A Management Planning Guide for Marine Resource Managers[1]

What this Guide Provides

This guide provides facilitators with a step-by-step process for facilitating the development of management plans for Marine Managed Areas (MMAs). Several extremely helpful guides to management planning exist. This document is not intended to replace those guides but to complement them and provide the facilitator with an easy-to-follow process to complete a management plan. A person who has even just a little experience in facilitation should be able to use this guide to facilitate a management planning process with a Planning Team. The result will be a simple and straightforward management plan for your MMA.

This document provides suggestions on how to facilitate a group through the topics outlined below. The document divides working on each topic into Sessions, provides you information on the purpose of the session, details on each of these topics, a suggested facilitation process to run the session, and worksheets for the participants to use.

Topics/Sessions

Introduction to Management Planning

- Reviewing the Definition and Benefits of Management Plans
- Reviewing the Elements of a Good Management Plan
- Getting Organized to Start Management Planning
- Reviewing the Steps to Developing Management Plans for MMAs
- Providing a Basic Table of Contents for a Management Plan
- Reviewing Important Concepts to Consider in Tropical Marine Ecology

The Management Planning Process

- Identifying Natural Resource Targets
- Creating a Community Vision and a Conceptual Model
- Completing a SWOT Analysis
- Mapping Your Natural Resources, Threats, and Other Factors
- Developing a Site Description
- Prioritizing the Threats

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[1] This manual was prepared by Scott Atkinson of the Community Conservation Network. It includes text and materials from:

"Parks, J., D.Wusinich-Mendez, K.Thurlow, E.Carey, and S.Moss. 2006. *Materials Used for the Bahamas National Park System Management Planning Training.* Technical report produced by the National Ocean Service of the United States National Oceanic and Atmospheric Administration, The Nature Conservancy Bahamas, and The Bahamas National Trust. Nassau, Bahamas. 49 pages."

- Crafting a Good Goal and SMART Objectives
- Developing Management Actions to Achieve the Objectives
- Prioritizing Management Actions
- Developing Project Tracking Plans
- Assessing the Compatibility of Objectives and Actions
- Developing Zoning and Regulations
- Developing Monitoring Plans
- Sharing the Plan with Stakeholders
- Developing Optional Management Plan Sections

What this Guide Does Not Provide

This guide does not provide facilitation training but does provide suggestions on how to facilitate each step in the process. Individuals who use this guide should have a basic understanding of facilitation.

This guide does not provide a process for addressing multi-stakeholder conflict. In many cases, different interests groups may have differing opinions about how a particular area should be used. It is important to try to manage this conflict before you start the management planning process. Numerous guides provide suggestions on how to do this. This guide, however, assumes that the individuals involved in the management planning process have the authority to complete the plan and have gathered input from various stakeholder groups. By all means, a process for gaining stakeholder input and for sharing the plan with stakeholders is absolutely essential. Some basic ways to do this are covered in this document. However, we do not provide detailed guidance on how to address stakeholder conflict.

SESSION ONE: INTRODUCTION TO MANAGEMENT PLANNING -- BACKGROUND INFORMATION

A. Session Purpose

As you facilitate the management planning process, participants should begin with a clear understanding of management planning, its benefits, and the reasons for creating a management plan.

In this session we will discuss:

- **I. What Is a Management Plan?**
- **II. Why Is Creating a Management Plan Recommended, and What Are Its Benefits?**
- **III. Characteristics of a Good Management Plan**
- **IV. Contents of an Effective Management Plan**
- **V. The Management Planning Process Flow**
- **VI. What to Do Before Management Planning**
- **VII. Getting Organized to Start Management Planning**

B. Facilitation Suggestions

1. If your group has very little background knowledge in MMA development and management planning, you may want to simply present the information in this session. This would include sharing a handout of the information. Provide opportunities during the presentation for participants to ask questions and discuss what you have presented.

2. Another option is to ask your group to brainstorm certain aspects of this introduction. For example, you may ask them to brainstorm about the benefits of management planning or the characteristics of a good management plan. We suggest that brainstorming be facilitated by asking participants to turn to their neighbor to discuss the topic for five minutes and then by asking the pairs to volunteer one or two of the items they discussed under each topic.

C. Background Information

Here we provide information that the facilitator can use to present key topics of this session.

I. WHAT IS A MANAGEMENT PLAN?

There are many definitions for "management plan." In general a management plan is…

a document that guides all management activities to be implemented in an area. It details the resources of the area as well as the goal for its management, objectives, and activities that will be carried out. It sets out a program of management activity that will be carried out for the next three to five years.

II. WHY IS CREATING A MANAGEMENT PLAN RECOMMENDED, AND WHAT ARE ITS BENEFITS?

There are several reasons that we recommend the creation of management plans for protected areas. The process of developing a management plan can clarify the management goal and objectives, which can help to prioritize the use of limited resources available for management. Also, if the plan is well designed, it can be used as a day-to-day guide for management. Without a good management plan, it is very possible that preservation, development, and use activities can occur in a haphazard way with little consideration for the implications. The result is likely to be lost opportunities and damage to important resources. Some of the benefits of good management plan are listed below.

Improved management of the area by:

1. Providing a clear understanding of the protected area and its resources,
2. Providing guidance for managers in the form of a framework for day-to-day operations,
3. Providing a long-term vision and guidance on how to reach this vision,
4. Helping to identify and define measures of management effectiveness by providing clear objectives and activities,
5. Providing continuity of management by helping to link management actions to a comprehensive plan, and
6. Maintaining momentum toward efforts to manage the area.

Improved use of financial and staff resources by:

1. Prioritizing management actions to make sure resources are devoted to priority areas and
2. Highlighting where additional resources (human and financial) are needed to manage the protected area.

Increased accountability by providing a mechanism for:

1. Supervision of the area manager and staff since their objectives and activities are clearly articulated and
2. Communicating with the public and various interest groups about the purpose of the site.

Improved communication by:

1. Identifying key audiences with whom the manager needs to communicate,
2. Clarifying the messages to be communicated,
3. Providing a means of communication with the public to explain policies and management activities, and
4. Promoting and publicizing the managed area to a wide range of stakeholders.

III. CHARACTERISTICS OF A GOOD MANAGEMENT PLAN

While there are not set rules for what makes a good management plan, some helpful general guidelines do exist. You can use these as a checklist when reviewing the completeness of your management plan.

In general a good management plan has the following characteristics:

1. **Clear**: Easy to read, jargon-free, and well presented.
2. **Concise and comprehensive**: No longer than is absolutely necessary, but with enough information to fulfill its functions.
3. **Accurate**: Without major errors and with the reasons for all judgments clearly explained.
4. **Logical**: Based on a thorough assessment of the site and with a clear rationale given for all objectives and activities (e.g. based on best scientific and social information available).
5. **Acceptable:** To all those with interests in and emotional attachment to the site.
6. **Practical**: With clear objectives and realistic methods for achieving them, resulting in desired outcomes which can be monitored.
7. **Focused**: Fulfilling its purpose as a tool for site management, meeting the needs of its users and satisfying any legal or other obligations.

IV. CONTENTS OF AN EFFECTIVE MANAGEMENT PLAN

1. **TITLE PAGE –** Name of site, names of lead group(s), date, version

2. **EXECUTIVE SUMMARY** – Key issues and decisions; summary aims, approach, and actions

3. **TABLE OF CONTENTS**

4. **INTRODUCTION** – Define the purpose and scope of the plan; explain the legislative or other basis and authority for the plan's development; summary timeline of plan development

5. **SITE DESCRIPTION**

   (a) Location and governance:

   - Location and size of the area
   - The purpose of the area (why was it created)
   - The legal status of the area
   - Who has the legal authority to manage the area
   - The current management system

   (b) Biophysical setting:

   - The key physical features of the area (climate, geology, geomorphology, hydrology, soil characteristics)
   - The key biological features of the area (communities, flora and fauna including any outstanding natural resource features) and the historical features of the area

   (c) Socioeconomic and cultural setting:

   - The cultural features (traditional communities, cultural practices)
   - The socioeconomic features (occupancy, access, income, tenure, other basic data and trends among local communities and their dependence on managed areas)
   - The stakeholder groups with an interest in the area

   (d) Conservation status:

   - The current uses of the area
   - The threats to the area
   - The obstacles to effective management
   - The management successes in the area
   - The current management challenges
   - The history of management planning in the area
   - Why a decision has been made to complete this management plan

6. **THE MANAGEMENT APPROACH**

(a) Description of the Management Planning process that was used to Develop the Document

(b) Vision and Problem/Solution model

(c) SWOT Analysis

(d) Goal and Objectives

(e) Management Activities

(f) Zoning and Regulations

7. OPTIONAL SECTIONS

(g) Roles and Responsibilities of Partners

(h) Enforcement Plan

(k) MMA Budget and Financing Plan

(l) Sustainability Plan

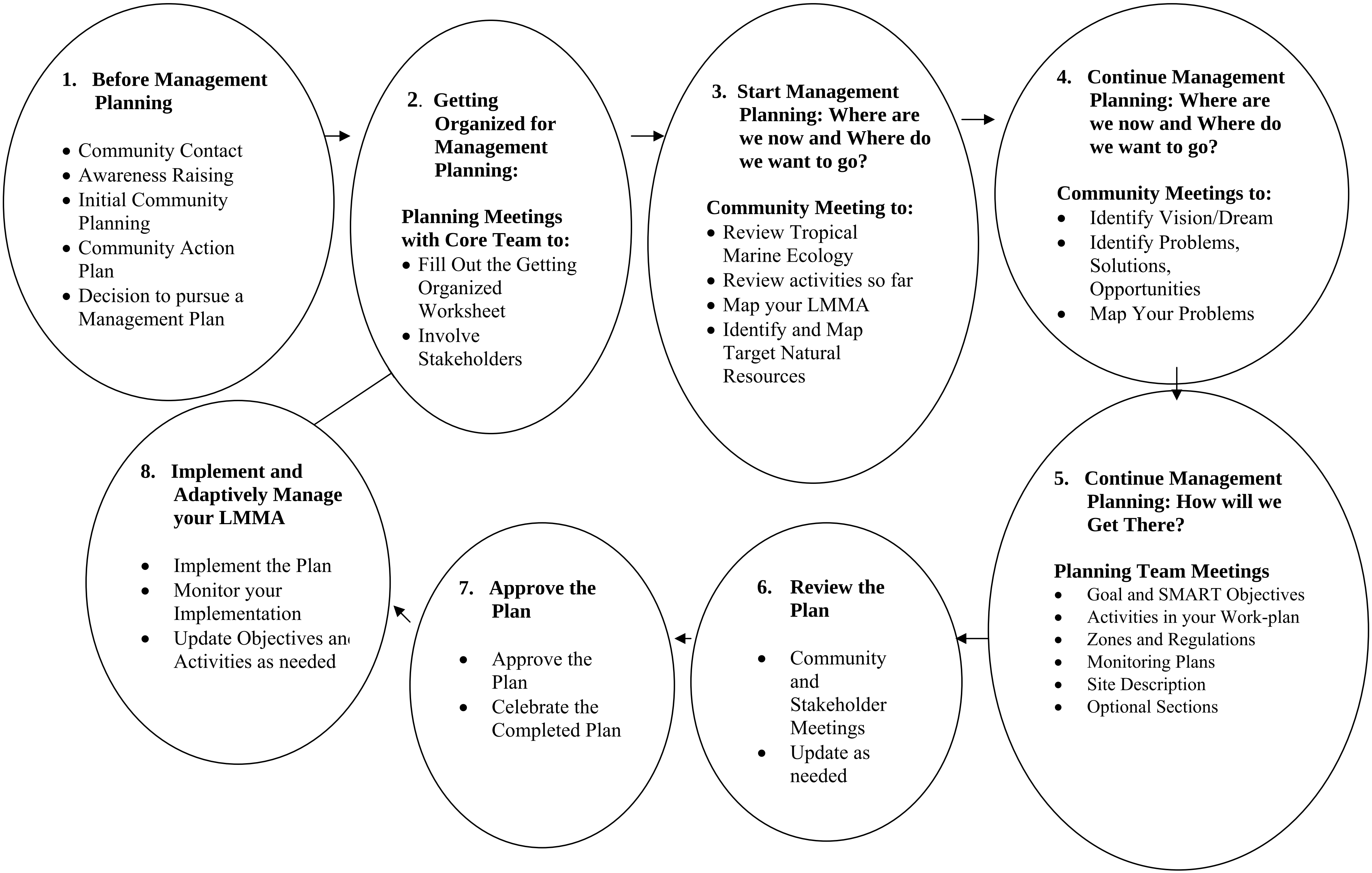
8. APPENDICES (Suggested)

