be beyond the job description for most MPA managers to have all of the specific technical skills required to service and maintain the variety of equipment used in an MPA. However, a manager would reasonably be expected to understand the key maintenance issues related to such items and other aspects of the infrastructure within an MPA.

In addition to the internal aspects of running an MPA and its components, it is also critical that a manager is able to undertake public interactions including enforcement activities in a manner that is effective but not detrimental to the MPA. In this regard it is important that managers are equipped with tools and methods for handling public awareness and public interaction at a number of levels, and under a variety of situations.

This module is concerned with these aspects of an MPA and how they may be dealt with so that the MPA is not only maintained, but is also able to meet its mandate as an MPA without alienating the its stakeholders.

Session 3.1 analyses various operational activities being undertaken on a day-to-day basis in the Tourism- and conservation-based marine protected areas. This is primarily done through an open class discussion with the activities listed on a flip chart. Discussions are directed toward the type of equipment needed, its service and maintenance requirements, what type of infrastructure is necessary, and how one might best assess the key aspects of these issues for the formation of a scheduled system of maintenance and review.

Session 3.2 examines the various operations and activities listed in session 3.1, and considers the servicing and maintenance issues that arose in discussion. Emphasis is placed on the maintenance and service schedules for equipment and infrastructure, and how this is important for efficient MPA operations. Against this backdrop the session takes up the key aspects of MPA regulation enforcement, community dialogue, and safety so as to focus attention on cornerstone issues that all MPA managers will have to deal with—generally on a daily basis. The session is concluded by a task with time for discussion and questions.

Session 3.3 provides participants with the essential knowledge and skills necessary to manage visitors with a view to minimising their impact on ecosystem and tourism resources.

Conceptual Framework for the Sessions

As suggested above, the daily routine of most MPA managers is likely to involve a myriad of tasks, resources and issues that need to be resolved or undertaken in both an efficient and sustainable manner. The daily workings of an MPA cannot be divorced from the longer-term goals and strategies of the MPA, so each day must contain facets of maintenance, assessment, review, and a managerial response to the information gained from these steps. This includes not only the equipment and infrastructure of the MPA, but also the MPA's relationship with its associated stakeholders.

To that end, it is essential that an MPA manager be able to organise and appropriately structure daily operations to encompass these aspects. This involves various approaches, such as the use of work schedules, maintenance programmes, and community interaction programmes or routines. It is more likely that an MPA will be sustainable over the long-term if these daily activities are integrated into the overall management strategy, rather than be undertaken in an ad hoc manner. Clearly there are many unforeseen situations that may arise and need to be addressed as such; however, the core management of an MPA should not use this as a mode of management. Rather, management should aim to forecast as much as possible based on a regular and routine assessment and maintenance scheme.

In the same way, core issues such as safety and stakeholder interaction should follow a defined and proactive set of procedures that are assessed and reviewed regularly. Loss of staff through injury, or the alienation of stakeholders through inconsistent or bad practises can both undermine attempts to maintain an MPA, and inhibit its integration into an effective resource management programme.

As an important source of income for many local and national economies, tourism represents a set of activities that need to be undertaken in an economically and environmentally sustainable manner. In the same way, MPAs need to be managed in such a way that they can firmly support environmental sustainability, but maximise the gains to be made from tourism and its associated activities. It is this balance, between sometimes competing perspectives, that is critical to meet for the overall welfare of many countries, and the MPA manager is at the forefront of dealing with many of the issues it entails. For that reason it is essential that MPA managers have an understanding of the key issues and dilemmas involved, as well as a grasp of the tools and approaches that can be applied to ensuring the best outcome for all stakeholders.

In many regards the success of both tourism and an MPA may be inextricably linked because of the mutual dependencies they have on the revenue and environment in a given area. This idea should not be lost as a point of discussion on how the appropriate balances are found and maintained. In an ideal situation it could be supposed that synergies can be gained from the connection of these two domains. However, in reality, these have been shown to be difficult to achieve in some cases. Nevertheless, the seeking of common ground and the maintenance of a healthy dialogue and interaction with tourism is essential for most MPAs; especially if they are to meet their local and national goals of supporting both human welfare and environmental sustainability.

It is within this context that the session on visitors/tourism management attempts to provide the basic tools and knowledge that an MPA manager will require to address most of the issues that tourism entails for an MPA, and which are essential for the long-term sustainability of the MPA and the environment it protects.

References and Additional Reading Material

- Barrett, M.G. 1992. Coastal zone planning and management.
- Clark, J. 1996. Coastal zone management handbook. CRC/Lewis Publ., Boca Raton, Florida (USA). 694 pp.
- Corfield, T. 1984. The wilderness guardian, A practical guide to fieldwork related to wildlife conservation.
- Eagles, P.F.J., McCool, S.F. and Haynes, C.D.A. 2002. Sustainable Tourism in Protected Areas: Guidelines for Planning and Management. IUCN Gland, Switzerland and Cambridge, UK. xv + 183pp.
- Harrigan, W.J. 1995. Emphasizing positive enforcement incentives for code of conduct compliance.
- Holder, J. S. 1990. Overcoming the socio-cultural and environmental impacts of tourism—The verdict for the Caribbean. The Courier No. 122, July–August 1990.
- Musyoki, B. M. 1996. Towards tourism management in the Coast region of Kenya. Staff Seminar Paper No. 13, 1995/96, Department of Tourism, Moi University, Eldoret.
- Schoorl, J. and Visser, N. (1991). Towards sustainable coastal tourism—Environmental impacts of tourism on the Kenya coast. Netherlands Ministry of Agriculture, Nature Management and Fisheries, Royal Netherlands Embassy, Nairobi.
- SEACAM, 1999. From a good idea to a successful project. A manual for development and management of local level projects. Secretariat for Eastern African Coastal Area Management, Maputo, Mozambique.
- Stewart, M. C. 1993. Sustainable tourism development and marine conservation regimes. Ocean and Coastal Management, Vol. 20.

Training Session 3.1: Daily Management Operations and Activities

Objective

To provide a basic introduction to assessing daily activities within an MPA, and linking these to a defined set of equipment and infrastructure resources. The concept of equipment sharing or multi-tasking is also introduced with emphasis on scheduling resources for tasks.

Significance

The majority of MPAs in developing countries are under resourced with regard to equipment and infrastructure support. At the same time, finances for maintenance are limited or non-existent, and access to spare parts and repair facilities is often difficult and expensive. In this context it is essential that equipment be used at its most efficient, and that its use is undertaken within a pro-active and defined schedule of assessment and maintenance. In order to do this, the MPA manager must be able to identify the strengths and weaknesses of equipment, as well as the level of need or use it is likely to be subjected to. With this information, the manager is then well placed to be able to develop task and service schedules that maximise the application of equipment, and the equipment's sustainability. Together, these provide the highest cost efficiency for equipment and thus support the overall sustainability of the MPA.

Presentation

The first 20–25 minutes identifies the key daily activities of the MPAs that the participants are involved in or have knowledge of. Using a flip chart or overhead projector, the various activities are tabulated so that they can be ranked in terms of priority, and so that the key items of equipment and infrastructure can be listed beside them. The remaining 20 minutes is used to identify the key equipment and infrastructure items, which are written for the list generated above. Also, participants are encouraged to identify the strengths and weaknesses of the key items and to make a note of how this may be used in establishing a schedule for the use and servicing of an item. On completion of this session, the group should all have a copy of the activity/equipment table for reference in the next session.

Duration: 40–45 minutes

Equipment and Materials: Overhead projector
Overheads and matching handouts
Flip chart paper and stand

Trainer's Note

Depending on the time available over the teaching day, it may be most efficient to assign participants the task of generating their own use and service schedules for the key equipment listed in this session (or a subset of it). These can then be examined at the beginning of the next session as a means of minimising the time taken but also to allow them time to assess their current practices.

Case Study 3.1: Management and Operational Constraints of Mombasa Marine Park and Reserve, Kenya

Mombasa Marine Park and Reserve is faced with a number of management and operational constraints as highlighted below:

- **Licensing**

The Park Management has no control or coordination of the licensing of the following activities, which are carried out within Mombasa Marine National Park and Reserve:

- Licensing of marine vessels is done by the Kenya Ports Authority
- Licensing of all kinds of fishing is done by Fisheries Department
- Licensing beach operators (curio dealers, safari hunters, etc.) is done by the Tourism Department
- Glass-bottom boat safaris and other tourist-related water-sports activities are licensed by the Tourism Department.
- Research activities within the Marine Protected Area are licensed and co-ordinated by Office of the President, Biodiversity Department at Kenya Wildlife Services (KWS) Headquarters and Kenya Marine Fisheries Institute (KMFI). Some of the research is academic and of little use in terms of its application to management issues.

Buffer Zone Not Gazetted

A buffer zone of 100 ft above the highest water-mark regulates and restricts development activities, thus reducing the human, land-based impact on the MPA. Apart from Mombasa MNP/R, all other MPAs in Kenya have a gazetted 100 ft buffer zone. Mombasa Marine National Park and Reserve was gazetted after private owners/developers had acquired legal title deeds up to the shoreline and therefore the buffer-zone of 100 ft above the high water mark is privately owned.

Insufficient Number of Access Corridors to the MPA

The number of access corridors to MPA is limited and does not meet the requirements for public access due to large private developments along the MPA. Currently there is only one public access to the MPA at Kenyatta Beach. All other accesses are private and subjected to an entry/passage fee. Access corridors to the sea, within the Marine Park and Reserve have been encroached into by private developers, and only one to two-metre tracks are remaining in some areas.

Marine Park Operations Base is Temporary (Squatter Basis)

Mombasa Marine National Park and Reserve is the only MPA without a permanent base for its operations on the entire Coast Region. This greatly reduces the effectiveness and efficiency of the management and administration. Mombasa Marine Park and Reserve Operation Base at Kenyatta Beach is not legally owned by KWS. Therefore any continuity in management of the MPA from this base depends on the goodwill of the Mombasa Municipal Council.

Location of the Marine Park

Mombasa Marine Park Boundary does not extend to the shore and therefore does not include a cross section of all marine ecosystems from the shore to the deeper waters. Currently, critical ecosystems, such as seagrass beds, seaweed beds and shallow/intertidal reefs, are not incorporated within the park boundaries, although they are of importance for the fringing reef systems within the park boundaries. However the reserve does extend to the shoreline. Due to conflicts between fishers and hoteliers, the zone between the shoreline and the park has been managed, *de facto*, as part of the park.

Lack of Tenure Rights for Resource Use by Local Communities (Fishers)

The current legal setup does not give the communities around Mombasa MP/R any tenure right of the natural resources,

Overhead 3.1.1: What are the Day-to-Day Operation Activities in a Marine Protected Area?

- Revenue collection
- MPA inland and beach patrols
- Sea patrols
- Sentry duties
- Other management tasks
- Repairs of infrastructure and equipment

3.1.1: Equipment Required to Undertake the Daily Operations

Objective

To provide a basic introduction to developing a set of priorities around tasking equipment, and using this as a basis for developing a schedule for use of equipment. Also, this session aims to provide basic guidelines and an introduction to how a manager might go about establishing a service regime for equipment, and how this would be integrated into daily work routines.

Finally, this session aims to highlight how specific key tasks can be made more efficient and more easily managed by the use of routines, schedules, and codes of practice. The two areas used for this are workplace safety, and MPA boundary enforcement.

Significance

Core issues such as safety and stakeholder interaction are critical with regard to the efficient functioning of an MPA as well as how personnel and the wider public relate to the MPA. As with equipment, these areas of management require diligent monitoring and a defined set of practices in order to function effectively. The loss of staff through injury, or the alienation of stakeholders through inconsistent or bad practices can both undermine attempts to maintain an MPA, and inhibit its integration into an effective resource management programme. Although these aspects may seem removed from the procedures applied to equipment, they require the same basic management philosophy and approach, i.e. preventative and proactive management within a defined set of plans and strategies, as opposed to ad hoc responses or a reactive mode of management.

Presentation

The first 15 minutes reviews the equipment and servicing issues identified in session 4.1. These are used to generate a schedule for the use and servicing of example equipment items identified by the trainer and group.

In view of the schedules developed above, the remaining 25 to 30 minutes are used to examine workplace safety and the community interaction side of MPA enforcement. Ideally this should involve a list of key components for each, which are presented by the trainer as an overhead. These are then discussed and altered, or added to, by the group. For each of these issues the concepts of performance monitoring and maintenance of standards should be brought home. The trainer should also present and discuss examples of codes of practice, and methods of monitoring performance. These should be summed up with reflection on the basic philosophy of preventative and proactive management, and how that can lead to significant gains in the overall safety and performance of an MPA.

Duration: 40–45 minutes

Equipment and Materials: Overhead projector
Overheads and matching handouts
Flip chart paper and stand

TABLE 3.1.1: WEEKLY VEHICLE INSPECTION REPORT FOR GOUKAMMA NATURE AND MARINE RESERVE (FOR SECTION 3.1.1)

VEHICLE REGISTRATION _____	MONTH _____			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4
a All lights and hooter				
b All instrument meters				
c Tyres				
d Battery				
e Boors				
f Drive shafts				
g Engine mountings				
h Filters				
i Nuts, bolts, screws				
j Oil				
k Brakes				
l Grease points				
m Exhaust system				
n Suspension, shocks				
o Radiator				
p Windscreen, windows				
q Window-wipers				
r Mirror				
s Number plates, reflectors				
t Fuel-cap				
u Chassis				
v Clutch				
w Wash				
x Licence renewal date				

Overhead 3.1.1.1: Equipment Required for Effective MPA Operations

- Transport equipment: For patrol activities both inland and at sea;
- Office equipment and furniture: For effective running of the MPA;
- Field equipment: Patrol and the enforcement team will require;
 - speed boats
 - diving gear
 - life jackets and rings
 - communication radios
 - first aid kits
 - binoculars and search lights, etc.

Overhead 3.1.1.2: MPA Infrastructure

- Mooring buoys and boundary markers
- Buildings (offices, changing rooms and sanitation, visitors centre)
- Power and water supply
- Roads
- Sewerage system
- Watch towers, platforms and docks.

Overhead 3.1.1.3: Service Schedule

Service schedule for all the equipment and regular maintenance for the infrastructure should be enforced by the management of a marine protected area. The outcome for the enforcement will be:

- added life to all the equipment and infrastructure;
- cutting cost on the expenditure for protected area operations (less fuel consumption and breakage, etc.)
- effective and smooth MPA operations without multiple failures.

Overhead 3.1.1.4: Appropriate and cost-effective Infrastructure Development

When developing the infrastructure the following points are worth considering;

- Long-term gains as compared to short term gains;
- Initial cost and maintenance cost
 - amount of money required initially
 - time required for implementation and maintenance
 - the intensity in which this will affect daily operations (number of patrols and personnel, etc.)
 - type and kind of service and maintenance required after installation.

Training Session 3.2: Monitoring, Assessing and Scheduling Operations

3.2.1: Enforcement and Outreach

Objective

To familiarise the managers with the role enforcement plays in management, how to undertake the enforcement and to create awareness through outreach.

Significance

There is no law without enforcement, so there is the need for MPA rules and regulations to be enforced in order to enable the users adhere to the management strategies, rules and regulations.

Presentation

Lecture for 10–15 minutes on enforcement and outreach followed by 5 minutes for slides show.

Duration: 20 minutes

Equipment and Materials: Overhead projector
Overhead transparencies
Flipchart sheets and board
Slides projector and slides

Background

Enforcement is a vital component of marine park and reserve management, but it is often not adequately integrated with other management functions such as education and monitoring. The enthusiasm given to research, monitoring, education, and interpretation sometimes fades away when the subject of enforcement arises. Supervisors and rangers are frequently left out of the mainstream of management concerns, and the budgetary requirements of enforcement for boats, engines, and radios are not considered.

Managers of marine protected areas, though, cannot afford to neglect their enforcement programmes. In actual practice, the enforcement staff usually interacts with the public more than any other staff. People remember and talk about their experiences with the enforcement officers more than the rest of the staff.

Enforcement, education, and monitoring are the three primary means used to implement a management plan. Without adequate enforcement, a marine protected area becomes a 'paper tiger', and compliance with the regulations and confidence in the management plan erode swiftly. Likewise, if a good enforcement programme is established but then ignored, the programme will gradually become less responsive to the original mandates of the plan. An enforcement staff not well integrated with other marine protected area staff may become independent; developing their own operating policy to cope with the daily situations they encounter on the docks, along the beach or out on the water; their motivation may suffer to the point where their performance is diminished.

On the other hand, a good enforcement programme, well supervised and integrated with the other functions of the marine protected area, is one of the most effective management programmes that can be implemented. The benefits of a well-conceived and managed enforcement programme are realised very quickly.

In conservation all officers should act as enforcers, regardless of their respective duties. Enforcement and outreach should not be left to the uniformed staff alone, but should be everyone's responsibility, for a simple or minor damage in marine environment may take a long time to recover or regenerate.

The structure of the Protected Area Authority is important as it determines the success in implementing the management plan of the MPA. An ideal structure should be activity-based and driven by professionalism rather than political interests, as these vary from one protected area to another.

Case Study 3.2: Enforcement and Outreach Programme in the Goukamma Nature and Marine Reserve, South Africa

Enforcement is of the preventative, educational and deterrent type. When it is quite clear that a crime was not committed intentionally, a verbal warning is issued with the name and address of the person being noted. For planned poaching syndicates and commercial operation prohibited in the protected area, culprits are arrested and all equipment, vehicles and organisms confiscated, or admission of guilt fines issued (lesser crimes).

All field rangers are qualified law enforcement agents having passed peace officers courses set by the state. All Sea Fisheries Inspectors (including field rangers) have more powers than the police. Field rangers can inspect bags, vehicles, boats, etc., without a search warrant. Upon registration and counting at the police station, confiscated items, fish or organisms, are returned to the sea if they are still alive, or else sold to fish shops.

All warnings (verbal, complementary, admission of guilt, and court appearance) are entered into a database at the Reserve for future reference.

Case Study 3.3: Reducing Poaching in MPAs

—Nirmal Jivan Shah

MPAs are increasingly being promoted as powerful tools in biodiversity conservation and natural resource management. More recently, they have been suggested as the solution to the current fisheries crisis. However, while there is some evidence for this, it is estimated that 79% of the world's MPAs possess unknown management or are failing to meet their management objectives.

Research on compliance to MPA legislation conducted in Seychelles by Louisa Woods of the University of Newcastle and the author shows that levels of poaching in MPAs of Seychelles are perhaps higher than have been imagined to date. It is augmented by the presence of what appears to be a substantial population of non-commercial poachers. Currently only one MPA, Cousin Island Special Reserve, is achieving negligible poaching, and thus fulfilling its potential role in fishery management. The other MPAs in Seychelles all exhibit some degree of poaching, and some are heavily poached.

In assessing motives for poaching during the research, three salient areas have been revealed. The first of these is economic incentives. The second is education, of both fishers and also of the general public, in terms of their appreciation of the necessity to support protective measures. The third is the socio-political environment in which natural resource management is occurring in Seychelles that has resulted in the marginalisation of fishers and their views.

It is therefore useful to understand why Cousin island is achieving negligible poaching. We attribute the success of Cousin in all but eliminating poaching from its MPA to its small size, its remoteness from Mahe the main island where most of the population is located, the local management having negotiated a unique relationship with poachers, and direct and indirect economic benefits to locals from eco-tourism.

Many local boat and tourism operators from the neighbouring island of Praslin are involved in on-island ecotourism and gain direct financial benefits (see Case Study 3.4). Other small businesses on Praslin also sell goods and service to Cousin management for the running of the island. The island is considered to be one of the jewels in the crown of the Seychelles ecotourism industry and local officials as well as economic actors all have a stake in maintaining the conservation status of the Reserve.

There have also been indirect economic incentives as well as disincentives. Local tour operators and any licensed boat operator, some of whom may have been fishers or poachers, all have access to Cousin for tourism purposes. In an isolated case of sea cucumber poaching in 2001 tour operators, fisheries officials and local authorities were made aware that the island would be closed to visitors if the poachers were not persuaded to stop their activity.

Overhead 3.2.1.1: Enforcement and Outreach

The success of a protected area management depends on the kind of enforcement and outreach approaches that the management puts in place.

There are two kinds of enforcement:

- Negative enforcement: This is forcefully installed into people (if you don't comply you are punished or penalised).
- Positive enforcement: Self-compliance, which is achieved through intensive outreach programmes. It creates a friendly force.

Overhead 3.2.1.2: Essential Skills for MPA Enforcement Officers

- Boat to boat visitor contact
- Boat handling and seamanship
- First aid, search and rescue
- Night operation skills
- Damage assessment and photography
- Second language
- Good communication skills, etc.

Training Session: 3.2.2 Safety

Objectives

To identify the safety requirement for an MPA's operations and develop a safety checklist.

Significance

It is important that the safety of both the MPA users and the managers is observed, it should further be extended to the equipment that are used to perform the MPA operations.

Presentation

Lecture for the first 10 minutes introducing the need for safety while undertaking the MPA operations, and concluded by a brainstorming session on the safety checklist.

Duration: 20 minutes

Equipment and Materials: Overhead projector
Overhead transparencies
Flipchart board and sheets
Marker pens

As the marine environment can at times be very harsh, there is need to have safety procedure for visitors, MPA users, managers and the resources. To ensure safety, there is need to develop a safety checklist for marine protected areas, which can be used on daily bases by the persons undertaking the daily activities.

For safety management, all the staff working in the marine protected areas should be equipped in safety techniques.

These should include:

- Medical/marine first aid
- Diving and swimming skills
- Search and rescue
- Boat operation, etc.

All the above skills prepare the MPA staff to be comfortable in their working environment, undertake their daily operations without fear and be in a position to save life with confidence.

Overhead 3.2.2.1: Objectives

1. Where, what and who requires safety on normal mpa operations?

Overhead 3.2.2.2: Content of the Safety Checklist

- Check the daily log of each equipment before use
- First aid kit
- Simple tool kit that could save a situation
- Floaters and life jackets.

Overhead 3.2.2.3: Essential Safety Techniques

All staff should be equipped with the following safety techniques:

- Medical/marine first aid
- Diving and swimming skills
- Search and rescue
- Boat operation, etc.

Overhead 3.2.2.4: Basic Equipment for Search Operations

- Snorkelling gear
- Buoy with a line (at least 15 m long)
- Rope
- Binoculars
- Compass
- Floatation aids (buoys, life jackets, etc.)
- Marine/VHF radio
- A signalling device, e.g. whistle, flare, etc.
- Boat
- Oxygen pack
- Scuba diving gear
- Rescue board (backboards).

Task 3.1: Malindi/Watamu Marine Park and Reserve

The class will be divided into two groups where one group will draw a proposal for Malindi and the other for Watamu Marine Park, and the presentation will be addressed to the two park managers.

Background

Malindi/Watamu Marine Park and Reserve is the oldest marine protected area in Kenya, gazetted in 1968. It supports a rich marine biodiversity. The park is managed by the Kenya Wildlife Services, which is a parastatal under the Office of the President.

The park obtains its operational budget from the central government, to which all the revenue collected is submitted.

The area comprises a 5-km-wide strip of sea and its associated beach reaching from Malindi in the north to Mida Creek 30 km to the south. It encompasses the three distinct conservation units listed below, which are collectively referred to as the Marine Complex.

- Malindi Marine National Park comprises an area of 6.3 km of sea and beach south of Malindi Town. This unit also has a land base of 5 ha at Casuarina Point which accommodates the Marine Complex's headquarters offices and staff accommodation.
- Watamu marine National Park lies at the southern end of marine complex and includes a marine component of 10 sq km and a land base of 2 ha, with a small office and staff housing.
- Watamu Marine National reserve incorporates the whole of Mida Creek up to the high water mark and covers an area of 10 sq km.

Watamu Marine Park has the following capacity:

Personnel: Warden, 11 Rangers, 2 Drivers

Equipment: One vehicle, 2 boats with 2 outboard engines, 4 sets of diving gear

Malindi Marine Park has the following capacity:

Personnel: 1 warden, 13 rangers, a driver, 1 accounts clerk, 1 mechanic, 1 artisan and 1 subordinate staff.

Equipment: 6 Vehicles, out of which only 3 are functional, 1 motorcycle, 2 boats with only 1 outboard engine functional, 6 sets of diving gear.

The park is faced with the following operational problems:

- Patrolling of the extensive reserve is inadequate and irregular;
- regular underwater patrolling and monitoring of underwater life is not undertaken;
- lack of planning for adequate dive sites and mooring buoys for boats at the coral garden;
- maintenance of buildings and equipment inadequate;
- collecting revenues from tour operators is difficult;
- a general maintenance planning is not in place.

Some of the underlying causes are:

- lack of diving equipment, gear and lack of sufficient diving personnel.
- most transportation equipment have been grounded for lack of service and repair;
- adequate park infrastructure is lacking (e.g. no clear boundary markings)

The Government of Kenya through the Kenya Wildlife Service is inviting project proposals from reputable consultancy firms and NGOs containing cost-effective mechanisms and recommendations to mitigate the above problems and ensure that operational aspects of management at Malindi Watamu Marine Park are strengthened.

The proposals should also include a design for a maintenance plan that addresses the above operational shortcomings.

Training Session 3.3: Visitors/Tourism Management

Objective

To minimise visitor impact on the environment and infrastructure of an MPA through controlling and regulating visitor use.

Significance

During the past decade, tourism in general and coastal tourism in particular experienced impressive growth in the WIO region. This growth has generally led to the creation of additional employment, increased flows of foreign exchange and improvement of infrastructure in the coastal areas. The economies of Kenya, Mauritius, Seychelles, and Tanzania depend on tourism for significant proportion of their foreign exchange and other regional states are actively expanding this sector.

Many MPAs in the WIO region have been designed to operate from self-generated revenues, taxes, and other innovative mechanisms. User fees from tourists are widely regarded as an important source of revenue for MPAs. In Seychelles and Kenya, where the tourism industry is relatively well developed, MPAs generate substantial revenues from user fees.

The development of coastal tourism can have a myriad of impacts on the MPA. These impacts can be positive, such as job creation for local people, or negative, such as coastal degradation due to unplanned development of coastal hotels.

Coastal tourism depends on a pristine and healthy coastal environment as its primary tourist attraction, so care needs to be taken to ensure that the development of tourism does not harm the very resources on which it is based.

A central issue for the sustainability of an MPA is the level and physical extent to which the MPA and its resources are used. As recreation and tourism expand, and the frequency of visitation to an MPA increases, a point is reached where management is needed to minimise any negative impacts that may result. The dilemma of MPAs is to enable people to visit and appreciate such areas, but to do so without destroying them or so changing them that the experience is degraded or devalued.

There are two major areas of understanding required for such management. One is ecological, an appreciation of the character and the ecology of the area. The other is social, an appreciation of expectations, intended activities, and important elements of the recreational experience for the various types of user likely to be attracted to the area.

The MPA manager should recognise the constraints and opportunities offered by the natural and sociocultural environments, the need for diversified recreational opportunities. Consequently, the MPA manager must be aware of the strategies and options available for managing the impacts of tourism on their MPAs and how they can be applied to minimise visitor impact. This training session aims at equipping MPA managers with this knowledge and skill.

Presentation

Duration: 1 hour

Equipment and Materials: Overhead projector
Overheads and matching handouts
Flip chart paper and stand

Case Study 3.3: Tourism Development in Mafia Island Marine Park, Tanzania

Tourism on Mafia is still in its early stages of development. Despite relatively low occupancy rates to date, it is reasonably likely that visitor numbers will increase in the immediate future. New hotel developments may also be proposed.

The capacity to accommodate further lodges in the vicinity of Utende and Chole is uncertain. The population of Utende has burgeoned in recent years as a result of the influx of staff at existing lodges, their families, relations and other hopefuls attracted by the prospect of employment. Potential and actual problems as a result of this are:

- disturbance of visitors by beach boys
- additional pressure on local resources including fresh water and land
- over-development and crowding of tourism areas by local houses.

In the absence of relevant legislation at the time of their development, existing lodges at Utende and Chole were not subject to environmental impact assessment scrutiny. The main issues of concern include:

- over-exploitation of freshwater supplies. Supplies of freshwater during the dry season already appear to be under pressure, though no hydrological survey has been conducted.
- Improper disposal of solid waste, wastewater, sewage, and chlorinated and other contaminated water
- Habitat damage, especially mangroves clearance to create beachfronts
- Disturbance of the coastline from construction too close to shore
- Visual pollution from unaesthetic construction
- Friction with local residents over land acquisition and access rights.

TABLE 3.3.1: POTENTIAL BENEFITS OF TOURISM IN PROTECTED AREAS

Benefits

Enhancing economic opportunity

- Increase jobs for local residents
- Increase income
- Stimulate new tourism enterprises and stimulates and diversifies the local economy
- Encourage local manufacture of goods
- Obtains new markets and foreign exchange
- Improves living standards
- Generate local tax revenues
- Enables employees to learn new skills
- Increases funding for protected areas and local communities

Protecting natural and cultural heritage

- Protects ecological processes and watersheds
- Conserves biodiversity
- Protects, conserves and values cultural and built heritage resources
- Creates economic values and protects resources which otherwise have no perceived value to residents and represent a cost rather than a benefit
- Transmits conservation values, through education and interpretation
- Helps to communicate and interpret the values of natural built heritage and of cultural inheritance to visitors and residents of visited areas, thus building a new generation of responsible consumers
- Supports research and development of good environmental practices and management systems to influence the operation of travel and tourism businesses, as well as visitor behaviour at destinations
- Improves local facilities, transportation and communications
- Helps develop self-financing mechanisms for protected area operations

Enhancing quality of life

- Promotes aesthetic, spiritual, and other values related to well-being
- Supports environmental education for visitors and locals
- Establishes attractive environments for destinations, for residents as much as visitors, which may support other compatible new activities, from fishing to service or product-based industries
- Improves intercultural understanding
- Encourages the development of culture, crafts and the arts
- Encourages people to learn the languages and cultures of foreign tourists
- Encourages local people to value their local culture and environment

TABLE 3.3.2: STRATEGIES AND OPTIONS FOR MANAGING VISITOR NUMBERS AND COPING WITH HIGH LEVELS OF VISITOR NUMBERS

Strategy/ Management tactics and techniques

Reduce use of the entire protected area

- Limit number of visitor in the entire protected area
- Limit length of stay
- Encourage use of other areas
- Require certain skills and/or equipment
- Charge a flat visitor fee

Reduce use of problem area

- Inform about problem areas and alternative areas
- Discourage or prohibit use of problem area
- Limit number of visitor in problem area
- Encourage/require a stay limit in problem areas
- Make access harder/easier to areas
- Eliminate facilities/attractions in problem areas, improve facilities/attractions in alternative areas
- Establish different skill/equipment requirements
- Charge differential visitor areas

Modify the location of use within problem areas

- Segregate different types of visitors

Modify the timing of use

- Encourage use outside of peak use periods
- Discourage/ban use when impact potential high
- Fees in periods of high use/high impact potential

Modify type of use and visitor behaviour

- Discourage/ban damaging practices/equipment
- Encourage/require behaviour, skills, equipment

Modify visitor expectations

- Inform visitors about appropriate protected area uses
- Inform about potential conditions in protected area

Increase the resistance of the resource

- Shield the site from impact
- Strengthen the site

Maintain/rehabilitate resources

- Remove problems
- Maintain/rehabilitate impacted areas

Case Study 3.4: Benchmarking Ecotourism in MPAs

What is Ecotourism and how should it be managed? Ecotourism as a term is bandied around and has become all things to all people. The issue on Cousin Island Special Reserve, a sea and island protected area in the Seychelles was how to benchmark a 30 year ongoing tourism program and mainstream it with internationally accepted norms.

Tourism on Cousin started soon after the island and the sea area around it was declared a Special Reserve in 1972. The tourism has always centered on small groups interested in viewing the biodiversity of Seychelles. This includes seven species of seabirds breeding in dense colonies, five endemic terrestrial birds, the best restored coastal forest in Seychelles, and more nesting hawksbill turtles than any other site in the Western Indian Ocean.

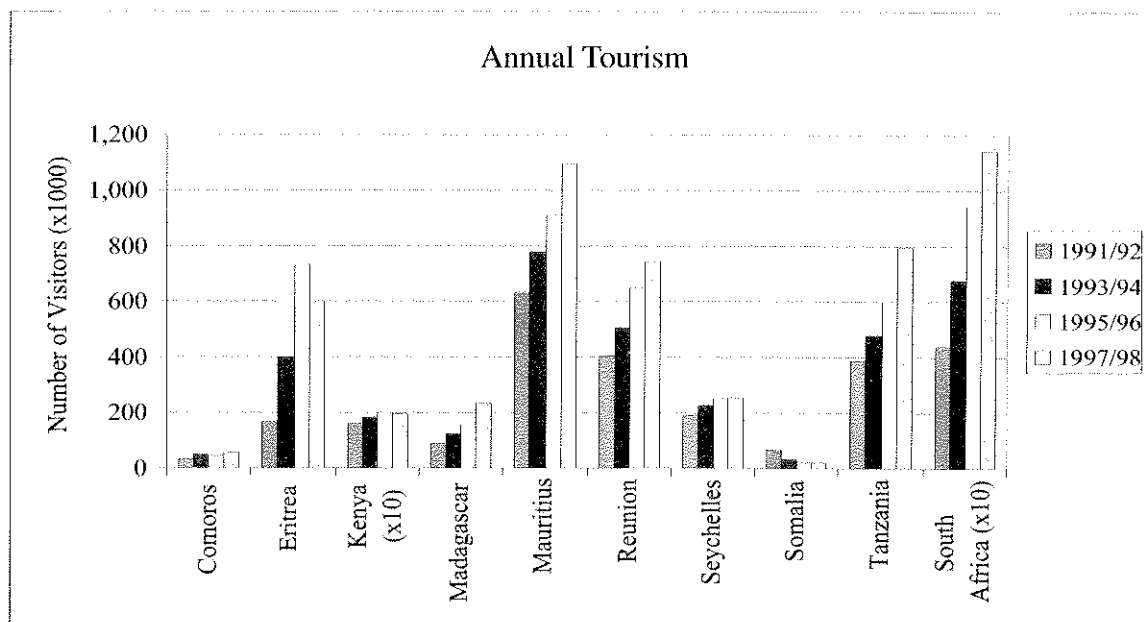
In 1998, with the management of the island turned over from BirdLife International, the owner of the island, to Nature Seychelles, a local NGO, the emphasis was to transform the ecotourism activities into a professional and world-class model.

In 2002, the Ecotourism Association of Australia and the Cooperative Research Centre for Sustainable Tourism of Australia, in collaboration with Green Globe circulated The International Ecotourism Standard for Certification in a document called Setting a Worldwide Standard for Ecotourism. The document lays out 8 Principles.

Over a period of one year, the entire ecotourism operation on Cousin was aligned to these Principles. The Principles of The International Ecotourism Standard and the practices adopted on Cousin to meet them are described below.

1. **Focus on giving visitors the opportunity to personally and directly experience nature (Natural Area Focus);**
The primary objective of tourism on Cousin is to provide visitors with a unique opportunity to experience the natural world. Tourists stay on the island for about two hours and the tour to view the biodiversity first hand takes one and a half hours.
2. **Provide opportunities to experience nature in ways that lead to greater understanding, appreciation and enjoyment (Interpretation);**
Visitors are taken around on a tour of the island by trained local guides who are themselves the conservation Wardens living on the island. The Wardens interpret the rich biodiversity for the visitors in two languages, English and French.
3. **Represent best practice for environmentally sustainable tourism (Environmental Sustainability Practice)**
The impact of visitors are kept to a minimum with short guided tours, no picnicking, no overnight accommodation, distance kept from nesting birds and turtles, no natural species or materials collected, solar power use and mooring buoys in place. Wardens have the legal right to stop any person or boat suspected of violating Reserve Regulations.
4. **Contribute directly to the conservation of natural areas (Contribution to Conservation)**
All the fees from ecotourism on Cousin are ploughed back into management and conservation of the Reserve as well as into conservation and environmental education projects on other sites.
5. **Provide ongoing contributions to the local community (Benefiting Local Communities)**
Ecotourism on Cousin has been proven to bring in over USD 200,000.00 annually to many local small operators and Seychellois owned businesses. Revenues earned from Cousin also support grass-roots projects under the Local Environment Action Program (LEAP).
6. **Be sensitive to, interpret and involve the culture/s existing in the area (Cultural Respect)**
All staff on the island as well as top management are Seychellois with a preference for recruitment of Wardens on the neighboring islands so as to match expectations of local communities and to reduce poaching.
7. **Consistently meets consumer expectations (Customer Satisfaction);**
A recent visitor survey has shown high customer satisfaction. More than 90% of visitors polled found the tours informative, interesting and well organized. About 40% said they would pay more for a visit. Most if not all visitors thought the island was being well conserved. Judging from entries in the Reserve Guest Book expectations continue to be met or exceeded.
8. **Be marketed and promoted honestly and accurately so that realistic expectations are formed (Responsible Marketing).**
A free booklet provided before visitors arrive on the island and information sheets sent annually to operators provide up to date information such as opening times, landing arrangements and legal regulations. They highlight the possibility of rough boat rides, mosquitoes and a humid forest, as well as the need to have personal insurance.

Overhead 3.3.1: Regional Tourism Trend



Overhead 3.3.2 Destination Characteristics Influencing the Intensity of Tourism Impacts

- Size and destination of country or area
- Scale and rate of tourism development
- Number of tourists
- Fragility and sensitivity of the landscape, flora and fauna
- Cultural sensitivity and social make-up of the local population
- Attitude of the local population
- Political environment and stability
- Development incentives
- Types of tourists
- Level of tourism development
- Competition from other areas
- Physical and economic accessibility
- Degree of foreign ownership
- Employment of non-indigenous labour
- Government provision of infrastructure and services
- Nature and attractiveness of tourism facilities
- Level of economic development of the area
- Whether the area is rural or urban.

Overhead 3.3.3: Common Tourism Developments and Activities in East African Countries

<p>A. INFRASTRUCTURE</p> <p><u>1. Accommodation</u></p> <ul style="list-style-type: none"> 1.1 Luxury hotel 1.2 Resort complexes 1.3 Safari camps 1.4 Guest lodges and villas 1.5 Time-share apartments 1.6 Private homes 1.7 Small beach cabanas 1.8 'Bush' hotels 1.9 Camping sites <p><u>2. Transportation</u></p> <ul style="list-style-type: none"> 2.1 Cruise liner 2.2 Passenger ferry 2.3 Chartered motorised craft 2.4 Local transport (land and sea) 2.5 Railway 2.6 Roads 2.7 4 x 4 (ORV) trails 2.8 Airstrip 2.9 Harbours 2.10 Marinas, small boat harbours 2.11 Jetties 	<p>B. ACTIVITIES</p> <p><u>1. Boating</u></p> <ul style="list-style-type: none"> 1.1 Yachts 1.2 Glass bottom boats 1.3 Sundowners cruises 1.4 Windsurfing 1.5 Jetskis 1.6 Canoeing 1.7 Powerboating (incl. waterskiing, parasailing) <p><u>2. Fishing</u></p> <ul style="list-style-type: none"> 2.1 Surf and beach fishing 2.2 Boat-based fishing 2.3 Spearfishing <p><u>3. Diving</u></p> <ul style="list-style-type: none"> 3.1 Scuba diving 3.2 Snorkelling <p><u>4. Relaxation</u></p> <ul style="list-style-type: none"> 4.1 Swimming/sunbathing 4.2 Hiking 4.3 Off-road driving 4.4 Night life
<p><u>3. Amenities</u></p> <ul style="list-style-type: none"> 3.1 Restaurants 3.2 Local eating places 3.3 Bars 3.4 Shopping (e.g. sale of curios) 3.5 Light railways 3.6 Golf course 3.7 Theme village <p><u>4. Ecotourism/nature-based tourism</u></p> <ul style="list-style-type: none"> 4.1 Marine parks 4.2 Nature reserves 4.3 Small island reserves 4.4 Underwater observatory 4.5 Game viewing 4.6 Guided package tours 4.7 Adventure travelling/backpacking 4.8 Bird watching 4.9 Whale-watching 	<p>C. INDIRECT EFFECTS</p> <ul style="list-style-type: none"> 1. Increased infrastructure 2. Increased consumption of potable water 3. Increased consumption of food 4. Increased support services (e.g. medical care, park administration, etc). 5. Increased waste output

Overhead 3.3.4: Benefits of Tourism Development

- It is a growth industry and is important for the economic development of countries and the region.
- Diversifies the economy.
- Helps to stimulate economic activity and growth in isolated rural areas.
- May act to promote governments' awareness and implementation of conservation policies.

Overhead 3.3.5: Costs of Tourism Development

- It is an unstable source of income greatly influenced by uncontrolled factors such as political stability, weather and currency fluctuations.
- 'Tourism may destroy tourism' due to overcrowding and environmental degradation.
- 'Leakage' of income back to developed countries. The World Bank estimated that 55% of gross tourism revenues to developing countries 'leaks' back to developed countries.
- A marked seasonal nature of tourism.
- Negative cultural impacts.

Overhead 3.3.6: Management Problems Associated with Tourism

There are a number of environmental, economic and social/cultural impacts associated with tourism development in the coastal and marine environment.

Problem	Causes	Examples
Inadequate water supply	Inadequate infrastructure, competition with other users, saltwater intrusion	Zanzibar, Inhaca islands
Coral reef degradation reef walking, water	Uncontrolled boating activity, pollution, coral collection, sedimentation	Kenya, Seychelles, Mauritius
Deteriorating water quality	Inadequate wastewater systems	Zanzibar
Dumping of solid waste on beaches	Inadequate solid waste disposal	
Mangrove clearing	Better access to coastal areas	Bagamoyo, Tanzania
Restricted beach access	High density of building in beach areas	Tanzania, Kenya

Overhead 3.3.7: Strategic Approaches for Reducing the Negative Impacts of Visitors on Protected Areas

1. *Managing the supply* of tourism or visitor opportunities, e.g. by increasing the space available or the time available to accommodate more use.
2. *Managing the demand* for visitation, e.g. through restrictions of length of stay, the total numbers, or type of use.
3. Managing the resource's capabilities to handle use, e.g. through hardening the site or specific locations, or developing facilities.
4. Managing the impact of use, e.g. reducing the negative impact of use by modifying the type of use, or dispersing or concentrating use.

Overhead 3.3.8: Customer Service

Customer service is like making love to your partner. You do not quit when you are satisfied; you quit when your partner is satisfied.

Overhead 3.3.9: Elements of Successful Customer Service

- Policies - give direction to staff on what is expected of them. A policy that empowers a guide to adapt to changes will ensure customers have a fun and safe trip.
- Procedures - are important to ensure consistency. The challenge is to deliver a great tour, not once, but a hundred times. A simple procedure list can assist in communicating what good service is.
- Standards - define what is expected. One standard is the guide-to-client (or visitor) ratio. A low guide-to-client ratio offers more flexibility in tour activities.
- Recruiting - the right staff is critical. The guide is the MPA representative, promoter and marketer with whom customers spend the most time. Apart from formal qualifications, the guide must have softer attributes such as leadership and communication skills and be able to smile.
- Training - the right person is critical as it can minimise training requirements. However, basic appropriate training to keep staff up to date on policies, procedures, standards and commitment to environmental sensitivity and work ethics will still be required.
- Controls - give some comfort that a desired level of customer service is being delivered. Preparing job descriptions and defining hiring requirements are two simple, but effective controls. Others are offering training and checking on things.
- Recognition or appreciation - of exceptional customer service when it happens will encourage staff to repeat the effort. This can be done through intangible or low-cost rewards, a verbal 'thank you', a certificate, or the opportunity to lead choice tours.

Overhead 3.3.10: Examples of Customer Service Performance Standards

- All tour participants will be greeted within five minutes of arrival.
- Operation of trip equipment will be explained and demonstrated to all group members.
- No trip members will be left behind.
- Each customer will be thanked for choosing to visit your MPA.

Overhead 3.3.11: Ways of Managing Customers

- Be directed where to go in the MPA, e.g. coral gardens, sand islands, etc.
- Be influenced in choosing to visit the MPA
- Have their movements controlled so as to provide security and safety
- Be made aware that tourism resources need to be used conservatively
- Be limited in number depending on carrying capacities
- Be handled with care otherwise they will not make repeat visits.

MODULE 4

Participatory Processes

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Objective

To introduce the concept of participation in protected area management, highlighting the importance of participatory processes in stakeholder involvement and team strengthening.

Summary of Training Sessions

This module contains 4 training sessions

4.1: Introduction to participation

To identify the key aspects and benefits of participation.

4.2: Team building

To identify elements of effective teamwork.

4.3: Parts I and II: Stakeholder Identification and Involvement

To demonstrate a participatory approach to identifying key stakeholders and ways to involve them in marine protected area management.

4.4: Conflict Management

To identify causes of conflicts in MPAs; methods for conflict management and a background in negotiation process.

Background and Sequence of Module

The success of protected area management depends in large part on the active involvement of stakeholders. Such involvement requires participatory approaches to programme and project assessment, planning, implementation, monitoring and evaluation.

The terms **participation** and **participatory processes** have a range of meanings. In some contexts these terms describe the inclusiveness of groups previously excluded from information collection and decision-making because of gender, age, class, ethnicity, race, religion, educational level, socioeconomic status, etc. The terms also apply to social action—people's movements—in many countries. Participation also describes a values-based methodology to planning, communication, learning, and decision-making. Shared responsibility and shared ownership are core values of participation. The two are complementary and mutually supportive.

Participation and participatory processes related to development reflect a particular values set and related commitments; participation requires a values shift that may not be easy. Such a shift may be most difficult for bureaucracies; easier perhaps for communities who still practice traditional participatory processes. These values and commitments include a deep and abiding belief in individuals' and groups' wisdom, intelligence and creativity; a belief that groups are capable of finding or creating a common purpose; respect for diversity; and flexibility in resolving issues and making decisions. True participation is more than different words; it is changed attitudes and behaviour. True participation in development permeates the development process. It is not something that happens at only a few points in the life of the development processes but is evident throughout.

In the context of MPA management, participation is essential. Many diverse groups may have an interest in a MPA. Resources in MPA's often form a crucial part of the surrounding communities' livelihoods. Key aspects of participatory approaches include the following:

- Type of relationship between the conservation agency and the role-players concerned;
- Type of benefits that accrue to local people (Beaumont, 1996).

Participatory approaches enable stakeholders to examine a range of viewpoints and interests, set priorities together, actively monitor processes, and collectively learn and benefit from the endeavour. Examples of participatory approaches used in MPAs include the following:

Consultative approach: User groups provide input to the government agency on proposals for a conservation area, or on management plans for the area. External agents define the problems and information gathering processes. Such a consultative process does not concede any share in decision-making, and professionals are under no obligation to utilise the information that has been gathered.

Functional approach: Participation is seen by external agencies as a means to achieve project goals, such as reducing resistance to the establishment of a park. People may participate by forming groups to meet predetermined objectives related to the project. Such involvement may be interactive and involve shared decision-making, but tends to arise only after major decisions have already been made by external agents.

Interactive approach: People participate in joint analysis, development of action plans and formation of local institutions. Participation is seen as a right, not merely as a means to achieve project goals. The process involves interdisciplinary methodologies that seek multiple perspectives, structured learning processes and problem-solving approaches. As groups take control of local decisions and determine how available resources are used, so they have a stake in maintaining structures or practice.

Self-mobilisation approach: People participate by taking initiatives independently of external institutions (From Pimbert and Pretty, 1995).

Conflict is an inevitable by-product of participatory processes. Participation processes often leads to conflict so the skills for management of conflicts principally through negotiation are necessary. If properly managed, however, conflicts can help to advance the participatory planning process and contribute to the effectiveness of management.

Conceptual Frame for Sequence of Training Sessions

This module introduces the concept of participation through engaging participants in a number of participatory processes themselves. It begins with an experiential introduction to participation. It then highlights the importance of building a strong team through participatory decision-making. This focus comes early in the module because it is a foundation piece. A good team is needed from the beginning. The module builds upon these two foundation activities by demonstrating the importance of participation in stakeholder identification and involvement—a 2-part session.

The last session builds on the previous session and focuses on conflict management. It examines and analyses the causes of conflicts and discusses the methods that were used to address them. Each training session in the module has a number identifying its sequence. Each also has an introduction, objective, estimated time, materials needed, and an outline of the process. Because all training sessions in this module are participatory and experiential, in contrast to a lecture approach, the process for each outlines detailed facilitator steps or instructions. The process steps indicate what the facilitator should do or say. The facilitator should not actually read the steps aloud, as one might do in a lecture, but instead follow the instructions noted in each step. Each training session also includes any needed handouts, overheads, and task instruction sheets.

Trainer's Note

Overheads have been provided in this module. You may choose to use them with an overhead projector or you may write the information on flip chart pages. I like to use flip charts because they are not dependent upon electricity and expensive equipment and they can remain hanging in the training room so that participants can refer to them later. You may want to use a combination of overheads and flip charts. If you do decide to use overheads, make sure the print is large enough so that those seated near the back of the training room may easily read it. Also don't try to cram too much into your overheads. Include only key points. You can fill in the rest with your talk.

Small Groups are used in the sessions in this module. The easiest way to form small groups is to have the participants count off according to the number of small groups you want. For example, ask them to count 1, 2, 3 with 1's forming one group, 2's another, and 3's a third, if you want 3 small groups. You can also cluster participants who are sitting near each other. You should use a variety of ways to form your groups.

You can keep the same small groups throughout or change with each activity. Benefits of keeping the same small groups include:

- participants get to know each other and their working styles, and
- there is continuity with their work.

On the other hand, being with the same people in activity after activity can become boring. Also, if the group had a problem with an early activity, the negativity may carry over into other groups.

Benefits of changing group composition frequently include:

- participants are exposed to a range of ideas,
- they get to know more people, and
- they become more skilled at working with a range of people.

Watch carefully to see how the groups are functioning, then use your judgement (and listen to them) to decide whether to keep the same group composition or change it.

Summary

This module provides an overlay that should influence thinking and actions throughout the project and beyond. These sessions attempt to demonstrate that participation is not an option in MPA but a vital part.

When planners and implementers view their work through a participatory lens they begin to see 'problems' differently. They begin to see solutions possible through increased participation. Participation, wisely and effectively encouraged, opens doors to hidden 'assets' and resources. Participation also contributes greatly to sustainable efforts through building capacity of stakeholders to continue the 'work' long after project funding may end.

References and Additional Reading Material

- Aubel, J. 1995. Participatory program evaluation: A manual for involving program stakeholders in the evaluation process. Catholic Relief Services. Reprinted by US Peace Corps Information Collection and Exchange, Washington, DC.
- Beaumont, J. C. 1997. Community participation in the establishment and management of marine protected areas: A review of selected international experience. *South African Journal of Marine Science*, 18, 333-340.
- Cousins, J. B. and Whitmore, E. 1998. Evaluating for a change: Reflections on participatory methodology. In *New Directions for Evaluation*, No. 80. Jossey-Bass, San Francisco.
- Feurstein, M. 1986. *Partners in evaluation: Evaluating development and community programmes with participants*. Macmillan Publishers, London.
- Ford, R. 1994. *PRA for monitoring and evaluation: A village log book from Ambodirafia, Madagascar*. Program for International Development, Clark University, Worcester, Mass. and SAF/FJKM, Analakely, Antananarivo, Madagascar.
- Goyder, H., Davies, R. and Williamson, W. (?). *Participatory impact assessment: A report on a DFID*

- funded ActionAid research project on methods and indicators for measuring the impact of poverty reduction. ActionAid, London.
- IED 1994. *Whose Eden? An overview of community approaches to wildlife management*. Russell Press, Nottingham, UK.
- Kaner, S. with Lind, L., Toldi, C., Fisk, S. and Berger, D. 1996. *Facilitator's guide to participatory decision-making*. New Society Publishers, Philadelphia, PA.
- King, J. A. 1998. Making sense of participatory evaluation practice. In *New Directions for Evaluation*, No. 80. Jossey-Bass, San Francisco.
- Kiss, A. (ed.). 1990. *Living with wildlife: Wildlife resource management with local participation in Africa*. World Bank, Washington.
- Kretzmann, J. P. and McKnight, J. L. 1993. *Building communities from the inside out: A path toward finding and mobilizing a community's assets*. ACTA Publications, Chicago.
- Kumar, K. 1998. An overview of rapid appraisal methods in development settings. In *Rapid Appraisal Methods*. The World Bank, Washington, DC
- Larson, P., and Svendsen, D. S. 1996. *Participatory monitoring and evaluation: A practical guide to successful integrated conservation and development*. World Wildlife Fund, Washington.
- Lewis, C. 1997. 'Conflicts in conservation'. Pages 62–64. In Borrini-Feyerabend, G. (ed.). *Beyond Fences: Seeking Social Sustainability in Conservation*. Volume 2: a resource book. IUCN, Gland, Switzerland.
- Lissit, S. 1997. *Participatory methods in monitoring and evaluation in Zomba, Malawi*. Center for Development and Population Activities, Washington.
- Managing the project cycle: A guide to people-centered and results-oriented project management*. Social Impact, Reston VA.
- Mayoux, L. 1995. Beyond naivety: women, gender inequality and participatory development. *Development and Change* Vol. 26:235-258. Institute of Social Studies, United Kingdom.
- Mefra, R., Alcot, M. and Baling, N. S. 1993. *Women's participation in the Cogtong Bay mangrove management project: A case study*. International Center for Research on Women, Washington, DC, and World Wildlife Fund, Washington DC.
- Narayan, D. 1993. *Participatory evaluation: Tools for managing change in water and sanitation*. World Bank Technical Paper No. 207. The World Bank, Washington DC.
- Odour-Noah, E., Asanba, I., Ford, R., Wichhart, L., and Lelo, F. 1992. *Implementing PRA: A handbook to facilitate participatory rural appraisal*. Clark University, Worcester, MA.
- Parker, A. R. 1993. *Another point of view: A manual on gender analysis training for grassroots workers*. UNIFEM, New York.
- USAID, 1999. *Participation at USAID: Stories, lessons, and challenges*. USAID, Washington DC.
1991. *Participatory rural appraisal handbook: Conducting PRA's in Kenya*. National Environment Secretariat, Kenya, Egerton University, Nairobi, Kenya/ Clark University, Worcester, MA, USA/ World Resources Institute, Washington, DC.
- Pimbert, M. P. and Pretty, J. 1994. *Participation, people, and the management of national parks and protected areas: Past failures and future promise*. United Nations Research Institute for Social Development/ IIED/ WWF/ mimeo.
- Pretty, J. N., Guijt, I., Thompson, J. and Scoones, I. 1995. *A trainer's guide for participatory learning and action*. International Institute for Environment and Development, London.
- White, A. T., Hale, L. Z., Renard, Y. and Cortesi, L. (Eds.). 1994. *Collaborative and community-based management of coral reefs: Lessons from experience*. Kumarian Press, West Hartford, Connecticut, USA.
- Who are the question makers? A participatory evaluation handbook* 1997. Office of Evaluation and Strategic Planning, United Nations, New York.
- Worah, S., Svendsen, D. S. and Ongleo, C. 1999. *Integrated conservation and development: A trainer's manual*. World Wildlife Fund, Godmalming, UK.

Training Session 4.1: Introduction to Participatory Approaches

Objective

To identify the key aspects and benefits of participation.

Significance

Participatory approaches encourage shared decision-making, cooperation, collaboration, mutual respect, confidence building and empowerment. Through incorporating such elements into all levels of development activities, communities, districts, and ministries become more engaged, informed, and responsible for their own sustainable development. Such an approach builds capacity, increases learning and strengthens participant ownership of the constructs and strategies underlying project activities.

Presentation

Participatory small group activity utilising hypothetical situations followed by plenary discussion.

Duration: 2 hours (could be more, depending upon group size and how much discussion is needed)

Equipment and Materials: Flip chart paper and stand

Overhead projector if you choose to use overheads

Markers

Overheads (see comments in steps below)

Copies of attached handouts, one copy per person.

Copies of: Beaumont, J. C. (1997). Community participation in the establishment and management of marine protected areas: A review of selected international experience. *South African Journal of Marine Science*, 18, 333–340.

Process:

1. Open the session by explaining the objective. Don't say anymore about the significance at this time. Use Overhead 4.1.1 (Or put this information on flip chart.)
2. Ask participants to think about what the term 'participation' means to them. What images come into their minds when they hear this term? Note their responses on flip chart.

If not mentioned, point out key aspects such as:

- involvement of key stakeholders at key points of project development needs assessment, problem identification, goal setting, planning, implementation, monitoring, evaluation, etc.
 - participation as part of a continuous process
 - participation should grow from within the community
 - representatives of different stakeholder groups must play active role and be well integrated throughout.
3. Next, explain that the group will be exploring different levels of participation in protected area management by looking at some hypothetical situations.

Trainer's Note

Each situation reflects one of four 'levels' of participation (Passive, Informed, Active, and Decision-making). DO NOT at this point explain these concepts to participants. First see what conclusions they reach from their own examination of the situations.

4. Give each person a copy of the SITUATIONS handout describing 4 community development situations.

Ask them to carefully read and determine degree of participation for each situation, in terms of WHO participated, IN WHAT, and HOW.

Next, divide the large group into small groups with 5–6 persons each. Ask them to discuss their thoughts about these situations. If there is disagreement in the groups, they should discuss these points.

Trainer's Note

You may want each group to look at only one or two situations to save time. If each group looks at one, have them look at different situations (Group 1, Situation 1; Group 2, Situation 2; etc.)

5. Once in the large group, ask someone from one group to describe their conclusions, how they saw the stakeholders participating in each of the situations. (Briefly note comments under each situation, on flip chart). Ask someone from another group to do the same.

Ask others to add points from their discussions. (To save time don't have each group report).

6. Ask the large group to look at the comments under each situation to see what conclusions they can draw. Help the group to see connections within a situation. Ask group members to explain points that don't seem to fit with the situation.

Post and explain the following stakeholder participation continuum using the attached handout:

PASSIVE → INFORMED → ACTIVE → DECISION-MAKERS

Stress that participation is a continuum and ask where the different situations would fall on this continuum.

7. Ask participants to think about this session, as well as his or her own experience, to come up with some Guidelines for effective participation of MPA (write Guidelines at the top of a flip chart). Note their responses.
8. If the group has not mentioned the following points you may do so. Write key words from these on the flip chart in addition to what the group has already listed. (Be careful to not give more prominence to these ideas than those that may already have been listed.)

Other benefits include.

- Increased sense of collaboration and shared ownership.
 - Greater flexibility when needed because all understand the need and consequences.
 - More involvement therefore better informed decisions because many and divergent opinions can be expressed and integrated.
 - Increased likelihood of group reaching sustainable solutions because of increased likelihood of constraints being identified and addressed.
 - Transference of participatory process skills across sectors and arenas of life. For example, participatory decision-making processes learned in a work setting can transfer to home, church and civic settings. The core concepts and processes remain the same.
9. Ask the group what they have discovered during this session that has helped them to see the value of participation.

Ask which of the points listed on the flip chart are most relevant for their MPA situation. (Ask them to explain why, too).

10. Comment on the effective use of participatory approaches by stating the following:

Wisdom coupled with participation leads to effective project and programme implementation. Some people misunderstand the concept of participation thinking it means that everyone must be involved in everything. This would be quite costly, cumbersome and inefficient.

Instead, wise planners form a steering committee of key stakeholders who help to decide what other stakeholders need to be consulted or otherwise involved throughout the various phases of project planning, implementation, monitoring, and evaluation. At each step of the project planning process key stakeholders should ask: (show these questions on flip chart or use Overhead 4.1.2)

- Who will be affected by this step?
- Who needs to have input?
- Who has key information?
- Who should be involved and how?
- Who or what might we be forgetting?"

Mention that later we will be focusing specifically on stakeholder involvement.

11. Close by explaining that this session introduces and helps to provide a foundation for understanding the concept of participation, which will be useful in not only the following activities in this module but with all subsequent sessions.

Distribute Handouts 1 and 2 and the Beaumont article.

Case Study 4.1: Community Involvement and Empowerment in the Mafia Island Marine Park, Tanzania

According to recent figures, the number of people residing within the Mafia Island Marine Park boundaries is about 18,000. Up to 50% of them depend wholly on the exploitation of marine resources for their livelihoods. In recognition of the importance of working in close collaboration with all relevant stakeholders with an economic or cultural interest in the Park areas, a detailed strategy to liaise with community has been developed. Through the Marine Parks and Reserves Act, all villages within and around the Park have been given the right to participate in the management and operation of MIMP.

Each village within and around MIMP is consulted on reviews of: zoning scheme; new developments and any other issue which may affect their food or income source and/or cultural and social values.

MIMP Liaison Committees have been established in each village and they have the following roles:

- articulate the views and concerns of the village to the Warden and Advisory Committee
- ensure village participation in Park activities
- disseminate information from the management team throughout their respective villages
- maintain and manage equipment allocated to each village
- issue on behalf of MIMP permits for visiting artisanal users
- provide information on resource issues and aspects of access to resources
- advise the Warden on appropriate steps in the advent of conflicting views.

Task 4.1: Participatory Approaches

Directions: Please read each of the following situations then answer the following questions for each situation.

1. What groups or individuals were involved in the project activities described in each situation?
2. In what ways were they involved?
3. What were (and might be) the benefits of their involvement?
4. What problems might arise in the future?

Situation One

In the annual assessment of a government-run protected area management project, a team of evaluators was engaged from a major university. The evaluators explained the basic outline of the evaluation to the local community and then administered questionnaires. They also interviewed a few community leaders. The evaluators then presented the main findings to a group of community members. They then returned to the university to write up their report that they then distributed to project donors.

Situation Two

A local NGO was given a contract to develop a land use plan to be used to develop a protected area management (MPA) project. The NGO asked community leaders to identify three community members to participate on the team along with three NGO staff members. The team met several times to develop the land use plan. At times they broke into pairs to carry out the study and the full team met to analyse the results. They then presented the results to the wider community at various community meetings and discussed recommendations to be included in the MPA project.

Situation Three

A major marine protected area management scheme is underway. The plan calls for building capacities of local communities so that they can be actively involved in carrying out major aspects of the project. They are involved at some level in all phases of the management plan. Government and local NGO staff members are monitoring the plan and determine what is succeeding and what aspects need changing. Community members are consulted on these decisions, as the monitoring team feels necessary.

Situation Four

Local communities approached local officials about problems they were facing from run-off from a nearby food-processing plant. A committee composed of community members, local officials, government extension workers, and local NGOs assessed the situation. They developed a proposal to secure a grant to help them scientifically monitor environmental indicators. Once funding was received, a community management committee was established. Committee members received training in a number of areas.

The committee met with NGO managers monthly to review progress and to plan future activities. During the first few months of the project, meetings were held to jointly determine indicators of success and to set up a project monitoring system. Community members were employed as natural resource management para-technicians and community development extension workers and were trained in information-gathering techniques.

Every six months members of the management committee and the NGO staff analyse the information gathered and present the findings to the wider community. Joint decisions are then made about putting the recommendations into practice.

Trainer's Note

These two stories can be simply told or they can be illustrated in the telling by using suitable pictures and icons in the manner described in the Oral Communication lesson.

Case Study 4.2: Examples of Participatory Processes from South Africa¹

—P.J. Fielding

I. The village near Umtata in rural South Africa

There is a small village near Umtata with a river running through it. People use the river to bath and to go to the toilet. Their animals drink from the river. The river is dirty and polluted. The children in the village are thin and always have diarrhoea and are often vomiting. Many die when they are still babies. At times the parents are too weak to look after their children properly and families go to bed at night hungry and without hope.

People in the village wrote to the government explaining that they were sick and needed help. After some time and many letters, the government sent a health inspector. It didn't take the health inspector long to see that the villagers needed a well. He met with the chief and explained what he had decided. A team of engineers arrived. With their big equipment they sank a deep hole, fitted an expensive pump motor and built a smart pump house. The villagers were pleased. They could drink fresh water everyday.

But after a few months, the pump motor broke. Nobody knew how this happened. People complained that it made too much noise at night so somebody had fiddled with the motor to make it run more quietly. Some said that the village tsotsis (gang members) had stolen parts for their cars and still others said that the neighbouring village had placed a curse on the pump.

Unfortunately, nobody in the village knew how to fix the pump. Some of the men tried, but the motor refused to start up again. The well ran dry and before long the people began using the river again. Their children were sick and dying once more, while the adults were shivering with the fever. Once again, the villagers wrote a letter to the government, asking for help.

II. Themba village

Themba village is a rural village on the South Coast of KwaZulu-Natal, South Africa. It faced similar problems to the village in Umtata. People built their huts right on the riverbanks and the river that runs through the village is polluted.

And then the great summer rains came. It rained night and day. At first the farmers were pleased. But when the rains didn't stop, then everybody became worried. The river became like a wild animal thrashing from one side to the other. As the waters rose, the villagers packed up their huts and moved to the nearby hills. When the rain finally stopped and the river started to behave like a gentle cow once more, illness struck the village. People who drank from the river were soon doubled over in pain. Ms Sithole, a teacher in the village called a meeting. "Every summer, people fall sick," she said, "I have two young children and an old grandmother to care for. I want to find an answer to this problem. I know of an organisation in Durban that can help us. What do you all think?" After a lot of discussion, the villagers agreed to ask for help.

Mr Andrews drove out from Durban on a Saturday when all the villagers were at home. Everybody gathered on the verandah of the local trading store and Mr Andrews asked them about their problems. It took a long time for the people to list their problems – no running water, no proper toilets, the children get sick every year, and so on. Mr Andrew wrote all the problems on a piece of paper and stuck it on the wall.

Mr Andrews asked, "What are the most important things that you want to tackle?" After a lot of talking and shouting and some angry words, the villagers decided that they needed a well and better toilets. By this time it was getting late, the soccer match was about to start and the trading storeowner wanted to lock up. Mr Andrews left, saying, "Come up with some solutions to these problems. I'll be back in two weeks."

At first everybody was angry that Mr Andrews did not just give them the answers to their problems. But Ms Sithole was happy. "It's good that we find our own solutions," she said. "I think we should speak to the old people in the village. They must know how to build wells. We can meet again in five days to come up with some answers."

And so it went on. The villagers met, they shared their ideas, and they spoke to Mr Andrews. With the help of a machine from Durban they dug a hole for the well. They lined the sides with stones from the local hills and covered it with wood. They knew it would take time for the well to fill with water, but it would be clean and sweet to drink. They made rules about using the well.

When the village of Themba drew the first water from the well, Mr Andrews smiled and shared a beer with the community. "What's your next project?" he asked. "You've tackled this one so well, why not get together and decide what else you can do to improve your community."

¹ Source: Saskia Kuiper, Environmental Evaluation Unit, University of Cape Town, South Africa.

Activity

1. Work as a group. For each of the examples I and II, discuss:

- a. What did the development aim to do?
- b. Who decided that the development was needed?
- c. Who planned the development?
- d. Who carried out the development?
- e. What happened?
- f. Was the development successful? Why?

Development can happen in different ways. A community could turn to outside experts and ask for their solutions and advice. This is called the **top-down approach** because the solutions come from the top.

Or people could get together as a community and decide what it is they need to change and then find ways of making these changes. Although they might call in outside experts, they don't depend on them for final decisions. This is called **participatory development** because everyone participates and is involved.

Activity

Work with a partner. Think back to the two stories. Discuss:

- a. What were the differences between the ways the villagers from Umtata and Themba solved their problems?
- b. Which approach do you think is better? Why?
- c. Think of some problems in your community. Which approach would you use to solve these problems?
- d. Share your ideas with the big group.

Trainer's concluding comments

In every community there are things that could be improved. Some communities may need to find a solution to their water and toilet problems. Other communities need to find a solution to crime and gangsterism. It doesn't matter what the problem is, it is far easier to find a solution in a group than on your own. Although working with other people can take longer because everybody wants to have their say, there is an old saying: 'Two heads are better than one.' You will come up with an even better solution if you combine your ideas, than if you worked on your own.

Case Study 4.3: The Swartkops Bait Fishery – A Case Study of Fisheries Co-Management in South Africa

—P.J. Fielding

The Swartkops is a large estuary just outside the city of Port Elizabeth, on the east coast of South Africa. The estuary has sand banks near the mouth and extensive mud flats further upstream, which are exposed at low tides. The sand banks and mud flats support very large populations of bait organisms – such as sand prawns, mud prawns, blood worm, tape worm and various species of crab. There is extensive fringing vegetation (mainly *Spartina maritima*) and large sea grass beds (*Zostera capensis*). The estuary is enormously productive and contains large numbers of many species of fish, both adults and juveniles, as well as providing a feeding ground for a wide variety of birds. Large numbers of recreational fisherman use the estuary, and the birds are a popular tourist attraction. The high north eastern bank of the estuary has been developed as an upmarket residential area while the south western flats have been settled by a community whose members are either jobless or have very low incomes. The low income community is increasing in size all the time because of a general influx of poor people to urban areas in the hope of getting a job.

For many years unemployed members of the poor community, with no other means of earning income, have harvested bait organisms from the estuary and sold them to recreational anglers. Trade is particularly brisk on weekends when large numbers of anglers visit the estuary. Some of the bait collectors also catch fish, which they try to sell.

Prior to the promulgation of new fishing legislation in 1998, bait harvesting controls that specified both bag limits and permissible collecting tools for all bait organisms, and minimum legal sizes for most species of fish, were actively enforced by Provincial and Municipal Nature Conservation authorities whose offices overlooked the Swartkops estuary. After 1998, the management of all marine resources became the responsibility of Marine and Coastal Management (MCM), the national fisheries management body, but compliance in the Swartkops estuary remained the responsibility of local Municipal Conservation authorities.

Regulations for bag limits and permissible collecting tools were incorporated almost unchanged into the new legislation and a requirement for a recreational collecting licence was added. These laws catered for the requirements of recreational collectors, but were not at all suited to the unemployed artisanal bait collectors who needed to harvest much larger quantities in order to earn a basic income from the sale of their catch. In addition, the artisanal collectors could not afford the licence fee. The regulations also stipulated that bait collection could only be done with a suction pump and no digging implements were allowed. Recreational bait collectors generally abided by these regulations. Artisanal bait collectors continued to use forks to dig bait on the mud banks, partly because they believed it to be a more efficient way of collecting prawns, but mainly because it is not possible to collect blood worms and tape worms with a suction pump. Blood worms and tape worms are far more desirable as bait than prawns and they can therefore be sold at much higher prices than prawns. Further, the artisanal bait collectors who caught fish had no recreational rod and line fishing permits, often caught and kept undersized fish, and frequently sold fish species that were listed in the regulations as recreational species only, and therefore were not permitted to be sold.

By 2001, the situation at the Swartkops estuary was:

- The number of illegal, unlicensed bait collectors was increasing steadily and their digging activities were probably doing considerable damage to populations of other benthic organisms on the mud banks.
- Recreational bait collectors and anglers were angry at the artisanal bait diggers for what they regarded as unsustainable harvesting of bait organisms and the illegal capture of under-size fish, which would lead to reductions in their catches.
- Recreational anglers were also angry at the Conservation authorities for what they perceived as too little effort directed at stopping illegal bait harvesting.
- The upmarket development residents had formed a residents association and were becoming increasingly vocal in their criticisms of the conservation authorities efforts to control illegal bait harvesting. These residents were upset by the visual impact of bait digging activities and the possibility of imbalances occurring in the estuarine ecosystem.
- Local conservation authorities were doing their best to control illegal activities but were somewhat understaffed.
- Illegal bait collectors were angry because of constant harassment by police and conservation authorities.
- Scientists were concerned that the harvesting of bait organisms at current levels would have knock-on ecosystem effects and impact seriously on avian predators populations.
- Large numbers of unsold prawns were often dumped on the shore once they died and no longer had any market value. This practice angered everyone except the bait collectors.

Continued

The Fisheries Regulations promulgated in 1998 recognised that subsistence and artisanal fishers were not adequately catered for in the regulations and made recommendations that they be formally recognised as a group, and that special dispensations be made to allow them to operate within the law. A Subsistence Fisheries Task Group was established and published recommendations for the implementation of a Subsistence Fisheries Program that would finally cater for the most marginalised of fishers.

In 2002, the national fisheries conservation authorities (MCM) employed an extension officer to work with the artisanal bait collectors at Swartkops in order to institute participatory co-management processes and establish a committee which would ultimately be responsible for the orderly running of a controlled bait-for-sale operation. MCM agreed to issue a limited number of permits to established bait collectors, which would allow them to collect a reasonable number of prawns and worms and to sell them. Permits had to be renewed annually. Bag limits were increased to 150 prawns per person per day as opposed to the 50 prawns per person per day for recreational bait collectors. Permit conditions stipulated the use of a prawn suction pump as the only method of bait collection and MCM issued prawn pumps to all the newly licensed bait collectors. Digging with a fork was only allowed on a Friday. A representative committee was duly elected by the artisanal bait collectors and one or two facilitated meetings were held with other stake holders (residents, recreational fishers, local conservation authorities) to explain the process and the need for legalising formerly illegal activities i.e. economic empowerment, equitable access to resources, participatory management etc. The mandate for compliance control was removed from local conservation authorities and vested solely in the local office of MCM. Very limited environmental awareness and general co-management capacity building training was given to the artisanal bait fishers and the committee members.

Today the situation at the Swartkops estuary is:

- The number of illegal, unlicensed bait collectors is increasing steadily. Many licensed bait collectors have sold the prawn pumps provided to them by MCM and continue to dig with a fork. Their digging activities are probably doing considerable damage to populations of other benthic organisms on the mud banks.
- Recreational bait collectors and anglers are angry at the artisanal bait diggers for what they regard as unsustainable harvesting of bait organisms and the illegal capture of under-size fish, which lead to reductions in their catches.
- Recreational bait collectors are angry that bag limits for artisanal collectors are so much higher than those for themselves.
- Recreational anglers are angry at the conservation authorities for what they perceive as too little effort directed at stopping illegal bait harvesting.
- The upmarket development residents are increasingly vocal in their criticisms of the conservation authorities efforts to control illegal bait harvesting. These residents are even more upset about the visual impact of bait digging activities and the possibility of imbalances occurring in the estuarine ecosystem. Many long term residents believe the bait organism populations have declined drastically.
- The national (MCM) conservation authority is doing its best to control illegal activities but is hopelessly understaffed.
- Licensed bait collectors are angry because the number of unlicensed collectors continues to grow and they believe the conservation authority should do more to prevent illegal (unlicensed) bait collecting. Unlicensed bait collectors compete directly with licensed collectors for a limited market.
- Scientists are concerned that the harvesting of bait organisms at current levels will have knock-on ecosystem effects and impact seriously on avian predator populations.
- Large numbers of unsold prawns are still dumped on the shore once they die and no longer have any market value. This practice angers everyone except the bait collectors.
- The fisher committee is virtually non-functional and the bait collectors want to change the committee members.
- Local conservation authorities are angry because they constantly observe continued illegal bait collecting activities and are now powerless to do anything about it.

The attempt to convert an illegal unsustainable free-for-all fishery into a sustainable, regulated one has largely failed. Why? Some of the reasons are:

- Despite the issue of permits the bait collectors still have no real rights over their resources.
- There is a lack of real commitment and support from government conservation authorities to participatory processes and co-management. In particular, Government has committed too little funding to getting the process up and running. MCM have yet to do much work to overcome the negative perceptions created by past top down management practises. Participatory processes depend very much on the building of trust and very little effort has been made by MCM officials to engage the trust of the bait collectors.
- Government conservation authorities are woefully understaffed.
- National Government (MCM) has been reluctant to devolve power and management responsibility to local levels.

Continued

- The licensed fishery was instituted by MCM with too little planning and understanding of the issues surrounding the fishery itself. No fishery-specific management plan was drawn up before instituting the fishery and there has been very little information sharing of traditional and scientific knowledge to generate understanding between the management authorities and the bait collectors.
- MCM representatives have made promises with regard to increasing compliance effort and have been unable to keep these promises. Part of the problem has been the presence of large scale abalone poaching within the jurisdiction of the regional MCM authority and much of the compliance effort has been directed at abalone poachers, presumably because the abalone resource is much more valuable than the bait resource.
- Inadequate attention has been given to capacity building and empowerment of fishers and their committee. Subsistence and artisanal fishers have to be equipped to engage confidently in debates and decision-making with the authority. It is certain that community committees are going to need more mentoring than one or two training courses.
- Regional and national conservation authorities do not understand participatory processes and co-management theory and have had no training in this regard.
- The fisher committee has no mandate to do anything, has no constitution, has no administrative skills, has no authority to make any decisions and has no idea of how to go about representing bait collectors concerns. This is a result of the lack of capacity building.
- There is a lack of participation from other stakeholders in the Swartkops estuary in resolving the bait fishery problems. This is partly a function of the lack of capacity in both the fisher committee and the conservation authorities – they do not know how to drive the participatory process.
- There is a lack of common objectives amongst government, bait collectors and other stakeholders in pursuing co-management
- There is an urgent need to identify alternative economic opportunities and livelihood strategies in the area.
- Participatory processes require a long time frame. Implementation of these processes very often critically depends on having an individual (external agent or facilitator) to drive the process.
- There has been no participative experiment involving harvesters in the determination of sustainable harvest levels and appropriate tools to use for collecting bait organisms. There has also been no involvement of bait collectors in a current data collection programme

The lesson is a combination of training material developed for the Coastcare programme of the Department of Environmental Affairs South Africa, and training material developed by the Environmental Evaluation Unit of the University of Cape Town for the implementation of the Subsistence Fisheries Programme (Marine and Coastal Management, Department of Environmental Affairs) in South Africa.

Additional notes to go with the Training Session 4.1: Introduction to Participatory Approaches —P.J. Fielding

Participatory approach: When those people who are directly affected by resource use are involved in decision making and managing the resource. For example, this would be the case if fishers were involved in making decisions about rules that affected them.

Top down approach: When people other than the resource users make decisions about managing resources and enforcing the rules. For example, this would be the case if government departments made all the decisions and rules about the resources.

Important points:

1. Participatory processes involve the community's participation in the information gathering exercise. The facilitator plays a key but very delicate role, **and building trust is absolutely critical**.
2. When scheduling participatory activities it is critical to make the process as accessible as possible to as many people as possible. Scheduling can be a factor that either encourages or discourages participation and may introduce significant biases if it ends up, either by accident or design, excluding certain segments of the community. Scheduling refers to both the time of year that the activity takes place and the time of day.
3. It is critical to maintain the community interest in the process.

Challenges facing managers in MPAs and PAs along the east coast of Africa

- Limited capacity and resources to implement management responsibilities and enforce rules and regulations (particularly along extensive coastlines and within rural communities);

- Ongoing conflict and sometimes violence in local communities;
- Mistrust between resource users and government;
- Limited knowledge of local circumstances and local problems and needs;
- High levels of non-compliance (poaching and rule-breaking).

Some of the potential benefits of participatory management styles are:

- Participatory and consultative democracy (those with a concerned interest in the resource have a voice, and are heard);
- Broader knowledge (information from the users should result in an improvement of management decisions);
- Better regulations (the more the regulations support the way users themselves define their problems, the greater they will be accepted and supported);
- Increased legitimacy (the more users are involved in making decisions that affect them, the stronger their support for the management rules);
- Increased compliance (the involvement of users, coupled with better regulations and increased legitimacy, will ultimately lead to greater adherence of the rules (compliance));
- Effective resource management (ultimately the above benefits will lead to a more equitable and efficient management arrangement);
- Adaptive management (co-management is flexible and allows for adjustments in activities as results are obtained and lessons are learned).

From a manager's perspective, specific benefits of participatory management styles may include:

- Lowering the costs of management (although co-management is costly to implement in the short-term, it is argued that in the long-term government costs are reduced. Enforcement costs would be reduced, for example, if legitimacy and compliance increased);
- Increasing their knowledge of the resource (through greater communication channels with the users);
- Building stronger relationships and trust with local communities and resource users (which will minimise conflict, violence and challenges to the managing authority);
- Increasing their chances of establishing a sustainable management strategy (those who are affected by the management arrangement are involved in making decisions and sharing the responsibility for management).

IMPORTANT NOTE

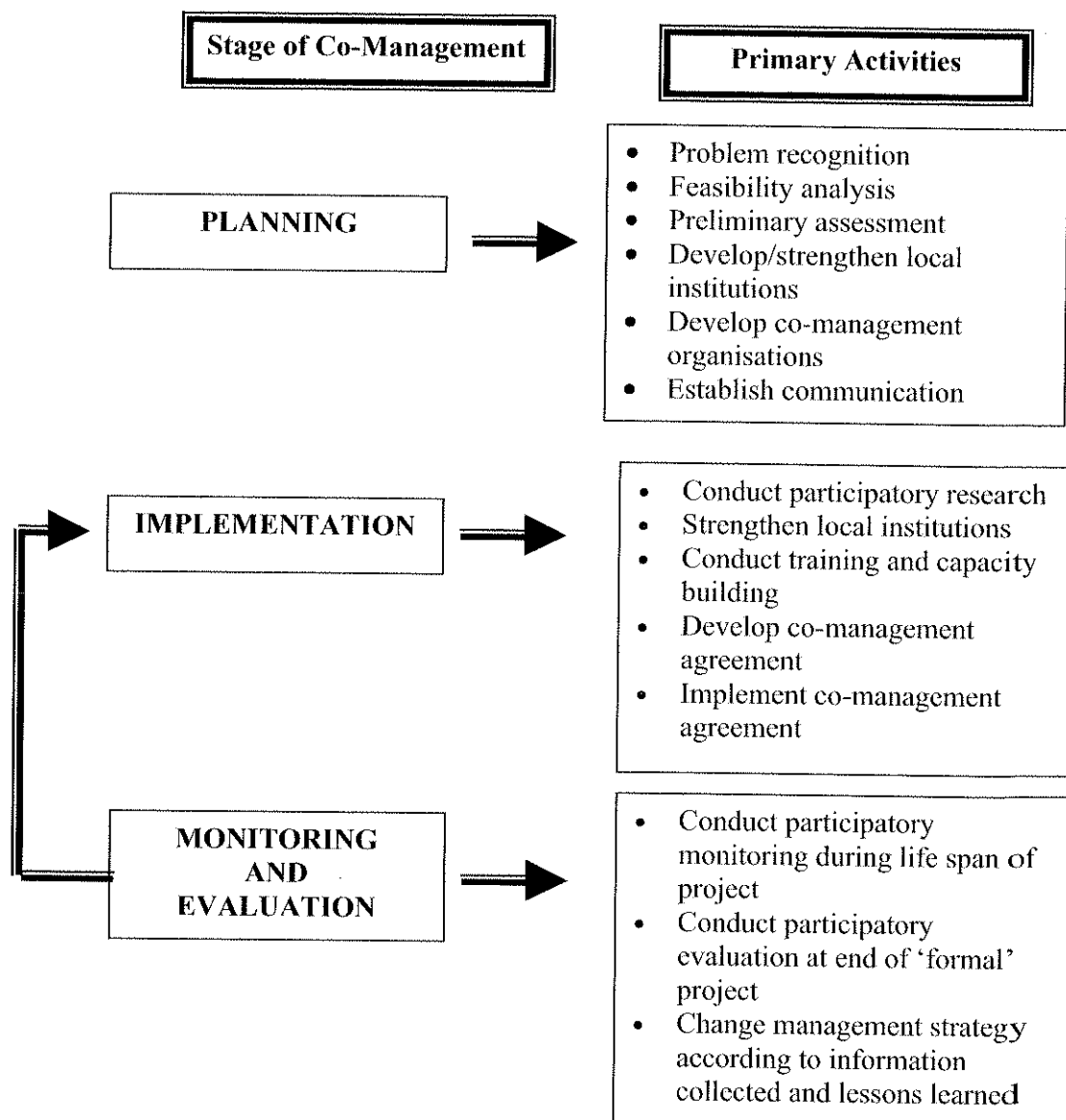
Although a specific project will likely be developed to implement a co-management arrangement, success will not be achieved in a 2-3 year period. It is an ongoing commitment from all stakeholders, particularly between resource users and government, even when a formal project ends. There will be many ups and downs that need to be weathered, and only with long term support from the partners will the benefits be realised.

The trainer would need to expand on the different stages outlined in the overview above in the development of a participatory management programme.

The Process of Establishing Participatory Management or Co-management

—Maria Hauck, the Environmental Evaluation Unit, University of Cape Town

It is important to remember that a co-management arrangement will change and adapt over time. Thus, the guidelines that we discuss below are only one example of how co-management can be developed and implemented. There is no blueprint, or model, that one can follow due to the differing circumstances in each locality. Thus, the process described below is considered a guide, that can be adapted to meet the conditions and needs of a particular situation.



Overhead 4.1.1: Objective

To identify the key aspects and benefits of participation.

Overhead 4.1.2: Key Questions to Ask at Each Step

- Who will be affected by this step?
- Who needs to have input?
- Who has key information?
- Who should be involved and how?
- Who or what might we be forgetting?

Overhead 4.1.3: Participant-generated Guidelines for Increasing Participation

Participants in another workshop developed these guidelines. You may want to develop your own, but these provide helpful guidance.

- Involve project beneficiaries from the outset, from project identification, and throughout the planning, implementation, and monitoring and evaluation phases.
- Build capacity.
- Consult with local people through village meetings and other means. Include representation from:
 - religious groups,
 - both genders,
 - political interests, and
 - government.
- Show confidence in local people.
- Ensure that the project focus, planning, and implementation reflect and are sensitive to the community and their cultural values.
- Provide incentives, when necessary.
- Be flexible

Overhead 4.1.4: Remember...

Participatory approaches encourage

- shared decision-making,
- cooperation,
- collaboration,
- mutual respect,
- confidence building , and
- empowerment.

Participation

- builds capacity,
- increases learning,
- strengthens ownership of project strategies, activities, and outcomes.

Training Session 4.2: Team Building

Objective

To identify elements of effective teamwork.

Significance

Once key stakeholders have been identified, it will be important to bring them together to identify their 'assets' or team resources, agree upon shared goals. Teamwork at many levels is essential for effective MPAs. Teamwork also exemplifies participation. If key stakeholders can work effectively together as a team, they will also be more likely to work effectively with others as a team.

Presentation

Interactive lecture format with either overheads or flip chart.

Equipment: Overhead transparencies or flip chart sheets
 Marker pens
 (See game at end of the lesson for equipment requirements for the game.)

Duration: 2 hours

Process

1. Explain the purpose. Explain that we'll be learning about team strengthening by reflecting back on some of our best experiences as a team. But first, we'll spend a few minutes thinking about what it means to be a team.
2. Start with this:

When a group is formed to do a certain unit of work so that a certain objective may be achieved and the work is too difficult or extensive or will take too long for one person to do, two sets of needs come about:

- **The need for clarity about what the group must achieve;**
- **The need to mould the group into a unit, develop it and preserve it.**

The leader is the person(s) who comes forward with the skills that are necessary to satisfy these two needs.

3. Ask the participants to write down what sort of characteristics a group should have if it was to be effective. Get feedback from the group and write up on flip chart. Lead a discussion around the following points. Make it clear in the beginning that you are interested in answers that describe the way the group functions as a team and not answers like "At least one big strong man" or "a mixture of men and women".
4. Get the group to describe what they feel when they first join a group constituted to achieve a goal, and later as the group gets to know each other. This can be done as an interactive exercise with comments written up on flip charts.
5. Ask the group what characteristics a good team leader should have. Write up on a flipchart. Discussion should centre on the following qualities:

Whoever facilitates the development of a team, should demonstrate the following qualities within a situation:

- **Confidence** -which means they are able to encourage the team to take risks, make decisions, and commit themselves to a course of action.
- **Commitment** -which means they give freely of their ideas, time, energy, towards achieving the team's goals and objectives.

- **Caring and concern** -which means they will encourage, support and care about the individual in the group and be positive on interpersonal relationships within the team.

6. Take the team through a **simple teambuilding session**. The following steps may be followed:

Step 1: Look at the present level of functioning and compare it with the ideal level. That is, establish the gap between the two levels.

Step 2: Write a simple mission for the group. In order to write a mission, the following questions must be answered:

- What is our business?
- What should our business be?
- What are the competitive strengths of our business?
- What is it that makes our group better than any other at carrying out this business?

Step 3: Analyse the work group's strengths and weaknesses. Then decide what can be done to improve the strengths and convert the weaknesses into strengths. (SWOT analysis)

Step 4: The team now identifies certain goals and formulates action plans to achieve these goals.

Step 5: Link the plans of actions to the names of people responsible and decide on deadlines for the completion of the tasks.

7. Ask the group to write down the things that they would notice if they were in a working environment where there was a happy effective team

8. Tell the following story on lessons from geese

As each bird flaps its wings, it creates an Uplift for the bird following. By flying in a 'V' formation, the whole flock adds 71% greater flying range than if the bird flew alone.

Lesson: People who share a common direction and sense of community can get where they are going quicker and easier because they are travelling on the thrust of one another.

When a goose gets sick or wounded or is shot down, two geese drop out of formation and follow it down to help and protect it. They stay with it until it is able to fly again or dies. Then they launch out on their own, with another formation, or catch up with the flock.

Lesson: If we have as much sense as geese, we too will stand by each other in difficult times, as well as when we are strong.

Geese in formation honk from behind to encourage those up front to keep up their speed.

Lesson: We need to make sure our honking from behind is encouraging—and not something else.

Whenever a goose falls out of formation, it suddenly feels the drag and resistance of trying to fly alone and quickly gets back into formation to take advantage of the 'lifting power' of the bird immediately in front.

Lesson: If we have as much sense as a goose, we will stay in formation with those who are headed where we want to go (and be willing to accept their help, as well as give ours to the others).

When the lead goose gets tired, it rotates back into the formation and another goose flies at the point position.

Lesson: It pays to take turns doing the hard tasks and sharing leadership—with people, as with geese, we are interdependent on each other.

Task 4.2: Team Strengthening

Group Task Instructions

Cup Stack

Depending upon the emphasis one places, the game can be used in a variety of situations e.g. conflict resolution, communication, management styles, cooperation, team building etc.

1. Cup Stack

Uses:

- team work
- the importance of communication
- the management of frustration
- listening skills
- leadership skills

Group Size: 6 or more (can be done with 3 people)

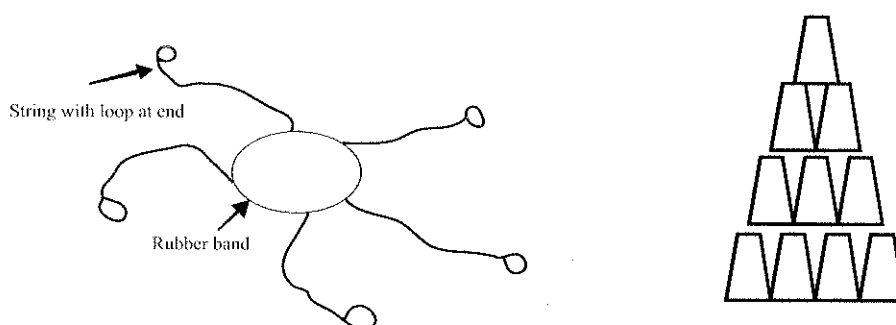
Materials Required: - for each group of 6

- 10 paper/styrofoam cups of equal size
- One rubber (must fit around a cup)
- 6 pieces of string each piece roughly 70–100 cm long

Description: Tie 6 pieces of string to a rubber band spacing them as evenly apart as possible. You will finish with a rubber band with 6 pieces of string attached to it (it should look like a sun with 6 sun rays going out in all directions). Make one of these for every 6 people. Tie a loop at the end of the string as this is where the person has to hold the string.

Divide your class into groups of 6 (or as close to this as possible). Give each group a stack of 10 paper/styrofoam cups and one of the rubber/string implements that you have prepared. Place the paper cups on the table upside down and spread them out a little.

Using only the rubber band with pieces of string tied to it, challenge the group to build a pyramid out of the paper cups (4 on the bottom, 3 on the next row, then 2, and finally one on the top). Group members may not touch the cups with their hands, or any other part of their bodies for that matter, **even if a cup falls on the floor.**



Each person should hold onto one of the strings that are attached to the rubber band and the group then uses this device to pick up the cups and place them on top of each other (by pulling the rubber band apart and then bringing it back together over the cups). If there are fewer than 6 people on any team, some team members may have to hold more than one string (but this does make it a bit easier). (If a group is struggling or one group is far ahead of another group we help sometimes by picking up cups that have fallen to the floor).

Discussion Prompts

- Was anyone frustrated at all during this activity? If so, how was it handled?
- Why was teamwork so important for this activity?
- Are you ever in a situation where you must use teamwork? Is this always easy for you?

Why or why not?

- What are some skills needed to be good at teamwork?
- What is so hard about teamwork?
- What did you do today to contribute to the teamwork on your team?

Variations

- Completing the task without being allowed to talk initially (this emphasises the importance of communicating and talking to each other when doing a project).

Overhead 4.2.1: Objective

To identify elements of effective teamwork.

Overhead 4.2.2: Characteristics of Effective Groups

Groups that function well will be characterised by the following:

1. The group has a clear vision and works with a purpose
2. Open communication takes place amongst group members
3. Differences of opinion and conflict are dealt with in a mature manner.
4. Group members gladly learn from their group leader and each other.
5. Members are loyal to their leaders, each other and the group
6. Group values and norms unite the members
7. Members feel free to take responsible risks
8. Group members are motivated to achieve goals
9. Group members are willing to work harder and more effectively in order to achieve success.

Overhead 4.2.3: The Basic Concerns of any Group

When people come together to form a group for a specific purpose, the people in the group have various concerns that change with time and the functioning of the group. These concerns can be grouped into three main categories

- 1. Inclusion:**
 - Who else is here?
 - Who can I be in relation to them?
 - What will it cost to join?
 - How much am I willing to pay?
 - Can I trust my real self to them?
 - Will they hold me up if I am falling?
- 2. Control:**
 - Who is the boss here?
 - How much can I push for what I want?
 - What do they require of me?
 - Can I say what I really think?
 - Can I take it if they say what they really think?
- 3. Affection:**
 - Am I willing to care?
 - Can I show that I care?
 - What will happen if I show I care for one person before I show I care for others?
 - What if no one cares for me?
 - What if they do?
 - What if I don't really ever care for someone(s) in a group?
 - Will the group be able to bear it?

It is important to realise that these concerns overlap during the life cycle of a group, although one of the three concerns may dominate the others at any given period of time.

Overhead 4.2.4: Strategies for the Development of Effective Teams

1. Create an Identity for the team.

It is very difficult for any team to function without an "identity" which is acceptable to all members. For example, families have names, sport teams have an identity and team colours. This makes it easier for the members to identify the team and be identified by others. It is important for the team (group of people, members of a country) to have an identity that everyone is proud of.

2. Establish Clear Goals

In order to evaluate a team's success, all of the members need to have a clear idea of what the team is trying to achieve. Then they can judge the team's performance in relation to that which they have collectively established for their team. In a sports team, this is often easier to do as they are members of a league and collect points according to whether they win or lose. In other teams, like families and those in the work place, it is some times more difficult to measure the team's successes. There are many ways of establishing a team's success, but what needs to be done first, is to define what the team constitutes as success for it. A sales team may define success by achieving a sales target. A family may define success by achieving unity, this being its goal. The existence of clear goals, which all members have had a share in creating, is a necessary first step in the evaluation of a team's performance. Failure to do this may lead to confusion and a breakdown in motivation.

3. Encourage Good Communication

Good relationships are built on good communication. An effective team needs to have open and honest communication among its members. In this way conflict and misunderstandings are quickly resolved. Similarly, members of effective teams will feel free to praise and encourage each other because they are not competing with each other for favours or benefits. This means that usually good teams demonstrate an equality of status amongst their members—all members are valued equally and seen to be equally important. Recognition of all team members by taking them seriously and their ideas seriously, leads to loyalty and commitment.

4. An Effective Reward System

In many work places the assumption is held that people are best motivated by material rewards and that there should be higher levels of rewards for those in senior positions. They thus attempt to encourage greater productivity by promising

greater rewards to those who are promoted to higher positions. Is this true ??