- Boundaries
- Maps (see list below)
- Habitat classifications
- Plant species (flora)
- Animal species (fauna)
- Special features at the site
- Legal language/regulations

- 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 Cultural and socio-economic features
- Map 9 - Major commercial and non-commercial uses
- Map 10 - Major use conflicts and threatened resources
- Map 11 - Zoning

V. MANAGEMENT PLANNING PROCESS FLOW:

Before Management Planning **Once you Have Decided to Prepare a Management Plan**



V1. WHAT TO DO BEFORE YOU START MANAGEMENT PLANNING:

Purpose of this Step: There are several steps in the development of an LMMA that should be undertaken before you are ready to develop a Management Plan. These include:

1. **Community Contact:**

   Most LMMAs that are supported by an outside organization start through initial discussions with a few community members who are particularly interested in marine resources. The discussion at this point is usually broad with a focus on trying to understand the concerns of the community and brainstorm some strategies that may help.

2. **Awareness Raising Programs**:

   Awareness Raising Programs are critical and are a very good starting point for development of a community LMMA. Even if a community is already enthusiastic about creating an LMMA, you should undertake Awareness Raising in the area to help them understand the basics of tropical marine ecology, the possible benefits of LMMAs, the limitations of LMMAs, and other key facts that they need to know as they move forward. Not all community members will be familiar with how an LMMA may help them. It is important to understand that LMMAs are only one tool that can be used to address the threats to their marine resources. Other tools should be explored as well. There may be problems such as sedimentation that LMMAs alone will not help. Later in the process, it will become clear if an LMMA will be the primary strategy for the area or if other strategies may be necessary.

3. **Initial Community Planning:**

   a. Gathering Basic Community Data:

   It is very important that you gain a basic understanding of the community situation. Techniques in Participatory Coastal Resource Assessment (PCRA) can be very helpful in this process: Several excellent guides to PCRA exist and can be used in the initial community planning. This process provides a good understanding of key natural and social resources. A map of these resources should be made. This map should be updated later during the Full Management Planning Process when Natural Resource targets and threats are being discussed and prioritized.

   b. Undertaking the Vision and Problem/Solution Modeling Process:

   The Visioning and Problem/Solution Modeling Process can either carried out independently as a basic community planning tool or can be an early step in Management Planning (as described in STEP FOUR: CONTINUE MANAGEMENT PLANNING: WHERE ARE WE NOW AND WHERE DO WE WANT TO GO?) . The process helps a community to understand:

   - Their vision for their natural and social resources
   - The problems (including direct and indirect threats and obstacles) that stand between them and achieving their vision

- Possible Solutions to these problems
- Opportunities that may help them to carry out their activities, achieve their objectives, and thus get closer to their vision

4. Develop an Initial Set of Actions (a Community Action Plan):

An Initial Set of Actions or a Community Action Plan can help to guide the development and implementation of an LMMA. Many projects chose to do this simple action plan first and get going on activities early in the process. This helps community members to get involved in the area and gets actions started. It is common that community members can become discouraged if all they see is planning and no action. While developing a full management plan is important, it can take a long time. As a result, it may be good to develop an initial list of activities that can be implemented during the development of the plan. Some communities may decide not to develop a full Management Plan. As a result, the Community Action Plan may guide the implementation of their project. However, as described below, we do recommend the development of a simple and easy to use Management Plan. Actions that might be part of a Community Action Plan include:

- Carrying out a baseline assessment of the marine area managed by the village
- Undertaking Outreach and Awareness Raising with key community members
- Delivering Youth Education Programs
- Undertaking community interviews to better understand people's concerns
- Undertaking biological and/or socio-economic monitoring
- Initiating Community-based Enforcement

5. Deciding to Develop a Management Plan

We strongly recommend the development of a simple Management Plan for all LMMAs. While LMMAs may operate well for years without a Management Plan, a simple Management Plan can be very important to the success of the LMMA. For a new LMMA, a simple Management Plan will help the community to clearly identify their concerns and their objectives. This is very important as management actions should be designed to help meet the communities' objectives. This will strongly influence zoning and rules that the community develops. For an existing LMMA, a simple Management Plan will help with adaptive management. It will review and clarify objectives and help identify if ongoing activities, rules, and zoning are working towards the achievement of the objectives. If the LMMA is not meeting its objectives, then adaptation of the above management activities may be necessary.

In deciding to develop a Management Plan, you should consider the following:

- Can the community devote sufficient time to develop the plan? At a minimum it will require three community meetings and five two to four hour meetings of a planning team.
- Do you have staff that can facilitate the Management Planning Process?
- Do you need to take some immediate activities to get the community involved in addition to the planning process? If so, do you have enough staff time to coordinate these activities and undertake Management Planning?

VII. GETTING ORGANIZED TO START MANAGEMENT PLANNING

The process of creating a management plan takes a great deal of time and effort. As a result, it is important to make sure that you and your Planning Team are really ready to plan before you begin. There are several steps that you should go through before you start your planning process. Getting organized before you start planning is absolutely essential. This stage defines what the process will achieve, how it will be carried out, timing considerations, and who is to be involved. These decisions need to be made at the highest possible management level and are critical to starting the planning process on the right footing.

This pre-planning phase generally includes the following steps (see Worksheet One):

1. **Evaluate if you are ready to plan.** Before you launch into a management planning process, evaluate whether your MMA is ready for it. If the MMA is only an idea of a few people, you are not ready to launch into the management planning process. You must first carry out the necessary stakeholder outreach and build your body of supporters. In many cases this process can require months, if not years. It is essential to the long-term success of the MMA and any subsequent management plan.

   Also evaluate whether you have the necessary time to create the plan and to follow up. The time required to create a management plan should not be underestimated. If so much time is spent planning that you lose the motivation to implement the plan, your time has been wasted. So make sure that your decision to plan is accompanied by a commitment to use the plan—and plan accordingly.

2. **Clearly identify the purpose of the managed area and ensure that it is understood by all involved.** The broad purpose of the area should have been set out in the legislation or other formal agreements designating the area. However, it may be necessary to re-examine the purpose since it will set the direction of the plan. If the broad purpose of the area has not yet been articulated or needs to be adjusted, this should be completed before planning begins. You also should communicate the purpose to the primary stakeholders before beginning the management planning process.

3. **Identify stakeholder groups that should be involved in the process.** Stakeholder involvement can run the gamut from the day-to-day involvement of a broad range of stakeholder groups, to simply getting input from stakeholder groups, to only informing stakeholder groups about the decisions that have been made once the plan is complete. The approach for stakeholder engagement will vary greatly depending on your site. Before you start planning, undertake a basic stakeholder analysis to identify who should be involved in the planning and how they should be involved. See Section Two in this guide for a basic stakeholder analysis process. Be sure to apply this process before you start planning.

4. **Identify a planning team.** Management planning should be a team effort. The planning team members should include the following characteristics: a strong interest in the area, considerable knowledge of the area, the needed authority to undertake management

5. **Identify the steps to be followed in applying the planning process, their sequence, and the methods to be used.** Many organizations have their own guidelines on the approach to be followed. If not, design an approach that will best suit the managed area and its management context. The process recommended through this manual may be adapted to suit local needs.

6. **Determine who the audiences for the plan are.** Management plans are prepared mainly for regular use by area managers, but they are not intended as detailed work plans. Members of the public, the government, commercial interests, and neighbors are also important users. In some situations, traditional owners, local government officials, and commercial operators can be key users. The style of presentation adopted should reflect the most important user groups.

7. **Prepare and follow a well-laid-out work schedule for the management planning process.** Project management work plans are often used to carry out this task. They help to organize and control the production of the management plan.

8. **Clarify and agree upon a procedure for the approval of the final management plan**. If the approval of external parties (e.g. funding bodies, advisory committees, and government departments) is required, the procedures to be followed in achieving this should be identified. Parties should also agree upon a timetable for the submission of a final version for approval.

9. **Collect necessary information.** It is important to gather some key information before you embark upon the management planning process. This includes ecological resources and their general condition, cultural resources and their general condition, physical features, key features of the socio-economic environment, land and ocean uses, threats to the area, facilities, and user characteristics and their impact on the area. Having all of this information collected beforehand will facilitate the management planning process. You may also want to include more detailed data collection and research as one of the recommended activities of your management plan.

WORKSHEET ONE: GETTING ORGANIZED TO START MANAGEMENT PLANNING

(1) Fill out the following table to answer the key questions about your managed area.

1. What is the overall purpose of the managed area?	
2. Who are the primary stakeholders? See more complete Stakeholder Analysis in Session Two below	
3. Who will be included in your planning team and why? Please describe who they represent and their skills.	
4. What steps will you follow in applying the planning process?	
5. Who will use the plan and for what purposes?	

6. What is the due date for completion of the plan? Also be sure to create a work plan for creation of the plan	
7. How will you involve outside stakeholders?	
8. How will the plan be finally approved?	
9. Have you collected basic necessary information about the area? (ecological and cultural resources and their condition, physical and socio-economic features, land and ocean uses etc.)	

SESSION TWO: INTRODUCTION TO MANAGEMENT PLANNING — INVOLVING STAKEHOLDERS

A. Session Purpose

Stakeholder involvement is an absolutely critical aspect of management plan development. The approach to stakeholder involvement will vary greatly depending on the site, the number of stakeholders, their involvement or "stake" in the area, the ownership and management authority of the area, the complexity of the situation, and many other factors. At some sites, you must engage a broad range of stakeholders in the entire planning process or they may undermine your decisions. At other sites, the authority of the community or the agency is so strong that stakeholders need only be informed about the decisions that are being made for the area.

It is very important to talk with a wide variety of stakeholders to get a sense of their concerns and ideas before you start the management planning process. Once you have that stakeholder input, it is generally more effective for the management planning process to be carried out by a team of designated individuals. If stakeholders have been afforded an opportunity to provide input, they are typically quite happy for a planning team to develop the plan. After the draft plan is complete, however, it is very important to loop back in with all the stakeholders so they can review the plan. A wide range of options for stakeholder engagement exists, including the following:

1. Detailed involvement of all major stakeholder groups in the planning process. This approach has been used in some managed areas. However, it can often degrade into a very unproductive process due to the difficulty of developing a plan with a large group.
2. Input sought from stakeholders through focus groups with a smaller planning team developing the Plan. After a draft is complete, the stakeholders will have a chance to review it. You may or may not have stakeholder representatives on the planning team
3. The community or agency has a high degree of authority, so they choose not to consult outside stakeholder groups. In this case, the planning team may chose only to inform various groups about the decisions in the plan.