A more effective way of rewarding people in teams in the workplace is by recognising their worth and their ability to contribute as well as everyone else to the team effort. Members of a team are usually most committed to the team success when their opinion is recognised and their contribution is valued.

5. Recognising Others

6. Effective listening

7. Affirmation

8. Understanding

A crucial aspect of effective teamwork is for the members of the team to be **aware of others**. Most people are too preoccupied with themselves and forget the others around them. This leads to a vicious cycle in that everyone becomes self-preoccupied and yet is craving recognition from others. In the end we have to remember that "each of us is the other to the other," and that a positive self-concept is the product of a caring, supportive and watchful social environment. **To be recognised by others is often a process that begins with our recognition of others.**

Overhead 4.2.5: Team Building

It is extremely important that the team leader unites his work group as a team. There should be regular progress reports.

Joint problem-solving is a technique for uniting the group as a unit. Individuals then feel that they have a contribution to make in solving problems which affect the group as a whole.

Overhead 4.2.6: How to Get the Most Out of Team Membership

- Plan to enjoy yourself
- Show appreciation to others
- Don't expect perfection of yourself, others, or your leader
- Participate actively
- Encourage feedback from others
- Have a set of objectives for yourself
- Apply your learning to your job.

Overhead 4.2.7: Characteristics of a Good Team

- People smile, genuinely and naturally
- There is plenty of laughter—genuine belly-laughs as opposed to nervous, embarrassed laughter
- People are confident— a "can do" rather than a 'can't do" group. They are relaxed and friendly, not tense and hostile.
- They are open to outsiders and interested in the world about them
- They are energetic, lively and active.
- They are enterprising, taking the initiative rather than reacting to events.
- They listen to and do not interrupt each other
- The group has a clear vision and works with a purpose.
- Open communication takes place amongst group members.
- Differences of opinion and conflict are dealt with in a mature manner.
- Group members gladly learn from their group leader and each other.
- Members are loyal to their leader, each other and the group
- Group values and norms unite the members. Members feel free to take responsible risks.
- Group members are motivated to achieve goals.
- Group members are willing to work harder and more effectively in order to achieve success.

Training Session 4.3: Stakeholder Identification and Involvement

Part I

Objective

To demonstrate a participatory approach to identifying key stakeholders and involving them in management of marine protected areas (MPAs).

Significance

Involving key stakeholders throughout the planning and implementation process helps to ensure effective MPAs. Through stakeholder involvement, all voices have the opportunity to speak, the work benefits from indigenous knowledge. Ownership and vested interest increase. Diverse multiple perspectives help to enrich planning and increase participation during implementation, monitoring, and evaluation. Involvement of stakeholders in monitoring strengthens their capacity to contribute to management planning and implementation.

Presentation

Participatory small group activity followed by plenary discussion.

Duration: 2–3 hours (depending upon group size and how much discussion is needed)

Equipment and Materials: Circles of varying sizes (include at least six sizes) cut out of coloured papers.
(Circles of a given colour should be the same size. Cut enough so each group can have several of each size).
Glue or tape
Copies of Task 4.3a and 4.3b sheets (1 copy of each per person)
Definitions from Step 3 on flip chart
Flip chart and paper

Process

1. Explain the purpose of this 2-part activity. Show the objective using Overhead 4.3.1 or flip chart. Explain that Part I will focus on ways to identify stakeholders and their relative interests in the MPA. Part II examines ways to involve stakeholders in planning and managing MPA.
2. Post and explain the definition of stakeholders (Overhead 4.3.2 or flip chart).

Stakeholders are:
Groups and Individuals who are directly or indirectly affected by the objectives and implementation of an effort—a project or programme involving protected areas, in this case. They could include implementers, recipients of benefits, advisors, managers and all responsible for MPA-related project results and sustainability.
3. Ask:
Who are the stakeholders in this workshop?
Who are the stakeholders in the work you do?
4. Explain that in this activity we will be looking at our own projects and identifying stakeholder groups and analysing their relative vested interest in the projects.
5. Explain that participants, working in small groups will be identifying some key stakeholders in one of your protected areas. (If participants are from the same area, they would just focus on theirs. If they are from different areas, each group should choose one project/protected area upon which

to focus). Explain that participants should do this with their own stakeholder groups when they return to their home MPAs or project areas. We are learning a process here using an example MPA. But the stakeholders probably will be different for the different situations you have—some may be the same.

Distribute and explain Task 4.3a and Task 4.3b sheets.

Group Task Instructions (Task 4.3a Sheet)

- Discuss and identify the threatened resource(s) your project is addressing. Write the PROJECT (related to the threatened resource) in the centre of a large piece of paper.
- Discuss and list as many 'stakeholder' groups (or individuals) as you can for your project and list them on Task Sheet 4.3b. Make a large copy of your Task Sheet 4.3b on Flip Chart so the other participants can see what you are filling in as you complete the chart throughout this session. Also discuss and list the interest they have or might have in the MPA or project area. (NOTE: The last two columns of Task Sheet 4.3b will be completed during Part II of this activity.)
- Using the coloured circles provided, label circles to represent the stakeholders. Choose a circle size to represent the relative interest of the stakeholder. The bigger the circle, the larger the 'interest'.
- Glue circles to piece of paper for presentation to rest of group.
- Each group will have 5–10 minutes to present.

(30–45 minutes)

6. Divide participants into groups with 5–6 persons per group and help them get started on their small group task.

(30–45 minutes for small group work)

7. After all have prepared stakeholder task sheets and made a visual depicting the relationship of stakeholder groups to the PA (and the relative strengths of stakeholder interests), ask each group/team to briefly present and explain their work.

Trainer's Note

If participants have not included the following groups on their lists and you feel they might be relevant to their situation, ask them if they have considered them.

Local resource users—such as commercial and subsistence fishermen

Non-governmental conservation groups

Non-governmental development groups

Commercial and business people—such as tour operators, recreation-focused groups

Government

Various community groups—such as men, women, youth, elders

Encourage the participants to specify which government groups, which NGOs, which conservation groups, and so forth.

After all have presented, ask them to look again at their individual posters and think about power and influence in relationship to stakeholder interest. That is, do the relative sizes of the circles also reflect the power and influence that these groups typically have? Ask them to comment on this.

8. Ask participants if, after discussion, they would make any changes in the way they have depicted stakeholders; who they are and the relative power they have regarding the project (or threatened resource).
9. Close by asking if participants could do a similar activity with project partners to help them identify stakeholders? If not, what further assistance is needed?

Part II

Objective

To demonstrate a participatory approach to identifying key stakeholders and involving them in management of marine protected areas (MPAs).

Significance

The first part of this 2-part activity focuses on stakeholder identification.

Presentation

Participatory small group activity followed by plenary discussion.

Duration: 2–3 hours (depending upon group size and how much discussion is needed)

Equipment and materials: Stakeholder Identification Chart from Part I

Glue or tape

Copies of Tasks 4.3a and 4.3b sheets (from Part I) and Task 4.3c and 4.3d sheets (1 copy of each per person)

Flip chart and paper

Process

1. Explain that the step of identifying stakeholders in a participatory fashion is an important step, but is only the beginning of the process of stakeholder involvement. The next and very important step is tackling how to get key stakeholders actively involved—identifying mechanisms that will increase their involvement and ownership in the process or project.

Explain that we will follow three steps to examine this question of how to get stakeholders involved or more involved. First we will look at how key stakeholders have been involved in the past with the resource (or project) in question. Next we will think and talk about what their roles might be now and in the future. Finally, we will identify mechanisms to actually involve key stakeholders.

2. Explain that participants will work in the same small groups they were in during the first part of this activity because we will be building upon the results of their work during Part I.

Post and explain the following Group Task: (and distribute Task Sheet 4.3c)

Task 4.3c: Group Task—Stakeholder Involvement—Creating a Timeline

- Refer back to your chart depicting stakeholders and their link to the MPA. Decide on 6 or fewer stakeholder groups to focus on during this activity (NOTE: In their real projects, they would want to address all stakeholder groups. We are using a limited number here because of typical workshop time constraints).
- Next, create a timeline that illustrates involvement of key stakeholder groups in the past with the MPA or project area.
- To create this time line, take one or two sheets of flip chart paper and draw a line on it. Look at your stakeholder groups and think about which group might have had the earliest involvement in the MPA or project area. Write that group and the time (year or month/season) above the line at the beginning of the line. Beneath the name of the stakeholder group and the time, write what their role or type of involvement was. Continue to complete your timeline depicting stakeholder involvement up to the present time.
- When you have completed the timeline, you should have all stakeholder groups listed above the time line with their time of involvement. Beneath the line should be their roles. Indicate if their involvement was continuous or sporadic. Indicate if their roles or interests changed over time, too.
- Prepare to present your timeline to the group.
- (20 minutes to prepare timeline. 10 minutes per group to present).

3. After all groups have completed their timelines and presented them, allow 15 minutes for questions or discussions.
4. Explain that the next step will involve identifying possible future roles and mechanisms for involving stakeholders.
5. Post and explain the following group task and distribute Task Sheet 4.3d:

Task 4.3d: Group Task: Stakeholder Involvement—Future Roles and Mechanisms for Involvement

- For this part of the session, you should be thinking about these important questions:
Who should be involved?
Why?
In what way?
When?

By thinking about, discussing, and beginning to answer these questions you will begin to build an understanding of the need for stakeholder involvement.

- Discuss and identify possible roles (interests) the stakeholder groups you have identified might have in the current MPA or project areas. It might be helpful to consider a continuum of involvement ranging from Need Information through to Key Decision-makers. Consider the range of roles in between these two poles. Fill in the boxes on Task Sheet 4.3b for Roles.
- Next, consider how you might involve these key stakeholders. How can you get them interested? List some of the mechanisms that you have used in the past or are familiar with that others use to get people involved in some action. Your list might include the following: Public meetings, interviews, written information, committee work, monitoring teams, active collaboration on a small task, advisory committee or board, and so forth.

Add others.

- Next, match up some of these mechanisms with stakeholder groups. What might work best with which groups? Also consider the role of the stakeholder groups. This might influence how you could best involve them. Fill in the boxes on Task Sheet 4.3b for How to Involve.
- Prepare to present highlights of your discussion and your completed Task Sheet 4.3b to the large group (focusing on the last two columns).

(30–40 minutes for small group work. 10 minutes per group to present)

6. After all have completed their small group work and presented their results, begin a 30–40 minute discussion to bring closure to the 2-part session on stakeholder involvement. Focus the discussion on the following questions. Record the responses on flip chart so at the end of the session the group will have developed a list of Key Learnings Regarding Stakeholder Identification and Involvement.

Have any of you added stakeholders or stakeholder groups as you worked through Part II? (If so, ask them which groups were added and why. Explain that sometimes we think we have adequately addressed stakeholder involvement, but once we begin to consciously examine stakeholder roles, we realise we have left out an important individual or group.)

- What new insights have you gained through this experience?
 - What are you sure to take back to your colleagues and partners to share about stakeholder identification and involvement?
 - What should we be sure to remember?
7. Close by recalling the purpose of the activity and reminding the group of the significance.

Training Session 4.4: Conflict Management

Objective

Human conflicts are common problems especially on sites where there is a complex of interests, as in a marine protected areas. Hence the objective is to demonstrate how conflict can be managed through negotiation

Significance

Conflict is an inevitable by-product of participatory processes. If properly managed, however, conflicts can help to advance the participatory planning process and contribute to the effectiveness of management.

Presentation

Plenary presentation

Duration: Approximately 40 minutes

Equipment and materials: Overhead projector
Overheads
Overhead notes pages
Flip chart paper and stand
Marker pens

Process

1. Start with an exercise which is designed to get people thinking about the nature of conflict and what we understand by the word conflict: Also to start them thinking about the ways in which they solve conflicts. You can make this as long or as short as you want to, depending on what you ask the group to do. The trainer can ask the group for verbal input only, or he / she can get them to go away and discuss the topic in small groups and report back on their discussions.

Ask participants to describe what they understand by conflict. What are their experiences of conflict? What ways do they solve conflicts? What are the traditional and local ways of solving conflict? What are personal ways they think they solve conflicts. Give an example of a conflict situation if necessary. e.g You have saved up money for three years in order to send your son to school. Your husband wants to take the money and buy a cow for the funeral of his mother. (He could buy two goats for considerably less but would lose some status). At the end of the exercise some / all members to read out their answers.

Discussion points: Do you think that the methods you use to resolve conflict are adequate? Positive? Destructive? Negative?

2. Trainer can ask the participants to give some examples of benefits to well managed conflict. Write them on a flip chart
3. However, conflict can also be incredibly destructive when it is not managed properly. *Trainer can ask the group for some ideas on the results of unresolved conflicts. Write them up as well.* Unresolved or poorly managed conflict leads to anger and stress, an inability to achieve personal and group goals (no team work), loss of motivation in a work environment, low morale and even deliberate destruction of property and life.
4. **Exercise:** To examine different types of conflict.

You can make this exercise as long or as short as you want by simple verbal report backs or written flipchart report backs, which are pasted up, on the wall grouping similar problems / conflicts. Work in small groups preferably putting people of different backgrounds together.

Discuss: What are the different types of environmental, social and economic conflicts that occur in your communities, between people, within the community, or between groups? Think about your experiences at home, at school, in the township, village, farm, etc.

5. **Other topics to be explored:** How are these conflicts resolved? What are the traditional and local ways of solving conflict? i.e. How is conflict usually managed or solved in your own communities? Is there anyone in your community who usually plays the role of facilitator or mediator? (Briefly describe what a mediator is). Each group reports back to the big group. Write these topics up on a flip chart.
6. **Exercise:** Trainer asks some of the group which of the animals they think they are in conflict situations.

If the group members know each other quite well it is a very interesting exercise to get individuals to identify their colleagues styles, and motivate why they put them in these categories (animals) with examples from their working/living environments.

7. Similarly: There are many methods of resolving conflict, from the use of power and domination to passive resistance. Discuss the **effectiveness** of the following methods: *Can be done as a group exercise.*
8. **Exercise:** Break the group into two smaller groups. Provide them with the following scenario.

The Government identifies an area that is currently occupied by squatters that it (the Government) wants to turn into a Protected Area. Scientists have determined that the area is a biodiversity hot spot. Negotiations with squatters to move from the area do not succeed. The Government claims that it has an international commitment to the preservation of biodiversity. The squatters say they are not leaving the area unless the government provides them with houses and basic facilities. The Government has limited finances for re-settlement. Both the government and the squatters are firm on their positions and do not want to change. One group is the government and the other is the squatters. They must negotiate a way forward. At the end of the exercise each group must present their side of the negotiation process and the solution reached. Different styles of conflict resolution should be identified during the group work and also the different methods and tactics used to come to a solution. These should be described in the report back.

9. **Exercise:** The following is a very powerful exercise that demonstrates many points relevant to conflict resolution. It is called the Chocolate Grab

Uses

- Conflict resolution
- Win/lose lose/lose win/win situations
- Working together
- Importance of communication

Group Size: Any group size as individuals work in pairs. However, we find the most useful scenario is to have two or three pairs participating in the exercise and the rest of the group watching.

Materials: A prize e.g. a small packet of sweets or chocolate bar for each person taking part.

Description: Two individuals stand side by side facing the same way. They hold hands tightly and may not let go of each other. A prize eg. a small bar of chocolate is placed out of reach on the outer side of each individual. They are told simply that objective of the exercise is for them each to get their bar of chocolate. Invariably they have a frantic tug of war, each pulling against the other in an attempt to get hold of their chocolate bar. (Note: For this reason it is generally a good idea to have pairs that are roughly the same size and strength). Once the pairs of two have had a tug of war, and fallen all over the floor, you explain that the instruction issued was that they each had to get their bar of chocolate and pulling against each other is perhaps not an effective way to achieve this outcome. You and a fellow trainer set up the exercise again with a bar of chocolate out of reach on either side of each of you. You hold your fellow trainers hand, emphasise that you talk to each other in order to come to an agreement, then you calmly both walk over to one side (still holding hands tightly) and collect one of the chocolates, then walk over to the other side and collect the other chocolate. You have both achieved your goal with a minimum of effort simply by communicating and coming to an agreement to co-operate rather than fight (pull against each other).

If one person manages to pull the other over and get his/her chocolate we have a win/lose situation. If neither can pull the other over towards their chocolate we have a lose/lose situation. It is important for them to work out that they can both go first to one person's prize, and then to the other person's prize. Then we have a win/win situation – both people get what they want with a minimum effort.

Instructions: "Each of you must try and get your own prize." (It is important that this particular instruction is given and not one which indicates that they need to pull against each other.)

Discussion Prompts: Why did you go about it as a tug of war?

Is this the ideal way of resolving conflict?

Having been given the instruction, what stopped you from talking about resolving it in a win/win way?

What happens in real life?

Variations: A slight variation involves using 2 or 3 people in each team.

Comment: This exercise is a very powerful one and invariably elicits great surprise when the trainer shows the group how easy it could have been for the frantically tugging participants to both get what they wanted. We used this very successfully to demonstrate the current relationships between Nature Conservation and Subsistence Fishers, (which in the Eastern Cape is generally one of considerable conflict and a lose/lose situation), and the potential for altering that relationship.

As we can see, it's not the conflict itself, but how we deal with it that eventually determines the outcome. Knowing more about the positions we can choose gives us a degree of control over the direction of the conflict, and can thereby empower us toward a more constructive and fulfilling resolution.

10. Exercise: Work in a large group. The trainer discusses the following issues with the group:

What do you understand by the word, listening?

Is listening the same as hearing?

Which organ of the body do you use for listening?

How do you know if someone is listening or not? In your culture, what is the right way to listen to someone who is older than you? If there are people from different cultural groups present it is worth comparing the listening procedures.

It is most informative to Write the information down on a flip chart and paste the sheet up on the wall

11. Exercise: Role-play: Listening. (See also the PRA session for similar exercises in listening) Work in a group. Sit in a circle so that everyone can clearly see what is happening. Two members from the group come forward to do a role-play. The one person has to tell the other about the best holiday that they ever had in their lives. Before the exercise the trainer has taken the 'listener' person aside and briefed them. The 'listener' must concentrate and listen attentively at first. To listen attentively involve the whole body, nod, look at the storyteller, etc. After a period of about 2-3 minutes the listener must gradually lose interest and start to listen badly. He or she must fiddle with shirt buttons, look all over the place, look at his or her watch, and so on. After two or three minutes stop. Work as a group. Discuss what they saw happening in this role-play. Ask the storyteller to say how he or she felt about the listener's behaviour.

12. Exercise: Role-play

There are two neighbours. The children of the one neighbour have chased and killed a chicken belonging to the other neighbour while playing. The angry neighbour comes to tell the mother about the damage. She accuses the children of being naughty, troublemakers, disrespectful, irresponsible, etc. She shouts and swears.

The children's mother listens patiently. She does not defend the behaviour of the children. Instead she keeps on picking out some of the strong words the neighbour is saying and asking what she means. The mother tries to reduce the feelings of the neighbour, by listening carefully and attentively to the neighbour, re-stating what the neighbour is saying in more gentle terms, asking the neighbour if this is what she is saying, all the while accepting that what the children did was not right. As the mother listens, cleaning the language, and asking for more explanation on some statements, the other neighbour becomes less angry. They begin talking and acknowledging the fact that the children made a mistake. It was a mistake. The angry neighbour acknowledges that he overreacted to the situation. Discuss the role play with the group.

Note: If the trainer chooses the participants carefully and they get really involved in the role-play this is a very effective exercise.

Discussion Points

- It causes conflict when we overreact to a situation.
- People miss the facts and get mistaken ideas when they are angry.
- If both parties overreact and become emotional, then they will not come to a solution and they could end up physically hurting each other.
- You can find solutions to a conflict in the same words that are used in the conflict.

13. *Exercise:* Role play: Work in small groups of three people to do the role-play below. After the role-play discuss the process you followed, how each person felt and whether or not you could reach a solution.

Role Play

- Think of a conflict situation that is common in your area.
- Two of the three people play the role of neighbours who are involved in the conflict.
- The third person is the mediator who is not affected by the conflict. This person is neutral, fair and independent. He or she does not take sides.
- The mediator has already met the people separately and has heard their side of the story. He or she has set dates, times, venue and the parties have separately agreed on the discussion rules.
- Each person who plays the role of the mediator should follow this process:
 - (i) Welcome the two parties and introduce yourself and what you will be doing. Emphasise that you will help them find their own solutions.
 - (ii) Introduce the issues in the conflict, especially what the people disagree about.
 - (iii) The people must agree not to interrupt when someone is speaking.
 - (iv) Allow each person to explain the situation from their point of view while the other person listens.
 - (v) Briefly sum up the facts.
 - (vi) Point out where there are things in common, for example both people might be feeling frustrated, both might have a strong commitment to the issue, both might want to find a solution, etc.
 - (vii) Help each person talk about their solution to the conflict. What skills would you use?
 - (viii) Again point out the common ground.
 - (ix) See if there is anyway they can compromise, accommodate, or collaborate to reach a solution. Try to help them reach a reasonable solution.
 - (x) This process may not result in a final solution, but at least the people have listened to each other.

Background

We all face conflict during our daily lives. Our relationships at work and at home often contain elements of conflict, disagreement and opposed interests. Conflict is a part of our lives. People differ on just about everything from politics to religion to the clothes they want to wear and the food they want to eat. When there are many differences of ideas there are more areas for conflict to occur.

What is conflict?: Conflict is generally a state of disagreement between people over ideas, interests or resources. In most conflict situations, the people in conflict see things differently to each other, or they have different views, different values, different opinions and sometimes they enjoy different things.

Most of us need to shift the way we think about and solve conflicts. Conflict is often seen as negative and can be destructive, but conflict is a natural process that can lead to positive results if it is handled properly. Conflict can bring about change, without which there is no progress. Lack of conflict can be a sign of apathy and non-involvement, rather than a healthy relationship. In this module you are invited to think of the different ways you and your community use to solve conflicts; and you may want to learn some new ways.

Levels of Conflict

Conflict is the process, which begins when we think that someone has negatively affected or is about to negatively affect something that we care about. The more deeply we feel about something, the more intense the conflict is likely to be. There are many forms of conflict, and as the level of conflict intensifies, resolving the conflict is harder to achieve.

Effective Conflict Resolution

Managing conflict effectively means controlling the amount of conflict that is necessary to bring about change, keeping it to its least destructive form, and resolving it as quickly and constructively as possible.

Different people use different strategies for managing conflicts. These strategies are learned, usually in childhood, and they seem to function automatically. Usually we are not aware of how we act in conflict situations. We just do whatever seems to come naturally. But we do have a personal strategy, and because it was learned, we can always change it by learning new and more effective ways.

Using a Mediator

Sometimes it is not easy for those who are involved in a conflict situation to manage it themselves. So they bring in a person or an outside organisation to help solve the conflict. We can call this person or organisation a **mediator**. The mediator does not simply present answers to the problem. Rather, he or she facilitates the mediation process and helps the people find their own answers or solution.

What is mediation? Mediation is a process in which an outside person helps the parties in a conflict work out their differences themselves and helps them to work out an acceptable solution to both of them. The outside person is the mediator who listens, gives suggestions, leads the process and helps the parties reach a final agreement. Being an effective mediator in a conflict situation takes a lot of practice.

Conflict resolution is a long process. It does not just take one or two days. It may take weeks or months. What is important in conflict resolution is to set up the process and to realise that this process involves patience. The final agreement may not be perfect for all parties involved but it may be the most reasonable solution in that situation.

Many people see conflict as bad, as something to be avoided. But it is part and parcel of our lives and it is not necessarily bad. We can learn from a conflict. We can come out with good solutions that help everyone and that make our lives a little easier. But we need to practice handling conflict in positive ways.

Conflict management is one of the unavoidable responsibilities of MPA managers, who will often be required to play a range of different roles in this process, ranging from facilitator to negotiator to decision maker. In instances where the management agency is one of the parties in conflict, it is the responsibility of the MPA manager to identify a method for conflict resolution that will be appropriate and acceptable to all involved.

Dealing with Conflict Assertively

When faced with conflict situations people generally react in one of three ways:

1. Non assertively
2. Aggressively
3. Assertively

Non-Assertive behaviour often occurs due to lack of confidence, the need to be liked or an attitude of passivity and fear of confrontation. People who behave non-assertively indicate to others that their needs are not as important as other peoples', which can lead to a feeling of being victimised.

Aggressive behaviour communicates a message of superiority and violates the rights of others. This type of behaviour causes resentment and does not win the co-operation of others. Needs and beliefs are expressed in inappropriate ways, which minimise the worth of others. It often can also involve sarcasm, blaming and hostility.

Assertive behaviour is characterised by honesty and respect for the rights of others. It is based on adult interactions and makes sure that the needs of both parties are equally considered. Assertive communication requires the expression of thoughts, feelings and beliefs in an open, honest and appropriate way. Assertiveness shows command of yourself and when used in a conflict situation helps to bring about a fair outcome. As discussed earlier, conflict is unavoidable and can have many positive benefits if dealt with properly. Using assertive behaviour not only helps to reduce conflict, but also ensures that the outcome will suit all parties.

Rights and Responsibilities

Your right to be assertive also comes with taking personal responsibility for your behaviour and actions. Since everyone is unique, assertive rights that promote one person's sense of self respect will differ from those that others find important. An assertive person will not only promote their own rights, but also encourage, promote and respect other individual's rights. We all have certain basic rights:

1. The right to hold and express opinions, views and ideas. The right to have your ideas recognised and listened to.
2. The right to have needs and wants that differ from others. The right to refuse requests without feeling guilty.
3. The right to make mistakes—and to take responsibility for them.
4. The right to be independent of the approval of others.

Accepting that you have these rights means you choose your response to situations and people. The responsibility for your words and actions is yours alone. All rights have attendant responsibilities—which includes acceptance and respect of other peoples' rights.

As an assertive individual you are the owner of your perceptions, thoughts, feelings and actions. When communicating you demonstrate that the messages you send are clear and you do not presume to know what others are thinking. You show others that you have self-respect. You confront issues and not personalities.

Behavioural Options

The table below outlines some of the ways different behaviour styles are expressed, and the effect they may have on others. Add to the list from your experiences.

	Passive	Assertive	Aggressive
Characteristics	Allow others to choose for you. Emotionally dishonest	Choose for yourself. Honest and direct	Choose for yourself. Tactless and direct
Your feelings	Anxiety, helplessness	Confident, Self-respecting	Righteous, Superior
Impact on feelings of others	Guilt, superior	Valued, respected	Humiliated, defensive
How other people see you	Lack of respect. Considered a pushover	Respect, trust	Angry, distrustful, fearful
Outcome	Others goals are met at your expense. Your rights are violated	Determined by open negotiation. All rights are respected	You achieve your goals at others' expense. Others' rights are violated.

How you behave will to a large degree determine how people treat you. It also impacts on how much confidence and self-respect you are able to maintain.

Assertive Communication

In order to become more assertive, changes in behaviour need to be made, particularly in how we communicate with others. **The communication process involves the words we choose, how we say these words and what we convey with our body language.**

Guidelines for assertive communication

1. Use 'I' statements rather than 'You' statements—Describe clearly how you see the situation.
2. Use facts, not judgments or exaggerations.
3. Be direct, don't hint or presume.
4. Identify the change you would like to see.
5. Choose words that are appropriate and respectful.
6. Take ownership of your feelings - don't place blame.

7. Listen carefully and actively to the other person.
8. Do not get emotional or react to aggression.
9. Be calm and rational and avoid personal comments.
10. Be clear on the objectives and which issues are negotiable.
11. Respect the diverse beliefs and values of others.

Your body language and tone of voice must reflect your feelings of worth and self-respect. It is important to make eye contact and make sure that your posture and gestures do not send the wrong message.

Choosing assertive statements

It is often not what we say but how we convey our message that makes the difference. Simply by altering our wording to reflect our own feelings—making 'I' statements—can make your statements more assertive. For example:

- a) "I felt embarrassed when you criticised me in front of my friends". Rather than "You always criticise me in front of people".
- b) "I get very angry when you arrive so late". Instead of "You make me very angry with your bad time keeping".
- c) "I really feel we should examine our strategy to get better results", in place of "Don't you think we should change our strategy?"
- d) "I would like to put across my side of the story". Rather than "Don't keep interrupting me,—you always think you are right".

Exercise: Create alternates to the following statements: The trainer can make up many more that are relevant for particular situations

"Why are you being so difficult?"

"Your work is always untidy and sloppy"

"Don't think you can get away with coming late"

"You always leave the vehicle dirty after your field trips"

"You never help with filling the diving cylinders at the end of the day".

"You never do your share of animal counts on weekends"

Learning to be assertive

1. Develop a belief and value system which allows you to assert yourself. It means giving yourself permission to be angry, to say "No", to ask for help, and to make mistakes.
2. Learn and practise basic assertion skills:
 - Use simple, straightforward expression of your beliefs, feelings, or opinions.
 - Recognise and be sensitive to other peoples' feelings and situations.
 - Take action when people violate your rights.
 - Use 'I' language and be clear about your own feelings.
 - Disagree actively; do not pretend agreement for the sake of peace.
 - Ask questions when requests or orders do not sound reasonable.
 - Say no to unreasonable requests or when your rights are being denied.
3. Develop your communication skills. Maintain eye contact, keep your posture open and relaxed, be sure your facial expression agrees with your message, and keep an even tone of voice.
4. Assertiveness cannot be learned by reading notes—practise first in situations that you are more comfortable in. Assess yourself regularly. Your confidence will gradually increase and being assertive will come naturally.

Negotiation and Conflict Resolution

We are all involved in numerous conflict situations that need to be dealt with through negotiation; this occurs at work, at home, and socially. A negotiation situation is one in which there is a conflict of interests and where both sides prefer to search for solutions, rather than giving in or breaking contact. You will be constantly negotiating and resolving conflict throughout all of your professional and personal life. Given that organisations are becoming less top down, less based on positional authority, less based on clear boundaries of responsibility and authority, it is likely that conflict will be an even greater part of organisations in the future. Studies have shown that negotiation skills are among the most significant determinants of career success.

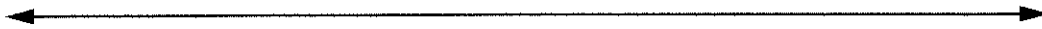
Responding to Conflict

It is useful to look at the various responses we have to conflict, in terms of two dimensions:
In a conflict situation it is a good idea to ask yourself:

1. How important or unimportant is it to satisfy my needs, and
2. How important or unimportant is it to satisfy the other person's needs.

Answering these questions results in differing methods of conflict resolution. There is no 'right' or 'wrong' way—it depends on what is appropriate to the situation.

Concern for others Altruism Co-operation Competition Conflict Self-Interest



Continuum of Self-Interest versus Concern for Others

Overhead 4.4.1: Objective

Human conflicts are common problems especially on sites where there are a complex of interests such as marine protected areas. Hence the objective is to demonstrate how conflict can be managed through negotiation.

By the end of this module you should be able to:

1. Explain what is conflict and how different conflicts arise.
2. Describe the different types of conflict.
3. Describe different styles of handling conflict.
4. Use conflict resolution skills.
5. Describe what is mediation and what is the role of the mediator.

Overhead 4.4.2: Benefits of Well Managed Conflict

- Conflicts encourage change where new skills need to be learned and old habits modified.
- Conflicts energise and motivate us to deal with problems.
- Better decisions are made as disagreement causes us to think the decision through very carefully.
- Conflict can assist us in building and maintaining stronger relationships.

Overhead 4.4.3: Different Types of Conflict

There are several different types of conflicts: For example

1. You can have a conflict **within yourself** where you don't know what to do about a situation.
2. You can have a conflict **with another person**. Your neighbour's goat keeps breaking into your vegetable garden.
3. You can have a conflict **within a group**. For example, in a community, there may be a conflict over who should take responsibility for liaising with conservation authorities or who should be responsible for ensuring the water supply.
4. You can have a conflict **between different groups**. For example, there might be conflict between two cultural groups in a community or between two communities.

Overhead 4.4.4: Levels of Conflict

Information - where there is conflict resulting from the interpretation of details or particulars such as dates, times, amounts or measurements.

Method - where conflict results from different ideas on the processes or methods required to undertake an activity or to reach goals or achieve objectives.

Goals - conflict occurs when parties have different goals. This can only be resolved if one party alters their goal or both parties change their opinion.

Values - conflict concerning values is the most difficult to manage. Values are very personal and deeply entrenched. Values are related to a person's belief in right and wrong.

Environmental conflicts are generally about the use and management of limited natural resources with many role-players and stakeholders from all levels. It cuts across economic, social and administrative boundaries and usually involves most of these kinds of conflict.

Overhead 4.4.5: The Conflict Process

The process of conflict often arises from a single problem issue. The steps in this process are usually as follows:

1. The beginning of conflict - people discover areas of disagreement between them.
2. Discussion - they start to talk or argue about issues.
3. Entrench - if conflict is not resolved, the parties become fixed in their positions and will not change.
5. Coalition - the parties try to strengthen their power bases by drawing in other people in order to win.
6. Fear of losing face - it becomes difficult for those involved to change their point of view without loss of pride.
7. Loss of objectivity - things become personal and perceptions become distorted. The parties start to label each other with names.
8. Full scale conflict - people make threats and take action in order to get their own way.

Overhead 4.4.6: How Do you Manage Conflict?

There are a number of animals that provide us with examples of the most common ways people manage conflict. *The trainer can make an overhead with pictures of these animals: Italics indicate the thought bubbles of the particular animal.*

The Ostrich - denies conflict exists and buries his head in the sand - *There is no problem*

The Tortoise - withdraws into his shell to avoid conflict - *I am getting out of this because people never agree anyway*

The Lemming - keeps the peace but becomes a doormat - *I'll give in because I need you*

The Hyena - avoids the issue by laughing - *Ha Ha Ho Ho Hee Hee Ha Ho Hee*

The Weasel - rationalises the problem away - *It's all very simple really*

The Gorilla - overpowers people - *You must believe me because I am right*

The Donkey - is dogmatic judgemental and self-righteous - *I am right and you are wrong*

The Owl - feelings and emotions are hidden - *I think and think and think and think*

The Sheep - conforms and goes along with the group rather than his own beliefs - *Bah bah bah bah bah*

The Giraffe - feels he is too superior for conflict - *It just isn't done where I come from*

The Canary - makes a compromise - *I'll meet you half way*

The Peacock - wants relationship and honest integrity. He sees conflict as neutral and natural - *I care enough to confront.*

Overhead 4.4.7: Methods of Resolving Conflict

Avoidance: The person avoids the problem and will not talk about it. The problem will not go away.

Smoothing: One person agrees to give in to the other. This may lead to problems in the future.

Use of authority: One person invokes his/her superior position to get their way. Often leads to problems in the future.

Force: One person threatens to use/uses physical violence to get his/her way. Leads to future problems

Compromise: Each person agrees to give up something so that the conflict can be solved. The people may however, still be unhappy and this can lead to problems in the future.

Arbitration: Both parties agree to abide by the judgement of a third party.

Follow rules and regulations: Both parties agree to abide by a predetermined set of rules/laws.

Confrontation: One person sees the conflict as a competition that he or she must win. This can lead to further problems.

Consensus: Both parties agree that one of them is right. One of them is usually still unhappy.

Behavioural changes: One party agrees to change his/her behaviour to reduce the conflict. Problems usually arise further down the line.

Negotiation or Problem solving: Both people decide to work out the best solution that makes them both happy. This is the only long lasting solution.

Negotiation provides parties with an **opportunity to define issues** that are important to them

Negotiation provides parties with an **opportunity to understand** each others interests and concerns.

Negotiation provides an **opportunity to achieve** better, more widely accepted decisions.

Overhead 4.4.8: Steps in Conflict Resolution

1. Identify the causes of conflict:
 - Use active listening. **One of the biggest causes of conflict is that people do not listen to each other.** Establish eye contact, and don't interrupt. We are not only showing respect when we listen, we're finding out information that can help us resolve the conflict. (See PRA module for active listening exercises).
 - Ask questions that reveal a willingness to understand, such as, "What is it about the situation that bothers you?" "What is it you really care about?" (See PRA Module)
 - Don't be confrontational. Don't shout, insult or hit the other person. Try to be objective and calm.
 - Express your own concerns, and try to keep your emotions out of it.
 - Stick to the issues; don't try to second-guess the other party's motives.
 - Stick to the present; try not to dredge up unnecessary things from the past.
 - Take responsibility for your role in the conflict.
2. Create an effective atmosphere, use a neutral venue and set times to suit all parties.
3. Clarify your perceptions, identify possible labels and look for positive potential in others.
4. Generate options - do not enter the conflict with a solution already in mind. Try to look for alternate options.
5. Focus on the problem, not on defeating the other party. Look for individual and shared needs and concerns and find common ground.
6. Build shared positive power, do not play games or use emotional blackmail. Give all parties a chance to make a meaningful contribution.
7. Focus on outcomes where both parties are satisfied. Look for win-win solutions where there is a high level of satisfaction for all parties.
8. **THE MAJOR BREAKTHROUGH IN CONFLICT OCCURS WHEN BOTH PARTIES BEGIN TO SEE THE CONFLICT AS A PROBLEM FOR BOTH OF THEM (OUR PROBLEM).**
9. Look at the long-term picture when deciding on outcomes.
10. Develop an action plan to resolve issues.
11. Third Party Intervention—sometimes it is necessary to bring in a third party to assist in the collaboration process.

Overhead 4.4.9: To Resolve Conflict You Need...

To resolve conflict you need, above all things, **COMMUNICATION**.

Other important factors that help to resolving conflict in the work place are **Team work, Loyalty and a Shared vision**.

Overhead 4.4.10: How Do We Improve Our Listening Skills?

One way is through **restating** what the person is saying. When we restate we do the following:

1. We listen carefully to what the person is saying.
2. Then we say what we heard in our own words.
3. Then we check with the person that we heard correctly.
4. Then we respond and say what we think.

MODULE 5

Communication and Public Relations

AUTHORS: STEVE PARR AND P.J. FIELDING

Objective

To outline and practice the most important forms of oral and written communication as well as outlining the importance of and requirements for effective communication in participatory process.

Summary of Training Sessions

This module contains 4 training sessions that require 2 days for delivery:

(DAY 1)

5.1A: Oral Communication—General Overview

- A presentation on the principal forms of oral communication.
- This is followed by a public speaking workshop.

5.1B: Oral Communication—Focus on Rural Communities

- Focuses on oral communication in rural settings.

5.2A: Written Communication—Print Media

- A presentation running through key PR outputs including logos, newsletters, brochures, posters and displays.

5.2B: Written Communication—Report Writing

- A presentation details the structure and 'dos and don'ts' of report writing.
- This is followed by a workshop on developing publicity materials.

5.3: Effective Communication in Participatory Processes

- A presentation focuses on techniques and mechanisms for building effective communication into the participatory.

(DAY 2)

5.4: The 4-P Workshop'—Designing a Communications Strategy for a Conservation Project

- A whole-day workshop designed to practice building a communications strategy utilising many of the communication elements presented the previous day. The workshop is also highly participatory and uses many techniques outlined the day before.

Background

To be a successful protected area manager it is essential to be able to communicate effectively. This is because successful protected area management demands the inclusion of relevant actors in collaborative management. Communication in all its forms is the means to seeking successful collaboration.

Talking, convincing, negotiating, persuading, listening. Oral communication is an active process that

most often and effectively involves face to face contact. It is by far the most important skill since there is no re-drafting or rubbing out and starting again. The point has to be made, the argument has to be won or the aggrieved party has to be listened to. There is nothing like experience and the exploration of one's character to learn how well one can cope with a variety of situations. Ducking the issues only serves to make them worse. Effective oral communication is about timing, style, language and expression.

Written reports or publicity materials are essential for effective project management and for establishing a public awareness component to work. Reports provide the principal measure for managers, donors and others to assess how well work is progressing. Public awareness materials tell people in an informal way about the important issues and their resolution.

Effective communication is one of key attributes for ensuring effective participation in any resource management initiatives. In other words, effective facilitation of participatory processes requires a range of communication skills and techniques.

The strands of the various communication methods are brought together in a workshop which relies on participatory methods to seek common goals or visions for organisations. A whole day workshop, called the '4-P Workshop', provides the means to develop a communications strategy.

Conceptual Framework for the Sequence of Training Sessions

This module is designed as a stepwise progression over the 2-day training period allocation. In this sense the guiding philosophy is one of a hierarchy of skills that when taken together creates the means to communicate successfully to the wide variety of priority audiences from local people to managers, donors, tourists and the general public. The structure also provides for a gentle beginning with simple presentations and associated workshops, building into more complex issues and activities.

Oral and Written Communication are the basic building blocks—everybody needs these skills and the workshops are light-hearted but relevant. The public speaking skills workshop provides an immediate means of hearing a range of views about relevant MPA issues that can be used later for prioritising the most important of them. A more advanced level of communication skills is encompassed in the participatory approaches. These skills are more sophisticated and require the acquisition and associated practice of techniques.

In a related way, the 4-P workshop provides a complex of techniques assembled in a logical framework such that problems or issues are worked through in a step-wise way to an overall jointly agreed solution.

The second concept that underlies the module is one of work prioritisation. Who should we be communicating with? Who should I talk to and why? Communication is about self-awareness and through this process to improve your awareness of the needs and interests of others. Creating this self-awareness is one of the key goals of the 4-P workshop.

The module provides an overall means of realising the power of communication in every day work. It provides the basis for participants to understand and possess some of the key tools to advance the cause of social sustainability. MPAs more than other protected areas demand participatory approach to solving problems since there is such a concentration of actors on the interface between land and sea. Successful conservation simply will not work without it.

Summary

This module provides a sound background to the variety of key forms of communication. These building blocks provide the basis for running through a workshop to elucidate the importance of participatory methods and gain an understanding of how to advance the goals of an organisation through the development of communications strategies. The workshop is designed for groups of participants to get beneath the surface of their targets and to gain insight into the strategies that lay behind the 'front' of communication.

References and Additional Reading Material

- Borrini-Feyerabend, G. 1997. Beyond fences: Seeking social sustainability in conservation. IUCN, Gland, Switzerland.
- Briguglio, L. 1998. Integrated Management of Freshwater, Coastal Areas and Marine Resources in Small Island Developing States, University of Malta, Gozo Centre, Islands and Small States Institute of the Foundation for International Studies, UNEP: Malta.
- Byers, B. 2000. Understanding and Influencing Behaviors: A Guide. Biodiversity Support Program, Washington DC, USA.
- Grange, N. and Odendaal, F. 1999. Guidelines for the Environmental Assessment of Coastal Tourism. SEACAM, Maputo, Mozambique.

- Conservation International 1999. The 4-P Workshop. Designing Communications Strategies for Conservation Projects. Conservation International, Washington DC.
- IUCN/UNEP. 1996. Status of sea turtle conservation in the western Indian Ocean. UNEP.
- Lemay, M. and Hale. 1989. Coastal Resources Management: A Guide to Public Education Programs and Materials. Kumarian Press. W. Hartford, Conn., 57pp.
- Linden, O. 1998. Special issue: Building capacity for coastal management. *Ambio*, 27(8).
- The Moment Project, 1989. Naming the Moment, Political Analysis for Action, A Manual for Community Groups. Jesuit Centre for Social Faith and Justice, Toronto, Canada.
- SEACAM 1999. From a good idea to a successful project. A manual for development and management of local level projects. Secretariat for Eastern African Coastal Area Management. Maputo, Mozambique.
- Shah, N.J. 1998. Birdlife in the Seychelles...30 years of achievement. In *World BirdWatch*.
- Thia-Eng, C., et al., 1999. Sharing lessons and experiences in marine pollution management, GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas.
- UNEP-CEP. 2000. Training of Trainers Course in Marine Protected Area Management.
- Werner, T.B. and Allen, G., 1998. A rapid biodiversity assessment of Milne Bay Province, Papua New Guinea. RAP Working Papers 11. Conservation International, Washington, D.C.

Training Session 5.1: Oral Communication

Part A — General Overview

Objective

How to make an effective oral presentation and how to present, often complex scientific information, in a clear and understandable manner, to a range of audiences.

Significance

Communication helps MPA management achieve its objectives by acting as the channel for transmitting information between MPA management to and fro individuals and/or organisations.

Presentation

Plenary presentation followed by practice oral presentations from participants.

Duration: Approximately 2.5 hours depending on number of participants and individual presentations.

Equipment and Materials: Overhead projector and overheads

Overhead notes pages
Flip chart paper and stand
Marker pens
Plain paper
Cue cards
Ambio journal (see references)

Process

1. This, the first session of the module, is opened by a lecture providing background on oral communication in a fairly light-hearted relaxing style.
2. Run through the presentation—this should take around 40 minutes.
3. Use this opening “If you cannot get the message across to a variety of audiences there is no point in doing the work in the first place” as an example of good and bad technique by example and exaggeration. Deliver your own introduction (who you are and where you are from etc.) twice—first time very professionally and then again mumbling and stumbling, i.e. try to make it fun and lively.
4. Preparation is the key to giving a good talk. Use cue cards to show how useful they can be when you forget what you want to say (Overhead 5.1A.2).
5. A press conference means journalists firing questions at you. Perhaps illustrate this by acting a scene with a student picked from class over an incident such as a pollution incident or dolphin stranding. Ask a string of questions and then throw in a difficult and barely relevant one at the end. This will illustrate that the press often have their own agenda and will use a PC to ask what they really want to ask and know about (Overhead 5.1A.5).
5. What makes a great speechmaker and what are the arts involved: Oratory is the art of oral persuasion and has complex and often subtle techniques. Key points involve repeating the same message over and over again in different ways and to use humour or pathos to make the big point. Ask who they admire as speech makers and seek examples, e.g. Martin Luther King, Bill Clinton, JFK. Play-act various postures, styles and paces to illustrate good and bad speeches (Overhead 5.1A.6).
6. Following the presentation ask if there are any points of clarification or questions.
7. Then move on to the task which should take 90 minutes:

Background

Oral communication includes face to face conversation, over the telephone, radio broadcasts, interviews, group discussions, meetings, and speeches. Oral communication is one of the best means for securing cooperation and resolving conflicts.

Among many forms of oral communication, this session is focusing on presentation skills and public speaking through speeches.

Oral communication particularly public speaking plays an important role at all stages of the MPAs operations from the initial identification of the area to the implementation of management strategies.

Regardless of whether you are giving a presentation in a conference or giving a public speech, the effectiveness of delivery is dependent on some general principles. These are pre-speech/conference planning, organisation, language, rehearsal, and delivery.

Managers of MPAs often are called upon often to give presentations on different aspects relevant to management of MPA in different local, national and even international fora. Managers are also giving presentations to different stakeholders including politicians and groups of visitors visiting the MPA, donors and funding agencies as well as to their Board or management committees. These presentations may include proposals for funding, strategic plans and annual reports.

Furthermore, managers are also required or invited to give speeches to fora such as conferences or to the general public meetings. While conferences are for presentation of technical matters, the general public meetings are useful for raising awareness on issues of concern and for communicating information on issues affecting a large number of people. These include objectives and boundaries of the protected area, and regulations and permit regulations applied in the area.

This session is designed to assist participants in developing effective public speaking or conference presentation skills.

Overhead 5.1A.1: Objective

How to make an effective oral presentation and how to present, often complex, scientific information, in a clear and understandable manner, to a range of audiences.

Overhead 5.1A.2: Key Points

'KISS'

- Keep it simple and straightforward.

BE SMART

- Dress appropriately for the occasion and feel good about your appearance.

BE PREPARED

- Remember that practice and preparation are the key.

MAKE CUE CARDS

- Create notes for reference and backup.

BE ENTHUSIASTIC

- Your work is interesting! Try to put your enthusiasm for your subject across.
- And don't panic— It is normal to be nervous!

Overhead 5.1A.3 KISS—'Keep It Simple and Straightforward'

- What do I want to say and how should I say it?
- The material should suit the occasion and audience.
- Examples of different types of presentation:
 - Science Paper at conference (Technical paper)
 - Talk on research results for non-technical audience
 - Conservation message to media
 - Talk to schools.
- Try to have a maximum of four 'take home' messages.
- Whatever the audience, back up each key message with a range of data or arguments.

Overhead 5.1A.4: All Talks Have Three Basic Components...