Typically the second approach is the most likely to lead to success. However, the devil is in the details. You have to think very carefully about how many focus group meetings you should have, how often you should inform stakeholders about your progress, and how many opportunities outsiders should have to provide feedback on the plan. In most MMAs, the more effort you spend involving and reacting to stakeholder concerns, the better your chance of getting true buy-in and compliance with the plan's regulations.

B. Facilitation Suggestions

The stakeholder discussion is best held with the entire planning team present. The discussion should happen one of the very first steps in the planning process.

WORKSHEET TWO: INVOLVING STAKEHOLDERS

(1) Fill out the following worksheet to clarify the stakeholders for your MMA and how you will involve them in the management planning process.

What are the main groups of people involved in the area?	**Describe their interest in the area**	**Describe the validity of their interest or "stake"?**	**How important is this group to the planning process?**	**How would you like to involve them in the planning process?**
Local community members	Clan ownership of many of the resources. Recognized resource use rights	Highly valid. They have had a role in the area for generations	Very important	Community visioning process, regular community meetings, quarterly feedback opportunities during the development of the plan
Fishermen from other villages on the island	Historically they would fish in the area only by asking permission. Now they often fish without asking permission	Low. Historically we would not deny them access as long as the stock was healthy. Now they come in without asking	Medium. They may choose not to follow the rules unless they are involved. But they have little valid stake in the area.	Ask them for their input on the actions and the rules. Inform them of our decisions, pointing out how we have involved their concerns
Illegal fishermen from the Philippines	Sharking fining, tuna fishing, catching turtles, etc.	None. They are fishing completely illegally in the area	Not important	Inform them of the rules once established. . Enforce when necessary
Commercial SCUBA operators	Taking tourists into the MMA to dive	Some of them have permits to operate. Others have no legitimate stake but have invested funds	Important as they have a strong lobby with the government	
Enforcement agency	They are mandated to enforce the rules of the area	High. Once rules are law, they must enforce them.	Very important. We need to know what is practical in terms of enforcement	Ask for their input early on and invite them to key meetings.

INVOLVING STAKEHOLDERS

What are the main groups of people involved in the area?	Describe their interest in the area	Describe the validity of their interest or “stake”?	How important is this group to the planning process?	How would you like to involve them in the planning process?

SESSION THREE: INTRODUCTION TO MANAGEMENT PLANNING — REVIEWING IMPORTANT CONCEPTS TO CONSIDER IN TROPICAL MARINE ECOLOGY

A. Session Purpose

Before launching into a management planning process for a tropical MMA, be sure that planning team members and stakeholders have a good understanding of basic concepts in tropical ecology. There are many MMAs around the world that have been inadvertently or purposely sited in ecologically inappropriate areas. The result is that these areas will never produce the benefits that were originally hoped for. For example, if one objective of an MMA is to improve fishing for key coral reef species, the MMA must be sited in an area that will produce coral reef fish and allow for spill-over. If grouper or parrotfish are an important fishing target, the area should not be placed exclusively in seagrass or sand flat habitat. These areas simply do not provide habitat for adult grouper and parrotfish. The best design would include a range of coral reef associated habitats to cover the full life history of key species. Some mangrove area would be protected, some seagrass beds, some sand flat, some reef flat, and some reef slope. Biologists can help identify which areas are likely to produce which results based on the ecology of the area. Planning team members should understand that this type of ecological advice is important to designing the MMA. If it is not taken into consideration, the MMA may not yield what you are looking for.

B. Facilitation Suggestions

This session is intended to be more of a discussion than a working session. Depending on the experience and knowledge of your group, we suggest that you pursue one of two facilitation approaches:

1. If your group has very little knowledge of tropical marine ecology, you may simply want to present the information in the "Background Information" section below and encourage a discussion of these key factors relative to your site.

2. If your group has more experience in marine ecology, it would be good to provide them with basic introduction on the topic before having them fill out the worksheet below. After this you can discuss the findings as a group, help the participants fill in any missing concepts, and identify any other factors they should consider. You could ask teams of two to fill out the worksheet and then hold a discussion about their findings. You can then fill in any important factors they have not identified.

C. Background Information

As any management planning team considers a management plan, zoning, and regulation system, review some basic facts about the ecology of tropical coral reef ecosystems. These will help guide decisions as to what types of actions and zones to pursue and where to put them.

1. Most coral reef fish species such as grouper and snapper grow slowly and only reproduce after approximately five years of life. As a result, they depend on long life and many years of reproduction to keep their population high or stable.

2. As a result, coral reef fish species are not good targets for intensive commercial-scale harvest. If harvested intensively the populations usually will crash and sometimes cannot recover.

3. Most reefs include important areas for spawning aggregations that become established over many years. It appears that young fish learn where to aggregate by watching older fish. As a result, if these areas are over-fished, it is possible that the aggregations will not recover. It is therefore important to manage fishing of aggregations very carefully.

4. Ideally, fish should not be harvested during their aggregation times so they are allowed to reproduce without disturbance.

5. Larger fish are older and produce many times more eggs than small or medium-size fish. For example, a 24 inch-jack produces almost 4.3 million eggs, while a 12-inch jack only produces 49,000 eggs. As a result, the larger fish is worth 87 of the smaller fish in terms of egg production and reproductive output.

6. It is believed by fisheries scientists that older, larger fish not only produce more larvae but also produce larvae that are healthier and more likely to survive.

7. In summary, large fish are extremely important because they produce more eggs, healthier larvae, and show younger fish where to aggregate. As a result, fishing regulations should restrict the taking of large individuals and instead focus on intermediate-size individuals.

8. After having been caught and released, a high percentage fish die. As a result, even when targeting intermediate-size fish, it is important to use specific gear such as spears rather than nets or hook and line.

9. Pelagic species (such as tuna and mahi mahi) grow quickly and reproduce at about two years of age. This is why they can handle more intensive harvesting and still have sustainable populations.

10. Corals can be killed when the temperature of the ocean becomes too high. This is known as bleaching. Widespread and damaging bleaching occurred in Micronesia in 1997 and 1998.

11. However, some areas of coral reefs tend to recover from bleaching more quickly because unique currents, upwellings of cool water, or some other feature enables them to recover.

12. If bleaching occurs and fish populations are too low, algae can over take the coral, thus preventing recovery. As a result, healthy numbers of fish when coral bleaching occurs.

13. Any zoning system should attempt to include areas that have recovered well from bleaching; an attempt should be made to keep the fish populations healthy in these areas.

14. No-take areas tend to have high numbers of fish. If the numbers are high enough, some fish often will move to areas adjacent to the no-take zone. This is known as "spill-over". As a result, the fishing on the edge of no-take zones is usually very good.

15. Because fish move around on the reef, it is a good idea to put a buffer zone around no-take zones where only a little fishing is allowed. This will allow fish who live in the no-take zone to move around without being caught.

16. Zoning systems should take into consideration the idea of spill-over and may want to place fishing zones near the buffer zone of the no-take area. These areas will tend to yield really good fishing; because of the buffer zone, the fishing will not have a major impact on the populations of fish in the no-take zone.

17. The larvae of corals, fish, and other species travel in the water with the prevailing currents. As a result, one area may be a source of larvae while another area receives larvae. It's important to try to understand how the currents around a reef work so that your zoning system can protect the areas that are sources for larvae and the areas that receive larvae. If you only protect areas that receive larvae, eventually the source will be overused and destroyed, the area you have protected will have no source for larvae, and it will decline as well. Understanding these relationships involves very complex science, but managed areas should do their best to understand the currents. They should also protect many areas around the reef so that they have a good chance of including both source areas and receiving areas in the zoning system.

WORKSHEET THREE: REVIEWING IMPORTANT CONCEPTS TO CONSIDER IN TROPICAL MARINE ECOLOGY

1) If your participants have basic knowledge in tropical marine ecology, ask them to fill out the worksheet below.

2) Discuss participants' results, and ask them to fill in any information they have not identified.

3) Based on the results, you can determine which concepts you need to teach them in basic tropical marine ecology. Understanding these concepts will help them when they work to develop the management plan.

1. Please describe the primary habitat types that comprise your MMA.	
2. Are coral reef fish a primary target of your conservation effort?	
3. How close to shore is your MMA?	
4. Do you have spawning aggregation sites in your MMA?	
5. Do you have an understanding of the prevailing currents in your MMA? Please describe.	
6. Please identify other any ecological factors that you think may influence the management actions you choose for your area.	

SESSION FOUR: THE MANAGEMENT PLANNING PROCESS — IDENTIFYING NATURAL RESOURCE TARGETS

A. Session Purpose

The purpose of this session is to identify the natural resources within your managed area that should be addressed within your management plan. Since these natural resources are the main target of our management initiatives, we will call them "natural resource targets."

Natural resource targets can include the following:

- A priority ecosystem (a near-shore coral reef ecosystem, an atoll)
- A specific habitat type (seagrass beds, coral reefs)
- A specific population of a species (migratory birds)
- A charismatic and/or endangered species (hawksbill turtle, giant clams)
- A special geological feature (a blue hole)
- A special biological event (grouper spawning aggregation)

B. Facilitation Suggestions

1. You may want to facilitate this session by having participants form small groups of three to six and asking them to fill out the worksheet below.

2. After each small group has filled out the worksheet, you can get the group back together and ask them each to present their findings.

3. You can then summarize the findings on a flip chart sheet that is in the same format as the worksheet. Then ask the group to re-prioritize the natural resource targets together.

WORKSHEET FOUR: IDENTIFYING NATURAL RESOURCE TARGETS

(1) Discuss and identify natural resource targets that characterize the marine, freshwater, and/or terrestrial components of your site. List these in the table below under the "natural resource target" column.

(2) From your list of targets, discuss and choose the top five most important targets you think should be the focus of management actions at your site. Number these targets from 1 to 5 under the "priority" column in the table.

	Natural Resource Target	Priority
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