- Introduction (set the scene, try to relax both you and the audience)
 - Who am I?
 - Where am I from?
 - What I want to talk to you about today is...
- The core message (your results)
 - We observed or did this...
 - We found this...
- Summary (Repeat the message in a simple and memorable way)
 - The take home messages are...

Overhead 5.1A.5 How am I Going to Present My Talk?

- A speech
 - Just straight talk (normally for formal occasions, e.g. after dinner)
- A talk or lecture with visual aids (overheads, slides, computer-generated presentation)
 - This is the most common type of talk for many different types of audiences: Schools, Community workshops, Scientific conferences.
 - Most people retain complex information if they have seen it and it's more interesting!
 - The style of the talk and the complexity of the material must suit the audience.
- A Press Conference
 - A talk, possibly with slides or diagrams plus questions and answers and a press release. Quick-fire answers can be tricky!

Overhead 5.1A.6: A Speech

A speech basically tells a story

- Write a version down and edit
- Practice the sound (rhythm) of the sentences and edit.
- Do not rush—Pace the sentences—but do not over run—practice and edit accordingly.
- Modify your appearance and tone to suit the material.
- Check the protocol for the introduction—"Mrs President, Excellencies, Ladies and gentlemen..."
- Speak clearly, be natural and look at the audience.
- Keep your hands free and visible (Do not hold anything apart from the podium, or fiddle, scratch, or worse!).
- Use gestures to reinforce key points.

Overhead 5.1A.7: What Shall I Use to Help Tell My Story?

- Overheads
 - Easy and effective but sometimes warped and difficult to read.
 - Too many can be boring—This talk is limited to 10!
 - Use *PowerPoint* types of software—It forces you to KISS.
- Slides
 - Effective if the slides are good—also make slides for results showing graphs and diagrams.
 - A talk using slides followed by overheads can be both entertaining and informative.
 - Computer-generated presentations. Very slick and professional but new. The technology is more expensive but surprisingly easy to use.

Continued

- Practice and check the technology
 - Do a dry run on your own the evening before and have low-tech backups in case the OHP or computer fails.

Overhead 5.1A.8: 'A Picture (or Diagram) Paints a Thousand Words'

- What should my diagrams look like?
 - Try not to show a table with more than 4 columns and 4 rows.
 - Tables need a lot of verbal interpretation—Try and plot the data on graphs to show relationships visually.
 - KISS—You do not have to show all the details since the talk is summarising the results that can be found in print
- Take your time to explain the graph or diagram
 - This graph plots this against this and the values did this, which indicates this...
- Do not show more than 3 graphs in a row.
 - They get confusing and dull. Break them up with a slide and/or a summary.

Overhead 5.1A.9: What Should Pictures or Photos Show?

- A clear view of something
 - Nothing distant, small or out of focus.
- Pictures or photos are:
 - Good scene-setters or scene-closers
 - Good breaks in mundane, technical subjects
 - Much better at making a key point than 1000 words (e.g. A picture of dead seabirds after an oil spill).
- Use more pictures for less technical audiences.
- Do not show too many pictures—They mesmerise
 - Don't be tempted to overload the cassette and then have to flick through loads of slides in quick succession.
 - One a minute is a good rule.

Overhead 5.1A.10: Oral Communication Public Speaking and Presentation Skills—Summary

- What message do I want to get across today?
- Remember you and your organisation are judged by what you say and how you say it.
- Invest time beforehand setting all aspects of the presentation right.
- Develop a clear structure with a few key messages.
- Use appropriate language, illustrations and technology for the type of audience.
- Project your feeling for the subject and this will be transmitted to your audience.

Task 5.1A.1: Oral Communication

Directions: Introduce the task and underline the fact that this should be 90 minutes of productive fun. The facilitator is key to creating the right atmosphere and getting the best from the participants. This needs some acting. *The subject of the presentation should be based on whatever local field trips have been organised for the training course—in this case Malindi & Watamu National Parks.* Alternatively participants can choose to talk about other local or national, regional or even global issues facing MPAs.

Run through the timetable and explain each section carefully.

- The simple idea is that each student prepares a speech and then either a sample or all delivers it.
- Give each student a number and draw numbers from a hat to pick speakers.
- Use this to run over the good points of each speaker's presentation.
- Don't pick up the bad points in public on anybody's attempt—be constructive at all times

Task Overhead 5.1A.1: Objective

To prepare and deliver a 3 minute oral presentation on any aspect of Malindi NP. Try to include elements discussed in lecture.

Significance: Practice is the art of public speaking and comparing styles one of the best ways of finding your own.

Task Overhead 5.1A.2: Task Structure

- 0-20 Talk preparation—Write the speech of your choice down on cue cards.
- 20-80 Talk presentation plus strengths/weaknesses using checklist.
- 80-90 Review of key points—What makes a good speaker?

Task Overhead 5.1A.3: Checklist

- Delivery
 - Clarity, pace and style
- Content
 - Structure and key messages
- Arts of oratory employed
 - Humour, pathos, rhetoric, gesture
- Composure
 - Cool, nervous
- Appearance
 - Smartness, style
- Overall impact.

Training Session 5.1: Oral Communication

Part B—Focus on Rural Communities

Objective

To teach trainers/managers/communicators to operate effectively in participatory way with their audiences, particularly in rural settings.

Significance

Rural communities who are in many cases the groups most affected, in terms of livelihoods, by the implementations and functioning of an MPA, need different types of communication methods to the ones described in the previous session. It is increasingly clear that Marine Protected Area management and indeed all other Protected Area management is going to be based more and more on co-management or community based natural resource management models. On the east coast of Africa, dealing with communities in a rural setting will therefore be one of the major challenges facing MPA managers, and both the structure of the communication process and the materials used are very different to those employed in more formal talks to schools, conferences and the media. Simply lecturing to illiterate or semi-literate people is not really effective because attention falls away very quickly as they often have difficulty understanding abstract terms and processes.

Presentation

Plenary presentation and group discussions.

Duration: Approximately 2.5 hours.

Equipment and Materials:

The trainer/manager/communicator needs to develop a resource pack. A basic resource pack should comprise:

- A whiteboard and stand
- At least four whiteboard pens
- Flip chart paper and stand
- Marker pens for writing on flip charts
- Sticky tape
- Prestick (sticky plastic putty for mounting large posters, maps etc to walls, and for sticking icons pictures etc to the maps).

Additional materials include:

- A number of posters or maps that depict typical coastal systems or scenes from the coastal area or MPA under consideration. The pictures and maps are at least 100 x 80 cm in size
- A variety of icons, pictures and illustrations that are relevant to the group the trainer/manager is interacting with and the topic of the interaction. These icons or pictures are of the important or relevant animals that might be found in a particular ecosystem, social/recreational/economic/tourism/cultural activities that are important in any particular place or ecosystem, examples of coastal livelihoods, things that might impact on an area or ecosystem, the many ways that people might benefit from the coast as well as some of the threats and environmental issues in the MPA or coastal region. Clearly, the types of icons or pictures developed depend entirely on the context of the information to be conveyed. Examples of activities are: Deep sea trawling, rock and surf angling, swimming and sun bathing, scuba diving, whale watching, industrial activities, oil pollution. The degree with which the resource is interactive and the range of the subjects that can be covered are limited only by the trainer's ingenuity and imagination.

Ideally, the icons/pictures etc should have a small magnetic strip glued to the back of each one, in which case the wooden boards must have a thin sheet of metal over them. The white board will often take magnetic icons but is not generally big enough to take one of the large maps or ecosystem. However, small pieces of Prestick can be used to stick pictures and icons to a poster. It is a good idea to prepare a large number of small balls of Prestick beforehand and stick them lightly to a convenient surface.

- Some lightweight wooden boards and a stand on which to mount maps and posters. (The stand is useful but one can use tables, chairs, boxes, beer crates or anything else available to stand the board on, or one can hang them from the branches of trees etc).
- Drawing pins/nails to pin flip chart pages and maps to walls/trees or any other suitable structure
- At least 4 "bulldog" clips to attach posters and maps to the boards and to hold flip chart pages flat when the wind is blowing
- A selection of games and models that could be used to demonstrate various processes. All of them use very basic materials that can be found almost anywhere (see below)
- Any other material that is relevant to the subject under discussion/purpose of the communication process. In short, the material can be anything that will be effective. If a picture is worth a thousand words (to quote the current training manual), interactive work with real material is worth three times as much in rural illiterate situations.

It must be emphasised that interactive participative training is not something that a trainer can go out and do any time he/she has a mind to. It requires considerable preparation and the building up of a resource base that can be used to in a variety of interchangeable ways.

Process:

1. The basic idea is to create your own story. The maps and posters act as backgrounds and are used in conjunction with the icons, pictures and illustrations to build up a picture of the coast or activities on the coast and show the relationships between things.

Choose the poster that suits the topic of the lesson and mount it on a board on a stand. Choose the icons that will help you to explain and explore your topic. These can be displayed on a table and members of the group can place them on the poster as the lesson progresses or the trainer can place them on the poster.

Icons can be added to the poster, taken off, or moved around to create the story or information that you want to convey. In this way the trainer tries to bring the topic to life for the group. Note this can be made as participatory as you want, with members of the group doing all the attaching, moving etc. Unlike a normal poster the trainer can constantly change the meaning of the poster using different icons or combinations of icons, connecting arrows etc. It is not necessary to always use a poster. The icons and pictures can also be used in conjunction with a flip chart to demonstrate different ideas. Encourage the group to get involved by helping to move and arrange icons and pictures.

2. Provide some details of the preparations necessary to run a communication exercise in a rural setting.
3. **Exercise:** Ask the group to think of other ways they could advertise a presentation or talk
 - In a rural community
 - In an urban area.

Discuss the practicalities of these suggestions – where they might be effective, likely drawbacks etc. Write them up on a flip chart.

Note: With rural communities, the trainer has to be prepared for anything with respect to group size. So many things can intervene despite the most careful advertisement and confirmation of the meeting or workshop. Funerals, pension payouts, political rallies and other unforeseen events, many of which are of major importance in the cultural life of rural communities, may reduce attendance at a carefully planned workshop to zero. If, in the normal course of word of mouth advertisement, the perception has arisen that the meeting or workshop will deal with matters that might impact on livelihood strategies, three times the number of expected participants may arrive. The major problem is that rural people have no access to modern communication technology so it is not possible for them to ask for clarification or postponements or to notify trainers of impending problems. Flexibility is a key requirement.

In some instances it might be helpful to **get some input from participants** planning to attend your presentation. They might have some particular issues that would like you to cover. It helps a lot to know what peoples' expectations are, particularly in the rural setting. It is also useful to know in advance if there are any specialised food requirements.

4. **Exercise:** Ask the group to think of questions that it might be useful to ask participants before they come to a presentation? Would these questions be different if you were planning a workshop as opposed to a talk aimed purely at providing information. Would you ask the same questions if you were planning a rural meeting as opposed to a presentation to an urbanised group.
5. **Planning:** For any presentation but particularly for a workshop it is useful to draw up a plan of what needs to be organised before the workshop. **Exercise:** Get the group to draw up a list of what has to be organised before a meeting or workshop.

6. **Discuss the list.** Are there other things from those listed above. Write the points on a flip chart and pin to the wall.
7. **Exercise:** Discuss with the group any other planning issues that they can think of that might affect a workshop or training session.
8. **Note:** One can see that considerable work has to go into the production of pictures and icons to illustrate the various dimensions of the coast and the issues that might be of relevance to situations in any MPA. However, the technique outlined above is very useful in that it is picture orientated and allows very effective communication around a whole range of issues with poorly educated and semi-literate communities. The participatory process maintains interest and allows the group themselves to be a part of the information sharing process. It is also a good idea to be very flexible in the agenda. Because of the participatory process, important issues sometimes surface and it is a good idea to explore these as they arise.

Background

Participatory processes are all about effective communication - they do not happen unless you have effective communication. The session on Conflict Management is also highly relevant to effective communication and is particularly relevant to participatory processes.

Communication in a rural setting is best accomplished in a participatory format. A meeting is organised with the community members and in our experience normally takes place in a hut, shed, rural school classroom, or quite often, out in the open under a tree. The common denominator is that the facilities are minimal. There is practically never electricity. The trainer talks to the trainees but the process of imparting information is very interactive and community members are required to assist with the process for example by building a picture of a given situation or placing animals or resource in a number of categories. The technique has much in common with Participatory Rural Appraisal methods except that the process of triangulation is absent and the training team consists of one or two people. Small Group discussions and report backs are also part of the process. All material that is covered in the course of the workshop or meeting is pinned up somewhere for reference throughout the day. Thus when the trainer has finished with one topic he/she does not pack away all the flip chart pages before going on to something else. It is a good idea for trainers to work in pairs because all the equipment normally has to be carried around, sometimes over some distance when road access is absent. A second person is also useful when pinning up large maps and pictures.

This session is designed to teach trainers/managers/communicators to operate effectively in participatory way with their audiences. The session comprises practical training tips and techniques that use simple resources in effective ways to get messages across. The idea is to encourage the audience to get involved and to feel comfortable sharing their own experiences. These teaching tips can be used with all topics and should be adapted to suit specific needs. Because the communication method makes use mainly of pictures and does not rely on text, it makes information accessible to learners of all literacy levels. After describing some special factors that contribute towards "preparedness" in the rural setting, in the first part of the session described the techniques that have been developed in South Africa in order for management authorities and trainers to interface with rural coastal communities. The process encourages interactive participatory learning and is an attempt to demonstrate how participatory communication can be used to deal with issues that are taking place in MPAs. It also provides practical examples of participatory communication techniques. The methods can be used to promote an understanding of the environmental, social and economic issues relevant to lives of people living at the coast, whether they are impacted by MPAs or not. The material is geared particularly towards sustainable coastal development. As with PRA techniques, communication using participatory techniques requires practice, particularly for trainers and presenters who have been schooled in an academic environment where the transfer of information is by way of lectures and seminars.

In the second part of the session, outlines of lessons that can be developed for particular situations or applications have been presented. It is not possible in this review of the training manual to fully develop lessons that cover every situation in which an MPA manager might need to interact with his/her stakeholders. The stakeholder/manager interfaces are very often situation and site-specific. Some general lessons that are probably applicable to most MPAs, but the manager would need to develop material suitable for his/her particular application, have included. This will require the trainer to apply his/her imagination to the problem of getting the required information across using the techniques described here. Part of the MPA manager training process in this session would be to develop training material for a particular application in his/her area. It should be noted that once a suitable base of training material has been developed it is possible to use material from one lesson for other lessons.

Case Study 5.1: Examples of Lessons that can be Devised Using Participatory Techniques - Sustainable use of marine resources

—P.J. Fielding (fieldwork@mweb.co.za)

Aim: To understand what 'sustainable use' means.

To demonstrate the importance of using our marine resources in a sustainable way.

Background: People have made a living from the coast for generations. Marine life is still used by people in many ways. People collect shellfish and small fish to feed themselves and their families, commercial companies harvest large quantities of marine life. As well, people catch fish for pleasure, and bait is collected from the rocks and estuaries. With human populations growing and the demand for seafood increasing, more and more of our marine life is being harvested. If we do not control how much of our marine life is removed from the sea, there will not be enough for future generations.

Activity: Place icons of a shoal of fish on a board. Discuss with the group the different kinds of human activities that impact on fish numbers and look for icons that show these. Examples are people fishing with rods, artisanal fishing activities, commercial fishing activities such as trawling, people fishing from ski boats. Talk about the different kinds of marine animals that feed on fish – dolphins, seals, gannets, penguins, predatory fish. Ask the group to contribute to the discussion. Place icons of these animals on the board around the fish shoal. Talk about how both people and other animals depend on the fish for survival.

Activity: There are a number of ways of addressing the issue of sustainable use. Designate members of the group as:

- Commercial fishers
- Subsistence fishers
- Recreational fishers
- Poachers
- Seals
- Penguins
- Gannets
- Dolphins
- Predatory fish.

Each of these groups come up and remove a proportion of the shoal of fish on the board—allow about half to be taken. Commercial take a lot of fish, subsistence fishers only a few, birds, seals, etc., only a few. Now replace about half of the fish that were taken. These fish are recruits born that year.

Once again the various fishers remove about half the fish and once again about half the number that were removed are replaced.

The supply of fish soon gets very small.

Discuss with the group why the number of fish keeps declining—too many fish are being taken out, fewer fish are breeding and not enough new fish are being born into the population to replace them. Write the main points up on a flip chart.

Activity: The trainer can initiate a role-play by pretending to be a TV reporter and interviewing various sectors of the fishing community to find out how they are feeling and how they are coping with declining fish populations. He can include an interview with a tourist or with a scientist or conservation officer.

Activity: Discuss with the group some ideas about what can be done to ensure marine life is harvested in a sustainable way. The group can be broken up into small groups who then report back. Write the answers up on a flip chart.

Some ideas for discussion:

People need to get a permit to fish

Permits limit the number of fish that can be taken out

Only animals of legal size should be taken out

There should be closed seasons during the breeding season

Conservation officer patrols might improve the compliance with regulations

There should be closed areas where people are not allowed to fish

Activity: Sustainable use of marine resources is only one issue in an MPA/our country. Can the group think of others. Write them up on a flip chart.

Some ideas: Sustainable use of water resources

Sustainable use of the money that you earn

Case Study 5.2: Examples of Lessons that Can Be Devised Using Participatory Techniques—Food Webs

—P.J. Fielding

Aim: To explore how all plants and animals in an ecosystem are interdependent and that if one group of organisms is removed the whole ecosystem is affected.

To understand how people fit into the ecosystem and the importance of sustainable use.

Requirements 1. A poster of a particular ecosystem e.g. rocky shore or an estuary

2. Pictures or icons of a range of animals and plants found in that ecosystem.

3. A ball of string.

Ask members of the group to add the pictures to the poster to make it come alive. As each picture is added discuss where the plant/animal lives, what it eats, what eats it. Ask if they have eaten it before and what it tastes like. Discuss how each animal or plant has its place in the system and together they make up the ecosystem.

Activity: To demonstrate how all the plants and animals are connected together in a giant web.

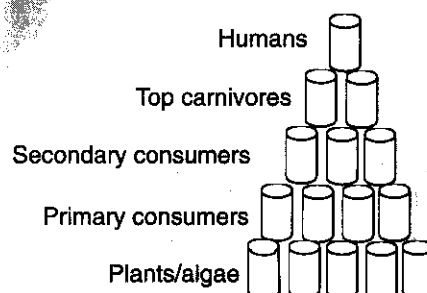
Choose a selection of animals and plants from the ecosystem. Ask members of the group to be these animals and plants. It helps to give them a picture to hold of the animal or plant they represent.

Cut lengths of string about 1.5-2 metres long from the ball of string. Discuss with the group what each animal eats and what eats it. Link the different people (plants and animals) to each other as predators and prey holding different ends of a piece of string. Each animal and plant will be left holding the ends of several bits of string and eventually they will all be connected in a giant web. Ask each animal to pull gently on the strings in his/her hand and see how they link to and depend on others for their survival. Discuss what this shows us about ecosystems. Discuss what happens if we take one of these animals/plants out of the system – one person can let go all the strings in their hand. What does this tell us about the importance of sustainable use.

Activity: Food webs can also be demonstrated by displaying icons of a range of animals and plants. Members of the group come up and select an animal or plant and stick it somewhere on a large sheet of paper (flip chart). When they have stuck their animal/plant down they take a marker pen and connect the animal with an arrow to all the animals that might eat it. They also connect that animal with different coloured lines to all the other animals that it might eat. The “diagram” soon gets very complicated with arrows and lines. Discussion can centre around this complexity.

Activity: Food webs can also be demonstrated using a pyramid of cans. Get the group to build a pyramid of cans. Members of the group are given a selection of plants and animals and stick them on the cans – plants and algae on the bottom level of cans, primary consumers on the next level, secondary consumers on the third level, top carnivores on the top level and I usually put a picture of a man on the very top. The trainer then knocks off the top can (man) and the pyramid stays otherwise intact – man is the only dispensable component of the food chain. A member of the group comes up and knocks out a can on one of the other levels and the whole pyramid collapses.

There are many other lessons that can be devised around different activities that take place in MPAs, using these tools and participatory techniques. Examples of other lessons might be on Tourism, the Water Cycle, Impacts on Estuaries, Impacts of Waste and Pollution, Impacts on Rocky Shores or Sandy beaches.



Overhead 5.1B.1: What are the Basic Preparations a Trainer Should Make if He/She is Going to Communicate with a Group, Particularly in a Rural Setting?

What group? Identify the group you are going to be talking to. Levels of education and understanding vary greatly. Will you be talking to scientists/teachers/ fishermen/community leaders/ tourists/holiday makers/subsistence users? Prepare your talk/ communication session in the light of their likely interests and levels of understanding. It is a waste of time preparing a scientific paper to deliver to a group of subsistence fishers. Each user group is interested in different aspects of the coast, the resources or an MPA. The kind of information presented and the way it is presented vary greatly with the group.

How many? Identify as far as possible how many people will be attending your presentation. Knowing the size of the group you are going to be addressing can affect your style of delivery - it is easier to have a more participatory style if you have a smaller audience. It may also play a part in the preparation of the materials you use. With a smaller audience you can be more interactive with the materials you present. If the purpose of your presentation is some kind of workshop and you are planning to provide food at some stage, it helps greatly to know the catering requirements.

To determine group size you need to tell your target participants about the presentation, why you are giving the presentation, when it is to be held and where. Thus the preparation of a letter or flyer with a tear-off reply slip is an option to consider. However, this is generally not a practical option in rural communities.

Overhead 5.1B.2: How Do You Let Your Participants Know About Your Presentation?

- Word of mouth -Walk around the local community letting people know.
- Put up posters at meeting places
- Put flyers in peoples post boxes
- Write personal letters
- Advertise in the local newspaper
- Ask the local radio station to talk about the presentation
- Approach community members to tell other members of the community about the presentation
- Ask the chief or headman to inform the community

Overhead 5.1B.3: A List of What Has to Be Organised Before a Meeting or Workshop

- Finances - Record all income and expenditure
- Venue: What is available? Confirm bookings. Make sure you can get into a locked venue. It is useful to evaluate potential problems that might arise with a particular venue. For example I have had to interrupt training sessions because the noise made by rain on a corrugated iron roof made it impossible to hear anything. Leaks in the roof have also proved a problem.
- Food/catering
- Transport
- Participants
- Equipment - What do you need to take along? Trainers - Do you have enough people to help you?
- Translators - are they necessary?

Overhead 5.1B.4: Other Planning Issues

Needs awareness. It is critical to find out what the groups' language is going to be. You have to make your presentation in a language understood by all the members of your audience. Use a translator if necessary. Remember that the same presentation will basically be twice as long with a translator as without. Training materials must also be in a suitable language.

Literacy. Be aware of how well your group can read and write. This has a major impact on the kind of materials and training aids you use. One option is to use a volunteer to write for everyone - this avoids embarrassing individuals who do not read and write easily. Otherwise the trainer can concentrate the training material around picture and diagrams. You can get the group to draw rather than write. Clearly you need to know something about the group beforehand to allow you to bring along the correct materials

Group dynamics. In some cultures women will participate or offer opinions reluctantly if men are present. This may affect the focus of the material and the way interactive sessions or group discussions are facilitated. Men and women often have different perspectives (see PRA module).

Food requirements. In the rural settings people often leave home very early and travel considerable distances on foot to attend meetings and workshops. They require an early lunch break or something to eat mid-morning if a late lunch is planned.

Overhead 5.1B.5: How to Make Sure That Your Audience Learn As Much As Possible About Whatever It Is That You Want to Talk to Them About

Starting your oral presentation

- Welcome everybody. It is courteous to welcome everyone. You need to try and make people feel at ease. Nametags, icebreakers for workshops are other options.
- Introduce yourself. Explain the context of the presentation. Introduce the translators if they are present.
- Explain the rules, e.g. That the workshop requires participation and everyone has to participate. That anyone can ask questions any time etc. That cell phones should be switched off (not usually a problem in rural areas).
- Explain the agenda - written up on a flip chart or poster on the wall. Or else individual handouts.
- In the workshop situation it is a good idea to ask what peoples' expectations are. Write them up on the flip chart and pin to the wall.
- You should ask the members of a group to introduce themselves - names - organisations or communities - something interesting about themselves - why they are attending the presentation / workshop/etc. if you are running a workshop. There are a number of ways to do this in pairs where each pair member has to introduce the other and tell the rest of the group about the other person. Alternatively there are a number of games one can play that allow people to get to know each other. If the group is larger than about 20-25 this may take too long and should be abandoned.
- In the workshop situation it is important to have a register prepared for individuals to sign.
- In the workshop situation plan something interesting after lunch - people get sleepy then.

Overhead 5.1B.6: Training Techniques—Ways to Explore Issues That Are of Concern in an MPA

These techniques should be practised as participatory exercises with the group.

Create your own story: Create your own story by arranging the icons or pictures on a poster of your choice to represent a situation found along the coast. This can be used to demonstrate general coastal concepts or to demonstrate a scene specific to a particular MPA or coastal area or any issue that has arisen. This can be used as a basis for discussion and the trainer and the group can add or remove icons to bring the story alive.

Exploring icons: Display a range of pictures or icons and ask each member of the group to choose an icon or picture that they know something about. This might be information or an observation about the picture e.g. they might have seen a whale offshore or the effect of vehicles on the beach or something they might catch or eat. Members of the group can then share their knowledge or experience with the rest of the group and place the picture on one of the coastal posters. This exercise can be used to introduce members of the group to coastal topics to allow the group to explore and feel comfortable using pictures as tools to express their experiences and their knowledge about the coast. It can be used as a basis for discussion about issues relevant to an MPA.

Putting things right: A variety of icons or pictures can be displayed in the wrong place on a poster. Ask the group to think about and correct the scene. They are then asked to discuss the changes they have made.

Grouping icons or pictures: Display a wide range of different icons and ask the group to place together icons that are similar in some way, e.g., "which of these animals do people eat?" Discussion can be led to issues of sustainability. Or: Find 5 pictures that show an activity that is harmful to the environment. Which pictures show people benefiting from the coast. Which icons show things that would not be good for tourism. Which icons show things that would be naturally washed up on a beach and which ones constitute pollution. Discussions can be focused on issues relevant to an MPA.

Improve the picture: Display icons on a poster that display a bad coastal scene. The group must discuss what they think is wrong and add or remove icons to put it right. Discussions can be linked to activities in an MPA.

Information: Ask the group or a member of the group to select a picture that they would like to know more about. Explore their knowledge and add to it. Relate the discussion to issues in an MPA.

Odd icon/picture out: Display a number of icons that are similar in some way. Place an icon among them that does not fit. Ask the group to choose the odd one out and explain why. There may be more than one right answer, e.g. fish, mussel, lobster, penguin, old motorcar tyre, octopus.

Training Session 5.2: Written Communication

Part A—Print Media

Objective

How to produce effective written publicity materials that successfully put over your important messages to the audience that you are targeting.

Significance

Publicity materials are important to advertise you, your work, and your organisation. Without the 'oxygen' of publicity, your projects can have little or no impact.

Presentation

Plenary presentation and a workshop on publicity material preparation.

Duration: Approximately 40 minutes for the presentation and 60 minutes for the task.

Equipment and Materials: Overhead projector
Overheads
Overhead notes pages
Flip chart paper and stand
Marker pens
Examples of logos, newsletters, brochures and posters (see notes for details)

Process

1. This, the second session of the module, is opened by a presentation providing background on the types of written communication. The material is not complex and again the presentation should be fairly light-hearted and fun.
2. Run through the presentation using the overheads and have the examples of logos, reports and posters sorted out in front of you.
3. Start by highlighting the value of written publicity to any organisation and ask the participants to provide explanation on why so many organisations spend so much on their public face? Also explain why public support is essential for Government, Private and NGO sectors and the obligations to inform, raise awareness and educate.
4. Take participants through different logos of different organizations, examples of press releases, newsletters, brochures, and posters. Discuss with them on the content, layout, use of photographs, and quality of outputs.
5. Following the presentation ask if there are any points of clarification or questions.
6. Break the participants into groups of 4 or 5 and spend the next 60 minutes working on production of publicity materials.
7. Afterwards each group should present the results and look for good and bad points. Do not try and score or mark the outputs.

Background

Written communication like oral communication is vital to day to day operations of MPAs. Written communication includes all those materials that are written and transmitted in the written format. This encompasses brochures, posters, press releases, booklets, reports, minutes and manuals.

With their concise format and visual impact, written communication can help disseminate clear, concise and consistent messages about MPAs to a large number of people. Written communication could be used for different purposes including:

- Raising public awareness of the environmental problems and proposed strategies to address them
- During the process of initiating a MPA, when members of the public may have a limited information on it.
- Informing stakeholders of achievements made by your MPA as well as economic opportunities it offers.

Below are the essentials of effective written communication (Lemey and Hale, 1987):

- Since they are targeting a broad audience or the general public, technical details should be kept to a minimum.
- The emphasis should be on simple and concise messages introducing people to topical issue or process or programme.
- The format is designed to attract attention and provide visibility for the issue, process or programme being introduced.

Among several forms of written communication, this session will cover: press releases, newsletters, brochures, posters and displays.

Overhead 5.2A.1: Objective

How to produce effective written publicity materials that successfully put over your important messages to the audience that you are targeting.

Significance: Publicity materials are important to advertise you, your work, and your organisation. Without the 'Oxygen' of publicity, your projects can have little or no impact.

Overhead 5.2A.2: Key Points

- Remember that publicity is an investment and it does pay!
- Modern publicity demands investment in equipment, materials and printing costs. Budget accordingly.
- Publicity is your public face and hence people will judge you by it. It is therefore important that it is:
 - Accurate
 - Honest
 - Professional
 - Interesting
 - Generally positive rather than negative.

There are various types of written publicity for a variety of audiences so choose your publicity accordingly.

Overhead 5.2A.3: Types of Written Publicity

- Press releases
- Logos
- Newsletters
- Brochures
- Posters
- Displays

Overhead 5.2A.4 Press Releases

A well-rehearsed format:

- Press release and embargo date in bold and caps on the top of the page.
- Headline in bold caps.
- First summary sentence in bold.
- Body of text 3-4 paragraphs.
- Include a quote from CX or project leader, telling how excellent the news is and any other key message.
- Author and further details contact information.

Overhead 5.2A.5: Press Release Tips

- Produce a regular supply of articles
 - Try and get a weekly/monthly feature.
- Be brief and to the point
 - Try and keep to 1 A4 page or however many words the editor wants.
- Do not take advantage of the opportunity to do anybody down unless that is the issue.
- Always have the time for a journalist but be careful what you say, even off the record.

Overhead 5.2A.6: Logos

- Logos instantly identify you and your organisation or group.
- They reflect your identity:
 - Dependable but dull (government ministries and 'conservative' organisations).
 - Abstract but memorable (preferred by many large, global organisations).
 - 'Snazzy' but lightweight (advertising, inventive, showy organisations).
 - Crude but simple (local/new NGOs).
- Inspect and understand a wide range of logos of relevant organisations.
 - What are the key elements?
 - What is the message?
 - What does it tell you about the organisation?
- Trial your design.
- Think about the number of colours and printing expense.
- Check how well it reduces and enlarges.

Overhead 5.2A.7: Newsletters

- Give the newsletter an easy to remember name.
- Make it interesting, newsy, attractive with newspaper layout:
 - use 2 or 3 columns/A4 sheet
 - use headlines—Make them catchy (use puns).
 - use pictures and graphics to help tell stories.
 - use 'constants', e.g. Headers and footers.
- Provide periodic updates of your work including:
 - editorial
 - news of projects and people (staff)
 - useful information.
 - special feature stories.
 - diary of events.
 - magazine articles/columns.

Overhead 5.2A.8: Brochures

- One-off publications providing information on a project, fund-raising or a success story.
- Layout must catch the eye and make it quickly digestible:
 - Pictures tell the story better than words.
 - Keep an uncluttered style with careful selection and limited number of fonts.
 - Make sure your identity (logo) and contact details are repeated in the front and back and are clear.

Overhead 5.2A.9: Posters

- A3 or larger display of your work, project or organisation.
- Layout must make it quickly digestible.
- Pictures, graphs and diagrams tell the story better than words.
- Keep an uncluttered style.
- Tell a story.
- Make sure your contact details, logo and organisation information plus strap line are on the bottom.

Overhead 5.2A.10: Display

- A collection of posters plus 'give-aways' and things to feel, read, smell, listen to and watch, i.e. Things for all the senses.
- Strong layout designed to pull passing crowds
- Pictures, graphs and diagrams tell the story better than words.
- Keep an uncluttered style.
- Tell a story.
- Make sure your contact details, logo and short organisation information plus strap line are at the bottom

Overhead 5.2A.11: Equipment and Materials

- Computer packages to design publicity materials (use whatever your preferred printing firm uses)
 - *MS Publisher* is easy to use and good for brochures.
 - *CorelDraw* for logos, brochures (memory intensive and not easy).
 - *Adobe PageMaker*—Industry standard for newsletters, etc.
- Scanner for loading images into publicity materials.
- Laminator for poster displays.
- Tips
 - Get an artist to do lots of drawings and scan them in as a clip art collection.
 - Build up a slide library.
 - Check out what others do and 'borrow' good ideas.

Overhead 5.2A.12: Summary

- What you produce is how you are measured.
- Use various types of media for various audiences.
- Publicity is essential if you wish to educate or advocate.
- Publicity is very powerful if the media find your message interesting.
- Use the media to help your cause or campaign, to resolve problems or to gain popular support.

Task 5.2A: Publicity Materials

Directions: This is quite light hearted but imaginative work. Use some examples of brochures as models and permit cribbing of ideas or design elements. The timetable is a guide and allows for a lot of flexibility depending on time.

Task Overhead 5.2A.1: Objective

For each group (of 4 or 5) to produce a brochure including a new logo, which are then discussed, improved and presented. Subject should be based on Malindi National Park.

Significance: All these skills need practice and an open, participatory approach to their production if they are to be high quality and agreed by key organisation members.

Task Overhead 5.2A.2: Task Structure

- 0-10 Introduction and decision time (what sort of brochure and logo are we going to prepare?).
- 10-60 Material preparation
- 60-80 Presentation of material and comments
- 80-90 Review of key points and wrap-up.

Training Session 5.2: Written Communication

Part B—Report Writing

Objective

How to produce a high quality report that describes your project activities.

Significance

Report writing is one of four essential skills that a manager of MPA should possess (the others are project design, data collection and data analysis).

Presentation

Plenary presentation followed by a workshop on Publicity Material preparation

Duration: Approximately 40 minutes for the presentation

Equipment and Materials: Overhead projector
Overheads
Overhead notes pages
Flip chart paper and stand
Marker pens
Examples of reports (see notes for details)

Process:

1. This is a presentation providing background on how to write a report. It is more technical and complex so it is consequently a different, more serious tone.
2. Run through the presentation using the overheads and have as examples of different types of technical reports.
3. Start by asking why so many reports that are produced end up on office shelves.
4. On the report structure—illustrate this with a good quality journal—highlighting the section headings for a number of papers or circulate some instructions to authors pages found at the back of most journals—these usually say to check format by reference to published papers in the journal. Talk about the peer review system.

Background

There are different types and styles of technical reports, however they have one key function, i.e. to convey from the author to the reader some conclusions and/or recommendations based on facts or circumstances that have been investigated.

MPAs or other technical staff may have to prepare and submit technical reports on key results on some aspects from their MPAs to either a funding agency or a conference. This provides an opportunity for disseminating information about your MPA to a specific target group namely funding agencies as well as scientific community. Reports could cover different aspects including: the results of monitoring programme of environmental and socioeconomic parameters and the effectiveness of the zoning scheme in enhancing fisheries stocks.

Articles for a conference or submission to a journal normally undergo peer review process and if published then one is assured of their scientific quality.

Case Study 5.3: Communication and Public Relations in the Goukamma Nature and Marine Reserve, South Africa

Different means of communication are being used to publicise the activities of the Goukamma Nature and Marine Reserve. These include:

- **Logo.** A logo was chosen that reflects the terrestrial and marine makeup of the combined reserves; the Cape clawless otter does reflect that. This logo is used in all media publications and on signboards.
- **The Edge.** The local newspaper *The Edge* is produced bi-weekly and has a whole page dedicated to conservation news. Goukamma ensures that this page is always full of interesting facts, stories, and advertises of the upcoming events.
- **Media Release.** Media releases are used when specific information has to be clarified to the public. The media releases are usually distributed by the head office as the Reserve officials are not permitted to comment on policy matters.
- **Displays.** The Information Centre at the Goukamma displays various items including artefacts, osteological specimens, preserved specimens, and photographs. Some of the display boards have been designed and constructed by Reserve staff and students. Most of the outdoor display boards have been sponsored by large national and international companies. The average cost of one of these boards, including artwork, framework and erection is about \$ 1000.
- **Scientific Symposia and Conferences.** The Reserve on different occasions has prepared posters for presentation to the scientific symposia and conferences. A poster is designed with pictures, drawings, diagrams, etc., with a reasonable amount of wording to get the message across.
- **Radio and Television Programmes.** The Reserve has produced several 20-minute programmes on national TV. The programmes produced and screened include: *Oystercatcher Conservation Programme*, *Alien Fish Species Illegal Introductions in the Lake System*, and *Rare Butterfly Species*. Local radio stations make announcements of special events affecting the local population such as the closing of certain fishing areas.

Overhead 5.2B.1: Objective

How to produce a high quality report that describes your project activities.

Significance: Report writing is one of four essential skills that a scientist must possess (the others are project design, data collection and data analysis).

Overhead 5.2B.2: Key Points

- Reports provide the means of describing your project activities.
- Clear layout and neat structure.
- Language is as 'tight' as, and structure is similar to, a scientific paper.
 - Structure is essentially introduction, methods, results and conclusions but with important 'add-ons'.
- Can 'box' important issues and use photographs to illustrate the work, the study area or the team.
 - i.e. use newsletter layout techniques.
- Use a computer package (*MS Word* is the standard) to produce professional reports.

Overhead 5.2B.3: Report (and Technical Paper) Structure

- Cover
- Introductory sessions
 - This the question that I wanted to answer...
- Table of contents.
- Executive summary.
- Background and introduction.
- Study area (map).
- Methods
 - I measured this by...
- Results
 - I recorded these data...
- Discussion or conclusions
 - My results in the context of the relevant literature are...
- References and annexes
 - Data, budget, team members, sponsors, contact details.

Overhead 5.2B.4 Cover

- Make it eye-catching.
 - Use colour, spiral bound with plastic covers
- Create a clear structure:
 - Title
 - Authors
 - Adresses and contact details
- Use a corporate or consistent style.

Continued

Introductory sections

- Make it part of a series and provide recommended reference.
- ISBN?
- Provide all information necessary to outline the aims of the project.
- Generate good quality maps—scan them or use a computer package (*ArcView*, *MapMaker*, etc.).

Overhead 5.2B.5: Methods and Results

Provide other workers with all the information to repeat what you did.

- Describe how and when you collected your data
 - The dates, the routine
 - The equipment, the human resources
 - The measures, the species identification.
- How you analysed the data (what statistics you used and perhaps what specialist programmes).

Results

- Produce tables of key data
- Produce results showing significant results from correlation or experimental analysis
- Use statistics to show level of significance
- Use of graphs to show important relationships.

Overhead 5.2B.6 Discussion/Conclusions

- Discuss your results in light of the significance of the observations, correlations or experiments
- Discuss your results in light of other published work
- Discuss the need for further work
- Discuss the significance for conservation, policy or whatever issue you were addressing.

References and Annexes

- Use standard conventions for references from preferred journal.
- Use computer reference package (e.g. *EndNote*)
- Provide all original data
- Provide income and expenditure details for project
- Provide list of sponsors if relevant
- Provide detailed contact information or further information.

Overhead 5.2B.7: Summary

- It is essential to produce useful outputs from work (Contract will often specify report as main result).
- Report structure is well-rehearsed
- Computers make reporting easy
- Use a binding machine with hard covers for a professional finish
- What you say is ultimately more important than how you say it but presentation is important if it is to be read and taken seriously.

Training Session 5.3: Effective Communication in Participatory Processes

Objective

To understand the role of communication in participatory processes.

Significance

Participatory processes are premised on the transfer and sharing of knowledge and information between and among stakeholders and management partners. Communication is the mechanism for this transfer, and effective facilitation of participatory processes requires a range of communication skills and techniques.

Presentation

Plenary presentation

Duration: Approximately 40 minutes and depending on availability of time 60 minutes for the task

Equipment and Materials: Overhead projector
Overheads
Overhead notes pages
Flip chart paper and stand
Marker pens

Process:

1. This session has been adopted from the UNEP-CEP Training of Trainers Course in Marine Protected Area Management. Begin the session with an exercise to demonstrate the importance of shared meaning/ vision. Ask participants to write down a word or phrase that they associate with each of three or four pre-selected words. Each participant should share her/his list with the group.
2. Lead the group in an examination of the extent to which meaning is shared within the group and the potential pitfalls of the absence of shared meaning.
3. This discussion can be used to lead into a discussion on the importance of and requirements for effective communication.
4. Break the group up into five smaller groups. Describe the following scene – you are all part of a community living on the coast. One group owns a local store. One group takes tourists out to sea to fish and to look at dolphins and seals and the scenery. One group catches fish for a living. One group owns a number of bungalows that they rent out to tourists. One group are fisheries managers. Depending on the size of the group people can be fishers, tour guides, bungalow owners, or fisheries managers.
5. Afterwards each group should present its results

Background

Effective communication is vital to successful implementation of the participatory processes. Participatory processes are premised on the transfer and sharing of knowledge and information between and among stakeholders and management partners. Each party brings a different knowledge base (scientific, popular/ traditional) to the intervention and each requires specific information to effectively fulfil its role. The planning phase of project development serves several purposes, these include identifying and negotiating project objectives and anticipated outcomes, building consensus and support for the intervention, and gathering data about the resource and its uses and users. At the centre of all of these activities is an exchange of knowledge and information.

Task 5.3: Conflict Resolution

There are serious rifts in the community between the fishers, the fisheries manager, the tourism operators and the business sector. The fishers say the tourists are catching all the fish. The fishers also do not like the seals because they eat a lot of fish and damage their nets but the seals are encouraged by the tour guides, because tourists like to see them. The shop owner and the bungalow owner are gaining income from the tourists in the tourist season. The bungalow owner has no customers out of season but buys a lot of things from the shop in the tourist season. The shop owner relies on the local fishers to buy things from his shop when there are no tourists. If the fishers do not catch fish then they will have no money to spend and he will lose out because the tourist season is only three months a year. But the tourist season is very profitable and if tourists don't come then he will also lose out. If the tourists don't come the bungalow owner will go out of business. If the fishers don't catch anything then they will not be able to feed their families and they also will not have money to spend in the shop. The fisheries manager has scientific data that tells him that the fish resources are over-exploited.

Based on all that you have learned in the lessons on Participatory Processes, Communication, and Conflict Resolution, describe the steps the group as a community will take to resolve the problems troubling the community.

Case Study 5.4: The Sokhulu subsistence mussel harvesting project—a case study for fisheries co-management in South Africa¹

—P.J. Fielding (fieldwork@mweb.co.za)

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The intertidal brown mussel (*Perna perna*) is heavily exploited along the east coast of South Africa by both recreational and subsistence gatherers. Prior to the promulgation of new fishing legislation in 1998, mussel use in the province of KwaZulu-Natal was controlled by a licensing system that specified a bag-limit and a standard collecting tool. These laws catered for the requirements of recreational collectors, but were unacceptable to subsistence gatherers who rely on the harvest of larger quantities to feed their families. Traditional methods and quantities of mussel harvesting by subsistence gatherers were illegal, and their ongoing attempts to harvest were dealt with by active law enforcement. Access to the resource has thus been a source of conflict between subsistence gatherers, licensed recreational gatherers, and the management agency (Ezemvelo KwaZulu-Natal Wildlife).

In the early 1990s rock-stripping was reported along the shores alongside the Maphelane Nature Reserve, and violent clashes occurred between enforcement staff and illegal subsistence harvesters from the adjacent Sokhulu community. To address these problems, the Sokhulu mussel project was initiated in 1995. It aimed to investigate the extent and impact of subsistence harvesting, to provide subsistence gatherers with legal access to a traditional resource, to undertake an assessment of sustainable levels of subsistence harvesting, and to facilitate the establishment of a system of co-management.

A local co-management structure was established and community monitors were appointed to regulate the harvesting. At first, community members were very doubtful of the intentions and sincerity of the management authority, because of the history of conflict between the two. Some of the first activities were aimed at sharing information and generating an understanding between the EKZN Wildlife staff and the Sokhulu harvesters, including a Participatory Rural Appraisal workshop. An integral part of this project was a large-scale participative experiment, which involved harvesters directly in determining the sustainable harvest levels and appropriate tools to use for collecting mussels. A key issue was the communication of the results of the experiments to the community in a pictorial format that they could understand. The project has resulted in subsistence fishers gaining legal access to a preferred stretch of coast, where an exclusive subsistence mussel use zone was established. This departed significantly from the pattern of traditional harvesting, which was rotational and sporadic by area. The Co-management Committee now oversees harvesting; identifies *bona fide* subsistence collectors, issues individual household permits, and specifies collecting tools, harvesting days and the number of bags of mussels available per month. Minutes have been kept for every meeting of the Joint Committee and serve as a record of decisions taken. All Sokhulu committee representatives, with one exception, have been women, and an issue has been their shyness to talk up at meetings and to assume a leadership role.

continued

For the authority, EKZN Wildlife, co-management had the potential to (a) address unsustainable harvesting practices; (b) improve relationships with the community by providing them with access to the resource (which also opened other opportunities for interactions with the community); (c) reduce poaching; (d) diminish the need for law enforcement, which was costly, difficult and a losing battle.

The mussel harvesters at Sokhulu stood to gain (a) legal access to the resource; (b) an injection of funds, resources, training courses and logistic support with arrival of the project; (c) access to information about policy and legislative developments; (d) participation in decision-making about their resource use; (e) beneficial spin-offs including development and capacity-building opportunities, literacy training and trips to other areas; (f) employment of community monitors. Perhaps the most important incentive for the subsistence harvesters to participate and co-operate was the opportunity to gain legal access to the mussels.

A key feature of this project has been information-sharing to ensure that both traditional and scientific knowledge were incorporated in the management system development process. Capacity-building to ensure that subsistence gatherers are equipped to engage confidently in debates and decision-making with the authority was an additional focus. The ultimate result of these activities has included: an increase in the capability of resource users to participate in management decisions, a more sustainable harvest, an organised local structure and the development of agreed, and enforceable rules.

At the start of the co-management project the use of a broad bladed bush knife to harvest mussels was a point of disagreement between the harvesters and EKZN Wildlife. This was resolved after a joint experiment in which three different tools were tested by the harvesters for efficiency (time to collect 100 mussels) and for bycatch (small mussels dislodged). The outcome was that although it takes longer to collect mussels using a screwdriver (the recreational legal tool), the bush-knife (preferred by the harvesters) dislodged far more small mussels relative to the number of edible-sized mussels collected. Communication of this result to the community was achieved by translating the scientific findings into an understandable pictorial form illustrating the need for appropriate means of communication. A unanimous decision by the committee was taken to use only the screwdriver in the subsistence zone. A deciding consideration voiced by them was that since collecting would now be legal, and could take place during the day rather than covertly at night, the speed of collection would not be a limiting factor. Further, when the results of the joint experiment to determine sustainable offtake levels clearly indicated that high levels of harvest were detrimental to recruitment, the committee voluntarily decided to reduce harvest levels and later to close some areas altogether to harvesting. A key mechanism that has been employed to overcome impasse or conflict situations has been to jointly conduct studies to collect information to determine the best course of action.

Provision of the harvesters with the scientific information they need to understand and participate in decisions about resource-use has been a focus of this project. The principle has been that the harvesters need to be involved in all research and monitoring so that the scientific results form part of the total common knowledge shared by the authority, researchers and harvesters. To achieve this, two methods were employed. First, harvesters were involved in participatory experiments in which they could see the results for themselves. Second, effort was put into explaining the principles of the experiments and interpreting the results in a creative way, involving models, diagrams and role-playing scenarios. Thirdly, formal training courses on intertidal foodwebs and basic fisheries management were run for the Sokhulu Joint-Committee members, the harvesters, the monitors and the children. As a result, general knowledge about the biology of mussels and the principles of sustainable use became quite high amongst the committee members and monitors.