SESSION FIVE: THE MANAGEMENT PLANNING PROCESS — CREATING A COMMUNITY VISION AND A PROBLEM - SOLUTION MODEL

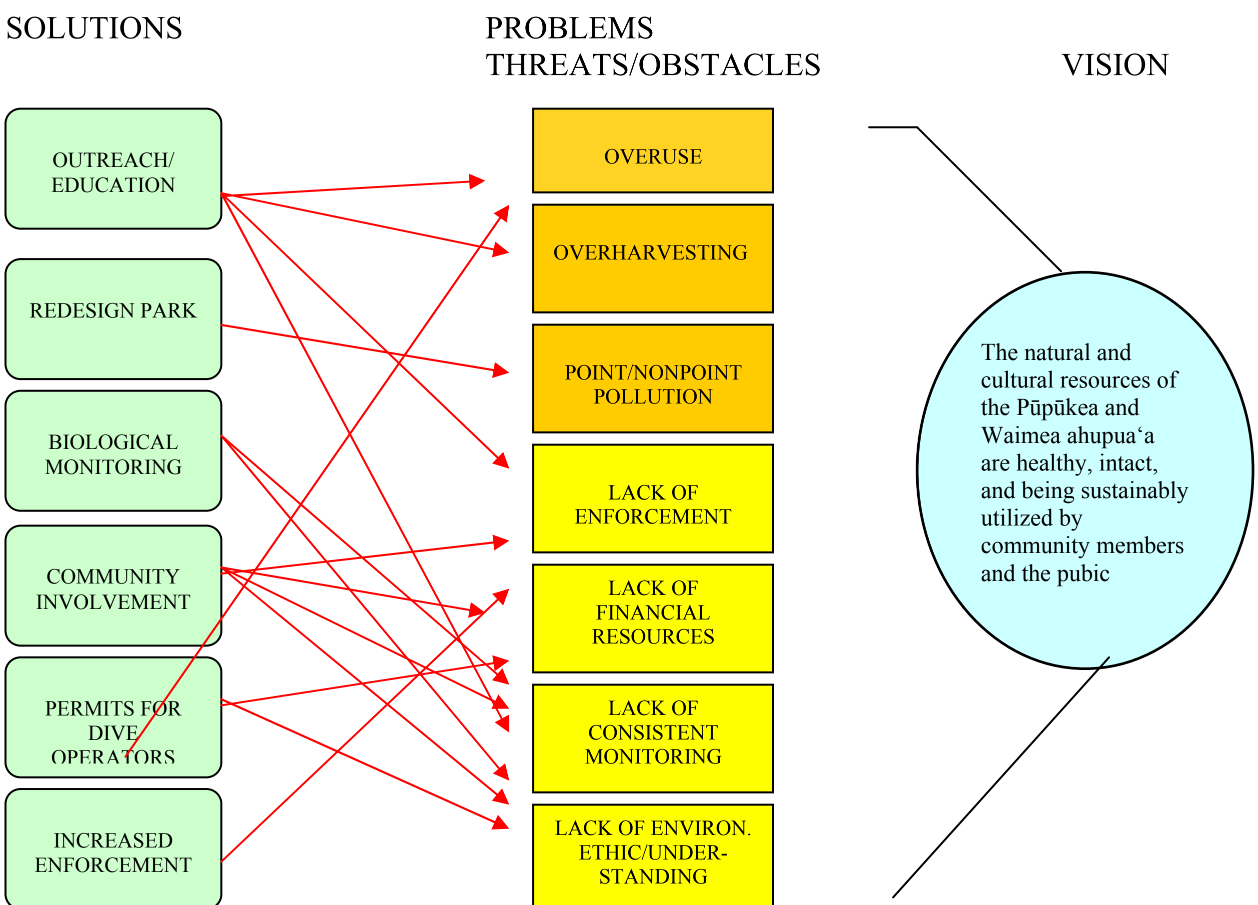
A. Session Purpose:

Developing a shared vision is one of the most important steps in developing a management plan. A vision is a statement of the preferred future at the site you are trying to manage. The following questions will help you to determine what the preferred future looks like for your area:

- What does the perfect world look like for you at this site in ten years?
- What is happening biologically at your site in that perfect future?
- What is happening economically at your site in that perfect future?
- What is happening socially and culturally at your site in that perfect future?
- What is being left behind for future generations?

The conceptual modeling process takes this a step further and identifies factors affecting your group's vision. In this process, you will identify the following factors in relation to your site:

1. Vision:
2. Problems including threats (direct and indirect) and obstacles to achieving that vision
3. Solutions to overcome the threats and obstacles in order to achieve the vision



To the degree possible, try to identify the solutions that you feel will be the most effective at addressing a particular threat or obstacle This will be important later when we prioritize threats and management actions to help improve management in your MMA.

The vision and problem - solution modeling process forms the foundation for all other aspects of the management plan. For this reason its extremely important that the group spend adequate time on this session.

B. Facilitation Suggestions

Depending on the number of people present, you may choose to carry out this session in one large group or in small groups. If the total group is small enough (fewer than 20 people), you may simply choose to facilitate this process as one group. If the total group is larger, you may find that small groups work better. The advantage of small groups is that more people get to speak; however after the small group sessions, the results have to be summarized into a master vision.

1. One Large Group

    1. Ask the participants to answer the questions on the worksheet below to help them identify their vision.
    2. Once they have answered the questions, the facilitator should help them craft the answers into a vision statement.
    3. Then facilitator should lead the group through a brainstorming session to identify Problem (which include threats and obstacles) to achieving the vision and finally to identify solutions to overcome the threats and obstacles.
    4. This should all be recorded on flip charts so all the participants can see it

2. Small Groups (Each small group will need a facilitator.)

    1. Have participants form small groups of four to eight.
    2. Ask the participants to answer the questions on the worksheet below to help them identify their vision.
    3. Once they have answered the questions, the small group facilitator should help them craft the answers into a vision statement.
    4. After this is complete, the small group facilitator should lead the group through a brainstorming session to identify threats and obstacles to achieving the vision and finally to identify solutions to overcome the threats and obstacles.
    5. Once each group has completed the entire process, bring them back together and lead the entire group through a process to summarize the results and make one master vision table.

WORKSHEET FIVE: THE VISION AND PROBLEM - SOLUTION MODELING PROCESS

(1) The vision and conceptual modeling process is normally recorded on flip charts as participants brainstorm in small groups. However, particularly with the vision statement, it is helpful if people clarify their thoughts first by answering the questions below.

To help develop a vision statement, answer the following questions:

What does the perfect world look like for you at this site in ten years ?	
What is happening biologically at your site in that perfect future?	
What is happening socially and culturally at your site in that perfect future?	
What is being left behind for future generations?	

Answer these questions in your small groups. The facilitator can then summarize these answers into a vision statement that helps to cover everything your group wants to see in the future for your site.

Your vision statement should…

- Describe what you all want to see happening at your site in the future;
- Not assume that the future world will be the same as the world today;
- Be written in the present tense as if you were living in that future right now;
- Be specific to your site and group;
- Be positive and inspiring; and
- Be idealistic — but not so much so that the vision is clearly unrealistic to achieve.

(2) Once the vision statement is completed, it is easy for the group or groups to brainstorm together for the threats/obstacles and solutions. The facilitator should simply record these on the flip chart as the group brainstorms each column one by one.

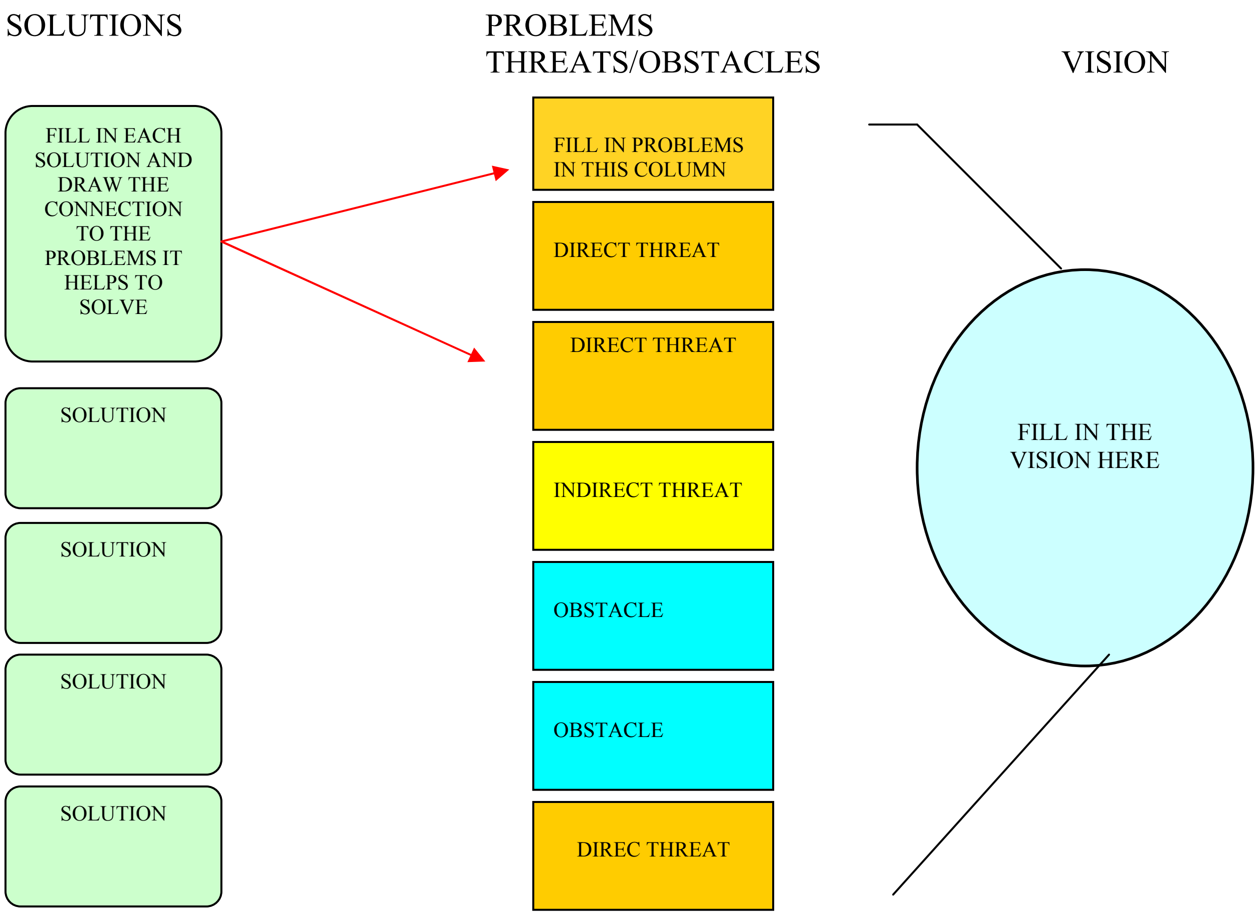
(3) At the end of the process, the facilitator will summarize the results.

(4) Problem Solution Modeling   The Problem Solution Modeling process will come immediately after the Vision process.

Problems are things or situations that are currently preventing or that could prevent you from achieving your Vision. These can be direct or indirect threats or obstacles to effective management. An example of a direct threat includes destructive fishing whereas an indirect threat may be poverty (that motivates people to fish destructively). An obstacle to effective management may be lack of political will or divisions in the community.

Solutions are strategic actions that can help you to overcome the problems either in the short term or the long term. Each problem is likely to have one or more solutions. It may be also be important that these solutions work in concert to overcome the problem. Likewise, each solution may help to address more than one problem. After you have identified the likely solution to each problem, you can draw the connections by literally linking the Solution with each problem that it affects with an arrow.

Many facilitators like to pass out index cards and ask participants to write one problem on each card. Likewise, each participant (or small group depending on the set up) can write their solutions on individual index cards. The index cards can all be posted on the wall or a sheet of flip chart paper and the connections can be made with string or by pen.



SESSION SIX: THE MANAGEMENT PLANNING PROCESS — COMPLETING A SWOT ANALYSIS

A. Session Purpose

A SWOT analysis is a subjective assessment of the internal (your group's **s**trengths and **w**eaknesses) and external (**o**pportunities and **t**hreats) forces acting at your site. In discussing these four dimensions, you will…

- Have a better overall understanding of what you think is happening at your site;
- Think more proactively rather than relying on habitual or instinctual thinking;
- Be able to make better decisions regarding how best to plan your work;
- Be able to characterize yourselves and your site on your own rather than having this done by outsiders;
- Be able to revisit and update your SWOT results as conditions change; and
- Be able to compare today's SWOT results with those generated in future years, allowing your group to monitor its own progress through time.

During the vision and conceptual modeling process, you discussed opportunities and threats. You should transfer these from your vision sheets and review whether there are any opportunities or threats you have missed.

B. Facilitation Suggestions

1. You may want to facilitate this session by having the participants form small groups of four to eight and asking them to fill out the worksheet.

2. You may not need to have each small group present their findings; instead, get the group back together and ask them to each offer one or two findings under each category.

3. You can then facilitate the process of creating one master SWOT analysis by combining the major findings of the small group during one large group session.