One of the spin-offs of the mussel co-management project is that the community is now participating in a mussel-reseeding project. This involves retaining the undersized mussels that would otherwise have been discarded, and 'planting' them on the shore beneath sleeves of plastic mesh that are attached to the rocks with screws. The mussels soon re-attach themselves to the rock face and the sleeve can then be removed, leaving the mussels to continue growing to a size at which they can be harvested. There are two potential benefits from this activity: 1) enhancement of yield in that small mussels are saved for later use, and 2) rehabilitation of over-harvested areas by deployment of mussels on which settlement can occur, given that recruitment is largely onto mussels themselves.

Overhead 5.3.1: Objective

To understand the role of communication in participatory processes.

Significance: Effective communication is vital to successful implementation of the participatory processes. It ensures that all the voices are heard, valued and all the messages are understood.

Overhead 5.3.2: Rationale for Effective Communication

Within the context of participatory approaches to MPA management, effective communication can:

- Encourage participation
- Provide a mechanism for the articulation of concerns
- Help integrate communities into management
- Play a critical role in identifying issues
- Establish credibility and build widespread support for specific initiatives
- Focus attention on a participatory process
- Make data and information accessible.

Overhead 5.3.3: Requirements of Effective Communication

- Be targeted at specific audiences
- Use language and symbols that are commonly understood and accepted
- Use media appropriate to the target audience, and which relate to their ability to understand
- Use media appropriate to different messages.
- Be inclusive rather than exclusive.
- Be sensitive to gender, cultural and religious issues.

Training Session 5.4: 'The 4-P Workshop'

Objective

Produce a mutually agreed comprehensive communications campaign plan to meet the desired communications objectives of a conservation project.

Significance

An agreed framework provides the basis for effective and coordinated communication of all aspects of the project both good and bad.

Presentation

All day workshop with a variety of plenary and group activities.

Duration: Each component takes up 90 minutes or so and can be run between start and coffee, coffee and lunch etc.

Equipment and Materials: Overhead projector
Overheads
Overhead notes pages
Flip chart paper and stand
Marker pens
Cue cards
'Blu-Tak' or masking tape

Process:

1. This is a complex series of activities, but the reference book and overheads provide a clear guide.
2. The workshop has been designed for projects (as Conservation International intended) not as a training day. However, it does adapt well, except that care must be taken in choosing an Issue/ Problem that is not necessarily a burning priority for even a majority but a subject that all students can work on. This inevitably makes the Issue/ Problem general or regional in nature but this is no great setback.
3. As a rule brainstorming are plenary activities and the remainder are group activities.
4. Run the presentation.
5. At the end of the workshop show the booklet.
6. Provide a copy of the presentation as a handout.
7. Undertake a module evaluation.

Background

Early 1990s Conservation International (CI), a nongovernmental organisation based in USA and its International Communications Program was challenged to come up with innovative ways that would inspire people to change their behavior in favour of conservation and a healthy environment. To respond to this challenge, CI developed a tool for designing comprehensive and well defined conservation awareness strategies, called the '4-P Workshop' (4P for Problems, Publics, Products, and Plan).

The 4-P Workshop involves bringing together people from different disciplines to discuss and create a communication strategy specific to an area. More specifically, the Workshop includes the following steps:

- analysis of the environmental challenges threatening a particular ecosystem or protected area
- identification of the objectives of the strategy
- studies of different audiences and stakeholders
- selection of the most appropriate communication tools to reach the priority publics
- compilation of the above information into an action plan

The 4-P Workshop has been used in different protected areas to develop communication strategies. These include: Abrolhos Marine Park (Brazil); Kakum National Park (Ghana) and Marahoue National Park (Ivory Coast).

Overhead 5.4.1: Designing Communications Strategies for Conservation Projects

'The 4-P Workshop'

©Conservation International (1999)

Overhead 5.4.2: Designing Communications Strategies for Conservation Projects

Objective: produce mutually agreed comprehensive communications campaign plan to meet the required communications objectives of a conservation project.

Significance: An agreed framework provides the basis for effective and coordinated communication of all aspects of the project both good and bad.

Overhead 5.4.3: Background—Conservation International and the 4-P Workshop

- Conservation International (CI) is an American NGO, with projects based principally in world biodiversity hotspots (areas with the richest concentrations of endemic species).
- CI designed the 4-P Workshop by merging advertising agency techniques with workshop methods.

Trainer's Note on Overheads 5.4.1–3

Provides a background and context for the day

Overhead 5.4.4: Introducing 'The 4-Ps'

- Projects, problems or issues
 - What do we communicate?
- Publics
 - To whom do we communicate?
- Products
 - How do we communicate?
- Plan
 - The integration of the what, the to whom and the how within a time frame.

Trainer's Note on Overhead 5.4.4

- Again the workshop is a logical sequence of activities that integrate to create the output. Reiterate this.
- It is a highly participatory process, requiring one to use communication and negotiation skills and talk about all the types of communication products discussed the day before.

When students appreciate the structure of the module they relax and really take on board the benefits.

Overhead 5.4.5: What Do We Communicate?

- What are the issues facing MPAs in the western Indian Ocean?
 - Presentations from each participant plus Q&A.
 - Examples might include local issues (e.g. resource use conflicts) or larger-scale issues such as coral bleaching or sea-level rise or communication problems such as a lack of awareness of MPAs locally, nationally or in the region.

Overhead 5.4.6: What Do We Communicate?

- Selection of the key projects, problems or issues
 - Brainstorm (based on presentations) list of 3 issues on cards and post them.
 - Regroup the cards into themes.
 - Identify and prioritise problems or issues.
 - Agree on the overall objective of the communications plan.

Trainer's Note on Overheads 5.4.5–6

- The presentations undertaken the day before mean that this discussion of the issues has been done already.
- Follow this by distributing cards to participants and ask them to write down their 3 most important issues or problems. (give 15 minutes for this).
- These then are posted by participants on a wall with blu-tak/masking tape.
- The facilitator then groups them into themes seeking advice at all stages from participants.
- The facilitator might prepare coloured cards to highlight the themes that emerge on the wall.
- The choice of issue or problem is then agreed by all.
- Post the issue on the wall next to the cards and highlight that this is the first P completed.

The whole session should take around 60 minutes bearing in mind there is no need for the 60 minutes of presentations

Overhead 5.4.7: To Whom Do We Communicate?

- Identify targeted publics or audiences
 - Brainstorm a list of potential publics.
 - If useful, organise publics by geographical scope (local or island, national, regional, international).
 - Prioritise and identify key target publics—List the top 3 or 4 publics for each geographical area.

Trainer's Note on Overhead 5.4.7

- 'Publics' is a strange term so explain again what it means.
- Plenary brainstorm of publics, using the flip chart to write them all up.
- Use the list provided in the booklet as a crib sheet.
- With another colour, then mark which of them local, national and international.

continued

Trainer's Note on Overhead 5.4.7 continued

- 3 lists then need preparing for the different geographical areas – use 3 participants to prepare these and ask the rest to help.
- Prioritisation is done by each participant listing their top three Publics for each geographical area (give 5–10 minutes for this).
- Then simply call out each Public on the list and ask participants to raise their hands and put the mark for each on the flip chart paper.
- The result is a list of Priority Publics.
- Post these results next to the Problem or first P.
- Break for mid-morning coffee/tea.

Overhead 5.4.8: To Whom Do We Communicate?

- Characterise target public profiles (up to 3 per group)
 - *Who am I?*
- Details of individual life style, occupation, income, philosophy, outlook or corporate body characteristics
 - *What do you want me to do?*
- To become aware of or understand, to seek and apply, to respect...
 - *What is in it for me?*
- What are the benefits if I agree with the message?

Trainer's Note on Overhead 5.4.8

- This is the first group session— divide participants into groups of 4 or 5 by counting them off.
- Give each group 1 or 2 of the Priority Publics to analyse depending on time— allow around 30–40 minutes per public profile.
- Ask them to produce the results of their analysis on flip chart paper and to nominate a rapporteur to briefly explain the results.
- These profiles should then be posted next to the Priority Publics and the second P is then completed.

Break for Lunch.

Overhead 5.4.9: How Do We Communicate?

- Selecting products to reach target publics
 - Brainstorm a list of potential products or activities
 - Classify the key products or activities that are most important to reach the target publics
- Identify the key messages to sensitise the target publics
 - List the key messages and choose the best

Trainer's Note on Overhead 5.4.9

- Another whole group brainstorm on the range of products
- Again a useful crib list can be found in the booklet
- Simply write up on flip chart the types of media that exist
- This process takes 20–30 minutes and is easy after lunch activity
- Then return back into same groups as before
- Try to match the products to the target publics and work out the key messages—

continued

Trainer's Note on Overhead 5.4.9 continued

again write the questions and answers on flip chart paper. Allow up to 30–40 minutes per public.

This is more complex activity. Make sure that you, the facilitator, visit all the groups and give them ideas and keep them on track by completing all 3 questions.

- Ask one of the group to briefly explain the results in turn and post them afterwards
- Keep it light-hearted but comment on the non-obvious things emerging especially the differences between types of public and their associated media.
- This is the first time that the participants can see what the fuss is all about and they start to appreciate the method. Sign off the 3rd P.

Overhead 5.4.10: How Do We Integrate the What, the To Whom and the How?

- Build a campaign strategy or plan
 - The strategy is a timeline of products and activities designed to reach the priority publics in identified locations by organisations to achieve desired objectives.
- Come up with a campaign slogan!

Date	Product/activity	Public	Objective	Location	Lead Organisation

Overhead 5.4.12: Present the Plan

- Each group presents their plan
- Finally identify the common themes and priority actions

Trainer's Note on Overheads 5.4.10–12

The last P is the **Plan**. Same group format but divide into only 2 groups with half of each of the previous groups in each so that representation is complete. Give 45–60 minutes for this and again offer help to each group if needs be but because the groups are larger this is hopefully not necessary.

Make sure each comes up with a slogan.

Same format as before, of flip chart paper to write out a draft Plan of activities and a rapporteur to run through the results.

Make sure that each presentation gets a big round of applause.

Highlight the initiatives and compare the two plans.

Thank everybody for his or her input.

MODULE 6

Administration and Management

AUTHOR: SARAH HUMPHREY

Objective

To provide the MPA manager with an overview of the personnel and office management tasks associated with the administration of a marine protected area.

Summary of Training Sessions

Module 6 contains two brief training sessions, with the following aims

6.1: Human Resource Management

To familiarise the MPA manager with the range of administrative tasks associated with the identification, selection and appointment of the various technical and support staff who will carry through the management objectives of the marine protected area.

6.2: Office Operations

To identify the role of the MPA office in the wider MPA management framework.

Background and Sequence of Module

This module is concerned with the logistical side of marine protected area management—with the human resources and administration systems that are needed to implement the management plan and to ensure that management activities are carried out in an efficient and effective manner.

Session 6.1 will show how the often long-term and far-reaching management goals can be broken down into a series of more practical objectives with associated actions which are carried out by individual staff members working as part of a team. These form the basis for developing individual goals and work plans, and drawing up job descriptions and specifications for the recruitment of personnel who will carry out specific activities. Examples are drawn from 'Coral Marine Park'. The session includes several short discussion points and a group exercise on interviewing.

Session 6.2 comprises mainly of a brief presentation of the MPA office and of the management structure, which is illustrated using an organogram. Participants will be asked to prepare organograms for an MPA with which they are familiar. The session concludes with a case study and time for questions.

A note to the instructor on case studies: Because of the large amount of information to be presented, Module 6 will involve a number of brief lectures using overheads, several individual and group tasks and discussions, and some brief case studies. Try to stimulate discussions and sharing of experience which have proved a particularly useful element in this module.

- A flipchart could be used if an overhead projector is not available (in which case the suggested text should be simplified, and filled out by the talk).
- Remind the participants that the overheads will be available as handouts in order to avoid them trying to copy everything down (rather than listening to what you are saying!).

Trainer's Note: Use of Case Studies

Upon presenting general management theory under each sub-heading, as an option, the instructor may decide to abbreviate/remove the group tasks under each. In their place, the instructor may choose one or two general management case studies that will serve to illustrate the application of the various concepts presented by the instructor and stimulate broad discussion among the participants. A pre-conference survey of the participants on needs/preference regarding management issues to be covered will also aid the instructor in focusing on the most relevant issues to be covered through a selected case study.

Cases present situations where participants face difficult questions on management challenges. The instructor's role is to structure the discussions by asking questions and to shape it so that there is a high quality of analysis. A good, lead question on the case should serve to stimulate discussion and points of view.

Remember, if the audience can be broken into groups of 5 to 7, they love to do case studies and then report to the whole class how they chose to solve the problem. Just because there is only one day for a big, general topic, don't make the BIG mistake of trying to cram too much material into it. Cut it down to some central lessons and build audience participation through a case study around it. The participants will love it and the instructor for not boring them to death, they will remember what is in it and later apply it, and it will be much easier for the instructor than lecturing all day.

The following web-based, management case-study resources are available, most for a per-copy fee. These cases cover a broad spectrum of management concepts and are excellent accounts of real-life situations that can help the instructor to exemplify and illuminate theory. A few of the sites have a download option while others ship the material to you, so some lead-time planning is required prior to delivery of the training.

References and Additional Reading Material

- Foster, N. and Lemay, M.H. 1989. Managing marine protected areas: An action plan. Department of State Publication 9673, US Man and Biosphere Programme.
- Bird, P. 1998. Performance appraisals. Hodder and Stroughton Ltd, London, UK.
- Greenwood, D. 1996. Taking on staff: How to recruit the right people for the job. Business Basics Series. How to Books, Plymouth, UK.
- Taylor, G. 1996. Managing recruitment and selection. Directory of Social Change, London, UK.

A wide range of basic texts on human resources management and office operations may be useful including those designed for individuals pursuing basic professional qualifications in this area, and perhaps especially those for small businesses.

There is a vast amount of material on the Internet about human resources management but much of this is rather academic, or aimed at professionals working in large companies. One useful site, which gives some practical details on recruitment and staff motivation is: <http://www.toolkit.cch.com/text/p05-0000.asp>

Case Study Web Sites

- The Harvard cases are boiled down to essentials and the short punchy articles are matched with the cases. At these sites, you can search for cases, and for a small fee, download and print them out.
<http://www.ksgcase.harvard.edu/case.htm?PID=805>
http://harvardbusinessonline.hbsp.harvard.edu/b02/en/cases/cases_home.jhtml;

- Ten (10) short tomes on basic management skills. Basic, relevant and well organized. Free on the site.
<http://www.ee.ed.ac.uk/~gerard/Management/index.html>
- This site has a load of good management articles that you can download.
<http://www.jimcollins.com/>
- A gem for general perspectives on managing
http://economist.com/surveys/PrinterFriendly.cfm?Story_ID=770819
- A simple little piece on quality management
<http://deming.eng.clemson.edu/pub/tqmbbs/govt/govimpro.txt>
- An interesting document on Total Quality Leadership
<http://www.odam.osd.mil/qmo/pdf/primer.pdf>
- Another interesting piece on the principles of quality management as seen by three leading management gurus
<http://deming.eng.clemson.edu/pub/psci/files/3expert.txt>
- A straightforward piece on the history of general management thought. A good overview of the field.
<http://web.cba.neu.edu/~ewertheim/introd/history.htm#HR>
- From a leading journal in management — The topic is THE topic in management, the nature of the job of leading. Depending upon your audience, this is on the high side of complexity in the management field.
<http://web.gsm.uci.edu/orgsci/OSLETT00.PDF>
- Other good sites to download cases.
http://www.unesco.org/mab/br/brbullet/br3_05b.htm
<http://www.nwlink.com/~donclark/perform/casesty.html>
<http://www.ecch.cranfield.ac.uk/>
<http://www.managementcourses.com/>
<http://econ.worldbank.org/topic.php?topic=21>

Training Session 6.1: Human Resource Management

Objective

To familiarise the MPA manager with the range of administrative tasks associated with the identification, selection and appointment of the various technical and support staff who will carry through the management objectives of the marine protected area.

Significance

The personnel of the marine protected area are one of its key resources, and indeed personnel management is often referred to as human resources management. A key task of the MPA manager is to put in place a group of staff who are capable of working together as a team to accomplish the diverse tasks associated with the day-to-day management and specific projects, which together are designed to accomplish the MPA goals.

Presentation

A number of short lectures are interspersed with opportunities for participant input. Allow approximately one hour before coffee for a major exercise involving mock interviews, with reporting back after coffee.

Duration: 2 ½ hours, with a coffee break after two hours.

Equipment and Materials: Overhead projector
Overheads and matching handouts
Handouts for the interviewing exercise (first session)
Flip chart paper and stands
Markers and tape

Trainer's Note

Open this Training Session by introducing the objective of the training session (Overhead 6.1.1). Read out the statement about the significance of human resource management (above), explain the presentation and sequence of the session.

6.1.1: Assigning Roles and Responsibilities, and Developing Workplans

The operational plan of the marine protected area will set out a series of activities or programmes, which are designed to achieve the overall goals underlying the establishment of the MPA. Each will involve a series of specific tasks that need to be completed by the MPA staff—including initial tasks associated with the establishment of the MPA infrastructure, and ongoing tasks for day-to-day execution of the management plan.

For example, day-to-day management tasks may include permitting, regulation and coordination of activities taking place inside the MPA (e.g. tourism, transport, fisheries); research and monitoring; education and interpretation; protection and restoration of species and habitats; and generation of revenues.

A task can be seen in terms of the amount of time and in terms of the type of skills (associated with one or more individuals) that are required to complete it. These two parameters will determine your staffing needs. Your staff will probably consist of a combination of professional and technical staff with skills in key programmatic areas, and support staff with more general skills. It may be more economical to contract out important but minor tasks rather than take on new employees.

Ultimately, each task needs to be broken down into a set of roles and responsibilities and individual goals that can be assigned to different individuals. These will be carried out over a period of time, with the individual working as part of a team involving other staff members, volunteers and members of the local community.

Task 6.1: Group Exercise 1 (Approximately 15 minutes)

Ask the participants to list different staff positions for the ideal MPA. List the positions on a flip chart.

It is likely that many positions will be listed—with emphasis on senior positions such as coordinators. Next, ask the participants to indicate (by show of hands) which staff positions are filled in the MPA they are most familiar with, and mark the numbers beside each position. In practice, many of the 'ideal' positions will occur in just one or two parks—if any.

It may also become apparent that many MPAs employ staff with several responsibilities – for example a single staff member may act variously as 'fundraising coordinator', 'education and awareness coordinator' and 'tourism officer'.

Two conclusions can be drawn from this exercise:

- (i) that there is not necessarily an individual associated with each ideal position, but instead, the task is completed by one or more members of the MPA staff team with skills in the relevant area.
- (ii) that different MPAs will have a different staff component according to the different themes which are prioritised in the management plan.

- I. 'Coral Marine Park' decided to appoint a senior warden with primary responsibility for attending to the needs of all visitors entering the park. His work involves working with various types of legitimate visitors from tourists to scientists, schoolchildren and local fisherman, and dealing with illegal visitors according to the park regulations. Two junior wardens and volunteers assist the senior warden with patrol and surveillance work. In addition, he collaborates with technical staff to ensure the maintenance of facilities, and with a part-time educational officer to provide interpretation services.

Discussion (Approximately 10 minutes)

Ask the participants to suggest the ways in which volunteers and other partners can assist directly in the work of the MPA (funding will be discussed later). What sort of duties can they be assigned? *What training may be required? Are they as reliable as regular (paid) staff?*

- II. Regional examples include Bird Clubs in South Africa where volunteers are provided with training to undertake monitoring work, and the collaboration of boat operators in Malindi to provide visitor services and ensure coral protection in the marine park.

By looking at your overall *Annual Workplan*, you can develop annual workplans for each individual staff member, or group of staff members. While some jobs are fairly consistent throughout the year, others are carried out at intervals. Be aware when your workload may peak due to the tourist high season, an annual board meeting, or seasonal conservation work and make sure that all such events and preparation times are reflected in individual workplans.

Two points are worth noting:

- It will not always be possible to fully develop activities in all programme areas at the same time and some areas of work may have to be postponed until sufficient resources are available. The *core activities* of the park are those that ensure that the park regulations are upheld and these should be the first priority where resources are limited.
- The management plan may establish priorities amongst tasks but is unlikely to be prescriptive about the personnel required as this is likely to *evolve*—for example, over time there may be less effort needed for enforcement but, at the same time, a growing demand for visitor interpretation services. The MPA manager should regularly re-evaluate how best to deploy staff, and make sure that they are willing and able (through training) to be flexible in order to ensure progress towards management goals.

- III. To illustrate this point, the Management Plan for Mafia Island Marine Park (MIMP) suggested staff recruitment would take place in two stages with an initial staff of eight expanding over time to between 11 and 13.

The second stage staffing includes a Licensing / Enforcement Officer, and Engineer / Logistics Officer, a Project Development (Technical) Officer, a Community Development / Liaison Officer, an Accountant / Purchasing Officer, a Secretarial / Administrative Officer and 4 to 6 Marine Parks Assistants. All of the staff would report directly to the Warden.

The management plan suggests that in the first phase, the roles of Project Development and Community Officer would be merged, as would the roles of Accountant and Administrative Officer. The senior of the four assistants would act as the enforcement officer.

6.1.2: Recruiting New Staff

Once you have determined the staffing needs for the MPA, there are several stages to recruitment, starting with the formulation of job descriptions, then advertising, selection of candidates for interview, and finally, interviewing and appointment.

There may be legal requirements in your country affecting the contracting and employment of staff and as a publicly accountable organisation, it is important that you observe them. The law may address issues such as provision of written contracts, working conditions, entitlement to paid holiday, and dismissal. Employees' rights may vary depending on whether the staff member is permanent or temporary, full time or part time, but if possible you should employ staff on as equal terms as possible to avoid resentment.

Where staff are employed to carry activities relating to a specific project, it is normal to offer a fixed-term appointment. This is particularly the case if the money being used to fund the post falls outside the core budget of the MPA, and there is no guarantee that the project funding will be extended. Do not recruit staff on 'soft' funding until you have a firm guarantee of the amount and timing of such funds—allow time for recruitment before the start of the project.

A. Formulation of Job Description

A clear job description is the key to successful recruitment and selection; as well as staff appraisal and supervision; induction; staff development; discipline and grievance procedures; restructuring and review; training needs analysis; staff/team relations, and job evaluation. It is well worth spending the time to draw up an accurate description.

The job description tells an employee how he or she contributes to the organisation's goals and relates to the other staff members. It provides a basis for supervision and evaluation, and reduces the risk of disputes over the type of work an employee should be doing. The job description may be periodically updated on the basis of what the staff member is actually doing, and should certainly be reviewed when a position is being renewed.

Trainer's Note

Talk through the example job description in Overhead 6.1.2. The 'summary' should be a brief statement of one or two lines—it may be easier to write this once the responsibilities have been defined. 'Responsibilities' should be detailed under headings that describe the principal job responsibilities in order of priority.

The job description is used to draw up a person specification setting out the requirements of an individual to carry out the job. The person specification should list the essential worker characteristics necessary to perform the job successfully.

Trainer's Note

Overhead 6.1.3. Essential criteria may include items under some or all of the following headings of the 'five point plan'.

Other requirements may include willingness to travel or to work flexible hours. There may also be legal requirements, for example relating to nationality or work permits. Desirable criteria can be used to refine the essential criteria—for example depending on the position, certain language skills may be essential, or just desirable.

Try to advertise the job as widely as possible and provide a deadline for applications (you can always re-advertise if you don't get a suitable applicant). Keep a clear record of each application—for example a table showing name, date of receipt and follow-up (selection for interview, rejection letter sent or candidate selected).

B. Hiring Appraisal

It can be very difficult to choose between different applicants, and it is important to take an objective view, especially if the candidate is already known personally or by reputation. The first stage in a

hiring appraisal, particularly for more senior posts, should be to appoint a selection committee. The committee should be representative of different levels of seniority, and between them, the members should have sufficient knowledge of the specialist skills required by the position. The ideal number of members is three, and the number should not exceed five. This committee will be involved throughout the recruitment process.

It is important that the recruitment process is as fair and accurate in predicting an applicant's potential as possible. Use of an application form with questions based on the person specification is a straightforward way to ensure that every applicant provides all relevant information. All application forms and assessment materials should be kept for at least six months after the selection process in case there are any complaints regarding procedures.

Shortlisting

If there are many applicants, it would be time consuming to interview them all. The shortlist is the list of candidates who are selected for interview from amongst the applicants.

Trainer's Note

Show overhead 6.1.4—A table setting out essential criteria for selection can be a useful way to shortlist candidates.

Explain that the criteria (left hand column) are based on the person specification, and can be graded as fully met (2 points), partly met (1 point) and not met (0 points).

Each member of the selection committee should complete the form separately, and then the committee should meet to discuss any discrepancies, and to agree on a final shortlist. Desirable criteria should only be used to help the panel to shortlist if there are a large number of applicants meeting all of the essential criteria.

Interviewing

A general outline of interview questions should be decided before the interview starts. Again, key areas of interest will be based on the person specification. The committee, or panel, should decide in advance the order in which the questions will be asked, and who will ask what. Panel members should take brief notes during the interview and take regular breaks to avoid becoming tired.

A form similar to the short-listing form could be used to compare candidates. The decision should be made immediately after the interviews, based objectively on fulfillment of the criteria, and a record should be kept of the reasons behind the choice. You may want to follow up references for the top one or two candidates either by telephone or in writing (is the candidate a good team worker? why is he or she leaving the present position? and so on).

Task 6.2: Interviewing Exercise (Role Play)(Approximately 1 hour)

Allow up to one hour for exercise. Allow the exercise to run up to the coffee break and postpone the reporting back until after coffee.

In the following exercise, a panel of 4–7 interviewers will interview two candidates in succession for the position of senior warden for a marine protected area. In addition, there will be one or two observers for each group.

First divide the participants into groups of between 7 and 11 depending on the total number of participants. Ask each group to nominate two interviewees and one or two observers (depending on the group size). Ask the interviewees to leave the room for a few minutes.

Give copies of worksheet A to each of the interviewers, and of worksheet B to each of the observers. Both groups should also have the candidate descriptions. Talk through the worksheets with each group individually, starting with the interviewers who will be given 15 minutes to prepare themselves. Brief the observers quickly, reminding them they should not speak during the exercise but will be asked to report back at the end of the interview. Then go out and chat with the interviewees, giving each group the description for Candidate 1, and the other the description for Candidate 2.

At the end of the exercise, ask each group to announce their decision. Ask the observers to report back on the process, noting the points on their worksheet. Ask if anyone else—perhaps the interview chair or the candidates—would like to add anything.

Did the groups pick the same candidate? Were their criteria the same? Did personality play a role? Are there any other concerns? (e.g. would the better qualified candidate stay in the job, or demand a higher salary? What training may be required?)

After Selection

The *letter of appointment* may be legally binding so should be drafted carefully. Mention if the appointment remains subject to good references, or if there is a probationary period. A probationary period of up to six months may be appropriate to see how the employee adapts to the new working environment, and perhaps to see whether he or she performs well in training assessments. The period of notice during the probationary period must be specified—seven days is usual. The letter should be followed by written terms and conditions which specify the hours of work, entitlement to leave and any other special conditions.

Take time to settle the new staff member into a new position—assign somebody to deal with any questions, show them around the work area, and make introductions, and designate a work place for time in the office. Remember, recruitment and training of new staff can be expensive and if possible, you should seek to avoid a high turnover in staff by making your staff feel comfortable with their position.

The reasons for the choice should be explained tactfully to any internal candidates who have been unsuccessful, as they may now have to work with and report to the successful applicant and any hostility should be avoided. For external applicants, a simple rejection letter may be sufficient (mention the extremely high standard of applications), but in some cases you may wish to invite them to apply for future openings, or perhaps a different position more appropriate to their skills.

C. Personnel Assessment

For new staff members, an assessment is typically carried out by the line manager (the person to whom the employee reports) approximately two months into the probationary period in order to assess the employee's performance. A record of the meeting should be kept and signed by both parties.

Problems identified at this stage are not necessarily the fault of the employee—the assessment meeting provides an opportunity to have an open discussion about such issues. For example, an employee may have failed to complete a specific task because he/she did not know it was his/her responsibility, or because he/she did not understand the instructions. If there are problems, actions should be agreed on how they should be addressed. After another month (or more) a further assessment meeting is held to mark the end of the probationary period, or if considered necessary, to extend this.

Evident problems such as repeated lateness should be dealt with by a warning. Failure to address such problems after two warnings may be grounds for dismissal. More serious problems such as breach of park regulations, or dishonesty, may be grounds for immediate dismissal or for legal action.

Trainer's Note

Return to Overhead 6.1.1

6.1.3: Ongoing Personnel Management

Personnel management does not stop with the successful recruitment of a new staff member. We have already seen above the need for ongoing evaluation of individual workplans and review of responsibilities. In addition, a good manager will be in touch with and approachable by employees and will be aware when there are problems relating to performance, job satisfaction or working relationships. An annual performance appraisal for each staff member is an increasingly common feature in organisations and provides a more structured means to stay in touch with employees. An appraisal can be used to set and review performance objectives and to determine training and development needs. It serves to remind employees of their important role in the organisation and can be a valuable tool in maintaining motivation. Normally the line manager carries out the appraisal, but if there appear to be problems between the line manager and employee, it would be a good idea for a more senior staff member to attend.

For a small staff, an appraisal system may seem unnecessarily cumbersome. Other ways to motivate your staff are to hold regular (weekly or monthly) staff meetings to talk about progress, to discuss any issues and concerns that affect their work in the protected area or administration office, and to seek their views and opinions.

Finally, the MPA manager should be concerned with the health and safety of all employees, both through minimising risks to safety at work, but also to the extent possible by ensuring that insurance provisions cover employees in the event of illness.

Exercise/Discussion

Ask the group to suggest different ways in which to motivate staff and list these on a flip chart. Typical rewards include pay increases, bonuses or promotion and these are sometimes directly related to performance.

However, rewards do not necessarily have to increase salary costs: other rewards include, recognition (for example, 'employee of the year'), prizes, increased responsibility (views may differ as to whether this is a reward), travel to workshops and meetings, training and exchanges, and perhaps access to better field equipment.

Regular staff meetings and social events, perhaps involving families, are also a good way to build a team spirit.

Case Study 6.1: Staffing of Indo-Pacific MPAs

—Pippa Gravestock

The number of permanent staff employed by MPAs in the Indo-Pacific¹ ranges from zero to 64, with the typical protected area employing 9 staff members (the median number).

The majority of these employees (roughly 60%) are field staff with the greater number being rangers. In a few cases the MPAs also employ separate boat crews. About 25% of staff is employed in one of a very wide range of administrative posts including park manager, communications officer, research personnel, community development co-ordinator and law enforcement officer. The remaining 15% of staff perform an assortment of other roles such as cooks, mechanics, cleaners and security guards. Although almost all MPAs employ field staff, only about two thirds have a workforce that includes administrative or other staff. Only a very small number of MPAs employ either seasonal staff or volunteers, while none use consultants or contract staff.

It would seem that broadly speaking most MPAs require very similar tasks to be performed (field and administrative functions), but that those with more employees are able to employ more specialist staff. MPAs with fewer employees require their staff to be more flexible or 'multi-task' in their roles.

The number of staff an MPA employs seems to be most closely related to the size of the protected area and the number of visitors it receives – the larger the area of the MPA and the greater the number of visitors, the higher the staff levels. Other important factors are whether the MPA allows recreational and commercial activities. This is probably because the MPAs allowing these have more visitors and therefore have higher staffing needs. Although it is not clear why, MPAs protecting seagrass and mangroves also tend to employ the most staff. Interestingly, the MPAs funded by foreign donors are also likely to have the most employees.

How do MPAs in the Indo-Pacific compare to those in the rest of the world?

The characteristic number of staff employed by MPAs around the world is 6 (the median number) compared with 9 in the Indo-Pacific. The split between field and administrative staff is similar for MPAs around the world.

A key difference in the staffing profiles between the Indo-Pacific and elsewhere is that protected areas in the West employ more contractors and consultants than in the Indo-Pacific and use considerably more volunteers.

Points for discussion

- how do your staffing levels compare to that of the typical MPA found in this study?
- what are the key roles in your MPA and are there sufficient staff to undertake them?
- how effective is 'multi-tasking' in your MPA?
- what determines the number of staff your MPA employs?
- if further funding was available, what additional positions would you hire for?
- why do you think that Indo-Pacific MPAs are better staffed than the other regions?

A key difference in the staffing profiles between the Indo-Pacific and elsewhere is that protected areas in the West employ more contractors and consultants than in the Indo-Pacific and use considerably more volunteers.

¹Based on a sample of 27 MPAs situated in the Indo-Pacific region who responded to a survey undertaken in 2002 on the Income Requirements of Marine Protected Areas.

Overhead 6.1.1: Objective

To familiarise the MPA manager with the range of administrative tasks associated with the identification, selection and appointment of the various technical and support staff who will carry through the management objectives of the marine protected area.

Sequence:

1. Assigning roles and responsibilities, and developing workplans.
2. Recruiting new staff
 - A. Job description
 - B. Hiring appraisal
 - C. Personnel assessment.
3. Ongoing personnel management.

Overhead 6.1.2: Outline Job Description

Name of the organisation:	Coral Marine Park
Address:	The Old School, West Village
Job title:	Senior Warden
Responsible to:	Manager
Responsible for:	2 wardens, 1 junior warden
Grade & starting salary:	Grade W3 (range xx-xx according to experience)
Working hours:	36 hours per week
Any special conditions:	Working hours will vary and overtime may be paid during busy periods. Accommodation is provided for the senior warden who may be on call during emergencies
Date written:	September 1999
(Date postholder started:	November 1999)

Job summary *to supervise and train junior wardens in their duties relating to the regulation of activities in coral marine park, including patrol, permit checking, and provision of visitor services.*

Responsibilities

Regulations

1. To oversee patrolling of the marine protected area by wardens and junior warden in order to ensure that park users are complying with park regulations;
2. To investigate any reported breaches of regulations, issue warnings, and where appropriate arrange for appropriate action to be taken against offenders, etc.

Equipment and supplies

Maintenance of facilities

Administration

General duties

Overhead 6.1.3: Drawing up Specifications

The five point plan

- (a) Qualifications / knowledge appropriate to the job
- (b) Experience
- (c) Skills and abilities e.g. driving, languages
- (d) Personal attributes
- (e) Physical attributes

Overhead 6.1.4: Example of a Marking Form for Short-listing

Candidate Number/Score					
Skill from person specification	Person A	Person B	Person C	Person D	Etc.
Completed Secondary education	2	1	2		
Three years supervisory experience	2	2	1		
Languages	1	2	1		
Boat handling skills	1	2	1		
Physically fit	2	1	2		
Interpersonal skills, etc.	2	2	0		
Total points					
Date: _____ Panel member: _____					

Training Session 6.2: Office Operations

Objective

To identify the role of the MPA office in the wider MPA management framework.

Significance

The MPA office is the focal point for day-to-day operations within the MPA, and for coordination between the different bodies concerned with the management of the MPA.

Presentation

The first 20–25 minutes will look at the role of the MPA office, within the overall institutional structure which is presented using an organogram. Participants will then be asked to prepare and present examples of different management structures using organograms. Finally a few minutes will be spent looking at office operations, and if there is time, looking at a case study from the Caribbean.

Duration: 1 hour

Equipment and Materials: Overhead projector
Overheads and matching handouts
Flip chart paper and stands
Markers and tape

Trainer's Note

Show the first overhead (6.2.1). Explain the significance and presentation. This is a brief session presenting the MPA office within the broader management framework, or structure.

6.2.1: Management Structures

The management structure of the marine protected area sets out the relationships between the MPA manager and by other individuals or groups such as the board of directors or advisory panel involved in management or decision making. It may also show the relationship between the different management tasks which are carried out by staff members (internal structure). The structure is often represented pictorially as an organogram.

Trainer's Note

Show overhead 6.2.2—a hypothetical example of the management structure for coral marine park. Talk through the different management bodies and the links between them.

Note that the manager is advised by three different external bodies, the Board of Directors, the Friends of Coral Marine Park which is a members' association responsible for fundraising, and an Advisory Forum comprised of stakeholder and community representatives. The advisory forum is actively involved in all aspects of the MPA work, both formally and informally. Many of the Friends are also volunteers who organise themselves on a rota basis and work directly under the supervision of staff members.

An important part of the manager's job is to interact regularly with these bodies, and to ensure that formal meetings are organised on at least an annual basis, or as otherwise provided for in the MPA's statutes.

Trainer's Note

Move onto the real example of Mafia Island Marine Park, or if you can, brief one of the participants before the Session and ask him/her to prepare and present an example.

Case Study 6.1: Management Structure of Mafia Island Marine Park, Tanzania

Three bodies share responsibility for overseeing management of Tanzania's MPAs. Their roles are set out in the 1994 Marine Parks and Reserves Act, and any revisions are thus subject to changes in the law.

The **Board of Trustees** is appointed by the Minister of **Tourism and Natural Resources** and is the overall governing body for all new and existing Marine Parks and Reserves in Tanzania. Its membership is representative of a broad group of interests in marine parks, and the 10 members are thus divided between regional and national government and other sectors, including a scientist, NGO representative and business representative.

The Marine Parks and Reserves Unit (MPRU): Currently situated in the Department of Fisheries, acts as secretariat to the Board of Trustees (BOT). The Unit is responsible for the development and establishment of new marine parks and reserves, and for seeking funding for existing parks.

Within the MIMP, **The Warden** is directly responsible to the Board of Trustees for the management of the MIMP, and for overseeing the MIMP staff. The Warden also acts as secretariat to the Advisory Committee. The Advisory Committee is meant to represent the broad range of interests within the MIMP, including local communities, and like the BOT, is roughly divided between government and non-government members. The Warden collaborates closely with the AC on all aspects of park management, including investment, scientific, technical and operational matters.

The Village Councils also have an active role in management, and in particular in the issuing of permits to artisanal users of the MIMP. The role of the communities is considered central to the success of the MIMP.

Finally, the warden is assisted by a **Technical Advisor** provided through an international NGO.

Trainer's Note

Overhead 6.2.3. The first overhead shows the institutional organogram for the MIMP. The top half shows the bodies involved in management of all of Tanzania's MPAs, while the bottom half shows bodies specifically involved with management of the MIMP.

Trainer's Note

Overhead 6.2.4. Shows the administrative structure for the MIMP, setting out the relationships between the different staff members and operational programmes. This is an evolving structure, guided but not constrained by the provisions foreseen in the management plan.

The Management Plan of the Mafia Island Marine Park set both the management structure and, as we saw earlier, the staff component of the MIMP. This can be illustrated using two organograms.

Exercise and Presentations (Approximately 25 minutes)

Ask the participants to draw up an organogram illustrating the management structure of an MPA with which they are familiar (they could select either the institutional or administrative structure). Ask volunteers from different areas to come up and present their example (or select randomly).

There is no one ideal configuration! Some of the differences you may see include:

- Some MPAs will be managed individually, perhaps under the auspices of a Board of Trustees, while others may be managed as part of a network through a government line agency or parastatal agency.
- Management services such as finance and personnel may be associated with individual parks or there may be a more central unit providing services to several parks.
- Stakeholder and advisory bodies may be associated with the protected areas network, and/or with individual protected areas.

6.2.2: The MPA Office

The MPA office is a focal point for the protected area where many, if not all of the administrative duties associated with the management of the MPA are carried out. It will not necessarily be located in the MPA, but possibly in a nearby centre where communications facilities are better. However, it should be in regular contact with staff based in the MPA, at least by radio and if possible there should always be somebody present during working hours.

The office area may also serve as a general reception point for visitors, including tourists and the

general public, sponsors and other important guests, media, and stakeholders. It may provide a point of sale for entry tickets, permits and even souvenirs and guides. A professional, well-organised office can create important first impressions.

A well-organised office will also save time and ultimately money and it is worth taking the time to establish some standard procedures for maintaining up to date records of all of the management activities. Certain procedures may already have been established by a parent organisation in which case it may be useful to have someone from that organisation spend some time in the MPA office working with local personnel.

A few tips to consider are to:

- Use a wall chart or schedule to plan ahead for meetings and major events, or periods of absence, and to set out important phases in the annual workplan.
- Have a clearly identifiable in-tray, date stamp incoming correspondence, and treat urgent issues immediately.
- Use appropriate subject files to keep incoming correspondence, together with copies of replies, in chronological order. A good filing system will ensure that you or any other member of your staff should always be able to find any information or correspondence within minutes.
- Keep a message book for phone calls or other messages taken while you are away.

Trainer's Note

If there is extra time, you could present the following case study from the Caribbean. The case study looks at both the management structure and the human resources of Bonaire Marine Park in the Caribbean. This example shows how management roles can be divided between the MPA manager and the parent organisation.

Case Study 6.2: Operations and Personnel at the Bonaire Marine Park, Netherlands Antilles

Management of Bonaire Marine Park (BMP) is overseen by the Netherlands Antilles National Park Foundation (STINAPA)—a national non-profit and nongovernmental organisation for nature conservancy which is responsible for several marine and terrestrial protected areas. The management contract for BMP issued by the Island Government also established a committee consisting of representatives of STINAPA, the tourist industry and government nominees, but this body no longer meets since its user groups are also represented on the Board of STINAPA.

STINAPA is responsible for policy decision-making, management of finances and personnel while the park manager is responsible for the day-to-day management—approximately 80% of his time is taken up with administration. The manager is also responsible for provision of information, education, research, monitoring, public relations and law enforcement activities.

In addition to the manager, BMP has a chief ranger and three rangers who are responsible for patrol and maintenance within the marine park. Four further staff members—a financial manager, receptionist, ranger and cleaning lady - are shared with STINAPA, which pays part of their wages. The shared ranger carries out shore patrol work and collects revenue from the admission tickets sold on behalf of BMP.

An important success of BMP in terms of enhancing its human resources has been its volunteer programme. For example, volunteers trained in dive survey techniques work with visiting scientists on specific projects, as well as carrying out regular monitoring. Other volunteers are involved with education and beach and underwater clean-up activities.

This case study is based on information on the BMP web site, which is well worth visiting at: <http://www.bmp.org/park>

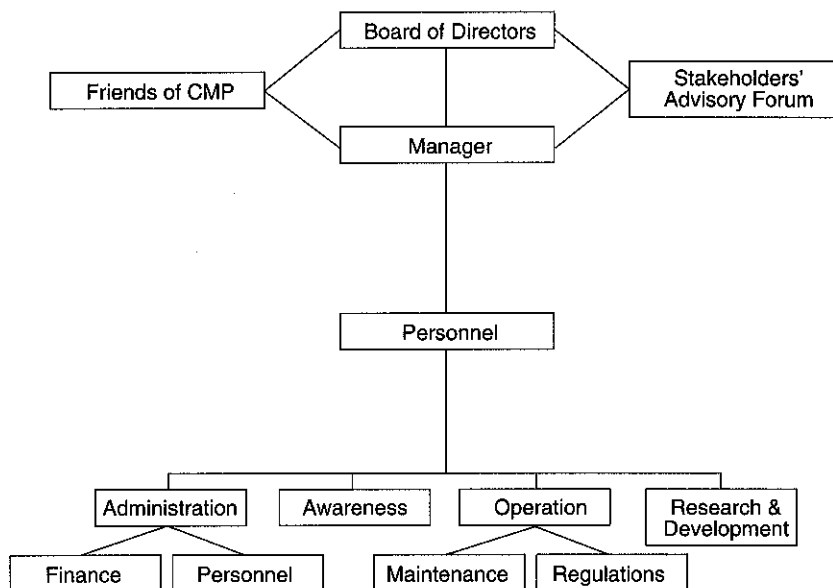
Overhead 6.2.1: Objective

To identify the role of the MPA office in the wider MPA management framework.

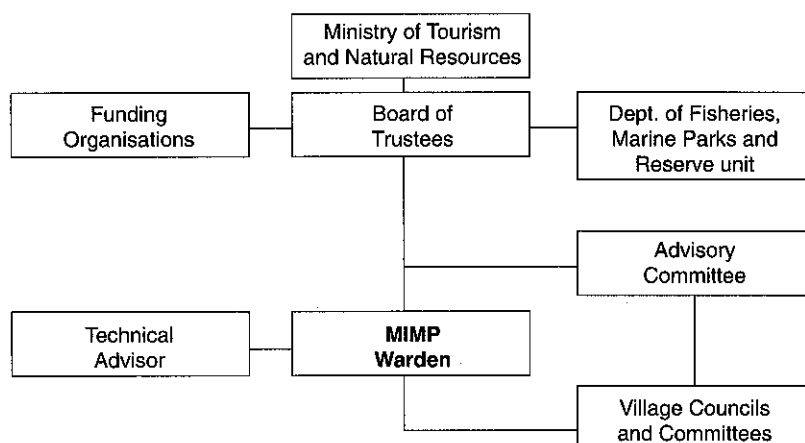
Sequence:

1. Management structure
2. The MPA office

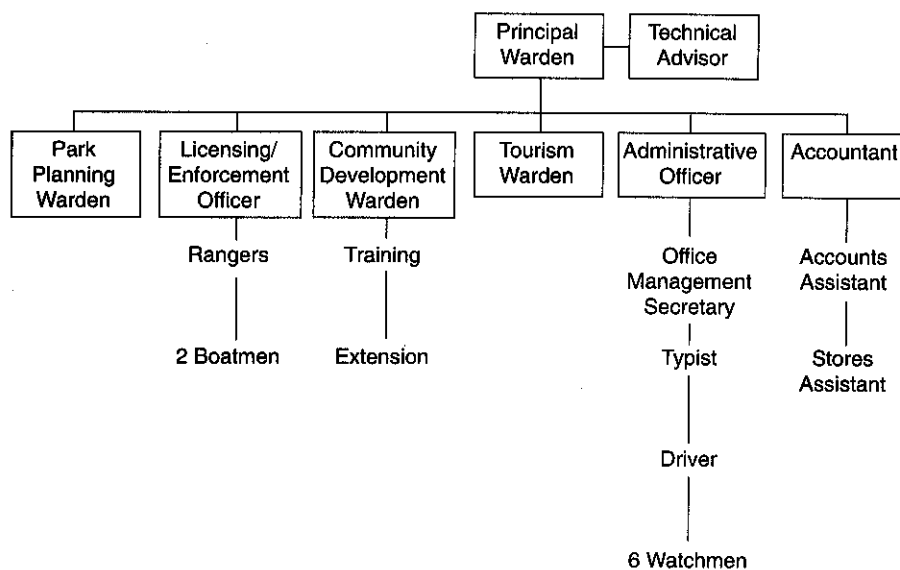
Overhead 6.2.2: Management Structure of Coral Marine Park



Overhead 6.2.3: Institutional Organogram for Mafia Island Marine Park (MIMP), Tanzania



Overhead 6.2.4: Administrative Structure and Staffing for Mafia Island Marine Park (MIMP), Tanzania



MODULE 7

Financial Management

AUTHOR: SARAH HUMPHREY

Objective

To provide the MPA manager with an overview of the financial management tasks associated with the administration of a marine protected area, including maintenance of financial records, generation of revenues, and fundraising.

Summary of Training Sessions

Module 7 contains three brief training sessions, with the following aims:

7.1: Budgets and Financial Reporting

To provide a basic introduction to financial management including budgets, maintenance of accounts and auditing.

7.2: Revenues

To introduce the different sources of revenue available for MPA management.

7.3: Fundraising

To introduce approaches to fundraising through donations and sponsorship, and for the development of specific projects.

Background and Sequence of Module

Like Module 6, Module 7 is concerned with the logistical side of marine protected area management. Session 7.1 introduces some basic concepts of financial management including the budget, costs and expenditures, assignment of priorities, and projection and cash flow. The module then looks at maintenance of accounts, the annual audit, and stocking and inventory. Session 7.1 is illustrated with the hypothetical budget of 'Coral Marine Park'. The Session includes a budgeting exercise to be carried out by small groups.