WORKSHEET SIX: COMPLETING A SWOT ANALYSIS

(1) Using four pieces of flip chart paper taped together, create a table with two columns and two rows, labeled as follows:

	Internal	*External*
Positive	**Strengths**	**Opportunities**
Negative	**Weaknesses**	**Threats**

(2) Think about everyone (and every organization or stakeholder group) who is (or will be) involved in your collaborative effort to manage the MMA (site). Identify and discuss the strengths of this group of people and organizations. Write your responses in a bulleted list under the “strengths” dimension of the table you created. Here are a few questions to help you get started:

- What are your group’s capabilities?
- Does your group have any advantages over other groups?
- What is unique and special about your team?
- What kind of resources are available to the group? These could include assets (funding, equipment), people (staff, volunteers, experts), and/or information (data).
- What experience, skills, and/or knowledge does your group have?
- Do you have financial support?
- Does your group have any cultural or behavioral assets?

(3) Think about, identify, and list any known management weaknesses within your group. Think carefully. The more honest you are, the more useful your results will be. Here are a few questions to get you started:

- What gaps are there in the group's abilities?
- Does your group have any known vulnerabilities?
- How much staff capacity exists? Are there any shortcomings?
- Does your group face any disadvantages at your site?
- Is your group's reputation, presence, and reach as strong as it needs to be?
- How strong is your group's financial support? other resources (see above)?
- How is team morale, commitment, and leadership?

(4) Think about, identify, and list any known management opportunities that you may be able to build on to improve your project effort.. Here are a few questions to get you started:

- Are there any recent events, developments, or influences that can help your efforts to conserve this site?
- Are there any scientific or social trends working in favor of conservation?
- Has new technology been put to use at your site that can assist you?
- Is there local and/or national demand for your conservation services on-site?
- Are there any geographic opportunities or benefits to working at your site?
- Is any information or research emerging to help conservation efforts on-site?
- Are there any opportunities for potentially beneficial partnerships on-site?

(5) Think about, identify, and list any known or possible threats. You have already thought about threats in the Problem –Solution model but its helpful to review these threats and see if there is anything that you may have missed. Review the threats with the following questions in mind:

- What human activities are destroying or impacting the natural resource target(s) at your site?
- What human activities target certain species or communities of species?
- What natural events impact your site?
- Are there any extractive technologies being used at your site that have negative impacts?
- Are there any social, economic, cultural, political, legislative, or behavioral threats impacting your site?
- How has the market or demand changed related to extractive (e.g., fishing) and/or non-extractive (e.g., tourism) uses of the natural resources located at your site?
- How is the economic outlook changing locally, nationally, and regionally?
- How aware is the public of what is happening on-site?
- How much information exists on the impacts of what is taking place?

<u>Using Your SWOT Results</u> (during and after the workshop)

The results of the SWOT analysis can now be used to address six specific questions regarding how best to develop a plan and implement management actions:

Your SWOT results…	***…can help you answer these six planning questions:***
Which of our identified **strengths**…	1. …do we need to **maintain** in our future work? 2. …must we **build upon** (increase) **or leverage**?
Which of the identified **opportunities**…	3. …do we need to **prioritize or optimize** new management action/energy into?
Which of our identified **weaknesses**…	4. …will we need to **remedy** prior to implementing planned management actions? 5. …requires us to **exit** out of certain planned management actions?
Which of the identified **threats**…	6. …requires that we act to **counter** them?

SESSION SEVEN: THE MANAGEMENT PLANNING PROCESS — MAPPING YOUR NATURAL RESOURCES, THREATS, AND OTHER FACTORS

A. Purpose of Session

This session provides a simple set of steps for making maps of your MMA. The maps will include the following:

- Important natural and cultural resources,
- Threats and the sources of those threats,
- Social activities, and
- Economic activities.

The location of these elements can be approximated and drawn on maps to provide participants a much better understanding of the spatial relationship between resources and threats. However, in order for full zoning to be undertaken, the precise location of these resources should be validated with a Global Positioning System (GPS).

B. Facilitation Suggestion

Mapping is a great group process. As a group, fill out the worksheet below and then transfer the information onto a large map of your MMA.

WORKSHEET SEVEN: MAPPING YOUR NATURAL RESOURCES, THREATS, AND OTHER FACTORS

(1) Answer each question on the worksheet, and then transfer the answers to your map. You may find it helpful to put the answer on the map one by one after you have answered each question.

Key Questions to Guide Mapping of Your MMA	**Answers to Transfer to Your Map**
1. What are and where are the key habitats within your MMA?	
2. Are there areas within your MMA that are important for key species (e.g. turtle nesting beaches, dugong feeding areas, bird nesting areas, spawning aggregations)? Please list.	
3. Please identify the areas of varying habitat quality (e.g. good reef areas, turbid water, clear water, damaged reef, etc.).	
4. Are there important cultural features such as fishing shrines, house sites, fish ponds, etc.? Please list.	
5. Where are the key threats most impacting your MMA?	
6. Where are the key social and economic activities carried out in your MMA (fishing, diving, snorkeling, other)?	
7. Where are different types of fishing gear used?	

SESSION EIGHT: THE MANAGEMENT PLANNING PROCESS — PRIORITIZING THE THREATS

A. Session Purpose

In order for your MMA to succeed, the solutions you apply in your management plan should address the highest priority threats. In many areas around the world, a failure to prioritize has led to a hit-and-miss management approach. This can be both costly and ineffective. If you carefully prioritize the threats that are impacting your managed area, you can more precisely develop and apply the solutions to overcome these threats and thus effectively manage the area.

Threat prioritization is a particularly important part of the Conservation Area Planning process used by The Nature Conservancy to help conservation areas streamline their management approaches. Feedback from numerous participants indicated that this process has helped change their perceptions of the highest priority threats and thus has completely altered the management approach.

B. Facilitation Suggestions

Unless your group is simply too large (30 people or more), you may find it most useful to carry out this exercise as a large group. The facilitator should prepare a flip chart ahead of time following the instructions on the worksheet below. Ask you group to fill in the chart following the instructions on the worksheet.

WORKSHEET EIGHT: PRIORITIZING THE THREATS

(1) Create a table with six columns and a row for each identified threat. At the top of the table, name each column from left to right as follows:

Threats	Target	Area	Intensity	Urgency	Total Score

(2) Under "threats," list all of the threats you have identified, one per row. Use short hand if necessary.

(3) Use four criteria to find out which of these threats are the most important (highest priority) for you to try and address:

a) "Target" – the number of natural resource targets affected by this threat.

b) "Area" – the amount of physical space at your site affected by this threat. (Is all of the habitat/resource impacted, or just a portion of it?)

c) "Intensity" – the degree of the threat's actual impact on the target(s) at your site. (Will the threat completely destroy the habitat/resource or affect it only slightly?)

d) "Urgency" – how immediate the need is to address the threat at your site. (Is the threat active now or will it occur tomorrow or perhaps not for a few years?)

(4) As a group, count the number of natural resource targets that are affected by each threat identified. Record the total number of targets affected under the "target" criteria column for each threat.

(5) Next, for each threat listed, discuss as a group and choose a ranking for the other three criteria. Rank the three criteria using the following scales:

"Area" ranking:
1 = only a small amount of area at our site is affected by the threat
2 = a moderate amount of area is affected, but not all of the area at our site
3 = all of the area at our site is affected by the threat

"Intensity" ranking:
1 = low intensity; causes only minor impact or damage
2 = medium intensity; somewhat impacts/damages
3 = high intensity; high impact or highly destructive

"Urgency" ranking:
1 = not very urgent; does not require immediate action
2 = somewhat urgent; will require action soon
3 = very urgent; requires immediate action

Write the group's three rankings under the appropriate column for each threat. Continue until all threats have been ranked.

(6) Across each threat listed, determine the total score of all four criteria by adding up the four numbers listed in that row in the table. Check your math.

(7) When all of the total scores have been listed and checked, identify the threats with the highest total scores in the table. There may be more than one threat with the same highest score. These highest scoring threats are your "highest priority" threats. On a flip chart, list these top priority threats (in order from highest to lowest, or alphabetically in the case of a tie) and corresponding scores in a table with three columns labeled as follows:

Highest Priority Threats	**Total Score**	**Direct or Indirect?**
1.		
2.		
3.		
4.		
5.		

(8) For each of the top five priority threats now listed, note in the far right-hand column if the threat is a direct ("D") or indirect ("I") threat. To do this, use the following definitions:

Direct threats – threats that immediately negatively impact the natural resource target(s)
Indirect threats – threats that underlie or lead to direct threats (i.e. root causes).

Example: Threat prioritization results from Kimbe Bay, Papua New Guinea

Threats	**Target**	**Area**	**Intensity**	**Urgency**	**Total score**
Anchor damage	2	2	3	3	10
Sedimentation caused by poor agricultural practices	5	3	2.5	3	13.5
Lack of understanding by fishermen	3	2.5	2.5	3	11
Aquarium fishing	2	1	1	1	5

Highest Priority Threats	Total Score	Direct or Indirect?
1. Sedimentation caused by poor agricult. practices	13.5	D
2. Lack of understanding by fishermen	11	I
3. Anchor damage	10	D
4. Aquarium fishing	5	D

SESSION NINE: THE MANAGEMENT PLANNING PROCESS — CRAFTING A GOOD GOAL AND SMART OBJECTIVES

A. Session Purpose

In this session you will get into the details of your management plan. You will start by converting your vision statement into a goal. A goal will be very similar to your vision in that it will talk about the preferred state of the managed area where you are working. However, a goal will be more practical.

Some managed area staff find it useful to have multiple goals. This is particularly helpful if you have a very complex management area. In this manual we will only develop one goal. However, it is fine if you find it more useful to have multiple goals.

Objectives are practical translations of the outcomes that you wish to achieve from the solutions that you have developed in the vision process. Each solution should have at least one objective. Through the worksheet below, we will develop at least one objective for each of the solutions from the vision process. But first what follows is an example of a good goal and SMART objectives.

Goal	Objective
Broad - your dream or vision stated in practical terms	**Specific - How to achieve your dream – A good objective should be Outcome Oriented**
Opposite of the problem	**Tool to solve the problem**
Easy for the public to understand	**Used by project staff to guide your activities**

A good objective is also SMART:

- **S – specific**
- **M – measurable**
- **A – achievable (achievement or outcome oriented)**
- **R – Realistic**
- **T – time-limited**

Examples

INEFFECTIVE GOAL	EFFECTIVE GOAL
To save Kavieng Harbor	**To restore the health of reef fisheries of Kavieng Harbor**
INEFFECTIVE OBJECTIVES	**EFFECTIVE OBJECTIVE**
To establish managed areas	**To create 2 new coral reef LMMAs by December 2008**
To get the communities involved	**To assist the 2 communities to clarify their dream by December 2006**
To work with the communities to make rules at the LMMAs	**To work with the 2 communities to develop fishing rules by June 2007**
To enforce the community rules	**To build the capacity of 10 community members at each LMMA to enforce fisheries rules by August 2007**

B. Facilitation Suggestions:

1. If you have enough time, you may find it interesting to divide the Planning Team into two or three small groups and ask them to develop both a Goal and Objectives. After they have each done this you can compare their results. By dividing into small groups, the Team may come up with more ideas than they would have if they had stayed together in a large group. The small groups should each present their results and the others should comment on whether the Objectives are SMART or not. After everyone has presented, the facilitator can lead a process of integrating the results into one overall Goal and a set of Objectives.

2. If your time is limited or your group is small, you may simply want to go through the process all together.

WORKSHEET NINE: A TABLE FOR WRITING SMART OBJECTIVES –

(1) Simply answer the questions in the table for each of the solutions from your problem/solution model, and you will have a SMART objective like the example below.