Session 7.2 looks at some of the ways that the MPA can enhance its revenues by introducing charges for access, and by increasing the range of services and products it provides. Session 7.3 on fundraising looks more broadly at sponsorship and donations, including applications for project funds and trust funds. A single case study—that of Bonaire Marine Park in the Caribbean—is used to illustrate Sessions 7.2 and 7.3 relating to revenues and fundraising, while additional examples are provided from the region.

Because of the large amount of information to be presented, Module 7 will involve a combination of brief lectures using overheads, discussions and group tasks.

References and Additional Reading Material

- Barzetti, V. (ed.), 1993. Parks and progress: Protected areas and economic development in Latin America and the Caribbean. IUCN and Inter American Development Bank, Washington DC.
- Clarke and Norton, 1997. The complete fundraising handbook, 3rd edition. Directory of Social Change, London, UK.
- Dixon, J.A., Fallon Scura, L. and van't Hof, T., 1993. Meeting ecological and economic goals: Marine parks in the Caribbean. *Ambio* 22, 117–125.
- Dunn, J. 1989. Auditing explained: A practical guide for managers. Kogan Page, London, UK.
- Marshall. 1997. Mastering bookkeeping. Business Basics Series. How to Books, Plymouth, UK.
- Emerton, L. 1999. Economic tools for the management of marine protected areas in eastern Africa. IUCN, Nairobi.
- Hooten, A. and Hatziolis, M., 1995. Sustainable financing mechanisms for coral reef conservation: Proceedings of a workshop. Environmentally Sustainable Development Proceedings Series No. 9, The World Bank, Washington DC.
- SEACAM, 1999. From a good idea to a successful project: A manual for development and management of local level projects. SEACAM, Mozambique.

A wide range of basic texts on finance and accounting may be useful, including those designed for individuals pursuing professional qualifications in this area, and perhaps especially those for small businesses.

Training Session 7.1: Budgets and Financial Reporting

Objective

To provide a basic introduction to financial management including budgets, maintenance of accounts and auditing.

Significance

Financial management involves anticipating, keeping abreast of, and reporting on the funding utilised for MPA management. The MPA manager needs to anticipate what resources are available in order to design appropriate management activities; to monitor expenditure and income associated with day-to-day management of the MPA in order to make necessary adjustments to planned activities; and to report on expenditures in order to demonstrate accountability, as well as meet legal and contractual obligations. Demonstration of good financial management can help to win the confidence of those supporting or interested in supporting the MPA that their money is being or will be spent in a correct and fully accountable manner.

Presentation

The first 15–20 minutes will introduce the basic components of financial planning and budgets. After an exercise on preparing budgets, the remaining part of the session will look at financial reporting, auditing and stock keeping.

Duration: 1–1 ½ hours

Equipment and Materials: Overhead projector
Overheads and matching handouts
Flip chart paper and stands
Markers and tape

Trainer's Note

Open this Training Session by introducing the objective of the training session (Overhead 7.1.1). Read out the statement about the significance of financial management (above), explain the presentation, and uncover the bottom half of the overhead to show the sequence.

7.1.1: The Budget

A budget is an estimate or plan setting out the anticipated income and expenditure for a particular activity, or more simply, is the sum of money available for that activity. The MPA manager will need to be familiar with two types of budget:

- The annual operating budget of the MPA, which should not normally exceed the total income anticipated for that year. The budget may have to be adjusted during the year if there is an unexpected shortfall in funds, or if extra funds become available.
- Budgets for specific (short-term) activities such as workshops or projects which may come from external sources. It is important to draw up as detailed a budget as possible in order to ensure that there will not be a deficit once the activity is completed.

More details are on managing budgets provided in the sections related to costed priorities and cash flow and projection. One important point to remember when drawing up both annual and project budgets is to include a percentage, typically ten percent, for contingency—to cover unforeseen price rises or costs due to technical complications, for example.

How do MPAs in the Indo-Pacific compare to those in the rest of the world?

Case study 7.1: Income of Indo-Pacific MPAs

—Pippa Gravestock

MPAs in the Indo-Pacific¹ have a very wide range of incomes. The median figure for the survey sample was USD 200,000². However, as illustrated in the chart below, there is no such thing as a “typical” MPA. In reality, there are protected areas with no income at all (mostly to be found in the western Indian Ocean) and there are MPAs with incomes measured in millions of USD. Generally speaking, the larger the area of an MPA and/or the more visitors it has, the higher will be its income.

The managers of the MPAs³ were asked if they needed more income in order to fulfil the objectives of the protected area. Around half felt that they had insufficient funds, indicating a desired increase in income ranging from 20% up to nearly 300%. MPAs funded by their governments were more likely to be short of funds than those receiving an income from their visitors or from foreign sources or charitable organisations such as the WWF.

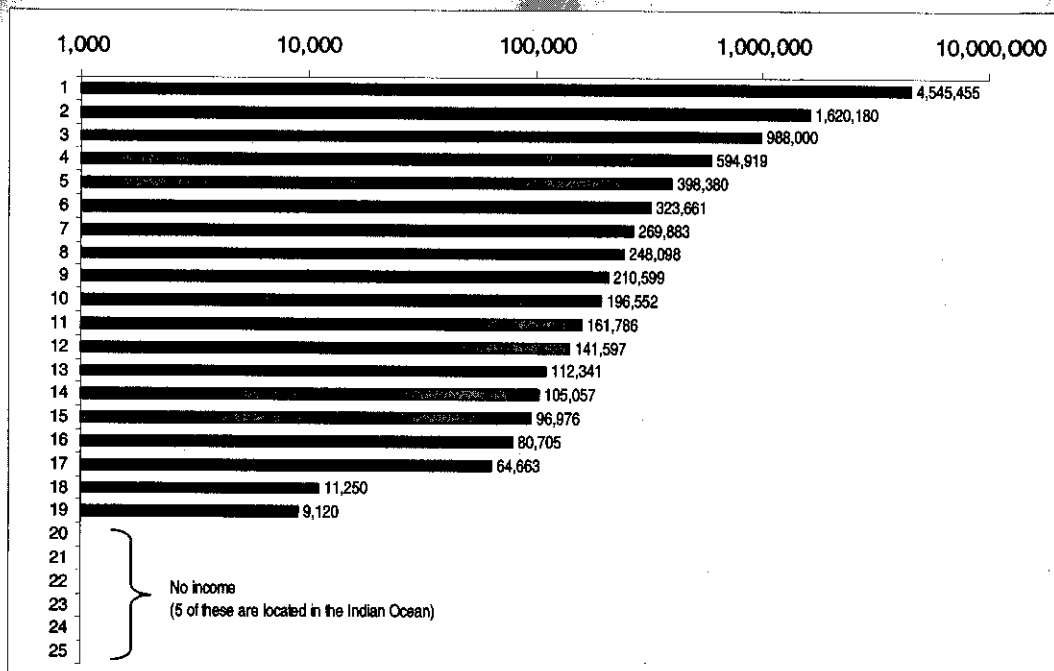
About half of the MPAs in the Indo-Pacific were supported primarily by their governments and half by foreign bodies. Only a few MPAs received most of their funds directly from visitors. A number of MPAs raised considerable funds from visitors, but were required to pass these on to the government, typically receiving a smaller stipend in return.

Although a few MPAs received an income from other sources such as royalties, this did not provide a major source of revenue for any of them.

How do MPAs in the Indo-Pacific compare to those in the rest of the world?

According to the survey, there were no major regional differences in MPA funding. An Indo-Pacific MPA was no more likely to have a lower income than one in, for example, the USA. Neither were MPAs in the Indo-Pacific more likely to be short of funds than elsewhere in the world.

The main regional difference in MPA funding was in the primary source of income. MPAs in the rest of the world were more likely to be funded by visitors than those in the Indo-Pacific, while MPAs in the Indo-Pacific were more often funded by a foreign organisation or charity than elsewhere.



Distribution of incomes across a sample of Indo-Pacific MPAs (USD; lighter shading identifies MPAs in the Indian Ocean)

¹ Based on a sample of 25 MPAs situated in the Indo-Pacific region who responded to a survey undertaken in 2002 on the Income Requirements of Marine Protected Areas.

² This figure excludes the MPAs which claim to have no income. Including the MPAs with no income, the figure is USD 110,000.

³ Seventeen MPAs responded to this question.

Points for discussion

- How much income does your MPA receive?
- Where does it come from?
- Is it enough to fulfil your MPA's objectives?
- Do you think your MPA's current level of income is sustainable?
- What factors determine how much revenue your MPA receives?
- What other potential sources of revenues for your MPA can you see?
- Why do you think MPAs in the Indo-Pacific are more likely to be funded by NGOs and less likely to be funded by visitors than elsewhere in the world?

7.1.2: Costs/Expenditures

Expenditure by the MPA includes both regular (or recurring) and occasional costs.

Trainer's Note

Display overhead 7.1.2, which shows the principal operational costs. The different sections of a budget are often referred to as budget lines. Briefly talk through the regular and occasional areas of expenditures. If you are using a flip chart (or if you prefer to write on an overhead) only the headings in bold need to be listed.

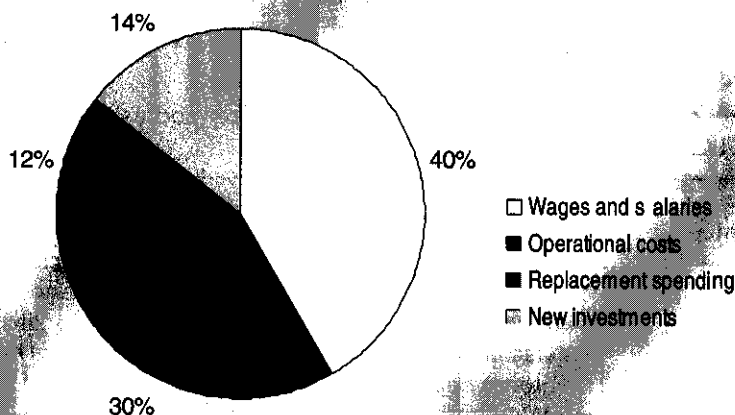
Case Study 7.2: Spending of Indo-Pacific MPAs

—Pippa Gravestock

As the chart below shows, the greatest expense for MPAs in the Indo-Pacific¹ is wages, followed closely by operational costs covering items such as fuel and maintenance. Roughly half of the MPAs surveyed had spent no money on capital investments (property, plant and equipment) in the past five years.

Analysing spending by purpose, it was apparent that the MPAs spent their money on a wide range of activities, with enforcement receiving over half of the available funds. Research and monitoring was also regarded as very important, followed by spending on general administration, visitors, education and other operational activities such as transportation. The spending patterns of the MPAs across the Indo-Pacific were fairly similar with only a few key differences. One such difference was that MPAs with larger areas spent a greater proportion of their income on enforcement than their smaller counterparts. MPAs protecting seagrass spent the most on community activities, while the MPAs with more visitors naturally spent the most on visitor facilities.

The MPAs were asked, if they had insufficient funds to fulfil their objectives, how they would spend an appropriate increase in their incomes. Across the board, spending on enforcement was a key priority, along with increasing the funds available to community activities. The protected areas with the highest visitor levels were keen to increase their spending on both visitor facilities and staff.



Breakdown of outgoings of Indo-Pacific MPAs

¹Based on a sample of 27 MPAs situated in the Indo-Pacific region who responded to a survey undertaken in 2002 on the Income Requirements of Marine Protected Areas.

How do MPAs in the Indo-Pacific compare to those in the rest of the world?

On a global basis, MPA spending on employee wages seems to be related to the wealth of the host country. The richer the country, the smaller the proportion of an MPAs income was spent on staff costs, with other operational items and new investments taking a correspondingly greater share of spending. Because host countries in the Indo-Pacific are typically poorer, wages seem to be a relatively important form of spending for MPAs in this region.

In terms of spending patterns by activity, enforcement was clearly a higher priority for MPAs in the Indo-Pacific than elsewhere in the world. This could be related to the fact that many Indo-Pacific MPAs have protection of fisheries as a key objective. Also, in some other parts of the world, other agencies — such as the coastguard — might play a role in enforcement.

Points for discussion

- how does the spending breakdown of the average MPA given above, compare to that of your MPA?
- what are the key activities your MPA spends its money on?
- how does your MPA determine what activities to spend money on?
- why is enforcement generally such a top priority?
- what activities would you like to increase spending on?
- what are the potential benefits of increasing spending on for example, more visitor facilities or community activities?
- what do you think of the differences in spending patterns between the MPAs in the Indo-Pacific and MPAs in the rest of the world?

Trainer's Note

Return to overhead 7.1.1, which shows the sequence of this training session.

7.1.3: Costed Priorities

As we saw in Module 6, you may have a big agenda set out in the management plan, but neither the financial or staff resources to undertake all of the activities at the same time. This requires setting priorities amongst the different tasks and projects and postponing some areas of work until sufficient resources are available. The core activities of the park are those which ensure that the park regulations are upheld and these should be the first priority where resources are limited.

Significance or importance are not the only criteria for selecting amongst possible additional activities, (indeed, it may be better to postpone some of the most significant tasks until the management team has gained more experience). Other criteria may include urgency, and opportunism—taking advantage of an opportunity offered by a sponsor who is interested in a particular aspect of your management plan.

The final criteria is more pragmatic—what can you do using your available resources?

Trainer's Note

Illustrate the following point by pointing to the different occasional and regular costs on overhead 7.1.2.

Costing of different activities means calculating all of the different direct costs which will be incurred in carrying out that activity including, as appropriate, staff time, materials and equipment, and communications and transportation. Remember to include your own time and that of support staff (e.g. secretary, accountant), plus an allowance for general office costs (electricity etc.). If the budget for the activity is being prepared for an external donor, these latter costs are sometimes included as an overhead. The overhead is often subject to intense negotiation, but it is reasonable to charge an *overhead* of around 15% for activities which place extra demand on office resources. If it is not allowed to include an overhead, these costs will need to be covered elsewhere in the budget.

A set of *costed priorities* provides a good basis to open discussions with a donor or sponsor who may not have specific ideas for the sort of project he or she would like to support. It demonstrates a well thought-out programme and shows how the activity fits into the broader management picture.

Task 7.1: Small Group Exercise (Approximately 25–30 minutes)

Divide the participants into groups and ask each to spend about 15 minutes preparing an outline budget for a defined activity that would be carried out over a short period of time. The following suggestions relate to the module on communications, but suggestions could equally be drawn from other management areas (e.g. a survey or habitat restoration work).

- Organisation of manned display/stand for a week-long tourism exhibition in the capital city.
- Organisation of a poster competition for schools, including printing 300 copies of the winning poster.
- Development of a boardwalk and educational trail.
- An open day offering a range of activities, entertainment and refreshments.
- Establishing a mobile theatre or puppet show.

The budgets should distinguish between regular operational expenditure (staff costs, consumables, maintenance) and occasional or capital expenditure (equipment, infrastructure, and other costs associated strictly with the task at hand).

If participants are used to working with the same currency, you could ask them to assign costs to each item. Exact figures are not important, but try to identify the most expensive items.

Ask each group to present in turn and ask for comments from the wider group.

The exercise can reveal the surprising range of costs incurred for even the simplest of activities. It is important to consider all these when applying for funding for an activity, and to ensure that provision is made for the draw on the regular operational budget. Costs such as staff time are often hidden but can be very significant.

Trainer's Note

Return to overhead 7.1.1, which shows the sequence of this training session.

7.1.4: Cash Flow and Projection

Cash flow has a fairly specific use in accounting, describing the effect of changes in different budget lines on the overall cash balance available. In everyday usage, maintaining cash flow means ensuring availability of funds at any given moment to cover expenditure required at that time. Reference to a cash flow problem implies a temporary problem which will be resolved as soon as foreseen funds are received or accessible. For example, you may need to give a period of notice to move funds to your current account from an interest-paying or foreign currency account and failure to anticipate this would create a cash-flow problem until the transfer was completed. Third parties may not be as understanding as you would like with respect to cashflow problems—supplies may be delayed and you risk spoiling relationships with those concerned with their own cash flow situation.

The best way to prevent a cash-flow problem is to anticipate expenditures and not to commit yourself to spending more money than you have available in any given period. Projection of spending should be carried on an annual basis, and in more detail on a monthly basis. This is not as difficult as it sounds, and is not binding—you will need to change the projections if you receive money from an unforeseen source, or, for example, if new priorities arise during the year.

Trainer's Note

Use overhead 7.1.2 again to illustrate the following point, which reinforces the distinction between regular and occasional costs.

Much of your monthly expenditure will be concerned with operational costs and will not vary greatly from month to month. You may need to anticipate whether there are busy periods when you will need to employ extra staff or times of year when extra maintenance work is carried out or when new equipment will be purchased. Try to keep a reasonable sum of money in reserve, but accessible, for contingencies—such as unanticipated price increases for supplies, or emergency repairs to buildings or equipment.

For special activities or projects we have already seen that it is good practice to draw up a detailed budget at the time the activity is planned, even if an external funder does not require this. Payment instalments should be matched to the project workplan to ensure that funds are available when they are needed.

Trainer's Note

Return to overhead 7.1.1 which shows the sequence of this training session.

7.1.5: Financial Reporting

The budget for a marine protected area is likely to be derived mainly from public funds and it is important that the park manager can be accountable for its expenditure. For an MPA, the most important part of the accounts is the statement of incomes and expenditures.

Where the protected area is part of a national system, there are likely to be administrative procedures already practised by your parent organisation—try to get a staff member assigned from another protected area far from the central office to help set up your office administration systems.

The marine park manager will be concerned with two main types of financial reporting: annual financial reports, and reports for additional short-term projects, particularly if these have been funded externally.

7.1.5.1: Annual Financial Reports

The annual financial report is a summary of all of the income and regular and occasional expenditures which have been made in the fiscal (financial) year. The simplest financial report is a summary statement of income and expenditure each presented in a separate column. Overall headings could be those shown on the previous overhead.

Trainer's Note

Show overhead 7.1.3 and briefly talk through the items listed under income and expenditure.

A more meaningful report could show how expenditures are related to the principle objectives of the MPA. Headings may include enforcement, facilities, research, training, outreach and education, and administration. To do this, you will need to estimate the proportion of staff time and supplies which have been allocated to different tasks.

A simple summary of annual expenditure is a good way to gain the confidence of partners even if it is not a legal requirement, or is normally hidden in your parent organisation's report. You may be asked to produce copies of financial reports when applying for certain types of funding. Even where this is not the case a summary of expenses will help a potential supporter to put the funding requested in perspective, as well as provide reassurance that funds will be well administered.

7.1.5.2: Project Reports

For end-of-project reports, or, with longer-term projects, quarterly or biennial reports, the statement should be presented according to the budget lines or headings agreed at the outset of the project. You should not reallocate funds between different headings (nor indeed vary project activities) without first seeking approval—this is unlikely to be refused if you present a good reason.

Always present project reports in a timely manner, or if absolutely necessary, notify the project officer of the reasons for the delay and specify the date when the report will be available. A delay in reporting may delay payment of further instalments and this could affect the success of the project.

7.1.5.3: Maintenance of Accounts

It goes without saying that accounting should not be left until the very last minute.

The manager may need to know what funds are available in order to inform his or her decisions during the year (for example, whether to invest in a particular piece of equipment, or to employ temporary staff during a busy period).

Any discrepancy between funds held in the bank and the expected balance should be investigated and corrected immediately.

The ledger is the official record of a firm's accounts, and in practice, normally is made up of several different documents: the general ledger; the cash book and the petty cash book. Entries are not usually made directly into the general ledger, but into a series of day-books (or books of prime entry), for example for ticket sales and fuel purchases.

The ledger can be maintained in hard copy on specially printed paper or on the computer. Even if you choose to maintain your accounts on computer to speed up calculations, it is recommended that you keep a definitive hard copy of the ledger.

Case study 7.3: Internal Control “Prevention is better than cure.”

—Jack McCanna

The accounting system is only as good as the people who form part of it. A good system will ensure the necessary checks and balances and provide all staff and board with tools to adequately manage and account for resources entrusted to them.

All organisations, large or small, should follow basic, generally accepted rules for internal control. The following is a list of the most common mistakes made by organisations that violate basic financial management principles. A manager who steers clear of these violations will go a long way to ensuring a basic and strong control environment for the MPA and will enable the organisation to obtain clean audits year after year.

‘Top Ten’ List of Internal Control Violations

- 10) Signing blank cheques
- 9) one cheque signatory
- 8) accountant signing cheques
- 7) major (as defined under policy) procurement without quotations
- 6) accountant preparing and checking own reconciliation
- 5) Cash payments without acknowledging receipt
- 4) commingling funds (donors, individuals)
- 3) effecting payments without supporting documents or authorisations
- 2) opting for cash vs. cheque without adequate justification
- 1) making a payment that is in conflict with the regulatory provisions of a donor agreement

Trainer’s Note

Ask someone in the group to suggest why. Possible answers, or those that you could add, are 1) Hand-written records are more secure since it is harder ‘to fiddle the accounts’ by altering records, and 2) There is also a risk that computer records could be lost in the event of a crash!

Book-keeping is a specialist task and you may need to employ a qualified book-keeper to maintain the ledgers (perhaps only for one day per month or per week according to need) and to design an appropriate set of day books (e.g. relating to ticket sales, stamps etc.). In a small office, the book-keeper may also deal with other financial issues—for example payment of wages (weekly) or salaries (monthly).

Other payments include those made immediately, on the basis of a periodically settled account with the supplier, and possibly in the case of larger items, by instalments. Whichever payment method is chosen, it is important to get an invoice and/or receipt which describes the item purchased or service provided, the price and the date, and the suppliers stamp or signature.

Remember all financial records must be available for inspection during the annual audit and it is therefore important to keep records of all income and expenditure including supporting evidence.

Trainer’s Note

Return to overhead 7.1.1, which shows the sequence of this training session

7.1.6: Auditing

Legal requirements relating to preparation of account statements and auditing differ from country to country, and may vary according to the type of organisation which is managing the marine protected area. In most countries, the annual audit is a legal requirement for all public and private organisations. In the case of the MPA, the audit may be part of a larger audit of the parent organisation (e.g. Ministry or Department).

An audit is an annual examination of an organisation’s detailed accounts and accounting procedures in order to verify the annual accounts. The audit is carried out by an independent firm of accountants, which belongs to a recognised professional body.

In private companies the audit is designed to ensure that the director is accountable to shareholders. Accountability is also important in the public or non-profit sector, where funds are derived directly or indirectly from the public. Auditors are not responsible for maintenance of accounts or preparation of accounting statements or for detection of fraud. (The latter is the responsibility of the directors though

in practice, the auditor will almost certainly detect fraudulent practices).

The auditor may choose to look at any aspect of the financial system, including whether it meets legal requirements. Typically the audit is concerned with two types of internal control:

- To examine the adequacy of mechanisms which are in place to prevent dishonest or fraudulent practice. For example, relating to segregation of duties, authorisation of a payment, custody of assets, and record keeping should be carried out by separate individuals, or double-checked.
- To ensure compliance with these controls—Has the appropriate person initialled payments? Does available documentation support the figures that appear in the accounts? And so on.

As we have seen earlier, for the marine protected area, the most important part of the accounts is the statement of income and expenditure, with supporting ledgers. However, as with a private company, the auditor may also look at assets of the MPA including buildings, furnishing, equipment, and even stocks of consumables.

Auditors may carry out some parts of their work at different times during the fiscal year but the final audit will coincide with production of the annual financial report. The amount of time (and money) required for the audit will be reduced if accounting records are in good order.

The final brief auditor's statement represents an opinion on the truth and fairness of accounts presented by the organisation being audited, and is designed to increase the credibility of accounting statements. It should appear in the annual report. The statement may note qualifications where insufficient information was available to verify certain aspects of the account or where there is disagreement with certain parts of the account. Clearly a qualified statement should be avoided! A more detailed management letter will inform the manager of problems which have been encountered during the audit relating any weaknesses in the accounting system. The auditor may make constructive suggestions as to how to improve the system.

Remember that maintenance of proper accounts and an annual audit may be a legal requirement in your country. Make sure you know who is responsible for carrying this out and be prepared to provide access to appropriate information to your parent organisation if needed.

7.1.7: Stocking and Inventory

Equipment, buildings, furnishing and even supplies are part of the assets of the MPA and may be examined in the course of the annual audit.

It is useful to maintain an inventory of all buildings, furnishings and equipment and update this when new items are acquired or when worn out, broken or obsolete items are disposed off. The inventory should be updated at least annually, and this, as well as crime prevention, will be easier if items are visibly labelled in a permanent manner.

- Use log books for equipment issued for use in the field (e.g. diving gear) and check every item is returned in good condition once the activity is completed.

A range of materials will be used in the day-to-day running of the MPA including consumables such as fuel and office supplies, and equipment such as boats, and perhaps radios or diving gear. Ensuring that these supplies are available as required is a minor but indispensable management task. Just as you project or anticipate your monthly expenditure it is a good idea to project the amount of consumables required in stock. Try not to overstock as office supplies in particular have a limited shelf life especially in warm or humid conditions; but on the other hand, be aware of the possible delays in your supply chains—for example fuel shortages.

Purchase of new materials is usually initiated by a countersigned purchase order, which in time will have its corresponding invoice and entry in the ledger. You may also receive materials as gifts or in-kind contributions from a sponsor. A stock-keeping system can help you keep track of consumables and prevent losses from pilfering. In essence, a designated staff member issues items from the store when an appropriate order has been signed. Stock-taking (a type of inventory) should be undertaken periodically to check that supplies are in order.

- Think about the conditions of storage—ideal storage conditions are secure, dry, cool, out of direct sunlight, and protected from pests such as insects or rodents. You will probably need to establish separate dry and wet storage areas.
- Issue older supplies first: first in–first out will reduce losses due to deterioration.

Overhead 7.1.1: Objective

To provide a basic introduction to financial management including budgets, maintenance of accounts and auditing

Sequence:

1. Budgets
2. Costs/expenditures
3. Costed priorities
4. Cash flow and projection
5. Financial reporting
6. Auditing
7. Stocking and inventory

Overhead 7.1.2: Regular and occasional operational costs for the MPA***Regular expenditure***

Staff—includes salaries, plus any benefits, allowances or employer's contributions to insurance, for all regular staff (full-time and part-time)

Maintenance—maintenance of infrastructure (e.g. visitor facilities, office building and signboards)

Consumables—items for day-to-day use, such as stationery, communications and fuel, utilities (water, electricity, etc.).

Occasional expenditure

Infrastructure—such as new buildings or moorings

Equipment—such as boats, diving gear or computers.

Overhead 7.1.3: Outline Accounting Statement for an MPA

Coral Marine Park: Statement of Income and Expenditure
Period Covered: 1 January-31 December 1999

	Currency (units)
<i>Income statement</i>	
Government allowance	10,000
Foundation start-up award (year 3)	7,000
Income from user fees	3,700
Donations	280
Total	19,980
<i>Expenditure statement</i>	
Staff salaries	9,000
insurance	900
Maintenance materials	400
servicing charges	120
Consumables stationery	130
communications	280
fuel	500
utilities	190
Equipment diving equipment	600
computer & printer	2,200
Infrastructure boathouse refurbishment	3,000
mooring buoys	2,500
Total	19,820

Training Session 7.2: Revenues

Objective

To introduce the different sources of revenue available for MPA management.

Significance

The funding provided by governments for protected areas is often insufficient to cover day-to-day operational costs associated with managing the MPA, let alone cover costs of improving the state of the protected area, or of the facilities and services it provides. Revenues are funds earned by the park by allowing its resources to be used directly or indirectly in return for a fee.

Presentation

This session consists primarily of a short lecture illustrated using overheads. Encourage questions and exchange of experience on the pros and cons of different types of fees.

Duration: 40 minutes

Equipment and Materials: Overhead projector
Overheads and handouts

Trainer's Note

Show the top half of overhead 7.2.1 which sets out the aim of this Session.

The core operational budget of an MPA may be fully or completely provided by central or local government either directly, or more likely through a line agency such as the Department of Parks and Protected Areas. Ideally all core operational costs of the MPA would be covered in this way, but this is rarely possible and most MPAs will have to find ways to supplement their income as well as to reduce their costs through such measures as the use of volunteers.

Chumbe Reef Sanctuary in Zanzibar has been fully financed by a private organisation (CHICOP). Since 1992, a variety of facilities, including nature trails, have been developed and several rangers have been trained and employed. Chumbe is now marketed internationally as an exclusive ecotourism destination using an attractive web site, which emphasises the cultural and environmental assets of Chumbe Island and the adjacent waters.

Trainer's Note

Ask the participants to indicate by show of hands whether they receive money from government or private sources (some may indicate both). Is the money provided by governments for MPAs sufficient to cover all aspects of the management programme? (It rarely is).

Trainer's Note

Return to overhead 7.1.3 from the previous training session. Point out that the government allowance just covers staff salaries and insurance. Other income is critical to ensure the functioning of the MPA. Emphasise the third item, user fees. These contribute importantly to the other regular operational costs (maintenance and consumables).

Marine protected areas can generate revenues and support from a variety of sources, some better suited to major projects and initial establishment costs, some to more everyday operational costs. Diversification of funding sources provides a more stable basis for financial viability than dependence on a single source of income.

This training session deals with products and services which are 'sold' by the MPA while the next session looks more broadly at sponsorship and donations, including applications for international and project funds, and development of longer term funding stability through the use of trust funds.

Trainer's Note

Show the bottom half of overhead 1 which lists different types of revenues in the order they will be displayed in this session.

Where do these revenues go? Some, particularly those generated by user fees, may go directly to central government or a relevant line agency. In this case you (or your parent organisation) may need to make a case for allocation of a portion of funds to management of the MPA. In other cases an agreement may be reached that all revenues can be used directly for MPA management. Other types of income may be received directly by the MPA.

However, the type of organisation which has been legally established to run MPA may restrict the type of revenues you are able to receive. For example, international assistance agencies will generally only work through governments, while international foundations are more likely to work with independent non-profit organisations such as NGOs. It may be useful to establish a separate revenue generating body which supports the marine protected area - for example, an association, a limited company, or a charity.

7.2.1: User Fees and Entrance Fees

User fees can offer one of the major sources of revenue for a marine protected area, though these are not always charged and are sometimes controversial as it may be argued that a protected area is a public resource. It is sometimes appropriate to have a tiered system of fees, for example establishing different rates for local, national and resident, and international users.

Trainer's Note

Show overhead 7.2.2, note the variety of user fees and discuss using the following points.

Tourism may become the primary source of income for an MPA if it is accessible and nearby facilities are available to cater for the visitors' needs (accommodation, etc). Fees are typically paid for more interactive activities particularly diving, and for overnight stays either in private boats or on land (e.g. camping). However a nominal fee may also be levied for admission to enjoy the park surroundings and for snorkelling, pleasure boating or wind-surfing, amongst others.

Certain types of natural resource extraction may be permitted in some protected areas or in designated zones. User fees are not appropriate for activities which have provided a traditional source of livelihood for local communities (and which may already have been restricted by the park regulations) but access passes could be granted to individuals carrying out permitted activities according to conditions imposed by the park regulations. Fees may be introduced for recreational or new users whose activities are compatible with the management objectives for a particular area or zone.

Scientists are used to paying 'bench fees' to host organisations for use of laboratory facilities and for access to field sites. As with other visitors, the fee should be tailored to the level of facility provided. It may be appropriate to develop field station facilities with a national university or research station, or to develop collaborative agreements with researchers from further afield.

Fee collection may be logistically difficult in a large MPA—unlike terrestrial parks it is not possible to limit entry to controlled gateways and controls on users may be limited to random checks. Rangers are likely to become familiar with regular and local users such as fishermen quite quickly, but visitors may be harder to control.

Place the onus on those providing access to visitors to ensure that admission fees are paid—for example by supplying the boat operators with entry tags which must be marked with the date of resale to individual visitors. Random checks and follow through with significant penalties to those providing transport into the MPA (fines or exclusions) will ensure compliance.

Provide visitors with information regarding the importance of their entry fee to the park's operations and projects and they will be happy to contribute.

Patrol overnight mooring areas at dawn or dusk.

Trainer's Note

Discussion (Approximately 20 minutes)

1. Distribute copies of the Press Release issued by the Board of Trustees for the Mafia Island Marine Park.
2. Point out the different types of fees which have been introduced—some of these are quite novel—for example the 'daily filming fee'.
3. Note the different levels of fees established for Tanzanian citizens, foreigners and expatriate residents.
4. Finally, note that the fees will go directly to the Marine Parks and Reserves Conservation and Development Fund, which has been legally established on the basis of the Marine Parks and Reserves Act.
5. Ask for other examples from the region of user fees. There will probably be many and the aim of this question is to show the wide range of possibilities. Do the fees reflect the type of facilities provided? Are systems tiered for local and foreign visitors? Is this fair?
6. Where does the money go? How is money from the user fees allocated to management costs?
7. If there are no suggestions give the following example.

Kenya Wildlife Service charges entry fees to its Marine National Parks in Malindi/Watamu, Mombasa and Kisite. Current charges to non-citizens are USD 5 for adults and USD 2 for children. There is an overnight 'Conservation fee' for extended stays. Kenyan residents and citizens pay an entry fee in local currency and can also buy an annual pass.

There is also a system of fees for boats, including an annual pass, and a substantial annual charge (10,000 KShs) for boats stationed in the park.

Trainer's Note

Return to Overhead 7.2.1

Case Study 7.1: The Permit System of the Mafia Island Marine Park, Tanzania

According to the Management Plan of the Mafia Island Marine Park, there will be two kinds of permit:

Local Resident User Certificate. Issued to all local resident resource-users without fee, having medium-term validity, initially 3 years. The certificates provide blanket permission for certain activities and effectively serve as identity cards for bona fide local residents to confirm their status to MIMP and village patrollers.

MIMP permit. Grant permission for a specified limited period for a given individual to undertake a specified type of resource-use, in some cases in a specified area.

The issuing authority for MIMP permits and Local Resident User Certificate is the Warden-in-Charge or his designated representative(s).

MIMP residents. Any MIMP resident wishing to undertake any permitted activity (fisheries, non-fishing and forest and terrestrial resource-use) in the Core, Specified-use and General-use zones, should hold a Local Resident User Certificate, obtainable through their Village Liaison Committee.

Village Councils within MIMP will establish and maintain a registry of all bona fide residents. Any MIMP resident wishing to undertake any permitted activity requiring a MIMP Permit will be required to apply for such, through their Liaison Committee.

MIMP residents will pay no fee either for any of the permits.

Non-residents. Any non-resident wishing to enter the marine park or to undertake any activity requiring a user permit, will be required to obtain an Entry Permit and/or a User Permit from the Warden.

A fee will be charged to non-residents for entry into the marine park and for permission to undertake any form of resource-use within the park.

7.2.2: Licences

A licence authorises an individual or organisation to carry out a particular activity, normally in a specified area or location and for a specified period (typically, one year). Licences differ from an annual user charge in that they are purchased from the government either directly or through authorised agents.

The licence is not a direct source of income for the protected area but may give an individual the right to carry out activities in the MPA, especially if the relevant legislation has not been harmonised.

Some activities in the MPA could be made subject to a user fee as well as to possession of the relevant government license. It may be possible to negotiate a revenue sharing scheme with the government if the licensed activity such as fishing is taking place principally within the MPA. For example, the MPA authority could become a designated agent for a particular type of licence.

Trainer's Note

Ask for examples – fisheries is the classic example—but the revenue normally goes to the department responsible for fisheries rather than that responsible for protected areas.

In Kenya, traditional fishing is allowed under license in the National Marine Reserve which surrounds Mombasa Marine Park.

7.2.3 Concessions

A concession is the leasing of a piece of land within the protected area to a private party for the extraction of resources or the right to trade goods or services. Concessions vary greatly—from minor concessions for the sale of refreshments and souvenirs to major concessions for development of a lodge or even to extract resources. Provision of access services to the MPA is another potential area for concessions—for example, boat services or launch ramps for private boats.

The concession encourages private investment in the protected area, and the new facilities may attract a greater number of visitors. However, the concession should not compete with private enterprises providing similar facilities outside the MPA but rather open new markets, and provide opportunities for local employment.

A concession should be granted and renewed on the basis of appropriate (and often stringent) environmental conditions including habitat restoration—operators are likely to comply in order to ensure a long-term return on their investment. Permission to develop land or licences to extract resources may also be required from the appropriate government agency.

Trainer's Note

Ask if there are any examples in the region. There may not be any, but point to the development of independently owned lodges in the larger terrestrial parks (e.g. Serena). Give the following example from the USA.

In some US National Parks, for example Glacier Bay, concessions are granted to commercial operators for provision of visitor services such as resort areas and marinas. Concessions are granted on an annually renewable basis and the level of fee depends on a variety of factors including the nature of the service provided and the number of clients served, plus a percentage of the gross income from the operation, and subject to a minimum fee.

An alternative approach to working with private investors, which we saw in the example of Mafia above, is to levy a fee on incomes from services such as hotels or transport. This may be appropriate for facilities which pre-date the designation of the protected area or where privately owned land in the protected area is developed.

7.2.4: Souvenir Sales

Souvenir sales and refreshments operations may also be run directly by the MPA authority, or in partnership with local enterprises. T-shirts, crafts, postcards and guides can provide good publicity for the MPA and surrounding area, and importantly provide a new outlet for local products.

- Try to provide a good selection of well-displayed goods, but don't over-invest in stock which deteriorates—no one will buy faded T-shirts or spoiled postcards.
- Gain the confidence of tourists by displaying a price list or labelling goods.

A souvenir or refreshments stall can double as an information point and is a good place to display notices reminding visitors of the park regulations, as well as more general educational materials or reports on projects, management activities, or lists of species sighted. Provide a guest book and ask for suggestions.

7.2.5: Services

Some of the specialist skills developed by marine protected area staff offer potential to provide training to the wider public or other services such as the installation of mooring buoys outside the protected area. A good service provided at a reasonable price can generate useful income for the MPA as well as promote goodwill in the wider community.

The Montego Bay Marine Park offers a range of services including training in swimming, first-aid, boat handling, water quality testing, environmental risk assessment, and ecology for tour guides.

7.2.6: Royalties

A royalty is a payment for reproduction of a product which is made to the originator of that product, sometimes in addition to a one-off payment for the rights to use or develop the original product. For example, an author receives a small proportion of the sale-price for every copy of his or her book which is sold. Two examples of products which may generate royalties for a marine protected area are biomedical derivatives and visual materials such as photographs or films that may be used in documentaries, advertising or books.

Royalties are not likely to provide the basis for a regular income since payments are likely to vary greatly according to sales, and to be paid only sporadically. It is also very difficult to monitor the use in far-away areas of products derived from the MPA and the revenue received may be largely a matter of trust (as well as a clear contract). However, an important spin-off from such products may be good publicity and increased general support and justification for marine conservation in general.

Overhead 7.2.1: Objective

To introduce the different sources of revenue available for MPA management

Types of Revenue:

1. User fees
2. Licences
3. Concessions
4. Souvenir sales
5. Services
6. Royalties

Overhead 7.2.2: User Fees

1. Leisure and Tourism

Entrance fees

Ranger guided tours

Self-guided tours (sign-posted trails, boardwalks)

Watersports: diving, snorkelling, windsurfing, etc.

Yacht and other boat mooring

Overnight fees

Facilities (accommodation, camping, firewood, etc.)

Fishing / tag fishing (where permitted).

2. Scientists

'Bench fees'

Transportation

Use of equipment

Field assistance

Accommodation / camping facilities

Provisions or catering

Long-term (interseasonal) storage

Fresh water

Laboratory consumables.

Handout 1: Press/Media Release

Issued by
The Board of Trustees of the Marine Parks and Reserves Unit
and
Manager of Marine Parks and Reserves Unit, Chikambi Rumisha

Government Introduces User Fees Scheme for Marine Parks and Reserves

The Board of Trustees of the Marine Parks and Reserves Tanzania wishes to announce the introduction by the Government of a User Fees scheme for Marine Parks and Reserves applicable effective from this government financial year (1st July 1999).

The introduced user fees scheme is meant to enhance the conservation efforts of the fragile coastal and marine environment. According to the government office notice, the scheme is designed to provide for an equal opportunity for marine parks and reserves users, visitors and the Tanzania community in general to participate and contribute to the conservation and protection of critical marine natural resources.

The fees will go directly to the Marine Parks and Reserves Conservation and Development Fund (CDF) established under the Marine Parks and Reserves Act No. 29 of 1994. The collections shall be used to support the conservation programme in both marine and freshwater bodies.

According to the order signed on 2nd March 1999 by Hon. Zakhia H. Menghji, Minister of Natural Resources and Tourism and published as Government Notice No. 84 and 85 of 26 March this year, adult persons who will visit Mafia Island Marine Park will be required to pay for Permit of Entry at the rate of TShs 1000/= per day (Tanzanian citizens) and US\$ 10 for foreigners. Expatriate residents will pay TShs 2500/= while children between the ages of five and 16 will pay TShs 200/= (Tanzanian citizens), US\$ 3 (non-Tanzanians) and TShs 300/= for expatriate residents. Permit rates for entry into the marine reserves of Mbuyya Island, Fungu Yasini Maziwi Island and Bongoyo Island are US\$ 10 for non-Tanzanians and TShs 500 for Tanzanian residents including expatriates.

Other payable fees include camping permits in the Mafia Island Marine Park, whose rates are TShs 1000 for residents and US\$ 10 for Non Tanzanians. Camping permits for children between 5 and 16 years are TShs 300 and US\$ 2 per child. Guide fees are US\$ 5 per day while filming fees are US\$ 100 per person per day. Scuba diving and the use of glass-bottomed boats for reef watching will be charged at US\$ 2 and 2.5 for non-Tanzanians and eExpatriate residents respectively and TShs 1000 for Tanzanians.

Rates for the use of leisure boats and TShs 1000 for private boats and TShs 5000 for commercial boats. Foreign registered boats will be charged US\$ 10 (private) and US\$ 40 (commercial boats). The government has also introduced fees of 10% per bed night (bed and breakfast) payable by hotels or lodges within marine parks or reserves.

C. K. Rumisha
Manager/Secretary to the Board

Training Session 7.3: Fundraising

Objective

To introduce approaches to fundraising through donations and sponsorship, and for the development of specific projects.

Significance

An imaginative and professional approach to fundraising can be extremely rewarding in terms of providing access to new kinds of support for the MPA. However, fundraising can be frustrating and may require a lot of initial investment in terms of preparation.

Presentation

The first 20 minutes consists of a short presentation on different types of 'fundraising'. The remaining 30 minutes will be spent on a group exercise which looks at different types of fundraising.

Duration: 50 minutes

Equipment and Materials: Overhead projector
Overheads and matching handouts
Flip chart paper and stands
Markers and tape
Examples of publicity materials with sponsors logos

The term fundraising is used for a wide range of activities which are designed to persuade other people to give you money. The key to all kinds of fundraising is communications—the ability to convince somebody else that they should support your work even if it is not in their direct interest to do so. Fundraising relies on the same techniques as marketing except that the goal is not to make your target audience want to buy a product, but instead to support a particular cause. Direct and personal approaches are the most successful and good preparation and persistence pay!

Try to make it easy for somebody to support your work by presenting a variety of possibilities. Make these meaningful—for example suggest the amount of money you will need to produce 500 leaflets, to train two new wardens, or to tile the roof of your visitor centre. In kind gifts may also be useful and some supporters may prefer to offer you materials, furniture, a computer, or even their expertise. Don't wait for people to come to you—you have to go out and ask.

Trainer's Note

Return to overhead 7.1.3, from the first training session (7.1) in this module. Point out how the "Foundation start-up award" enabled Coral Marine Park to develop its infrastructure and buy significant items of equipment.

Donors and sponsors like to see a tangible result for their investment—and it is easy to ask for money for a specific item whose role in improving the management of the park can be clearly demonstrated.

Trainer's Note

Return to overhead 7.3.1

7.3.1: Donations and Sponsorship

A donation is simply a gift with no strings attached—though sometimes a small reward is provided as a token of recognition. Donations vary from the exceptional large endowment in a will to small amounts left in collection boxes.

Sponsorship differs to donations in that sponsorship is openly recognised. Sponsorship should be seen as a partnership between donor and recipient where the commercial sponsor in particular is

rewarded, through the role its support plays in public relations. Sponsorship can create good publicity for a business, particularly one whose customers may benefit directly from the marine protected area.

The most common sources of business and commercial sponsorship are local. Tourist-related initiatives such as tour agencies, travel agents, hoteliers and dive operators are all likely to support a well publicised scheme, particularly when they see that others are doing so. They may even compete to be the most generous! Local people can contribute to the park financially, by giving materials or by assisting directly with different types of voluntary work.

1. The Watamu Conservation Group—a registered self-help group—assists the management of Watamu Marine National Park and Reserves. The group provides resources to the Kenya Wildlife Service in the form of fuel and computers amongst others, has raised funds for maintenance and repairs, and has secured donations of boats and engines. Funds are raised from a variety of national and international sources including local businesses and tourists.

If your organisation has a recognised charitable status, regular or large donations may provide tax advantages for the individual or business donor, as well as for your organisation (which may be able to receive the income tax paid on the donation).

- Remember to say thank you when you receive a donation; for large gifts, send a letter explaining how the funds were used and you may be rewarded by a further donation in the future.
- Provide a certificate or annual award stickers so that the donor can display his or her concern for the future of the area. When marketing such a scheme remind the operators that their clients will appreciate the goodwill.
- Adoption programmes (adopt-a-trail or a mooring buoy; adopt-an-animal; adopt-a-species) can be a good way to increase community interest in the park itself as well as to give business sponsors, or even private sponsors, a sense of ownership, and of return for their investment. Programmes like this have been developed in the USA - for example, in the Gulf of Farallon National Marine Sanctuary.
- Many charities offer special types of “membership” —for example ‘supporters’ and ‘friends’—on the basis of different levels of monthly or annual donation. Normally this kind of loyalty is rewarded in some way; for example a three monthly newsletter, special events, or reduced admissions.

For a larger gift—for example the renovation of a building—try to organise an event such as an opening ceremony with media coverage. Be prepared to mark your sponsor’s generosity with a commemorative plaque, or perhaps display their logo on signboards, posters or leaflets. Try to get the sponsor involved with your projects—arrange a site visit and or send a newsletter or photographs illustrating the good work they have supported.

Trainer’s Note

Look at some examples of communications or educational materials produced through or sponsorship, and ask for examples from amongst the posters or leaflets the participants have brought in. Note the logos!

7.3.2: Project Funds

A specific form of sponsorship is the funding of projects, often as part of a regular programme where organisations are invited to submit proposals in a particular thematic area. A wide variety of foundations, nongovernmental organisations, and international development agencies fund marine projects which are compatible with their areas of programmatic interest and it is up to you to show how your work is compatible with their priorities. Funds of this nature are best suited for start up activities, or to the funding of specific projects (e.g. environmental education) which fall outside the day-to-day operations of the MPA.

It is worth taking time to find out about funding opportunities. Embassies and NGOs are a good place to find out about international funding opportunities and to obtain contacts. Some embassies provide funds for small projects which are sometimes the most effective but may require just as much preparation and reporting as a larger project. Other contacts may be made through meetings or conferences, at social events, through colleagues, or through announcements in newsletters.

Fundraising can be frustrating as it often takes a long time to know whether your application has been successful. It is worth making the effort to prepare a good proposal. Develop a clear justification for the project, and show that it will be carried out in a professional manner by drawing up a workplan and a clear budget. Make sure before you start that your project is suitable—there may be restrictions on who can apply and on the type of activities supported, and there will almost certainly be budget

restrictions and overall limits. If your proposal is unsuccessful try to find out why as this will help you to improve the proposal—and try again elsewhere.

Trainer's Note

Show overhead 7.3.2 and expand on the points given using the following paragraphs.

Tips for making applications

- Obtain all available information on the programmes including its goals and objectives, and the amount of funding available for individual projects. If possible, ask for examples of other projects funded in your region.
- Be aware of the organisations' aims and objectives and present your own project in a favourable light—but don't mislead the potential supporter as to the type of work you will be doing.
- Read the instructions carefully and provide all information required including a detailed breakdown of the budget.
- Note the deadlines for applications—some organisations may review projects only once or twice during the year and this is clearly not suitable where immediate funds are required.
- Finally, if funds are to be received in a foreign currency be aware of possible bank charges and delays, and allow for this in the project budget. Similarly, allow costs for overseas communications.