Threat	**Solution #1**	**Outcome(s) the Solution is trying to achieve? -- is needed to Overcome the Threat?**	**Where?**	**When?**
Over-fishing causing decline in fishery	Create LMMAs	**- Increase abundance of target fish species**	**- In three villages where there is good fish habitat**	**In the next three years**
Lack of Enforcement	Increase Enforcement Patrols	**- A 50% reduction in violations of marine resource regulations**	**- In the waters surrounding our community**	**In the next year**

Now lets write an Objective for the first Threat and Solution and test it against the SMART Criteria.

OBJECTIVE #1: Increased fish abundance within three years in communities where there is good fish habitat.

- **Is it Specific?** **Local communities, three villages, good fish habitat**
- **Is it Measurable?** **Increased abundance of target fish species, three years**
- **Is it Achievement or Outcome Oriented?** **Increase fish abundance**
- **Is it Realistic?** **Yes, the communities are interested. Fish populations can increase in three years.**
- **Is it Time Limited?** **Three years**

IT IS A SMART OBJECTIVE!

A TABLE FOR WRITING SMART OBJECTIVES

Threat	Solution #1	Outcome(s) the Solution is trying to achieve? -- is needed to Overcome the Threat?	Where?	When?

SESSION TEN: THE MANAGEMENT PLANNING PROCESS — DEVELOPING MANAGEMENT ACTIONS TO ACHIEVE THE OBJECTIVES

A. Session Purpose

Now that you have developed the objectives for your management plan, its important to put more detail about specific actions that need to be carried out in order to achieve each of the objectives. In this session, we will use a simple work-plan format to develop key actions that must be taken to achieve each objective. It is not enough, however, to simply list all of the actions that need to be done under a specific objective. To be useful from a management planning perspective, for each action listed we also need to identify the following:

- Who specifically will be responsible for getting the action done (or making sure that it gets done);
- When the action needs to be completed by (due date);
- What estimated amount of financial resources, if any, will be needed to complete the activity; and
- Who (stakeholders, groups) needs to be involved (if anyone).

On a quarterly basis, you can also use this same work plan to develop tasks that must be undertaken to complete the action.

Some common management actions are included below:

- Capacity building activities such as training for staff and volunteers;
- Enforcing the rules and regulations of the managed area;
- Public education and outreach activities such as school tours at the site;
- Monitoring activities such as implementing community coral reef monitoring;
- Infrastructure such as installing mooring buoys or building a field station; and
- Performing targeted biological and social research for management purposes.

B. Facilitation Suggestions

1. Just as in the session on developing Objectives, if you have enough time, you may find it interesting to divide the Planning Team into two or three small groups and ask them to develop the Management Actions for each Objective. By dividing into small groups, the Team may come up with more ideas than they would have together. After they have each done this you can compare their results and integrated this into one set of Management Actions.

2. If your time is limited or your group is small, you may simply want to go through the process together in one group.

WORKSHEET TEN: DEVELOPING MANAGEMENT ACTIONS TO ACHIEVE THE OBJECTIVES

(1) Write down your objectives and as a group discuss and list all of the associated management actions that need to be taken in order to achieve the selected objective. As you identify each, also fill in the other information under the relevant columns in the table. Don't worry about Indicators yet. We will develop these in the next session.

Objective	**Management Action**	**Who**	**Due Date**	**Cost**	**Indicator**	**Status as of__________________**
Objective One						
	Action One:					
	Action Two:					
Objective Two						
	Action One:					
	Action Two:					

SESSION ELEVEN: THE MANAGEMENT PLANNING PROCESS — DEVELOPING GOOD INDICATORS

A. Session Purpose

Monitoring a good indicator helps you to determine whether you are making progress toward your objectives. Indicators can be integrated into your work plan to help your project keep on track.

There are two main types of indicators:

- Process: A process indicator tracks how your project is doing in terms of the processes you developed in the Management Plan. For example, have you developed the community council? Have undertaken biological monitoring every quarter? Have you held the education and awareness workshop you identified as necessary? In many cases, process indicators are tracked by simply identifying whether or not the activity has been completed. As you track these indicators, provide details about the status of each activity.

- Impact: Impact indicators convey how your management actions are changing the resource or situation in your area. They measure how your actions are impacting the area, with a focus on the factors you are trying to change. For example, has poaching has been reduced by 40%? Are fishermen seeing catches increase by 20%? Is the neighboring village requesting assistance establishing its own MMA? These impacts have resulted from the project activities. In many cases, impact indicators are developed and tracked as part of a biological or socioeconomic monitoring plan. We will work in the development of these monitoring plans in a later session.

B. Facilitation Suggestions

Developing indicators is best accomplished within a small group. One option for facilitation of this session is to assign a small group or a sub-group to develop the project tracking plan and present it back to the larger group. The sub-group could develop the indicators outside of the workshop sessions to save time.

WORKSHEET ELEVEN: DEVELOPING INDICATORS

(1) With the table that you used to develop your Management Actions, fill in your Process and Impact indicators both for Objectives and for the Management Actions. You may have several indicators for each Objective and Management Action

Objective	**Management Action**	**Who**	**Due Date**	**Cost**	**Indicator**
Objective One					
	Action One:				
	Action Two:				
Objective Two					
	Action One:				
	Action Two:				

SESSION TWELVE: THE MANAGEMENT PLANNING PROCESS —ASSESSING THE COMPATIBILITY OF OBJECTIVES AND ACTIONS

A. Session Purpose

Several factors may result in your objectives and activities being incompatible. If objectives are stated in terms that are too absolute, they may either be impossible to achieve or not compatible with other objectives. It is not possible to achieve objectives that are incompatible with each other.

For example, one MMA in Micronesia wrote two objectives that were too absolute and, thus, were ultimately determined to be incompatible. There was no room for compromise with other objectives and, as a result, the two objectives could not be achieved simultaneously. The original objectives are listed below:

1. To fully restore the natural ecology of the coral reefs of the area.
1. To benefit the local community through economic activities on the reef such as small-scale commercial fishing, aquaculture, and tourism.

Given the ecology of coral reefs, it is not possible to simultaneously fully restore natural conditions while also developing economic activities that include commercial fishing. As a result, the community reevaluated their objectives and worked to make them more compatible. The rewritten objectives are listed below:

1. To help maintain the ecosystem biodiversity functions of the area by establishing marine managed zones that are sufficiently large, representative, and resilient.
2. To allow all residents and their guests to visit and use parts of the reef for sustainable subsistence, cultural, and recreational purposes.

These new objectives are compatible. They have toned down the expectation from full restoration to helping to maintain the reef. They have also toned down the economic activities from commercial fishing to subsistence fishing in just part of the reef. These objectives can be achieved simultaneously.

As part of the process of checking on the compatibility of your objectives, it may be helpful to review the basics of marine ecology discussed in the pre-planning process.

B. Facilitation Suggestions

Its best to facilitation this session as a large group. You should work together to go through the worksheet below. This way everyone is exposed to the logic that is being used to ensure the compatibility of the objectives and management actions.

WORKSHEET TWELVE: ASSESSING THE COMPATIBILITY OF OBJECTIVES AND ACTIONS

(1) In order to check the compatibility of your objectives and management actions, you must first review the natural resource targets and threats you developed. Review what you are trying to manage and the threats you are trying to overcome.

(2) Once you have reviewed these elements of your management plan, flip to the objectives and management actions and answer the questions in the following table.

1. Are any of the objectives written in absolute terms (terms such as "fully restore coral reefs" or "return the area to its natural ecological state"? If so, please write any of these objectives to the right and circle or underline the absolute terms	
2. Is it possible to achieve all the objectives? Does achieving one or more of your objectives automatically prevent you from achieving any of the others? If so write down the objectives that prevent you from achieving the others.	
3. Are there ways to rewrite your objectives so that they do not use absolute terms and can also all be achieved? Rewrite your objectives to the right.	
4. Now that you have updated your objectives, do your management actions need to be updated in any way to be compatible with the objectives?	

SESSION THIRTEEN: THE MANAGEMENT PLANNING PROCESS — PRIORITIZING MANAGEMENT ACTIONS

A. Session Purpose

Given the human and financial resources limitations that most managed areas have, it is very valuable to prioritize management actions. This can not only help to conserve resources but also to help direct management actions to the highest priority threats.

It is extremely helpful to go through this exercise at least annually to help ensure that your project is still addressing the highest priority threats by applying the highest priority actions.

B. Facilitation Suggestions

Prioritizing management actions is best done in a large group. In this way, everyone has a chance to provide their input. Use the worksheet below. It is key that all Planning Team members be present for this exercise.

WORKSHEET THIRTEEN: PRIORITIZING MANAGEMENT ACTIONS

(1) Create a table with eight columns and a row for each identified management action. At the top of the table, label each column from left to right as follows:

Actions	Capacity	Enabling Environment	Funding	Support	Threats	Targets	Total Score

(2) Under "actions" list all of the management actions you have identified for **one** of your objectives, one management action per row. Use short hand if necessary.

(3) Use the following six criteria to determine which management actions are the most important (highest priority) for you to try and address in the immediate future.

a) "Capacity" – the ability of those involved in the management of your site to implement the action now. (Do we have the time, qualified personnel, equipment, and non-monetary resources that will be needed to do this action?)

b) "Enabling environment" – the authority to implement this action and the political will to support it. (Do we have permission to do this activity? Does the government or other necessary authority approve?)

c) "Funding" – the potential for funding this action based on both the immediate availability of funds as well as the ability to raise new funds. (Do we have funds to implement this action, or do we need to raise funds? If we need to raise funds, do we have ideas for how we can **quickly** raise funds to support this action?)

d) "Support" – the amount of public support that exists for this type of management action and the level of conflict that may result among the involved stakeholders. (Will the local community support this activity? Will anyone find this activity controversial or feel that it threatens their livelihood and/or values?)

e) "Threats" – the number of your top five threats addressed by this objective.

f) "Targets" - the number of natural resource targets affected by this objective.

(4) As a group, discuss and choose a ranking for the first four criteria. Rank the four criteria using the following scales:

"Capacity" ranking:

1 = little to no capacity to implement action
2 = some capacity to implement action
3 = fully capable of implementing action

"Enabling environment" ranking:

1 = do not currently have authority to do the action; not approved by government or other authority
2 = have authority to do action; somewhat approved by government
3 = have authority; strong approval and support of government

"Funding" ranking:

1 = little to no funding; little potential to raise funds quickly
2 = some funding; existing mechanisms to raise funds quickly
3 = funding readily available

"Support" ranking:

1 = little to no support; likely to cause conflict
2 = some support; not likely to cause conflict
3 = good support; little to no conflict

Write the group's four rankings under the appropriate column for each action. Continue until all actions have been ranked.

(5) As a group, count the number of threats from your group's top-five priority threats (product of worksheet eight) that are addressed by each management action identified. Record the total number of priority threats affected under the "threats" column for each action.

(6) As a group, count the number of natural resource targets that will be affected by each action identified. Record the total number of targets affected under the "target" criteria column for each action.

(7) Across each action listed, determine the total score of all six criteria by adding up the six numbers listed in that row in the table. Check your math.

(8) When all of the total scores have been listed and checked, identify the actions with the highest total scores in the table. Note that more than one action may share the highest score. These highest-scoring actions are the highest priority actions you will want to implement in the immediate future. On a flip chart, list these top priority actions (in order from highest to lowest or alphabetically) and corresponding scores in a table with three columns labeled as follows:

Highest Priority Actions	Total Score
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

SESSION FOURTEEN: THE MANAGEMENT PLANNING PROCESS — DEVELOPING ZONING AND REGULATIONS

A. Session Purpose

Often, the process of developing a management plan includes developing zones for specific activities and regulations. Some MMAs are simple and have only one zone where you can or cannot undertake a certain activity. Many MMAs, however, are much more complex and require a series of zones and regulations to manage the following types of activities:

1. Types of fishing
2. Types of boating
3. Types of recreation
4. Access
5. Research

To develop zones and regulations, first fully review the objectives you have established for the managed area. The zones and regulations should provide the spatial map to indicate where activities can happen in order for you to achieve your objectives.