Once your application has been successful ...

- Take care to observe reporting requirements—a good report will serve as good publicity for you as well as for the organisation supporting you.
 - Remember to use the supporting organisation's logo and name on any materials they have supported (leaflets, signboards etc).
 - Encourage your supporter to visit—this may provide a basis for a long-term partnership and for developing projects that go beyond the regular forms of support.
1. Several marine parks in East Africa have developed very effective long-term collaboration with WWF—including Bazuruto in Mozambique, Mafia in Tanzania, and Kiunga in Kenya. In 1998, a percentage of profits from the commemorative watches sold at the "World Oceans Expo" were donated via WWF to the Bazuruto project providing excellent publicity for all parties involved (Expo, watch company, WWF and Bazuruto) as well as a valuable source of revenue.

Trainer's Note

Return to overhead 7.3.1

7.3.3: Trust Funds

A trust fund is a fund of money set aside for a specific purpose under the supervision of a legally designated Trustee or Board of Trustees. A well-established trust fund can provide regular income in the form of interest or return from investments, which can be used without depleting the overall capital. Ideally, it provides a steady source of income for the MPA, reducing its dependence on other less reliable sources of income.

There are innumerable ways to build up a trust fund, including all the fundraising and revenue earning approaches mentioned above. The trust fund offers your sponsor or donor a long-term investment and sense of achievement, and assurance that funds are being well managed. Use an anniversary to launch your appeal, or aim to establish the fund when the park is gazetted but bear in mind that the investment in terms of staff time will be considerable.

Task 7.1: Individual or Group Exercise (20 minutes upwards)

Allow 5 minutes (individuals) or 15 minutes (groups) to prepare or discuss ideas, and 15 minutes or more for reporting back. (This is an upbeat discussion to end the day and so collect as many real or hypothetical examples as time allows).

Ask the participants to suggest examples of how they would raise money from either:

- I members of the general public including local residents and tourists;
- II a commercial sponsor who is interested in an eye-catching and popular project in order to enhance their public image;
- III a more serious donor who is interested in projects that promote long-term environmentally sustainable development.

Give the participants a few minutes to prepare their answers either individually, or if there is time in groups. Select initially at random, and then more specifically ask for examples of the different themes.

Products which appeal to the general public are often small items of which you can 'sell' many—for example, adopt-a-species or imaginative souvenir sales including educational items such as identification guides, or T-shirts and pins. A commercial sponsor may undertake to support a longer-term and more ambitious project—but again one with visible or tangible results—for example, providing equipment or infrastructure. There should be a direct link to conservation objectives, support of which the sponsor can publicise to generate goodwill.

A more serious sponsor may be interested in developing capacity for management or research, or in working with communities whose livelihoods are based in and around the MPA. They may support community development projects such as a rotating fund, or promotion of alternative means of income generation. Increasingly, donors are looking for projects that can demonstrate long-term outcomes in the years after the funding has ceased.

Trainer's Note

If there is time, present the following case study that looks at the way in which Bonaire Marine Park in the Caribbean has set about diversifying its funding base. It illustrates many of the points raised in 7.2. and 7.3.

Case Study 7.2 Bonaire Marine Park (BMP), Netherlands Antilles

Bonaire Marine Park (BMP) was first established in 1979 with funding from WWF supplemented by local and Dutch government subsidies. However, the park was not actively managed between 1984 and 1991 owing to financial difficulties.

In 1991 BMP was revitalised with further funding from Dutch Government (approximately \$125,000 per annum for a maximum period of 3 years) which was granted subject to certain conditions; specifically that it should have an acceptable institutional structure and should become self supporting within the period of the grant funding. BMP no longer receives any government subsidy.

A number of different funding options were initially considered including a system of franchises for local dive operations, a general 'nature tax', and introduction of admission fees for selected users. A 1992 law established a diver admission fee of \$10.00 per diver per calendar year. Tickets and tags are sold to dive operators on a weekly basis and dive operators then sell them on to their divers. Income is thus received directly by the Marine Park with no delay or administrative charges.

At first the dive industry was concerned that divers were being unfairly targeted and that Bonaire would become less competitive as a destination for divers. In fact the \$10.00 fee is now used as a marketing tool demonstrating Bonaire's strong commitment to marine environmental protection. Divers have never objected to the fee and according to a 1991 survey, would be willing to pay up to \$25.00 per annum.

Expenditure of BMP's income is legally limited to maintenance, information and education, research and monitoring and law enforcement. At present, the user fees are sufficient to cover salaries and operational costs only—all other expenditure, particularly special projects (e.g. research projects, yacht mooring programme), have to be financed through grant funding or donations.

Grants and donations also provide an important source of income for BMP. For example, \$10,000 was given in 1994 from a commercial organisation for the public yacht mooring programme while BMP has established a long-term relationship with WWF Holland which has funded five important projects to date. Small donations of money or equipment are acknowledged in BMP's newsletter, while posters were recently sent to Prince Bernhard of the Netherlands showing some of the equipment and facilities which he has provided. On a less positive note, souvenir sales proved disastrous in 1993/4 with the BMP barely breaking even as stock provided to external sales outlets was not paid for.

Despite many successes, the BMP is still struggling to bring in enough revenue to meet its annual operating costs and its reserves are declining. In the medium term BMP is considering other sources of funding such as introducing charges for other user groups such as snorkelers, windsurfers and yachtsmen or increasing the diver admission fee. Other activities include encouraging the development of a trust fund for the Antilles, seeking tax-free status for donations from the USA, and identifying new outlets for an improved range of unusual and high quality souvenirs.

This case study is based on information on the BMP web page, which is well worth visiting at: <http://www.bmp.org/>

Overhead 7.3.1: Objective

To introduce approaches to fundraising through donations and sponsorship, and for the development of specific projects

Sequence:

1. Donations and sponsorship
2. Project funds
3. Trust funds

Overhead 7.3.2: Tips for Making Applications

- Obtain all available information on the programme
- Be aware of the donor organisation's aims and objectives
- Read the instructions carefully and provide all information required
- Note the deadlines for applications

Once your application has been successful ...

- Take care to observe reporting requirements
- Use the supporting organisation's logo and name
- Encourage your supporter to visit

MODULE 8

Sustainable Utilisation of Natural Resources and Alternatives

AUTHORS: RON JOHNSTONE AND SALIM MOHAMMED

Objectives

The objective of this session is to enhance the level of understanding around the various issues associated with the use of natural resources and their sustainable management. This includes an examination of the resources themselves as well as a variety of tools used to manage resource utilisation and sustainability.

By the end of the session participants should be conversant with the various resource-use issues existing in the western Indian Ocean, and be able to knowledgeably assess the management imperatives and mechanisms likely to be important for different resources.

Summary of Training Sessions

This module contains two training sessions:

8.1: The WIO Region and Defining the Issues

Examines the varying definitions of what a resource is, and includes direct use and non-direct use resources. This session also explores the concept of ecological and socioeconomic 'footprints' from resource use, as well as the different ecological, social, economic and cultural spin-offs resulting from different modes of resource use and management.

8.2: Management of Natural Resources and Some of the Tools

Examines the mechanisms that can be used to manage resource use and sustainability. This includes regulatory, economic, technological, and educational methods, as well as the use of alternative resources and methods of resource utilisation.

Both sessions involve participatory exercises and case examples from the region.

Background and Sequence of Module

In dealing with the direct management of resources and the related stakeholder issues, the manager of an MPA is likely to face considerable variations in the perception, understanding and definitions that prevail for the resources and ecosystem components being managed, as well as for the methods applied in their management. Within this context it is essential that MPA managers have a clear understanding of what constitutes a resource and of how the fate and management of one particular resource may impact on a host of other factors and resources.

At the same time, coastal populations continue to grow and are characteristically comprised of a

growing immigrant component drawn from remote areas within the country or from elsewhere. This brings with it varying cultural and socioeconomic backgrounds that strongly influence the perceptions and expectations held by a given community. Accordingly, MPA managers need to be flexible in their own perceptions and must be able to apply suitable, and often varying, tools and mechanisms in order to deal with the issues that such variations necessitate for sustainable management outcomes.

This Module is primarily concerned with highlighting the need to encompass many perspectives and concepts in the management of natural resources. This applies to the technical or scientific aspects of measuring the effects of resource use, as well as the other aspects of socioeconomics, and culture. In particular, the module aims to explore the tendency for people to be unaware of the connectivity between a given resource and other aspects of the ecosystem, or with apparently removed aspects such as socio-economic and cultural facets. The module also presents a platform for participants to examine their own perspectives together with those held by their colleagues with the aim to integrate these into a sound approach to resource management. In view of this dialogue, the module then seeks to develop a sound resource management approach to two case studies provided from the region.

Session 8.1 presents a brief overview of the marine and coastal resource situation for the region. The session then examines examples of resources including those directly used and those that provide indirect value to society. These are considered in terms of the major issues associated with their extraction and use, as well as common perspectives on their management. Further, this session explores the concept of 'footprints' derived from resource use activities.

Session 8.2 consists mainly of a discussion and the group development of a resource management strategy based on two types of resource taken as examples from the region. The larger group is divided into two smaller groups for this and each is given one resource to work with. The two management approaches are then presented and reviewed by the larger group with discussion of critical issues such as the use of different management tools, the use of alternative resources, and the alteration of resource-use methods.

Conceptual Framework for the Sessions

The sessions are designed to make participants question their own perceptions and understanding of natural resources and their management. This involves examining the different classification systems and definitions that might be applied to resources. The aim is to reflect some of the commonly held definitions and, where possible, some of the misconceptions associated with the relatedness of some resources. This latter aspect leads into considering the broader impact or consequences of using a particular resource, and how this broader impact may be neglected in planning management strategies. The idea of resource 'footprints' can be discussed here as a means of examining the related ecological, cultural and socioeconomic issues.

In view of the above discussions, the participants are then taken through the procedures of developing a management plan with regular reflection on the broader 'footprint' issues as well as the specific concerns of the particular resource(s) at hand. The aim here is not to provide specific generic answers for all problems, but to develop a mode or approach and a way of thinking when resolving the dilemmas of resource management. Basic tools are provided in the sessions but the emphasis is placed on the manner in which the 'problems' or 'issues' are resolved, through the correct application of a variable set of tools and solutions, rather than one answer for all.

This module provides an arena for participants to assess their own way of thinking about resource management and how, from their own experience, they might deal with some of the issues that arise from managing the varying and broader issues related to natural resources. The module also provides basic tools and approaches that can be developed by participants to suit the needs and characteristics of their own working environment and situation.

References and Additional Reading Material

- (1995) Hint book to the user of logical framework analysis (LFA). Swedcorp, Stockholm, Sweden.
- Andersson, J.E.C. and Ngazi, Z. (1995). Marine resource use and the establishment of a marine park: Mafia Island, Tanzania. *Ambio* 24, 475–481.
- Kelleher, G. (1999) Guidelines for marine protected areas. World Commission on Protected Areas (WCPA). Best Practice Protected Area Guidelines Series No. 3. IUCN, Gland, Switzerland.
- Salm, R.V. and Clark, J.R. (1984) Marine and coastal protected areas: A guide for planners and managers. IUCN, Gland, Switzerland.
- (1988). Economic values of protected areas: Guidelines for protected area managers. Best Practice Protected Area Guidelines Series No. 2. IUCN, Gland, Switzerland.
- Shah, N.J., Linden, O., Lundin, C.G. and Johnstone, R. (1997) Coastal management in eastern Africa: Status and future. *Ambio* 26, 227–234.

Training Session 8.1: The WIO Region and Defining the Issues

Objectives

- To examine the varying definitions of what a resource is; to include direct-use and non-direct-use resources.
- To examine the different understandings and perspectives of resources and their use together with how this may be significant for management.
- Explore the concept of 'footprints' from resource use and the different ecological, social, economic and cultural spin-offs from different modes of resource use and management.

Significance

The use of a resource and the impacts it generates can be narrow or very broad in character. At the same time, different stakeholder groups may perceive resources in a different manner so that, for example, resources of a non-direct value are not encompassed in their perspective and management approach. Accordingly, any attempt to assess the impacts of resource use, and to then manage this, needs to encompass the different ecological, socioeconomic, and cultural components that are key to sustainability. This involves an understanding of the depth and extent of effects across the myriad of ecological and human welfare-related issues.

Presentation

The session is comprised of a series of factual deliveries on overhead, video, or slides demonstrating the different features of a resource and levels of potential impact. It is proposed that this be a directed discussion rather than a monologue, since participants are likely to already have experience of one or more resource use issues.

It may also be useful to have physical examples of some resources in the room such as, for example, coral bricks, lime from corals, and jewellery from corals. This clarifies the direct values that different individuals might have for a coral reef, for example.

A number of key overheads should be used to focus discussion and to illustrate concepts, especially when presenting the concepts of direct and indirect value resources, and resource related 'footprints' derived from their extraction and use.

It may also be useful for participants to list different resources that are of a direct and non-direct value so as to examine any differences in understanding between the two.

Duration: 1 ½ hours

Equipment and Materials: Demonstration examples of resource(s)

Overhead or video projector

Overheads and slides with matching handouts

Flip chart or electronic whiteboard so that material can be copied or collated

Markers for the chart/board

8.1.1 Introduction and Overview

The countries of the region place a high regard on the marine and coastal resources within their jurisdiction. This valuation is directly related to economic gains and/or to social welfare. In this respect, the countries of the region can be grouped into three categories with respect to their relative dependency and physical proximity to the marine environment, as well as their access to other resources from non-marine sources. These are: **Coastal Nations** e.g. Tanzania, Kenya, Mozambique, South Africa and Somalia; **Large Island Nations** e.g. Madagascar; and **Small Island States** e.g. Mauritius, Seychelles and Comoros. Participants should be encouraged to discuss the situation in their home countries with respect to how important coastal/marine resources are to social and economic development.

Trainer's Note

Overheads 8.1.1 to 8.1.2 cover the introduction and overview of the western Indian Ocean region as well as some of the issues to define.

Support Information: Fishing

Fishing is by far the most important marine resource extraction activity in the region, engaging over 200,000 people. In Mozambique, for example, the fishery sector employs up to 60,000 people and represents approximately 40% of the total export earnings annually. Fishing contributes approximately 8% to the gross national product in the Comoros, and accounts for nearly 90% of exports in the Seychelles.

Similarly, in South Africa, industrial fishing is an important part of the economy. In 1993, for example, the country recorded a total catch of 596,000 tonnes.

Fishery resources in the region have come under increasing pressure and this is considered to be responsible for the depletion of fish stocks. Catch per effort in the region has declined to be approximately 40% of what it was 17 years ago.

8.1.2 The Multifaceted Nature of Resources and their Management

An issue often not integrated very well into management strategies is the multifaceted nature of the characteristics pertaining to natural resources, as well as the resource users. For this reason some emphasis should be placed on examining the different perspectives and values that people place on the resources themselves, as well as on other issues related to managing a given resource. This is also a good stage to discuss issues such as resources with direct value and indirect value, as well as the significance of ecological processes and ecological integrity—in this case the term integrity means the status or relative health and resilience of the ecosystem—within resource valuation or management structures. Overheads 8.1.6 to 8.1.12 provide some basic structure for this section.

As noted previously, it is intended that participants work through much of the information in an interactive and descriptive way based on their own experience and local setting. To this end, the trainer is encouraged to pose questions and work to direct the discussion rather than give a straight delivery. A discussion of the level of scale at which one might consider a resource and its management is one suggestion of how this can be done. Discussion in this vein can cover important issues such as the need to consider whole ecosystems as a resource in some situations, and the individual items they provide as resources in another. This can further lead into issues such as the level at which management might intervene, the level at which the measurement and monitoring of a resource might be best directed, and the issue of taking the appropriate approach to the particular management issue at hand. It is important that the basic concept of *appropriate* management, and the perspectives it requires, is brought out.

8.1.3: The Appropriate Scale and Level of Approach

As a direct follow-on from the discussion of perspectives and the scale of different issues, it is then appropriate to discuss the concept of 'footprints' with regard to resources and their use. This particular approach is taken because it offers a means by which all relevant aspects of resources and their sustainable management can be examined in the context of their multifaceted, complex nature. It also highlights the need to deliberately assess the real management imperatives, and the appropriate level at which management aims its initiatives and strategies: "**It cannot all be done at once**" is the type of message to provide. This leads to the need for a structured and well defined set of priorities and a management plan that reflects them.

Associated issues to raise are those of multi-sectoral involvement in management, the potential to fail in management if a sound procedure is not put in place to adequately define the issues, and the need to look beyond the specific resource when trying to manage it in a sustainable manner. Regardless of the type of resources, a failure to manage them appropriately can lead to over-exploitation, damage to habitats and loss to biodiversity and ecosystem integrity—with socioeconomic and human welfare costs.

Overhead 8.1.1: Objectives

- Examine some of the key issues associated with natural resource management
- Increase our understanding of the interdependencies of the issues
- Examine current problems associated with existing modes of resource use
- Examine strategies and alternatives for better resource management

Overhead 8.1.2: Module Outline

- What do we mean by resources?
- Resource characteristics and how they influence sustainable use (direct value and non-direct value)
- General characteristics of the western Indian Ocean region (WIO)
- Types of resources and their uses
- Problems of resource use and 'footprints'
- Management-strategies and alternatives to increase resource sustainability

Overhead 8.1.3: The Western Indian Ocean Region

- Extensive coastal areas
- Mixture of mainland and island environments
- High dependency on coastal resources for local and national economies and welfare

Overhead 8.1.4: Coastal Population and Coastal Resource Access in the WIO

Country	Coastal Land Area (km ²)	Coastline Length (km)	Coastal Area as % of Total Area	Coastal Population (Millions)	% of Population on Coast
Comoros	2030	-	100	0.63	100
Kenya	32,447	500	5.52	1.66	7
Madagascar	242,745	4000	40.95	4.8	37
Mauritius	1,328	200	100	1.1	100
Mozambique	162,938	2500	20.64	5.62	21
Seychelles	455	600	100	0.07	100
Tanzania	57,225	1000	6.07	4.61	6

Overhead 8.1.5: The Subtlety of Resources?



Overhead 8.1.6: Types of Resource

- Direct use (direct value)
 - Extractable
 - Tangible
- Support and intrinsic resources (non-direct value)
 - Often not obvious and not considered
 - Necessary for existence of direct use resources
- Are natural processes resources?

Overhead 8.1.7: Generate Your Own List of Resources

Direct use:

-
-
-
-
-

Non-direct use:

-
-
-
-
-

Overhead 8.1.8: Common Extractive Resources Utilised in the WIO Region

- | | |
|--------------------------------|----------------------------------|
| • Fisheries | • Groundwater and drinking water |
| • Coral, sand and coastal rock | • Minerals |
| • Mangroves | • Oil and gas |
| • Coastal forests | • Salt |

Overhead 8.1.9: Corals and Coral Reefs



Overhead 8.1.10: How Is It a Resource?

Resource name	Resource features
•	•
•	•
•	•
•	•
•	•
•	•
•	•

**Overhead 8.1.11: Derived Directly from One Resource—
Mangroves****1. Fuel**

Firewood
Charcoal
Alcohol

2. Construction materials

Timber
Scaffolds
Heavy construction material
(e.g. for bridges)
Railroad ties
Mining pit props
Boat building
Dock piling
Beams and poles for building
Floor panelling
Thatch and matting
Fence posts
Chipboards
Glues

3. Fishing

Poles for fish traps
Fishing floats
Wood for smoking fish
Tannins for net and line
preservation
Fish-attracting shelters

4. Agriculture

Fodder
Green manure

5. Household items

Furniture
Glue
Hair oil
Tool handles
Matchsticks
Incense

6. Food, drugs and beverages

Sugar
Vinegar
Cooking oil
Tea substitute
Fermented drinks
Condiments from bark, leaves
and fruits
Sweetmeats from propagates

7. Paper products

Paper

8. Textiles, leather

Synthetic fibres, e.g. rayon
Dye for cloth
Tannins for leather preservation

Overhead 8.1.12: Indirect Resources from an Ecosystem?—Mangrove

List:

[illegible]

Training Session 8.2: Management of Natural Resources—Some of the Tools

Objectives

- To examine the procedures and approaches that can be used to develop a management plan for natural resources within the context of current management problems within the WIO region.
- To examine the important characteristics that a sustainable resource management plan needs to incorporate.
- To examine some of the different tools that are available for use in managing natural resources.
- To examine strategies and alternatives that can be used to improve current management practices and management problems.
- This session also explores the concept of 'footprints' from resource use and the different ecological, social, economic and cultural spin-offs that arise from different modes of resource use and management.

Significance

There are a number of factors that have either singly or collectively contributed to the depletion of resources in the region. Among these is the limited capacity to manage because of generally limited human and fiscal resources. Similarly, it can also be said that management has historically focused on narrow aspects of 'management need', only rarely taking an integrated view of the issues. More recently, an integrated coastal zone management approach has been advocated, but there continues to be slow development of a truly integrated view and approach to many natural resource management issues. It is therefore important that managers are capable of addressing issues in an appropriate and integrated manner so that the sustainability of the resource and of the management plan itself are maximised.

Presentation

The session is comprised of a series of factual deliveries on overhead or slides demonstrating the different aspects of a sound management plan and its development. As with session 8.1, it is proposed that this be a directed discussion rather than a monologue.

It may also be useful to present examples of management plans from other areas and to ask participants to comment in view of their own management strategies and plans. Depending on available time, it is intended that the group be asked to go through a brief process of constructing an outline management plan for a particular setting and resource. This would probably have to be limited to identifying the critical components, processes and relationships. The trainer is urged to provide some structure to this and may be well served by using some kind of simple matrix or logical framework analytical approach.

A number of key overheads should be used to focus discussion and to illustrate concepts, especially when presenting the concepts of integration, multifaceted issues and imperatives, and the need to incorporate more than one stakeholder's perspective.

In the discussion of management tools, the trainer is again urged to provide some examples but to solicit input from the group on what they see as good or bad tools, and what the limitations might be based on their own experience. The session is summed up by a look at alternative strategies, approaches and resources, as a means of looking toward the future and the optimism that can be gleaned from it.

Duration: 1 ½ hours

Equipment and Materials: Overhead projector
Overheads and slides with matching handouts
Flip chart or electronic whiteboard so that material can be copied or collated
Markers for the chart/board

Trainer's Note—Tenure is an Issue

One factor that can be singled out as being a major contributing factor to the current environmental situation is the fact that coastal/marine resources in most of the countries in the region are open access. This is true for living resources such as mangroves and fisheries. As a result, these resources are subject to most of the abuses associated with open access resource uses, including disregard for resource sustainability. This has had serious consequences in terms of loss of the resource as well as decline in the socioeconomic well-being of a large sector of the population of the countries in the region.

8.2.1: Constructing a Sustainable Management Plan

The emphasis in this section is on ensuring that the methods and approaches selected are appropriate for the perceived management problems and imperatives, and take into account the financial and human capacity setting within which management has to operate. The trainer is urged to present a generic approach and to discuss the use of procedures such as logical framework analysis (LFA) as a means of focusing the development process and of ensuring that all critical issues are addressed. An example matrix for an LFA can be obtained from various sources and used as an overhead for this discussion (see also Module 2.2.1, Overhead 2.2.4, and reference list).

If time permits, participants should be asked to generate an outline plan of management for a specified hypothetical location or case study site. These can be used to develop the discussion on what is appropriate and what mechanisms are necessary to have in place so that management can succeed.

It is also important in this brief session that participants examine the issues of supporting management itself. This might include the use of economic tools that supply management with resource (e.g. green taxes), but would also involve aspects such as public awareness, political will and support, and key infrastructure components such as utilities.

Trainer's Note— Loss of Resource and Loss of Welfare

The decline of fisheries in the region has negatively affected the livelihoods of numerous coastal communities. It is estimated that up to 50% of the fishermen from the region risk losing their livelihoods in the next 10 to 20 years if the current trend is allowed to continue.

8.2.2: Tools That Can Be Applied in Natural Resource Management and Implementation

This section discusses the different types of tools that have been applied to managing natural resources and which may have application in the WIO. Again, time constraints will limit the depth to which the trainer can deal with different tools so it is intended that, apart from any clear information provided on a given tool, the participants are well informed on the concept of things like economic and regulatory 'tools' as well as the existence of a range of such tools and mechanisms. Similarly, it is important to examine the linkages and interactions between different tools and the need to encompass this perspective in the design and implementation of management.

The final part of this section deals with the implementation of the management plan and examines the relationships between the different phases of plan development, and the key aspects that need to be addressed to ensure successful implementation.

As with the previous sections and stages, the trainer is encouraged to draw examples from participants and to discuss their experiences in terms of the application and issues associated with different tools and approaches. Overheads 8.2.7 and 8.2.8 provide a structure for part of this discussion.

Trainer's Note— Some Examples of Initiatives That Can Be Undertaken

- Resource users and managers need to be made aware of the finite nature of marine and coastal ecosystems. There is a need to promote open discussion among stakeholders of the problems facing coastal resources and their sustainable management.
- Where possible, there is a need to re-establish basic tenets of local resource management as were commonly practised by many coastal communities in a sustainable manner historically. For example, such as in mangrove harvesting.
- Strict bans or limits can be placed on the more ecologically destructive methods of

Continued...

resource collection and use. This would entail similarly strict policing and enforcement. Examples of such practices might be dynamite fishing, bottom set netting, and coral mining on living reefs.

- Attempts should be made to improve on the efficiency of extraction and processing technologies, in order to reduce the negative impacts of resources extraction and utilisation. More efficient processes reduce raw material requirements, and thus the ecological pressure on natural resources.
- Public awareness and education programmes should be made an integrated part of the management process. Similarly, natural resource management should form an integrated component of the national welfare management plan and economic perspective.
- All relevant stakeholders should be encouraged to participate and take ownership of the management process from their respective situations.

8.2.3: Alternative Strategies, Technologies and Resources

In this last step, participants are encouraged to propose alternatives to their current modes or practices of management. Similarly, they are encouraged to present their experience on where alternatives have not been successful, or are perhaps not warranted. The main thrust of this stage is to encourage the consideration of alternatives. This can draw from technologies, but also needs to examine economic, social, regulatory and other areas where innovative alternatives may be developed. This section should provide some examples from within and outside of the region but should also encourage the participants to think about their own situation and possibilities.

Case Study 8.1 Alternative to Live Coral Mining in Mafia Island Marine Park, Tanzania

Coral mining is a traditional source of relatively high quality building material on Mafia Island, both as building blocks and for lime production. Coral mining for commercial sale provides additional cash income to communities in at least 4 villages within Mafia Island Marine Park, namely: Bwejuu, Jibondo, Juani and Chole.

A vast proportion of the historic damage caused to reefs within MIMP was from coral mining for commercial building projects, such as road and airstrip construction, and for house construction in Kilindoni.

Some MIMP villages, notably Bwejuu, lack alternative construction material in the vicinity of the village, and the cost of importing alternative materials from elsewhere is prohibitively expensive to most villagers.

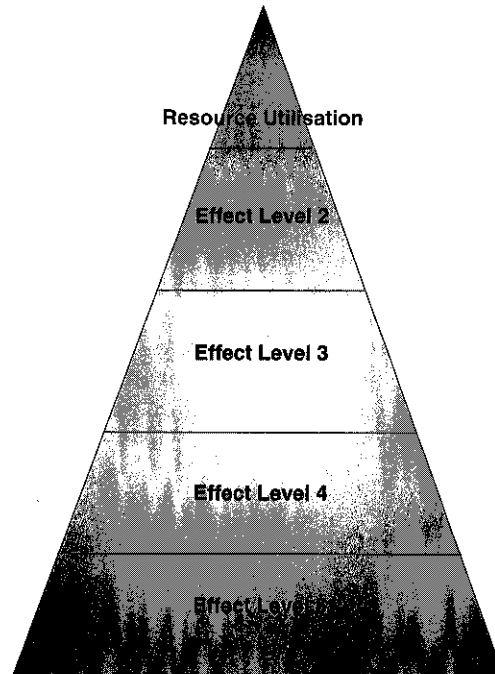
Nevertheless, there are alternative building materials available to most of the communities within MIMP. These alternative materials are, however, not without environmental problems. There are substantial deposits of fossil coral suitable both for construction blocks and to make lime, in the vicinity of Baleni and Kungwi villages. However, fossil coral, if burned on an open kiln requires substantially more firewood than sea coral, to convert to lime. So fuel-efficient kiln technology would be a valuable introduction. Successful construction trials using sun-dried mud bricks on Chole Island were conducted in 1994 and there is no immediately apparent reason why such a technology should not be promoted further.

8.2.4: Summing-up and Review

To begin the process of summing up this session, it is proposed that some attention is given to the emergence of new resources that are likely to be sought after in the region. An example of this is the current ongoing search for medicinal and industrial substances from aquatic organisms. The possible need to incorporate such likelihoods into the management perspective (and plan) is examined, and the participants review the issues they have dealt with in the entire session.

Overhead 8.2.1: Footprints! The Effect of Using a Resource

- Not all the consequences of resource use are directly observable.
- The 'spin-off' effects can cover many scales— in time and space.
- 'Footprints' have management consequences beyond the ecosystem.



Overhead 8.2.2: Footprints Across Systems



Overhead 8.2.3: Consider the 'Footprint' for

- Coral jewellery production
- Mangrove pole production
- Groundwater use in the coastal zone

Ecological aspects?

Socio-economic aspects?

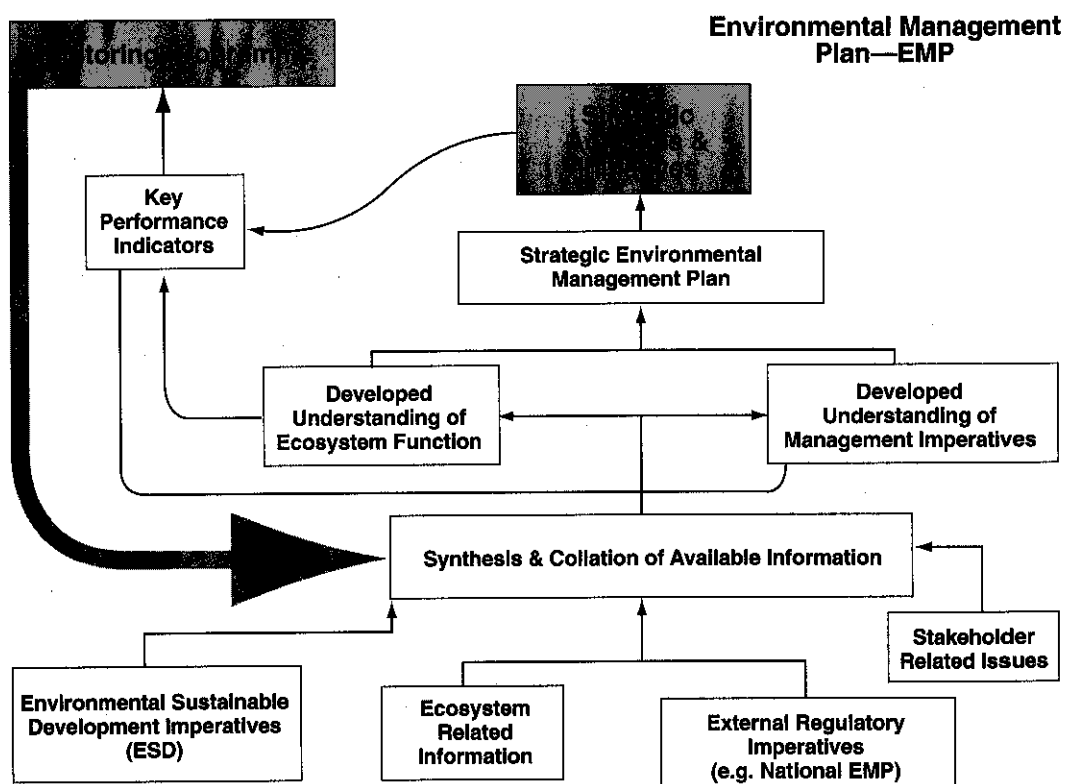
Direct or indirect?

Important level or scales?

Are there *key* issues?

What are the main management aspects to consider?

Overhead 8.2.4: Managing Resources - the Plan



Overhead 8.2.5: Generating an Environmental Resource Management Plan—EMP

- Defined procedures - e.g.
 - Logical framework analysis (LFA)
 - Convergence matrix to identify keystone issues.
- Components need to include inputs from:
 - Stakeholders, environment, socioeconomic and cultural setting, regulatory bodies, financial and resource setting for management implementation.

Overhead 8.2.6: Tools for Resource Management

- Regulatory and policing
- Infrastructure
 - e.g. Communal resource use such as public transport
- Economic—for example:
 - incentives and subsidies
 - user pays
 - levies and green taxes
- Technological—efficiency enhancement and new technology
- Education and awareness building
- Others?

Overhead 8.2.7: Implementation of an EMP

Critical aspects to consider:

- Financial and infrastructure support
- Human capacity and resources
- Ecological imperatives and limitations
- Flexibility of plan to meet unforeseen issues
- Transparency and stakeholder participation
- Appropriate performance indicators and an integrated review mechanism/procedures.

Overhead 8.2.8: Strategies and Alternatives to Current Practices

- Improved efficiency of resource use
- Recycling and multiple use of resources
- Alternative resources
- New technologies
- Innovative economic tools

Examples...

Overhead 8.2.9: The Search for New Resources in the WIO

- Some examples
 - Medicines
 - Industrial and food additives (e.g. from algal cultivation).
- How can this be accounted for in the management plan?

MODULE 9

Monitoring and Evaluation in a Marine Protected Area

AUTHORS: RON JOHNSTONE AND SALIM MOHAMMED

Objectives

The objectives of this module are to ensure that the participants have the basic concepts of monitoring and evaluation that are essential to the effective management and maintenance of an MPA. In particular, emphasis is given to the types of indicators that may be applied to different aspects of an MPA as well as the characteristics that make an indicator effective and appropriate. Participants should leave this module with the ability to construct, critically assess, and refine a monitoring programme.

Summary of Training Sessions

This module consists of two brief training sessions which are intended to be closely linked in their presentation and content.

9.1: The Basics of Monitoring and Evaluation

This session presents the fundamentals of evaluation and monitoring from a whole management perspective so that participants gain a clear understanding of these activities within the central processes and strategies that comprise MPA management. It is also intended to provide a forum for participants to discuss their own current monitoring programmes and to assess these in the light of each other's experiences, as well as the general imperatives of sustainable MPA management. Emphasis is also given to the need for monitoring to be an integral part of management rather than a satellite activity not related to the management cycle. Monitoring is presented as intrinsic to management at all levels.

9.2: Indicators and Monitoring: Designing a Monitoring Programme

As a direct extension of the first session, this session examines the features that determine the usefulness of any particular indicator, and aims to instil the idea that indicators have to be specifically chosen for particular systems and local management needs. Also, this session examines the technical side of constructing a monitoring programme and examines the features that are essential for a successful monitoring programme that is useful as a management tool and which has both short- and long-term value to the sustainability of the MPA.

Background and Sequence of Module

As environmental management has developed over the last decades there is a growing awareness that it is not sufficient to manage ecosystems on a reactive basis whereby the bulk of management is

undertaken in response to a crisis or particular event. Similarly, the use of post-hoc monitoring has shown that management beyond such events can only be sustainable if monitoring outcomes are integrated into an evolving management system that meets the dynamics of the ecosystem. The paradigm of adaptive environmental management is now considered as being central to the long-term sustainability of ecosystems and the resources they contain. In this context, and as the western Indian Ocean region develops its capacity in MPA management, it is vital that prospective managers learn from experience elsewhere and that tools such as monitoring are integrated into an adaptive management system at the outset of MPA development rather than as an afterthought.

As is the case with any system that is to be managed, an MPA requires some level of evaluation and monitoring if it is to be sustainable over time. Efficient and sustainable management cycles invariably contain a monitoring and evaluation aspect, whereby any changes to components within the system are documented and then evaluated in the light of the larger management goals and imperatives. This 'feedback loop' of information then serves to help management refine and redirect its activities to ensure that the system being managed, and its respective components, continue to function adequately toward meeting the stated management goals—the new information is captured and assimilated into an adapted and refined management system and initiatives.

Session 9.1 gives an overview of how evaluation and monitoring are integral to effective management, and takes examples from participants to demonstrate the different issues involved.

Session 9.2 examines key application and technical aspects of good monitoring programmes. Using these, it then briefly takes participants through the process of structuring and constructing a monitoring programme.

Conceptual Framework for Sessions

It is anticipated that the majority of participants are likely to have some experience in the evaluation and monitoring of aquatic ecosystems, although this may vary considerably. Similarly, the majority of people working as MPA managers either have a strong technical background, or they have come from a more purely administrative environment. Few MPA managers usually have significant experience in both areas.

Consequently, aspects that require an integrated perspective, such as monitoring, need to ensure that these overlapping issues are brought out. In this context, monitoring here includes not just ecosystem components and their performance, but also aspects such as the relationship between the MPA and the local community, the tourist activities that may occur within an MPA, and the outcomes of management initiatives such as exclusion zones, or specified visiting intensities. The basic concept here is to show how management needs to understand the role of monitoring for all aspects of the MPA, and that the design, implementation, and outcomes from monitoring all have to feed directly into management in order for management, and the MPA by extension, to be sustainable.

References and Additional Reading Material

- English, S., Wilkinson, C. and Baker, V. (eds) 1994. Survey manual for tropical marine resources. ASEAN-Australia Marine Science Project: Living Coastal Resources. Australian Institute of Marine Sciences Press, Townsville, Australia.
- UNEP (1997). Global International Waters Assessment (GIWA) Expert Workshop on Water-Related Issues of Transboundary and Global Concern. Geneva, 21–25 April 1997.
- Snedaker, S. C. and Snedaker, J. G. (eds). 1984. The mangrove ecosystem: Research methods. UNESCO.
- The World Bank (1996). Guidelines for using social assessment to support public involvement in World Bank-GEF projects.
- Gulland, J. A. (1983). Fish stock assessment: A manual of basic methods. John Wiley and Sons, New York.
- Hamilton, L.S. and Snedaker S. C. (eds) (1984). Handbook for mangrove area management. UNEP.
- Clark, J. R. (1992). Integrated management of coastal zones. FAO Fisheries Technical Papers 327. FAO.
- Ngoile, M.A.K., Horill, C. and Kaka, A. (1995). The management and monitoring of protected areas on Zanzibar. UNO/RAF/006/GEF Field Document 15.
- Pernetta, J. C. and Milliman, J. D. (eds) (1995). Land-ocean interactions in the coastal zone: Implementation plan. IGBP, Stockholm.

Training Session 9.1: The Basics of Monitoring and Evaluation

Objectives

The main aim of this session is to give participants a clear understanding of the fundamentals of evaluation and monitoring from a management perspective. It also aims, through participant discussion and case examples, to examine how monitoring and evaluation form critical parts of the larger management process. The intention here is to demonstrate tangible justification for the integration of monitoring into management, and the need for MPA managers to be broad in their understanding of the types of monitoring that need to occur, as well as the types of indicators that may be useful. Central to this section is the notion that monitoring and the indicators it uses are specifically aimed at helping to make more appropriate and robust management decisions at various levels of management across the operation of an MPA.

Significance

In environmental systems, evaluation and monitoring are activities that many management structures undertake, but they are often not adequately integrated into the overall management cycle. This session is concerned with the various types of evaluation and monitoring required for marine protected area management and the MPA development process. Emphasis is given to the appropriate use of monitoring methods and the effective integration of monitoring into the overall management process—from design to monitoring outputs and refinement of the management to be undertaken.

At the same time, many areas that are currently being considered as MPAs are under considerable pressure from human activities and anthropogenic influences. For this reason, emphasis is given to the need for the early establishment of an effective monitoring programme as a key to the success of these MPAs, and for their sustainability into the future.

Presentation

The presentations in this module focus on the use of small groups and the material is presented as a series of discussions, group exercises and lectures. The individual aspects are presented as units that are verbally linked by the trainer, so that the larger framework is reinforced throughout the session, i.e. that monitoring and its features are an integral tool of management. It is intended that the trainer provide appropriate examples and case studies from the region so that, in conjunction with participant inputs, the group is able to dissect and assess the characteristics, and implications, of a sound monitoring programme.

In this first session, it is vital to set a common background of understanding around the goals of monitoring: how it forms a part of management, and what types of indicators may be used to monitor different aspects of an MPA's operation. Also, the notion and basic features of an indicator are clearly defined to include the presentation and discussion of issues, including how different indicators have their own strengths or limitations, and how an indicator may be used to reflect the performance of more than one system component. The key here is the use of participant examples to illustrate the points and to help participants understand the value of taking the time to refine the indicators and approaches they use with regard to long-term management success. As elsewhere in this course, it is useful to encourage the participants to share their knowledge and experiences so that the perceived and tangible issues experienced throughout the region are firmly incorporated into the learning process.

Duration: 3 hours of lectures and group discussion.

Equipment and Materials: Examples of local indicators as a Table—including their specific features that make them good or bad indicators.

Flip charts and stand

Marker pens

Overhead projector

Case Study 9.1: The Memorandum of Understanding between the University of Dar es Salaam and the Board of Trustees for Marine Parks and Reserves

The MoU between the University of Dar es Salaam and the Board of Trustees for Marine Parks and Reserves was signed in 1998 to facilitate undertaking of research, evaluation and monitoring at the Mafia Island Marine Park (MIMP) by the Institute of Marine Sciences (IMS) of the University of Dar es Salaam. This was the aim of setting up a mechanism for undertaking and/or coordinating a monitoring programme and evaluation, one of the main activities of the MIMP, as specified in its General Management Plan (GMP).

The objectives of the MOU are to:

- address indicators associated with the management objectives as stipulated in the GMP;
- establish baseline data to produce readily monitored data for recording any changes on species diversity, habitats and ecosystems;
- investigate and set levels for sustainable use on current extractive and non-extractive resources utilisation such as tourism, mariculture, fisheries, and mangroves harvesting;
- explore the potential for future development involving the undertaking of various feasibility studies as stipulated in the GMP;
- conduct research into the ecosystem processes of the area. This research includes: hydrology, nutrient cycling, assimilation of nutrients, flow of organic materials, primary productivity, energy flow and sedimentology;
- develop, adopt and test environmental impact assessment (EIA) procedures for application to development activities or projects undertaken in MIMP.

Overhead 9.1.1: Objectives of the Module

- Define monitoring and evaluation
- Examine monitoring and evaluation as management tools
- Examine the development of a monitoring programme
- Examine types of monitoring and the essential characteristics for sound monitoring or evaluation
- Discuss ecological versus social monitoring
- Examine techniques for monitoring and evaluation

Overhead 9.1.2: Areas to be Covered Include

- The integration of monitoring into management—Adaptive Environmental Management (AEM)
- Defining the management imperatives
- Defining key performance indicators—KPIs
- Using monitoring outcomes to refine management practise
- Technical aspects of monitoring—appropriate scales and techniques
- Methods of handling monitoring data

Overhead 9.1.3: Evaluation vs Monitoring

- Evaluation:
 - Usually a snap-shot of 'status'
 - Limited time perspective—if any
 - Often a preliminary measure to other management activities such as strategy development
 - May be preliminary to help define monitoring characteristics
 - Methods often coarse and low resolution
 - If the resolution is sufficient, may be used as a bench mark for monitoring
 - Other characteristics?

Overhead 9.1.4: Evaluation vs Monitoring

- Monitoring
 - A collection of snap-shots of 'status' over time
 - Provides a clear change/time perspective
 - Often a preliminary measure to other activities such as a formal impact assessment
 - Its characteristics reflect the specific performance criteria set by the management plan
 - Methods can vary depending on the indicators used
 - Is an integral tool for the assessment, review and refinement of a management plan
 - Other characteristics?

Overhead 9.1.5: Some Common Reasons for Monitoring

- To assess the status and changes in distribution and abundance of biota in a particular ecosystem
- To be able to separate 'natural' changes from human-induced changes
- To detect change through natural processes such as recruitment, growth, mortality, and changes that may impinge on human welfare
- To provide perspective on the importance and significance of status and change
- To provide managers the context for assessing the impacts of human activities
- Management?

Overhead 9.1.6: What Do You Monitor?

Why?

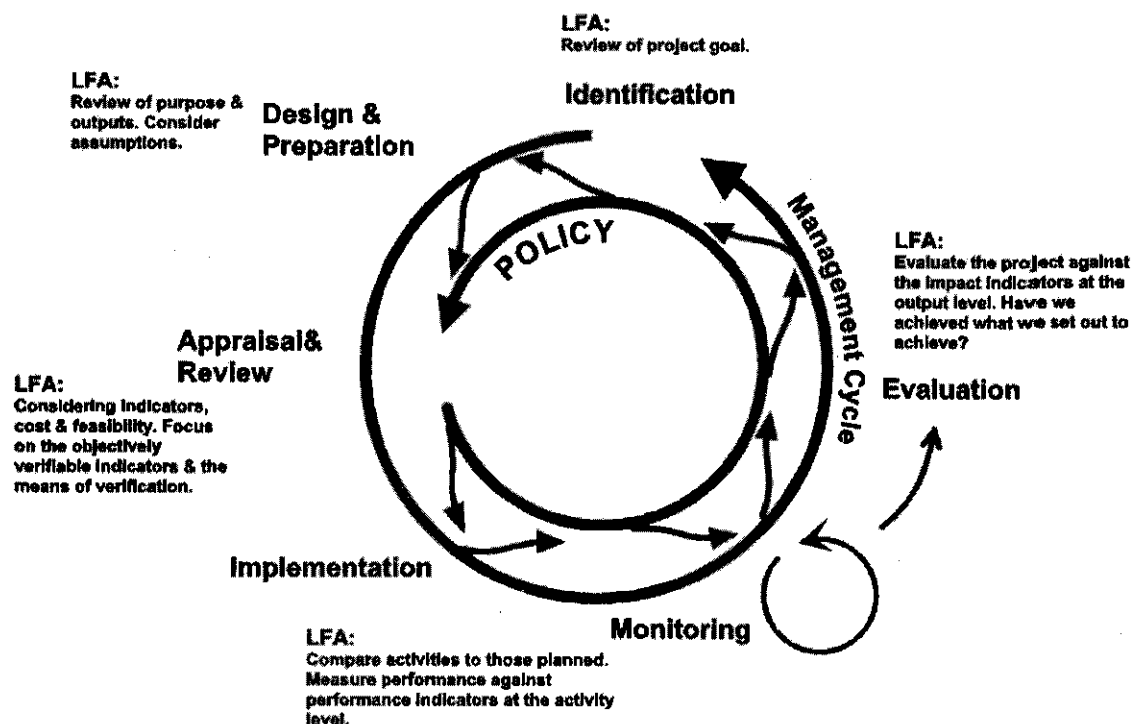
Indicator monitored

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-

Management target

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-

Overhead 9.1.7: The Integration of Monitoring into Management—AEM Cycle



Training Session 9.2: Indicators and Monitoring—Designing a Monitoring Programme

Objectives

The main aim of this session is to give participants a clear understanding of how to incorporate appropriate indicators into a sound monitoring programme. It should also examine the key technical issues behind ecosystem monitoring, such as the scales over which monitoring may need to operate for different system components, and how the outcomes of monitoring must truly reflect management needs as opposed to pure technical interest. Again, as with the preceding session, the aim is to use participant examples to examine how monitoring is fundamental to the review and refinement of the larger management strategy for an MPA.

Significance

Having decided on the type and quality of indicators that best suit a situation, it is imperative that these are applied in the appropriate manner so that the results obtained truly reflect ecosystem and MPA performance, as well as support development toward the management goals that have been set for the MPA. Also, it is essential that the indicators be integrated into the monitoring programme in such a way that it is most cost effective and logistically manageable for the MPA as a whole.

To do this, there are various technical and managerial issues that need to be addressed. These include issues such as the timing, geographic extent and replication of monitoring activities. These may vary depending on the aspect being monitored, and so it is important that these issues are assessed and integrated into the monitoring programme at the outset. Also, it is equally important that the information gained from monitoring is used to refine the programme and be used to assist in the overall development of a sustainable management strategy.

This session is concerned with some of the key technical issues that apply to all indicators, and aims to use examples from the region to demonstrate the strengths and weaknesses of different approaches, as well as the technical limitations that may hinder the monitoring of a given managerial strategy.

Presentation

As with the preceding session, the presentations in this module should use group interaction and the material presented as a series of discussions, group exercises and lectures. As is highlighted in the attached teaching materials, there are a number of modest exercises for the groups to perform and these are intended to tease out the relationships between the type of indicators used, the mode in which they need to be applied, and how these integrate into a monitoring programme. Participants are asked to define indicators for hypothetical local situations and the results are discussed from a management perspective. This knowledge is then used to work through the construction of a hypothetical monitoring programme and the technical issues that apply to all indicators are noted. It is intended that the teacher give local examples during this section and that the participants are urged to interact, rather than simply listen to the information provided.

Again, a central goal here should be to help participants understand the value of taking the time to actively design the monitoring programme and to do this within the larger management context, as well as within the technical context of the components to be monitored. As elsewhere in this course, it is useful to encourage the participants to share their knowledge and experience so that the perceived and tangible issues experienced throughout the region are firmly incorporated into the learning process.

Duration: 3 hours of lectures and group discussion.

Equipment and Materials: Examples of local monitoring programmes including their specific features that make them more or less robust and sustainable for management.

Flip charts and stand
Marker pens
Overhead projector

Case Study 9.2: Ecological Monitoring Programmes at the Goukamma Nature and Marine Reserves, South Africa

There are several ecological monitoring programmes at the Goukamma Nature and Marine Reserves. These include:

National Marine Linefish Programme

The aim of this programme is to monitor catch statistics. The system consists of the completion of catch cards by fishermen after each period of fishing. The number of people in the fishing party, whether local or tourist, type of fish, weight, size, etc., are all recorded. Field rangers also complete these cards while on patrol.

The Oceanographic Research Institute (ORI) in Durban manages this project and gives yearly feedback on data as well as producing a yearly single-page newsletters on fishing in the Goukamma Nature and Marine Reserves. These newsletters are handed out to fishermen while filling in catch cards.

Stellenbosch Farmers Winery Fish Tagging Programme

The aim of this programme is to monitor the dispersal of fish species. This programme is a national programme also managed by ORI. Fishermen buy a tagging kit and can tag fish where they want. Recovery of these tags is where the main monitoring takes place on Goukamma. Field Rangers help fishermen to weigh and measure fish and either return fish (if still alive) and return tags with information of length, weight, species, data of capture and location.

ORI prepare a computer printout and send it to the fisherman and/or reserve to check the data. It is then stored on computer at the Reserve.

African Black Oystercatcher Breeding

The aim of this programme is to monitor the breeding success of the rare coastal breeding bird in southern Africa and to identify the threats to its environment. Western Cape Nature Conservation Board in conjunction with the University of Cape Town (Percy Fitzpatrick Institute of African Ornithology) run a National Oystercatcher Conservation Programme. On Goukamma foot patrols along 14 km of coastline are conducted every 2 weeks by field rangers during the breeding season (October – March). Data are collected on numbers of adults nest sites (coordination) numbers of eggs, numbers of chicks and fledglings as well as causes of losses. Marker rings are also fitted to large chicks to track movements of birds. UCT issue regular scientific papers and newsletter.

Water Quality Monitoring—Goukamma Estuary

The aim of this programme is to monitor the water quality of the Goukamma river as it is a very sensitive nursery area for fish. Chemical monitoring (for Ca, Cl, Ec, F, K, Kjcl, N, Mg, Na, NH_4^+N , $\text{NO}_3^-\text{NO}_2^-\text{N}$, pH, PO_4^{3-}P , SO_4^{2-}S , Tl, Tp, Tds), turbidity and temperature are taken on a regular basis. Algae sampling is being used as an indicator of water quality.

There are also smaller programmes such as bird lists, coastal bird mortalities, rare fish identification, etc.

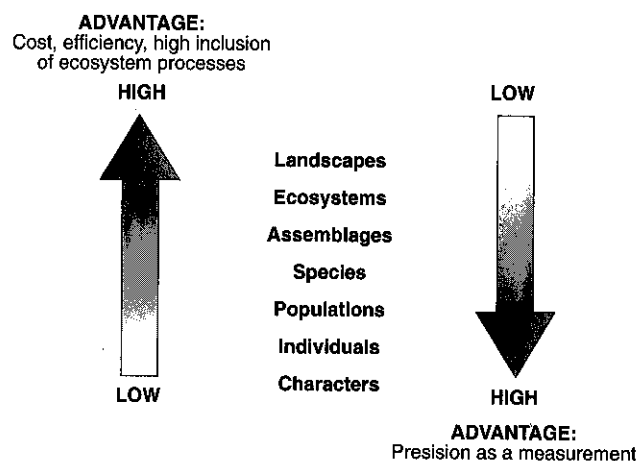
Overhead 9.2.3: Indicators Should...

- Be a robust indicator of environmental change
 - Reflect a fundamental or highly valued aspect of the environment
 - Be relevant at scales relevant to management
 - Provide an early warning of potential problems
 - Be capable of being monitored in a scientifically rigorous and sound manner
 - Be scientifically credible
 - Be easy to understand
 - Be easy to monitor regularly and with relative ease
 - Be cost effective
 - Have relevance to policy and management needs
 - Contribute to monitoring of the management plan toward its improvement
 - Where possible and appropriate, facilitate community involvement
 - Contribute to clear and easily understood reporting
 - Utilise existing knowledge and information as appropriate
- Where possible, be comparable with indicators used in similar other areas and regions.

Overhead 9.2.4: Overview

- Indicators are necessary to assess the state, pressure and eventual change
 - Different scales of time and space
 - Natural change
 - Human-induced change.
- Indicators are necessary to assess the performance of management itself
 - Different scales of time and space
 - Ecological effects of management
 - The management 'system' - is it correct?

Overhead 9.2.5: Deciding on Indicators—Surrogates



Overhead 9.2.6: Summary: Common Issues for Indicator Selection

- Operate at, or reflect, appropriate scales of time and space
- Truly reflect the aspect required for management
- Are resilient over time
- Provide information suitable for clear understanding
- Scientifically robust and sound
- Others.....

Overhead 9.2.7: Indicators Task—the Situation

1. Groundwater use:
 - Over-consumption of water and shortages occur
 - Adjacent mangroves usually receive significant groundwater inputs
 - Management introduces water rationing and import.
2. Mangrove harvesting
 - Rapidly increasing consumption of mangrove poles due to increased building
 - Local community heavily dependent on mangrove fishery and other resources
 - Management gives incentive for alternative building designs and materials.
3. Coral jewellery production
 - Tourism demand has led to increased production
 - The prime coral type is widespread locally but rare in the region
 - Management places a licensing scheme on producers.

Overhead 9.2.8: Indicators task—the indicators

Groundwater, mangrove harvesting, coral jewellery production

List 4 indicators of:

- Community change in the local village
- Change in ecosystem function
- Effectiveness of management initiative

At what frequency would you have to monitor these?

Overhead 9.2.9: Designing a Monitoring Scheme

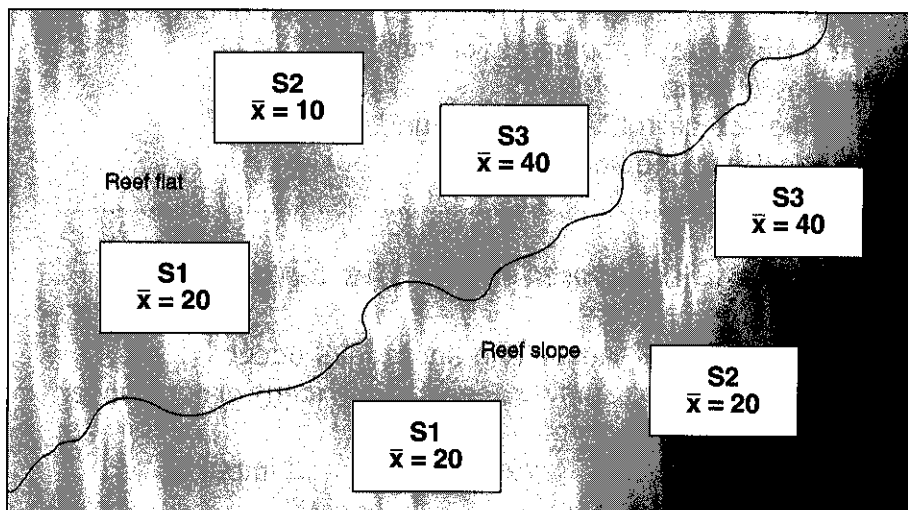
- What?
- Where?
- How often?
- What techniques?

Overhead 9.2.10: Where to Begin?

Can you propose a method or approach for drafting a monitoring programme?

- What tools can you use to carry out this process?
- How do we define the aims of the programme?
- How does your management plan fit into this process?

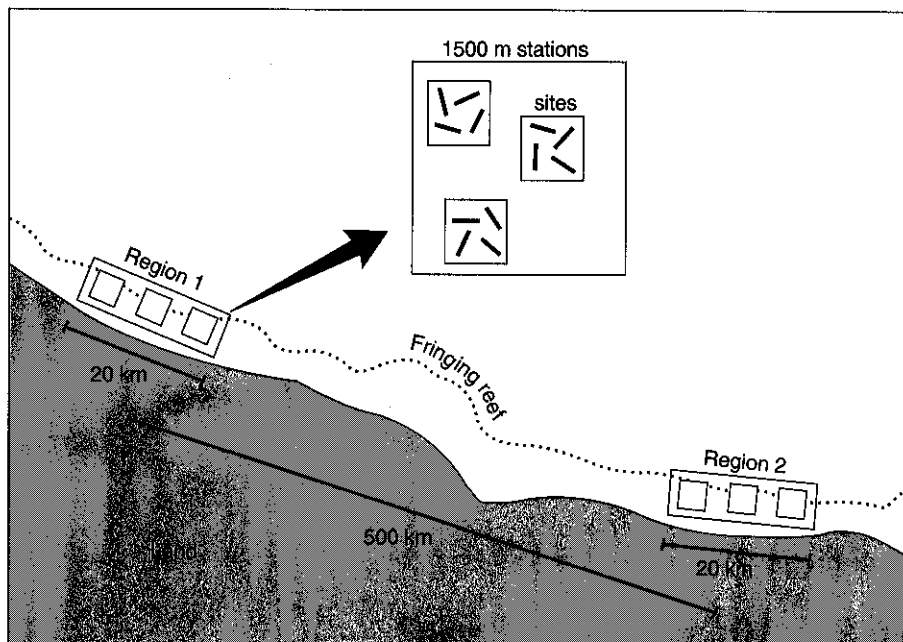
Overhead 9.2.11: Spatial Scales 1



A schematic representation of three sites on a reef flat and three sites on a reef slope. Percent hard coral cover is estimated using replicate transects within each site. The mean cover for each site is shown.

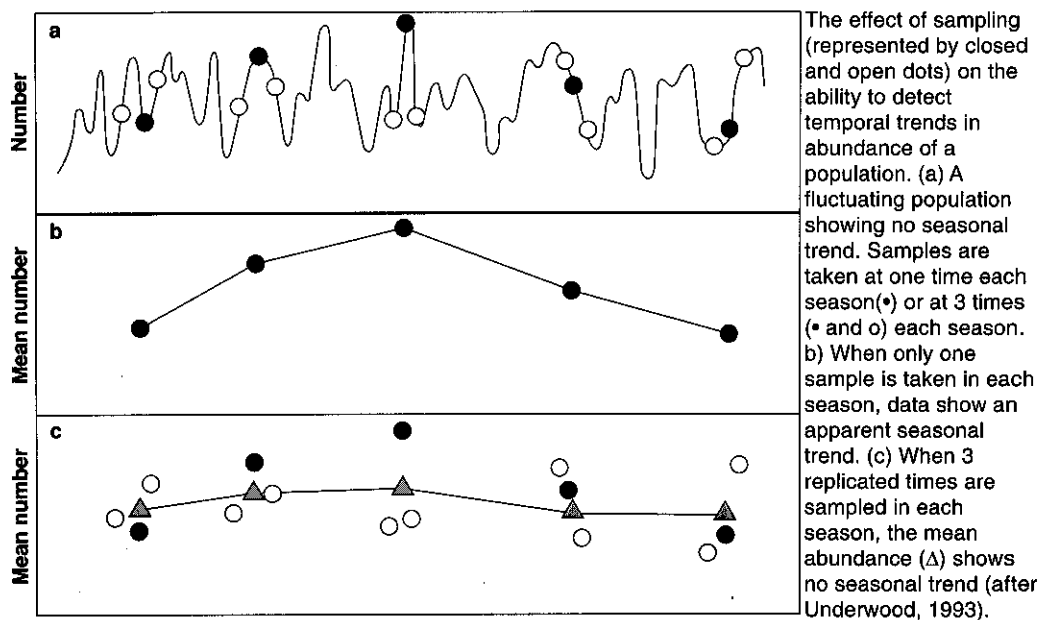
Scenario	Comparison		Conclusion
	Reef flat	Reef slope	
1	S4 ($\bar{x} = 40$)	S3 ($\bar{x} = 40$)	Coral cover high, reef flat and slope the same
2	S1 ($\bar{x} = 20$)	S4 ($\bar{x} = 40$)	Reef slope coral cover higher than reef flat
3	S3 ($\bar{x} = 40$)	S2 ($\bar{x} = 20$)	Reef flat coral cover higher than reef slope
ACTUAL	Average = 21.25%	Average = 27.5%	Coral cover low; reef slope higher than reef flat

Overhead 9.2.12: Spatial Scales 2



An example of a nested (hierarchical) sampling design. Regions are separated by 500 km (100's km scale); stations are allocated within each region (1 to 20 km scale); sites are allocated randomly within each station (< km scale); transects are randomly positioned within each site (m scale). This sampling design allows estimation of coral cover between 2 regions and provides estimates of how cover varies across 4 spatial scales.

Overhead 9.2.13: Temporal Scales



Overhead 9.2.14 Case Studies Exercise Monitoring

List the major characteristics of your monitoring programme, for the case example you produced indicators for:

- Management goals?
- Indicator?
- Scales of time and space for monitoring?
- Type of information produced?
- Other characteristics?

Overhead 9.2.15: Implementation and Reality

- Gaining support for monitoring:
 - Consider the management plan as a source of justification
 - Priorities are established by the management plan.
- Limited resources may mean compromises need to be made:
 - At what level can we do this?
 - The role of the management plan in helping set priorities?
 - What alternatives can be used?

Overhead 9.2.16: See Attached Case Study Information

Overhead 9.2.17: Construct a Rough Plan

Management Issue	Expected Impacts	Indicators	Spatial Scale of Sampling	Time of Sampling

MODULE 10

Assessing Management Effectiveness in a Marine Protected Area

AUTHORS: SUE WELLS, LANI WATSON AND SANGEETA MANGUBHAI

Objectives

The objectives of this module are to provide an introduction to the concept of assessing management effectiveness of MPAs. It is important to note that this module in itself would probably not enable an MPA manager to carry out an assessment, but it will ensure an understanding of the process and provide guidance on the tools and skills that are necessary.

Summary of Training Sessions

This module consists of one training session that is closely linked to the previous module on Monitoring and Evaluation. An introductory lecture describes why assessment of management effectiveness is useful and outlines a basic methodology that can be adapted to different MPAs. The module is based on the methodology developed through IUCN and uses the workbook prepared specifically for Western Indian Ocean MPAs. The trainer should use the workbook in preparing the presentation, and copies should be made available for participants to use during the training session. The training session includes group work during which participants have an opportunity to test methodology using information from their own MPA sites.

Background and Sequence of Module

The concept of using assessments and the results of monitoring programmes to adapt and improve management of protected areas has come into being relatively recently but has evolved very rapidly. The need for tools and guidelines to evaluate the ecological and managerial quality of protected areas was recognized at the 1992 World Parks Congress in Venezuela, with the result that in 1996 IUCN set up a Management Effectiveness Task Force (METF) under the World Commission on Protected Areas (WCPA). In 1999, IUCN and WWF held a joint workshop to review the growing number of assessment methodologies being produced for protected areas, and to explore options for a more harmonized approach. Out of the discussions, and with additional work by METF, came a framework methodology which was published in 2000 (Hockings et al., 2000a). This provides overall guidance in the development of assessment systems and encourages basic standards for assessment and reporting (www.wcpa.iucn.org).

IUCN's global programme on improving protected area management through assessments now involves a wide range of partners including WWF, TNC (the US-based Nature Conservancy), UNESCO, the World Heritage Convention, and the marine component of WCPA. Increasingly governments and

civil society want accountability and evidence that setting aside areas of land and sea for biodiversity conservation is worthwhile. Accountability is also required at the international level, with institutions such as the Convention on Biological Diversity requesting parties to report on the status of their protected areas.

In November 2001, a workshop was organised by IUCN-EARO, with WIOMSA, in Zanzibar as an initial step in raising awareness and developing an approach to assessing MPA management effectiveness in the WIO. Subsequently, a module on assessing management effectiveness was held at the WIOMSA / CZMC Regional Training Course in MPA Management, St Lucia, South Africa, in June 2002. These preliminary activities resulted in general agreement that assessment of MPA management effectiveness would be a valuable activity to carry out within the region.

This module is based on a 'workbook' that has been produced in order to test, and adapt as required, the WCPA methodologies, and which is being tested in a number of MPAs in the WIO in 2003. This is a new field and many methods are being developed and tested at present. The workbook is based mainly on the approach used in a four-year UNF/UNESCO/IUCN project involving World Heritage Sites ('Enhancing Our Heritage') which includes WIO marine pilot sites (Greater St Lucia Wetland Parks and Aldabra Special Reserve) (www.enhancingheritage.net), as well as the WCPA/METF Framework. Reference is made to a global initiative by WCPA-Marine to develop and test indicators for assessing management effectiveness in MPAs (<http://effectiveMPA.noaa.gov>). The framework guidelines produced by WCPA emphasise the importance of promoting a flexible approach to assessments, recognising that the general methodology will need to be adapted to each site.

As pointed out in the monitoring and evaluation module, it is vital that prospective managers learn from experience elsewhere and that tools such as monitoring are integrated into management at the outset of MPA development rather than later as an after thought. Efficient and sustainable management cycles invariably contain a monitoring and evaluation mechanism whereby any changes to components within the system are documented and then evaluated in the light of the larger management goals and imperatives. This "feedback loop" of information then serves to help management refine and redirect its activities to ensure that the system being managed, and its respective components continue to function adequately toward meeting the stated management goals.

Conceptual Framework for Sessions

The previous module on monitoring and evaluation will have given MPA managers an understanding of how monitoring should include not just ecosystem components and their performance, but also aspects such as the relationship between the MPA and the local community, the tourist activities that may occur within an MPA, and the outcomes of management initiatives. It will have shown that managers need to understand the role of monitoring for all aspects of the MPA. This module shows how the results of monitoring can be used to adapt and improve management on a regular cyclical basis, by carrying out periodic assessments of management effectiveness.

References and Additional Reading Material

- Bunce, L., Townsley, P., Pomeroy, R. and Pollnac, R. 2000. Socio-economic Manual for coral reef management. Australian Institute of Marine Science, Townsville, Queensland, Australia. 251 pp.
- Hockey, P.A.R. and Branch G.M. 1997. Criteria, objectives and methodology for evaluating marine protected areas in South Africa. *S.Afr.J. Sci.* 18 : 369-383.
- Hockings, M. 1998. Evaluating management of protected areas: integrating planning and evaluation. *Environmental Management* 22(3): 337-346.
- Hockings, M. 1999. Management effectiveness of protected areas. Theme issue. *Parks* 9(2).
- Hocking, M., Stolton, S. and Dudley, N. 2000a. Evaluating Effectiveness: A Framework for Assessing the Management of Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK. 121pp. www.enhancingheritage.net/docs_public.asp
- Hockings, M., Stolton, S., Dudley, N. and Parrish, J. 2000b. The Enhancing Our Heritage Toolkit – Book 1. A training manual on how to build assessment, monitoring and reporting systems on the management effectiveness of World Heritage Sites. 36pp. www.enhancingheritage.net/docs_public.asp
- Hockings, M., Stolton, S., Dudley, N. and Parrish, J. 2000c. The Enhancing Our Heritage Toolkit – Book 2. A workbook on how to build assessment, monitoring and reporting systems on the management effectiveness of World Heritage Sites. 136pp. www.enhancingheritage.net/docs_public.asp
- Jones, G. 2000. Outcomes-based evaluation of management for protected areas – a methodology for incorporating evaluation into management plans. Paper presented at WWF International Conference "Beyond the Trees", Bangkok, May 2000. http://archive.panda.org/forests4life/spotlights/trees/bt_jnpaper.htm

- Mangubhai, S. 2002. Biological and socioeconomic monitoring programmes and assessment recently carried out or underway in MPAs in selected countries in the Western Indian Ocean: Kenya, Madagascar, Seychelles, South Africa and Tanzania. Unpublished report, IUCN Eastern Africa Regional Office, Nairobi, Kenya.
- Mangubhai, S. 2003. Assessing Management Effectiveness of Marine Protected Areas: a draft workbook for the Western Indian Ocean. IUCN Eastern African Regional Programme, Nairobi, Kenya. 74 pp.
- Margoluis, R. and Salafsky, 1998. Measures of success: designing, managing and monitoring conservation and development projects. Island Press, Washington D.C.
- Pomeroy, R.S., Parks, J.E. and Watson, L.M. 2002. How is your MPA doing? A Guidebook. Biophysical, Socioeconomic and Governance Indicators for the Evaluation of Management Effectiveness of Marine Protected Areas. <http://effectiveMPA.noaa.gov>
- Seychelles Island Foundation 2002. Initial Assessment: report of initial management effectiveness evaluation. Aldabra Atoll, Seychelles, Enhancing our Heritage project, IUCN/WCPA. 117 pp.

Training Session 10.1: Assessing Management Effectiveness in a Marine Protected Area

Objectives and Significance

As for module (see p. 254)

Presentation

Plenary presentation and group work

Duration

If only a half-day session is available: 1 hour of lectures; 2 hours group work and feedback in plenary.
If a day can be allocated to this module, this would be preferable.

Equipment and materials

Copies of workbook with sample blank worksheets

Each participant to have information concerning his/her MPA (ideally the management plan, results of monitoring programmes etc.)

Flip charts, stand and marker pens for group work

Overhead projector

Process

The following paragraphs provide an elaboration of the overheads to be presented in this session.

Overheads 10.1-7: These provide an introduction to the concept of assessing management effectiveness. The trainer must emphasise that the main aim of assessment management effectiveness is to improve performance of the MPA. Assessment should be seen as a normal and essential component of MPA management, perhaps linked with periodic reviews of the management plan. Assessment involves looking at changes in the biophysical and socioeconomic environment as a result of the presence of the MPA, and also at the structures, activities and processes involved in management itself.

The methodology adapted for MPAs in the WIO uses worksheets to guide the assessment of each component. It suggests issues to be measured and some indicators and criteria to be used and thus provides a common 'structure'. Individual sites can adapt it as necessary.

The IUCN-WCPA framework methodology has six components relating to three key elements of protected area establishment and management (see graphic in Chapter 1 of workbook):

1. Design:
 - What is the **context** in which the MPA exists, and what is the vision for the MPA?
 - How appropriate is the **planning**?
2. Management Systems and Processes
 - What **inputs** are needed?
 - What is the management **process**?
3. Delivery of objectives
 - What are the **outputs**/products?
 - What are the **outcomes**/impacts?

The key principles involved in assessing management effectiveness are shown in Overhead 10.5, but the trainer should note the more comprehensive list in the workbook.

A useful analogy can be made with a public bus (*dala-dala*, *matatu*, bush taxi) making a journey and the 'effectiveness' with which it does this (see cartoon in workbook). In this analogy:

- 'context' would equate to the aim of the journey or destination, the state of the road, weather and other external variables, government support to the bus company etc.
- 'planning' would equate to the design of the bus (size in relation to number of passengers, etc.) and the existence of a road map, etc.
- 'inputs' would equate to fuel, the bus crew, equipment and provisions on the bus to facilitate the journey, etc.
- 'process' would equate to maintenance of the vehicle, ability and training of the driver, etc.
- 'output' would equate to number of passengers carried, luggage delivered, revenue from tickets, etc.
- 'outcomes' would equate to the safe arrival of the bus at its destination with satisfied passengers.

Overhead 10.8: This outlines how an assessment is carried out. The first step is to set up a small 'implementation team' to lead the assessment. This is likely to involve core technical staff and key stakeholders; if the capacity of the MPA is very limited a consultant might be necessary. Next, the necessary data must be collated, using reports and other literature produced by the MPA, or with interviews and discussions. Then the worksheets can be completed, often most effectively in a group situation. Subsequently the worksheets must be reviewed by all MPA staff and stakeholders. A minimum of two workshops are necessary—one with 'managers', including members of the Management Committee or Board, and one with 'stakeholders'. Smaller consultations will probably also be necessary to ensure that everyone's views and opinions are included. Scheduling sufficient consultations may be difficult and it is recommended that meetings that are already part of the annual work plan be used as much as possible. For example, the assessment could be made an agenda item at a scheduled meeting of the Management Committee. The final report should give results and recommendations for improving management, monitoring or other aspects at the MPA.

Overheads 10.9–14 guide the explanation of each of the components of the assessment. The trainer should familiarise herself/himself with the details in the workbook in Chapter 3, and may wish to make additional overheads to provide participants with greater detail.

Overhead 10.9. Context: There are four sets of worksheets for this component, addressing

- The significance and values of the MPA, which involves identifying the biodiversity, socioeconomic and any other **management targets**. Understanding why the MPA was set up (e.g. to protect marine turtles, for improving fish stocks, etc.) is essential if appropriate management interventions are to be carried out. Often the objectives are too generalised or unclear to be useful in measuring management effectiveness, which is why it is useful to identify the management targets that they encompass.
- The **threats** to the MPA – both current and potential; these must be correctly identified and understood if appropriate actions are to be taken. Managers should understand the 'stress' to the management target, and also its 'source', or the human or other activity that causes the stress.
- The **national context** within which the MPA operates. Managers need to know how national government policies and legislation affect the MPA. Table 2 in the workbook provides notes to ensure that all relevant issues are covered in this worksheet.
- The extent to which **stakeholders** are involved in management: This requires that the main stakeholder groups are identified, and their relationship to, and participation in, management is then analysed.

Overhead 10.10. Planning: This component has two main worksheets addressing:

- **Design:** i.e. size, shape, location, zoning, connectivity with other protected areas and ecosystems.
- **Adequacy of management and other plans:** planning documents for the MPA should be listed, and the main one (usually the management plan) is assessed (using the criteria provided as guidance) for its effectiveness as a decision-making framework and its appropriateness in the current context.

Overhead 10.11. Inputs: A generic worksheet to assess inputs for each management target is given in the workbook, along with a template for a summary sheet. The pilot sites testing the methodology have found this part of the assessment difficult, as MPA budgets are rarely laid out according to objectives or management actions. It is therefore recommended that sites adapt the worksheets provided to suit their own situation. The main inputs to consider are:

- **Staff** – numbers, skills, functions
- **Funding** – sources, breakdown according to activity, short-falls
- **Equipment** – availability, state-of-repair, maintenance
- **Infrastructure** – appropriateness, maintenance etc.

Overhead 10.12. Process: This component has a single worksheet that is used to rate the management of the MPA on a wide range of aspects in terms of how well an activity is being carried out. The assessment of process aims to answer questions such as:

- Are the best systems and standards of management being followed, given the context and constraints within which the MPA operates?
- Are agreed policies and procedures being followed?
- How can management practices be improved?

The overhead lists some of the management aspects that are rated – the trainer should refer to the worksheet when describing this component of the assessment.

Overhead 10.13. Outputs: This component assesses the **products or services** that were produced, and the single worksheet (plus summary sheet) is thus an assessment of the implementation of the management plan. Typical outputs include annual and other reports, public awareness materials, visitor and other facilities, databases, marker and mooring buoys installed, patrols, prosecutions, training workshops, education programmes, etc. Most MPAs will produce periodic reports detailing progress in relation to outputs and thus may already have a process in place for this component of the assessment – if so, this can be used instead of the suggested worksheet. Participants need to understand the distinction between outputs and outcomes – for example, brochures and videos are ‘outputs’ which would lead to an ‘outcome’ of improved understanding among stakeholders; patrols on turtle beaches are ‘outputs’ that would lead to an ‘outcome’ of protecting a turtle population.

Overhead 10.14. Outcomes. Assessment of outcomes is ultimately what shows whether the management actions and interventions have had a positive impact on the management targets/objectives for which the MPA was established. Module 2 on Planning includes a discussion of Objectives and participants should be reminded of what they learnt during this, and should also think about what the management objectives of their MPAs are, and what their management targets might be (if these have not already been identified).

This component of the assessment has worksheets assessing the status (or health) of the biodiversity management targets, the socioeconomic management targets and the threats. Monitoring programmes are generally required to determine whether outcomes are being achieved. For example, if coral reefs are a management target within a biodiversity protection objective, monitoring will be necessary to show the status of the reefs. Many MPAs in the WIO have some monitoring activities underway (Mangubhai, 2002) and thus will have some data for this component of the assessment, although for some management targets (particularly socio-economic ones) it is likely to be lacking. The assessment will help to show where data are lacking and where monitoring programmes are needed or require improvement.

The methodology developed by WCPA-Marine (Pomeroy et al., 2002) involves a much more detailed assessment of the outputs/outcomes of an MPA. This takes considerable time as it involves the collection of new data, and requires significant funding. The methodology provides a list of some 40 indicators (11 biophysical, 17 socioeconomic and 16 governance), and requires that data are collected to measure each of these. To implement this methodology, an MPA ideally needs a management plan, baseline data (a benchmark) from the time that it was established, and to have been in operation for at least 2 years before the first assessment is conducted. The guidebook to this methodology is however essential reading for anyone carrying out even a simple MPA assessment as it gives extensive background and a detailed description of the process of carrying out an assessment. Furthermore, many of the indicators described could be used in a more simple assessment.

Overheads 10.15–17. The remaining overheads outline some of the key points to bear in mind when designing and preparing an assessment.

The scale and detail of an assessment may vary, depending on the financial and human resources available, and the particular needs of the MPA. In particular consideration needs to be given as to whether the methodology described in this module is appropriate or whether the more detailed assessment developed by WCPA-Marine should be carried out. Ultimately, both approaches are probably needed. The broader one may initially be more useful in this region, where there tend to be significant problems in day-to-day management of an MPA. But if an MPA has the resources, the more detailed assessment will provide more information and give a more rigorous assessment.

The ‘implementation team’ also needs thought. Gathering information and compilation of worksheets may be carried out by MPA staff, or a team of people such as volunteers, consultants or key stakeholders. In all cases, however, the worksheets are best completed with input from as wide a range of stakeholders as possible, through workshops or consultative meetings.

Careful thought should also be given to reporting the results of the assessment. Recommendations are likely to take two forms:

- changes to the management process itself or new management interventions, where sufficient information is available to show that certain aspects of management are inadequate (e.g. the Aldabra assessment (Case Study 10.1) revealed that there was no formal lease or land tenure arrangement for the atoll which led to some very rapid government action before the assessment was even complete); and
- collection of new information where data are insufficient to make a statement about a particular management activity, impact, etc. - this might mean recommendations for improving monitoring programmes or developing new ones, carrying out research etc. (e.g. the Aldabra assessment showed the lack of data available for the marine environment and the urgency of implementing a monitoring programme for this).

The long-term aim is for the sites involved to act on the recommendations, and then repeat the assessment in 2-3 years time to see the changes. Ultimately, it is hoped that MPAs will mainstream assessments into their monitoring and reporting systems at regular intervals in order to develop an adaptive management approach. Many MPAs have requirements for periodic review of the management plan, and assessments could fit in well with this.

Group work

The participants should be divided into groups according to the MPA and/or country that they come from. The size of the group is not important, but each group should work on the MPA(s) for which it has experience and so all members need to have a common background. Groups should be provided with a selection of sample worksheets, the number depending on the time available for the exercise. It is recommended that sheets from several of the components are provided and groups asked to tackle a small section of each, rather than completing one single sheet. This will give them a greater experience of the work involved in the assessment. Groups should complete the sheets, using their own knowledge and information from management plans or other relevant documents.

For the feedback session, it is suggested that the facilitator/trainer takes each worksheet in turn and, at random, asks the groups to report on how they filled in a particular section. After a number of examples have been given, there can be a short general discussion of problems encountered, before the trainer moves on to the next sheet.

Case Study 10.1. Assessment of management effectiveness of Aldabra World Heritage Site

Aldabra World Heritage Area is one of the pilot sites in a 4-year UNESCO/IUCN-WOPA project entitled Enhancing Our Heritage (www.enhancingourheritage.net). The main aim of this is to demonstrate how using an assessment, monitoring and reporting framework can enhance effective management of World Heritage sites. At the end of the project, sites will have established systems for evaluating management effectiveness that are integrated into the general process of management, staff capacity to carry out assessments, improved communication between managers and key stakeholders, and improved management based on the results of initial assessments.

Aldabra Atoll was gazetted as a Special Reserve in 1981 and is managed by the Seychelles Island Foundation (SIF), a government body. The protected area has limited personnel and so lacks the capacity and human skills to carry out assessments in-house. A team consisting of SIF staff and consultants was therefore formed to conduct the initial assessment, with the SIF Executive Officer as coordinator. Consultants were used for data collection, interpretation and facilitation of meetings. A detailed implementation plan was prepared. The assessment involved a series of meetings, conducted in April 2002, with most data tables completed and reviewed by SIF staff by June 2002. The methodology detailed in the Enhancing Our Heritage workbook (Hockings et al. 2000) was modified and adapted by the SIF team during the assessment process as needed. Gaps, priorities for action and other recommendations were identified as a result of the assessment, and a report prepared.

The assessment was considered very useful by all SIF staff, the local Management Committee and the Board of Trustees. It clarified issues and provided a mechanism for prioritizing future actions at the site. The assessment provided staff with the opportunity to review their activities in relation to the management of the WHS, and highlighted key factors that need to be addressed, such as:

- Lack of awareness of the values of the atoll (i.e. management targets), and of the content of the management plan and operations manual. With the exception of staff resident on the atoll, few people regularly used the plan and it was not guiding management at the site.
- Inadequate monitoring programmes for certain issues such as terrestrial vegetation, marine ecosystems and the impacts of introduced animals (e.g. rats), although others were good or adequate (e.g. giant tortoises, birds).
- The need to create opportunities to involve other stakeholders in management, particularly NGOs and civil society;
- The structure of annual work plans should be improved so they can be used in future assessments of management effectiveness. A better system is needed for reviewing and monitoring the management plan.
- The financial management system needs to be improved.

This assessment provided a number of lessons learned:

- The importance of involvement by upper management levels (in this case the local Management Committee and the Board of Trustees), which should help to ensure that recommendations made during the assessment are followed up.
- The value of assigning individuals to work independently on different sections of the assessment (this was more efficient than involving everyone in each component), and of choosing people with prior knowledge of the site, but independent of its management.
- Low levels of commitment to the process from some team members and limited interest from certain stakeholders and partners slowed the assessment and may have led to biases.
- Some stakeholders found the process intimidating, particularly when issues relating to their role were raised. This highlighted the importance of stressing the positive aspects of an assessment and dealing with tensions/conflicts as they arise.

Case Study 10.2: Assessment of management effectiveness of Kenyan Marine Parks and Reserves

Assessments of all the Kenyan MPAs are being carried out as part of an ICRAN/UNEP funded project to pilot assessment of management effectiveness in MPAs in the WIO. Technical assistance is being provided by IUCN-EARO, and the workbook used as the basis for this training module (see above) is being followed. Four sites (in some cases comprising both a Park and a Reserve) - Malindi Marine Park and Reserve, Kiunga Reserve, Mombasa Marine Park and Reserve, and Kisite Marine Park/Mpunguti Marine Reserve - are taking part. All Kenyan MPAs are managed by Kenya Wildlife Service (KWS).

Following an introductory workshop, each site formed an implementation team and drew up a work plan. A national co-ordinating team was set up with staff from the KWS Coast office in Mombasa, which provides technical and logistical assistance, and has overseen production of an annotated bibliography of references and research reports relevant to all sites. For Watamu Marine Park and Reserve, the implementation team includes representatives from NGOs and CBOs, as well as a JICA volunteer. The other sites have teams comprised primarily of KWS staff. The worksheets are being compiled by the implementation teams, with assistance from the national co-ordinators and a consultant hired by IUCN-EARO.

Input from some of the stakeholder groups, a questionnaire was developed to collect information and opinions in a workshop setting, as the worksheets were found to be too complex for some of the community stakeholders (e.g. fishermen and boat operators). Furthermore, many of the consultations had to be conducted in Kiswahili. A particular challenge at most of the sites is involving the hotel and tourist industry.

The assessments will not be completed until towards the end of 2003 but, as in the case of Aldabra, useful recommendations are already being generated. For example, the Malindi and Watamu MPAs currently have a joint management plan, as the sites are adjacent to each other. However, the detailed information gathered during the assessment indicates that there are sufficient differences at each site, that separate plans would be useful, with some form of co-ordinating mechanism to ensure joint management of common issues, such as the Marine Reserve. These assessments will be particularly interesting in that they will provide an opportunity to evaluate the effectiveness of the full national system of MPAs for Kenya.

Overhead 10.1: What does Assessing Management Effectiveness Mean?

Management effectiveness is the degree to which a protected area is achieving its objectives. An assessment will allow you to find out if the MPA is meeting these objectives in the most efficient and effective way:

- Is the MPA designed and planned appropriately?
- Is it managed appropriately?
- Is it having positive results? - protecting biodiversity, increasing fish populations etc

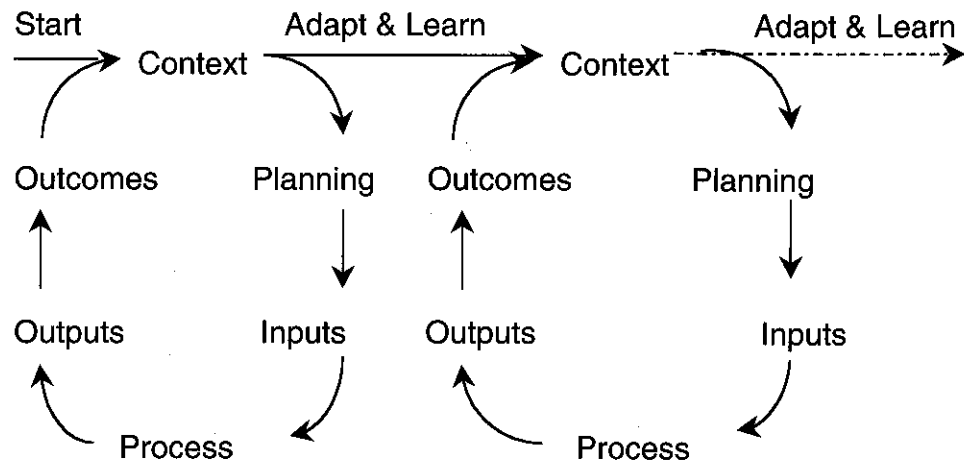
Overhead 10.2. Why Assess Management Effectiveness?

- Helps to identify threats and needs and thus improves planning
- Determines if the objectives are being met
- Establishes accountability - results can be given to interested parties
- Identifies issues that are within or beyond the control of the individual manager
- Provides lessons learned and allows for comparison between MPAs
- Provides information to develop priorities and funding proposals

Overhead 10.3. WCPA Framework for Assessing Management Effectiveness

- What is the starting point (context); what is the vision?
- How will the vision be reached (planning)?
- What resources are needed (inputs)?
- What are the management actions (process)?
- What was produced (outputs)?
- What was the impact (outcomes)?

Overhead 10.4. WCPA Management Effectiveness Framework



Overhead 10.5. Key Principles in Assessing Management Effectiveness

- The aim must be to improve management/ generate positive change
- There is no 'right' method - adapt the framework to suit your MPA
- Assessments must be participatory
- Use the level of assessment that is appropriate
- Include biophysical, socio-economic, cultural, management issues
- Use the results!!!

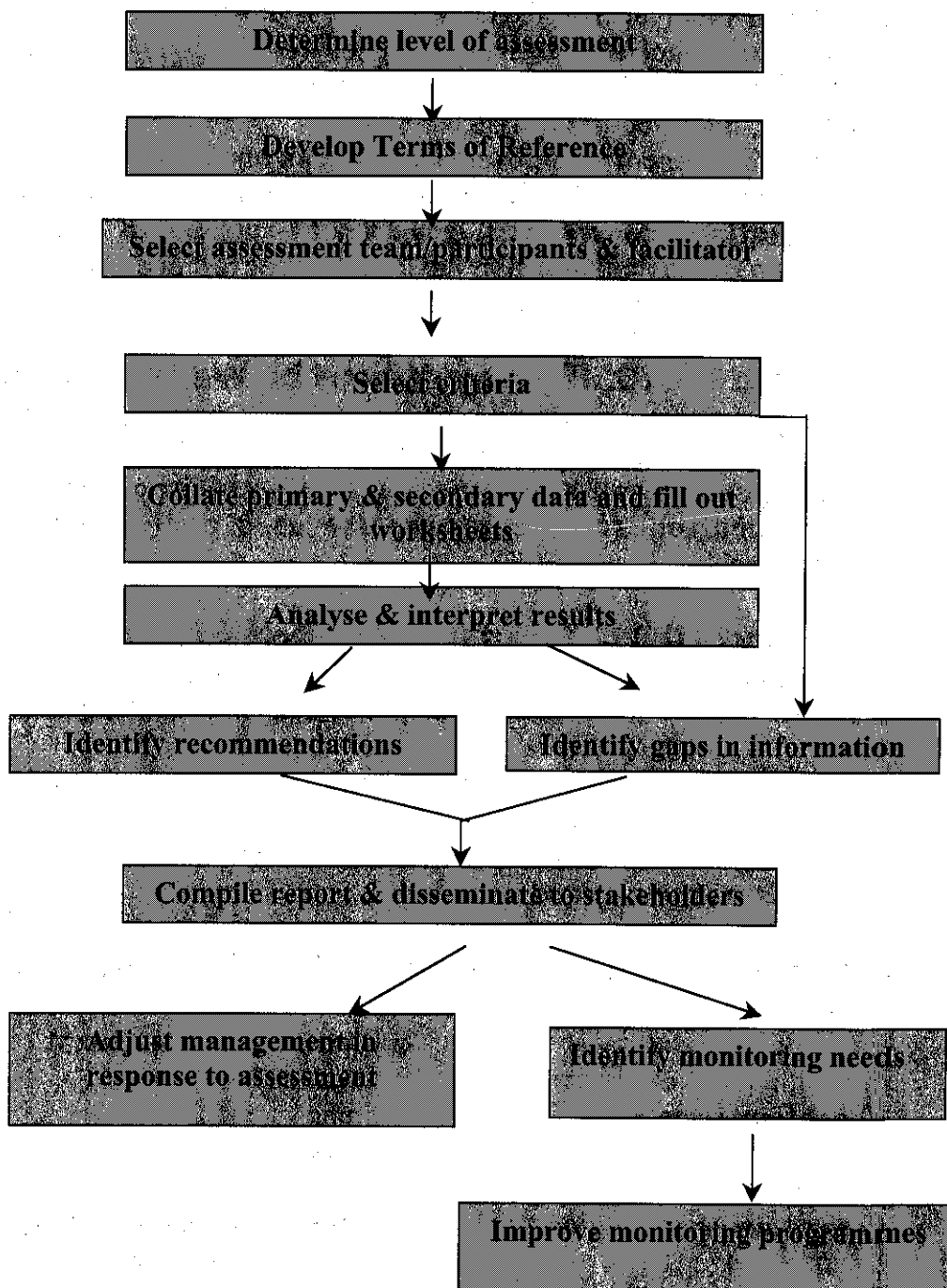
Overhead 10.6. An Assessment is *NOT*:

- An exam
- A competition
- An opportunity for negative criticism
- A chance to show off!

Overhead 10.7. Challenges in Assessing Management Effectiveness of MPAS

- Relatively new methodologies for assessing effectiveness
- Dynamic nature of the marine environment
- Socio-economic needs and political influences
- Unpredictable or poorly understood impacts on biological systems
- External factors, beyond control of the manager

Overhead 10.8. How is an Assessment Done?



Overhead 10.9. Context: Where Are We Now?

- Management Targets: the significance and values of the MPA in terms of biodiversity (e.g. unique ecosystem/habitats, endemic/threatened species), natural features (e.g. unique geological/physical features), and socio-economics (e.g. unique cultural practices, livelihood benefits)
- Threats: current and potential; sources and stresses;
- **National Context: legislation, government policies, international conventions, government support to MPA** (e.g. funding), relationship with national protected area agency
- Stakeholder Engagement

Overhead 10.10. Planning: Where Do We Want to Be?

- Design - size, shape, location, connectivity with other protected areas and ecosystems
- Management plan - existence of clear objectives, appropriateness of content; use as a decision-making framework

Overhead 10.11. Inputs: What Do We Need?

- Funding - total budget, expenditures (salaries, maintenance and operations), sources (government, revenue from fees, grants etc)
- Staffing - numbers, location, function, skills and training, volunteers
- Equipment - vehicles, field and office equipment,
- Infrastructure - road, buildings

Overhead 10.12. Process: How Do We Go About It?

How good was the:

Planning	Maintenance of equipment
Patrolling and enforcement	Communication
Education/awareness	Training
Research	Visitor management
Personnel management	Conflict resolution
Budget and financial control	Participation/stakeholder input
Legislation	Resource inventories
Economic benefits	Monitoring and evaluation

Overhead 10.13. Output: What Were the Results

Extent to which management plan has been implemented e.g. number of actions carried out/products produced, such as:

- Educational materials
- Research studies/reports
- Training activities
- Patrols
- Prosecutions
- Acquisition of equipment

Overhead 10.14. Outcomes: What Did We Achieve?

- Impacts on biodiversity management targets
- Impacts on socioeconomic targets (community well-being)
- Impacts on threats

Overhead 10.15. What Level of Assessment Is Needed?

	Low	High
Time	No/little data collection	Requires primary data collection and long-term monitoring
Cost	Few people, equipment	Substantial capacity and equipment
Implementation team	External consultants	Internal staff, local stakeholders
Depth	Shallow but broad	Narrow but deep
Purpose	Prioritisation/ comparison	Tracking improvement

Overhead 10.16. Who Carries Out the Assessment?

MPA staff	External advisors/stakeholders
Bias or complex relationships	Impartial; fresh perspective; credibility
Know details, history, experience	Limited knowledge
Focus on efficiency and effectiveness of work	Tend to focus on questions relevant to external issues
Enhance application of the results	Less involved in implementation of results

Ideally the assessment involves partnerships between a range of players

Overhead 10.17. How Should the Assessment Be Reported?

- To who? Internal staff, stakeholders/community, national government, regional network, donors, NGOs
- What format? Verbal report, written report, website
- How is it presented? SWOT analysis, Scoring, LFA

Training for the Sustainable Management of Marine Protected Areas: A Training Manual for MPA Managers

Introduction to the Manual

This training manual was prepared initially to assist the Coastal Zone Management Center (CZMC) of the Netherlands, the Institute of Marine Sciences (IMS) of the University of Dar es Salaam, and the Western Indian Ocean Marine Science Association (WIOMSA) deliver regional training courses in marine protected area management in the western Indian Ocean region in 2000 and 2002. The manual has since been updated and expanded, and now contains up-to-date and relevant information from the region and, where necessary, information and experiences from other parts of the world.

The manual is intended as a stand-alone document for use in both short-term (e.g. two-week) and long-term (e.g. one-year) training courses. The 10 modules in the manual each have several training sessions, and contain a variety of analytical and problem-solving exercises, as well as case studies from the region, which serve to maximise local context and relevance.

It is intended that the training courses presented using this manual be based on lectures, facilitated discussions, as well as small group exercises.

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