The process of developing zones and regulations can be very complex and needs to take into account the input of various stakeholder groups. The management planning team often will seek the opinions of various stakeholder groups through focus group meetings. These stakeholders will recommend their ideal zoning and regulatory system; the planning group must then use this information in light of the objectives that have been developed for the area.

B. Facilitation Suggestions

The facilitation process will greatly depend on the complexity of your MMA and the size of your planning team.

1. With a complex MMA, it may be very helpful to have several stakeholder group meetings to discuss zoning and regulations. It is helpful for different small groups to develop zones and regulations independently of one another and then to integrate their results. This can provide an excellent way to make sure a diversity of ideas are ultimately captured in the zoning. We suggest that each small group go through the worksheet below. Then the planning team should integrate these results. The results can then be presented back to the groups, and a compromise can be developed or consensus can be reached.

2. With a less complex MMA, it may be very possible and effective to undertake the zoning/regulatory process with one group. If that is the case, simply facilitate the group through the worksheet below. This should be a very hands-on working session. Everyone should sit or stand around a good map of the area

WORKSHEET FOURTEEN: DEVELOPING ZONING AND REGULATIONS

(1) You should have developed a map in Session Six that you can now use for this session. Make sure the following elements are clearly displayed.

- Important natural and cultural resources
- Threats and sources of those threats
- Social activities
- Economic activities

(2) Review the objectives you have developed for your MMA. Write them on a sheet of paper where the group can see them.

(3) List the types of activities you would like to regulate and corresponding zone on the table below. These activities should link to achieving your objectives.

Type of Activity and Restriction	**Zone (Describe, draw on the map, and provide GPS points.)**	**Objective It Is Helping to Satisfy**	**Other Considerations**
Fishing or Marine Life Collection			
1. No fishing with gill nets	1. Entire MMA	1. Eliminate destructive fishing within 2 years.	1. Make sure the definition of gill nets is clear.
2. No fishing or collection of marine life	2. Northeast 30% of the atoll (Provide GPS points.)	2. Establish fisheries replenishment areas in at least 50% of the atoll by 2008.	2. Explain why this is important to improving fisheries.
3. Traditional fishing education	3. Special zone in South of Atoll where traditional fishing techniques are taught	3. Revitalize traditional cultural practices of fishing and canoeing by 2010.	
Recreational Activity			
1. Commercial recreational activity	1. Restricted in entire MMA	1. Revitalize traditional cultural practices of fishing and canoeing by 2010.	
2. Use of kayaks	2. Restricted in entire MMA	2. Revitalize traditional cultural practices of fishing and canoeing by 2010.	

3. Community-based non-profit recreational tours	1. Allowed and encouraged in entire MMA	1. Provide culturally appropriate economic opportunities for community members by 2010	
Access			
1. Access to sensitive areas	1. No-entry zone in seagrass area	1. Eliminate impacts to high sensitive areas by 2008.	
2. Access to aquaculture area	2. No entry zone in aquaculture area	2. Provide culturally appropriate economic opportunities for community members by 2010	

DEVELOPING ZONING AND REGULATIONS

Type of Activity and Restriction	Zone (Describe, draw on the map, and provide GPS points.)	Objective It Is Helping to Satisfy	Other Considerations

SESSION FIFTEEN: THE MANAGEMENT PLANNING PROCESS — DEVELOPING MONITORING PLANS

A. Session Purpose

Management plans must include a thorough mechanism to track any changes related to management actions. This will not only help to justify the existence of the MMA, but also will provide key information to help adaptively manage the MMA over time. In addition, today most donors and funding agencies are requiring thorough monitoring programs. They want to know if their funding is positively impacting the conservation targets in areas they fund.

The elements of monitoring programs largely depend on the specifics of the area and the objectives you are trying to achieve. Earlier you developed indicators for the impact of your management actions. Many of these indicators provide the information that will help you monitor your progress over time. Biological and socioeconomic monitoring, however, requires a great deal of specificity about the species, habitats, and socioeconomic factors you want to track .

The worksheet below will help you to identify which factors to monitor and to develop the plan you want to use to monitor them.

B. Facilitation Suggestions

During this session, you will develop biological and socioeconomic monitoring plans. One way to facilitate this session is to simply to separate the planning team into two groups. One group will develop the biological monitoring plan, and the other will develop the socioeconomic monitoring plan. You should definitely secure the assistance of someone who has experience in the development of these types of plans. There are many existing protocols, so it is not necessary to re-invent the wheel. PIMPAC, LMMA, CCN, and others can provide you with detailed examples of monitoring plans to help you develop yours.

WORKSHEET FIFTEEN: DEVELOPING MONITORING PLANS

(1) To fully develop a good monitoring plan, it is first helpful to review examples of monitoring approaches others have used in MMAs around the world. A number of excellent biological and socioeconomic protocols have been developed and can be adapted to your area. As a first step, collect examples of good biological and socioeconomic monitoring protocols. You can find good examples at the LMMA Web site (wwww.lmma.org) and in the SOCMON approaches developed by NOAA.

(2) Before you design your monitoring plan, identify the resources and factors that must be monitored for you to be able to assess the progress toward your project's objectives. If your primary objective is to improve the harvest of clams, you may not want to invest the time necessary to develop a complex biodiversity monitoring program. Likewise, if your objective is to improve the quality of life for local community members through increased fish catch, you need to monitor changes in fish populations, catch, and changes in quality of life factors.

(3). Answer the questions below. These will help you to develop factors that you will need to monitor in order to assess whether you are progressing toward those objectives.

Biological Monitoring Plan

What are your biological and natural resource objectives?	Based on these, what species or habitats need to be monitored?	How often do you need to monitor these factors?	What technique will you use to monitor these factors?
1.			
2.			
What species and habitats are important to the community or other stakeholders?			
1.			
2.			
Do you need to monitor any socioeconomic factors to satisfy a management authority?	If so, what factors must be monitored?	How often do you need to monitor these factors?	What technique will you use to monitor these factors?
1.	1.	1.	1.

Socio-economic Monitoring Plan

What are your socioeconomic objectives?	Based on these, what socioeconomic factors need to be monitored?	How often do you need to monitor these factors?	What technique will you use to monitor these factors?
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
What socioeconomic factors are most important to community member or other stakeholders?	Based on these, what socioeconomic factors need to be monitored?	How often do you need to monitor these factors?	What technique will you use to monitor these factors?
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
Do you need to monitor any socio-economic factors to satisfy a management authority?	If so, what factors must be monitored?	How often do you need to monitor these factors?	What technique will you use to monitor these factors?
1.	1.	1.	1.

Based on this simple plan, you will need to develop the following:

- A full biological and socioeconomic monitoring protocol
- Data sheets for recording data
- A database for storing and analyzing data
- A system for reporting data

The development of these systems will require working sessions that are outside the scope of this manual; however, there are many good resource materials that can be used, including several from the LMMA.

SESSION SIXTEEN: THE MANAGEMENT PLANNING PROCESS — DEVELOPING A SITE DESCRIPTION

A. Session Purpose

The purpose of this session is for participants to learn an easy method to facilitate the creation of a site description.

A thorough site description is extremely important for any management plan. However, the site descriptions in many management plans are so long that they are not useful. Its important to keep your site description concise. Supportive or other additional information should be included in annexes.

B. Facilitation Suggestions

1. Using the worksheet, ask participants to work together as a team to answer the questions.

2. Depending on the size of your group, you may find it easier to assign this task to a small group who will complete it on behalf of the larger group. The small group can then present the results back to the larger group for changes or suggestions.

WORKSHEET SIXTEEN: DEVELOPING A SITE DESCRIPTION

(1) As a team, answer the questions below. You may want to ask a small group to answer these questions on behalf of the planning team. If you do not have a computer, you may choose to write out the answers and transfer them to a computer later. If you do have a computer, you may start to build your site description directly in the computer.

Where is your MMA located?	
How large is it?	
What is the purpose of the area? Why was it created?	
What is the legal status of the area?	
Who has the legal authority to manage the area?	
What is the current management system?	

What are the key physical features of the area (climate, geology, geomorphology, hydrology, soil characteristics)?	

What are its key biological features of the area? (communities, flora and fauna, including any outstanding natural resource features)	
What are its cultural features? (traditional communities, cultural features and practices)	
What are the Socio-economic features of the area? (occupancy, access, income, tenure, other basic data and trends among local communities and their dependence on managed areas).	
What are the stakeholder groups with an interest in the area?	
What are the Historical features of the area? (land and ocean use and landscape/seascape history, archaeology, buildings)	
What are the current uses of the area?	

What are the threats to the area?	
What are the obstacles to effective management?	
What are the management successes in the area?	
What are the current management challenges to the area?	
What is the history of management planning in the area?	
Why has a decision been made to complete this management plan?	

SESSION SEVENTEEN: THE MANAGEMENT PLANNING PROCESS — DEVELOPING OPTIONAL MANAGEMENT PLAN SECTIONS

A. Session Purpose

There are numerous optional management plan sections that we have not covered in this manual. Many of these are critical to the operation of your MMA. Optional sections include:

1. **Roles and Responsibilities for MMA Management**: It can be very helpful to identify the roles and responsibilities of various partners for MMA management plan implementation. Most MMAs have more than one group involved in their management. If the roles and responsibilities are not clear, it is possible that items can fall through the cracks. The management actions section includes a column for identifying who is responsible for which action. In addition, you may want to prepare a brief summary of roles and responsibilities for each of the major partners involved in implementation.

2. **Enforcement Plan:** The enforcement plan will lay out the logistics and operational elements required to enforce the zones and regulations of the plan. In many MMAs, there is no active enforcement group that is dedicated solely to that MMA. So it is important to work with the relevant enforcement groups to ensure they have input on what is and is not practical in terms of rules.

3. **MMA Budget and Financing Plan:** Any plan is only useful if there is sufficient funding to implement it. As a result, it is very helpful to identify the full costs of implementing the management plan. This can also help in prioritizing management actions if there is not a sufficient budget to implement all actions.

4. **Sustainability Plan:** All MMAs need a plan for their long-term sustainability. This includes: improving project efficiency, strengthening institutional elements, and establishing financial sustainability. The process of developing a sustainability plan can take some time and requires detailed research. We suggest not launching into sustainability plan development immediately after management plan development but instead to wait six months to a year before developing a plan. However, don't wait years to develop the plan—particularly if your funding sources are time limited. We suggest that a sustainability plan be developed a minimum of three years before it is actually needed (i.e. the funding has run out).

B. Facilitation Suggestions

This session should be a brainstorming session with the entire planning team. You can use the worksheet below. You should also be sure to determine whether these will be included in the management plan or stand alone. If it will take a long time to prepare these additional sections, you may want to have them stand alone.

WORKSHEET SEVENTEEN: DEVELOPING OPTIONAL MANAGEMENT PLAN SECTIONS

(1) Please fill out the table below which will provide you a guide for developing other sections that can be included in your management plan or become companions to the management plan.

What other optional management plan sections will you develop?	Why do you feel the need to develop these sections?	Who will be responsible for development of the section?	When will the section be due?	Do you want to include this in the management plan or have it be a separate document?
1.				
2.				
3.				
4.				

SESSION EIGHTEEN: ONCE THE DRAFT PLAN IS COMPLETE

Once the first draft of the Management Plan is complete you still have a few steps to go through. These include:

I. Reviewing and Updated the Plan as needed
II. Approving and Celebrating the Completion of the Plan
III. Implementing and Adaptively Managing the Plan as needed.

Below we provide some suggestions on how these three processes might be undertaken.

I. REVIEW AND UPDATE THE PLAN

Community Review

Given that communities (clans) are the primary resource owners in PNG, it is important that the completed draft plan first be reviewed by the local community. Once the Planning Team has completed a solid draft of the Management Plan, including zoning and regulations, the plan should be circulated to community members for their review. While each LMMA will be different, we recommend that community members have an opportunity to review the plan before it is circulated to outside stakeholder groups. This is especially important in communities where there is a strong system of local ownership or control of marine resources. Out of respect for the local community and their role in management, it is generally important that they have a chance to review the plan before it goes out to other stakeholder groups.

One of the best ways to facilitate community review is to pass out photocopies of the key elements of the plan such as the Target Natural and Social Resources, the Threats, the Objectives, Zoning, and Regulations. The printed copies should be just a few pages so that people can review them relatively easily.

The full Management Plan can then be presented in a community meeting. How to conduct the meeting will vary based on the available technology. In some communities, it may be possible to use a computer and a projector to project key aspects of the plan. But what is projected should be the same as what people have in their hand outs so they can follow along easily. As many maps and visuals as possible should be used so people really understand. We suggest that maps are made and presented on:

- The Natural and Social Resource Targets
- The Threats
- The Proposed Zoning

In some communities using projectors and computers that require electricity may not be practical. In these communities, the key elements of the plan should be written on flip charts in large letter so people can follow along as the key elements are discussed.

Once the plan has been presented, it may be a good idea to do an interactive process to really make sure that people understand the plan. A good way to do this is to ask people to get into groups and ask them key questions about the plan.

They can look to their abridged copies of the plan and to the presentation for the answers to the questions. Key questions may include:

According to the draft plan:

1. What are the key resource the community is interested in protecting?
2. What are the main threats?
3. Please list the top three objectives in the plan?
4. Where are you allowed to fish and not fish?
5. What are the penalties if you are found fishing in an area that the community agrees will be no fishing?
6. Do you agree with this plan or do you have any concerns or questions?

While this may seem like a quiz, going through this information and having community members supply the answer will help to ensure that everyone fully understands what the plan is trying to accomplish. This will prepare them for asking any questions or offering any suggestions.

It is recommended that feedback on the plan be solicited during the community meeting but also that community members be given a week to think about the proposed plan. A second meeting can be held a week later to ask people if they have questions or proposed changes or if they agree with the plan. The meeting may be short if there are few questions or comments. It may also be long if there are lots of comments or concerns. If there are lots of concerns, it will indicate that the plan may not really be ready for final approval. It may need more work.

If the plan seems fine and the majority of community members are supportive, it may be possible for the community to approve of the plan during this meeting.

During the community meeting its important to outline the approval process that you will use for the plan. This is discussed in more below in the approval section of the manual. But be sure to outline the process for the community members that are participating in the review of the plan. In summary, the process will include:

- Community Review
- Stakeholder Review
- Update of the Plan
- Final Community Meeting
- Final Updates to the Plan
- Approval by Community Counsel or Other Appropriate Body
- Approval by LGU, Provincial Government, and

Stakeholder Review

During the initial Stakeholder Analysis (page XXX of this manual), you should have identified the various stakeholder groups and how you plan to involve them in the development of the plans. Depending on the Stakeholder group, they may or may not have been involved in the development of the plan. Very close Stakeholders such as local business owners that are affected by the plan are typically involved at some point in the plan development. Less critical Stakeholders such as illegal fisherman, may not be involved in the development of the plan but simply regulated by the plan. Before the plan goes for final approval, key Stakeholder Groups should be given an opportunity to review the plan and provide input.

If the Stakeholders are organized, it may be possible to hold a Stakeholder Meeting in which representatives of each group are asked to attend. This might work well for example if you wish to present the plan to local Dive Shop operators and key Government Agencies. If this is not possible, you may have to hold several one on one consultations. It is very important not to overlook this step of ignore any important Stakeholder Groups. Not only is it ethically correct to inform people that may be impacted by the plan but some Stakeholder Groups may have the potential to block or disrupt the approval of the plan. So its good to involve key Stakeholder Groups in the review process and to take their input seriously.

It is important to note, that the plan will not be able to satisfy all Stakeholder Groups. There is no doubt that there may be some people who are upset by the plan. The general rule of thumb for involving Stakeholders in the development of the plan and or in its review is as follows. Involve the Stakeholder Group in the Development and/or the Review of the Plan if:

1. The Stakeholder has a legitimate right or interest in the use of the resource. This would include: Resource owners, community members and permitted business owners that have legal and ethically derived agreements for use of resources. This might include SCUBA operators or an aquarium fish trading business that have permits that were acquired through legal and ethical means.
2. The Group has an official mandate or role in management of the resources in question. This would include various Government Departments depending on the resource.
3. The Stakeholder Group has potential to block or disrupt the approval of the Plan and the especially the rules and regulations of the plan.

Refer back to the Stakeholder Engagement section of the Management Planning Process to get guidance on which Stakeholders to include in the review.

Conservation Science Review

Hopefully the process used to develop the Management Plan has included sufficient conservation science to help ensure that regulations and zoning will really help to yield the best results possible in terms of replenishment of key species and ecosystems. As discussed in the Zoning section of this Manual, if the project is targeting replenishment of particular species, it is critical that sufficient habitat for these species be protected.

However, it is still helpful to ask a few key conservation science advisors to review the plan. They can help you to understand the following:

1. Is your area large enough to provide a good probability of recovery for key species
2. Are the fishing regulations sufficient to help restore populations of key species
3. Are the right habitats included and zoned appropriately to help restore populations of key species.
4. What is a good way to monitor the changes in populations of key species of concern.
5. Other questions as needed.

Update the Plan as Needed

During the review process, some plans will receive very few comments while others may be completed gutted by the reviewers. Typically, the more key community members, stakeholders, and advisors have been involved in the process, the fewer recommendations for change.

Once feedback has been received from the community, key stakeholders, and conservation science advisors, the Plan will need to be updated. This process may be very quick if few comments have been received or may require going back several steps in the process if a lot of comments have been received. While it may seem like a lot of work, it is critical that the plan be updated based on the comments received in the review process. If necessary go back and reconvene community members or key stakeholder groups to discuss key issues.

The Management Planning process is purposely illustrated as a flow chart with arrows going in both directions. This is because, at any step in the process, you may have to go back one or more steps to be sure the results are high quality, appropriate, and have the highest probability of success.

Management Plan Review Worksheet

1. COMMUNITY REVIEW		
How will you facilitate the Community Review Process?	**Who is responsible?**	**When will this process be complete?**
2. STAKEHOLDER REVIEW		
How will you facilitate the Stakeholder Review Process? **Stakeholder Group # 1 :** **Stakeholder Group # 2:** **Stakeholder Group # 3:**	**Who is responsible?**	**When will this process be complete?**
3. CONSERVATION SCIENCE REVIEW		
How will you facilitate the Conservation Science Review Process?	**Who is responsible?**	**When will this process be complete?**
4. UPDATING THE PLAN		
How will you go about updating the plan? Do you need any additional consultations, assessments etc?	**Who is responsible?**	**When will this process be complete?**

II. APPROVE AND CELEBRATE THE PLAN

Approval of the Plan

How the Management Plan will be approved will largely be based on the situation in the individual are. In each country there are several options for approval and recognition on the plan. These include the Community, the Local Government, the Provincial Government, and the National Government.

1. Community

   Exactly how this approval will take place will be largely depend on the current organization of the community. Most communities have some sort of body that meets regularly to discuss and work on issues related to the well being of the community. These bodies will typically related to the officially recognized Local Government in some way or another. Regardless of the system, before the plan is submitted to any Government entities for consideration it should be officially approved by the appropriate community body. The review process described above should give community members and community representatives sufficient opportunity for input. Once the plan has been updated based on this input, the community can body can review it one last time and approve it through its normal process.

   We suggest that some sort of celebration be held when the community has approved the plan. This may be followed by other celebrations later once different government authorities have approved the plan. See the celebration discussion below.

2. Local Government (LG): Most areas have some sort of Local Government with some authority to make regulations and enforce rules. Most of the Management Plans will benefit a great deal from having Local Government approval and endorsement. The Local Government can pass ordinances that include rules and penalties. Given the LGUs are located in close proximity to the LMMA, the LGU rules will be important for enforcement and compliance. The Local Government may also be important for enforcement and prosecution of individuals who violate the LGU rules.

3. National Government

   Depending on the country, there may be several options for National Government designation for MMAs. Some communities may opt to go for National Government designation while others may be happy with a more local type of designation. If a community elects to go through the National process they should be prepared that it may be time consuming. While it may yield greater benefits for the area, its important to understand that it may take a lot of time from the team. A judgment must be made if this time can be better used working to implement the plan with a more local designation.

Whether a community elects to pursue National Level designation or not, it is typically very important that they communicate and coordinate with the National Government. The National Agency in charge of resource management will typically want to know about local efforts to advance Management Plans and may be helpful in the process.

Celebrate the Completed Plan

While small celebrations may have been held along the way for example when the community or one level of government has approved the plan, it is important to hold a major celebration once the plan has been approved by the ultimate regulatory authority. If this ultimate authority is the Local Government, it is appropriate to have a major celebration once it has approved the plan. If the community is seeking approval from all levels of government it may appropriate to hold separate celebrations after each approval. These are likely to be spread out well enough that it will be fun and appropriate to hold celebrations after each approval.

Celebrating the completion of the plan is important for several reasons.

a. It highlights all the hard work that went into the creation of the plan and recognizes the individuals who put in all this effort.
b. A public celebration helps to raise awareness about the rules and regulations
c. A celebration with good food and entertainment provides an immediate benefit to community members. Most MPAs require that community members sacrifice some of their fishing area. As a result, it is important that the community leaders and their partners provide periodic events with really good food to thank the community for making the sacrifice that is necessary to succeed with the MPA.

III. IMPLEMENT AND ADAPTIVELY MANAGE YOUR MPA

Implementation of the Plan should be guided by the detailed work plan that is developed earlier in the Management Planning. The work plan will include activities under each objective that will be carried out in the next year. These activities collectively should help to ensure that the project is on track to achieve its objectives. Each objective will be written in such a way that a specific outcome is identified in the objective.

In order to make sure you are making good progress toward the intended outcome of each objective, it is important to periodically ask yourself the following questions and update your work plan or objectives as needed. We suggest reviewing the status of the objectives and activities in the work plan at least once per quarter. Once per month is ideal but once per quarter is essential.

Question	Answer with Detail
1. Have we carried out the activities that are specified in the work plan?	
2. Are we monitoring the indicators that were identified in the work plan? If not, why not. Are they too difficult to monitor and do they need to be changed?	
3. Does our monitoring indicate that we are making progress toward the intended outcome of each of our objectives?	
4. If we do the activities will we achieve the objectives?	
5. Will achieving the objectives enable us to overcome the threats to our target resources? If not, can they be adjusted to be sure that we will overcome the threats?	
6. Are there any shorter term milestones that we want to set to be sure that our activities collectively will help us	

7. If we are not getting close to achieving our objectives, are there additional activities that we need to do to help us in the process?	
8. Are our objectives too ambitious and do they need to be adjusted?	

Answering these questions honestly and changing the plan accordingly are critical for effective Adaptive Management. Because activities may need to change regularly, we recommend that activities be included in a work plan that will be an appendix to the Management Plan rather than in the Management Plan itself.