

HOW IS YOUR MPA MANAGED?



A Guidebook for MPA Management Planning



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NATIONAL MARINE
SANCTUARIES

INTRODUCTION

How is Your MPA Managed? is a guidebook developed to provide marine protected area (MPA) practitioners with a process overview for assembling management plans for MPAs. In no way is this guidebook considered as a definitive model for management planning, but rather a compilation of a series of planning steps most commonly used and adaptable to different MPA settings. The process model used in this guidebook has been found to be complementary to other MPA management planning processes like TNC's CAP model, NOAA's National Marine Sanctuary management planning approach, and those used in a variety of MPAs around the world that tested and applied the process model outlined in *How is Your MPA Managed?*.

The guidebook is structured as both a training manual with accompanying worksheets representing the different process steps that can be used in a classroom setting; and, as a framework for those MPAs actually going through a stakeholder-based management planning process. Laying the management planning process out in a guidebook suggests that these steps are sequential. In fact, most natural resource planning processes are organic in nature, unfolding in an opportunistic manner in which some steps may occur simultaneously, in a different order, or some steps may be eliminated altogether. As such, it is important to remember when using this guidebook to recognize what works best for each MPA setting, group of stakeholders, capacity of the MPA, and ultimately what is realistic when it comes to implementation of the plan.

The information in this guidebook does not come from any single source, but rather represents the experience of a multitude of MPA capacity building trainers, planners and practitioners that have been leading management planning processes for MPAs and networks of MPAs over the last several decades. *How is Your MPA Managed?* seeks to bring together the latest knowledge and wealth of experience from the field into this guidebook and make it available for MPA practitioners. This is an evolving process, and with experience we all continually find new and better ways to approach the management planning process for MPAs. The many minds that contributed to this guidebook are listed on the next page.

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How Is Your MPA Managed?

MODULE 1 • Starting the Planning Process

1.1 DEFINING THE LEGAL FRAMEWORK

National Level Law and MPA Management Plans

What Does This Mean for MPAs

1.2 PRE-PLANNING PROCESS

Are We Ready to Start Planning?

The Planning Process Steps

1.3 ENGAGING STAKEHOLDERS

Stakeholder Identification and Analysis

1.4 DEVELOPING A VISION

Developing a Vision for Each MPA – Imagining the Ideal Future



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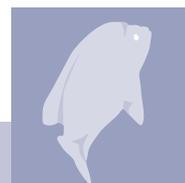
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OVERVIEW

This module will help with two critical aspects of management planning; ensuring that it is the right time to undertake management planning and then how to organize for the management planning process.

It is strongly recommended that a management plan for a marine protected area (MPA) remains simple, but grounded in a well-executed participatory planning process. While an MPA may operate for years without a management plan, a clear and well-articulated management plan can be very important to setting management priorities, and to the ultimate success of the MPA in meeting its management objectives.

The management planning process should only be undertaken when the MPA manager and staff are prepared to fully commit to the planning process. The planning process can take a significant amount of time and resources. It will require numerous planning meetings, meetings with stakeholders and other agencies over the course of several months or years. If you determine that you are ready, this module will provide some case studies and guidance to help you organize for the planning process.

One of the first places to start the planning process is by understanding the legal authority of the MPA. For most countries, a broad and integrated approach to conservation and management of marine resources is a relatively new endeavor not adequately provided for nor well understood in terms of MPA's management authority.

The legal framework for MPAs can occur at several levels: international, regional, national, and local – and through various legal instruments – international agreements, national laws, local ordinances. Legal frameworks will vary from one country to another according to the form of government and administrative and natural resource governance arrangements. Most countries have a legal framework for fisheries management, which often allows for the creation of MPAs as a fishery management tool, but specific legislation for MPAs may need to be drafted and adopted in some jurisdictions. Legislation is particularly important to support management and regulation over the protected area and for enforcement authority. Various institutional arrangements for MPAs, such as community-based MPAs, also require appropriate legislation to support the management authority over these areas.

LEARNING OBJECTIVES

- Determining if now is the right time to undertake management planning
- Getting organized for the process
- Preparing a planning timeline to guide the management planning process
- Understanding different planning methodologies, their common elements and differences, what has worked and what has not
- Understanding the full range of stakeholders and their relationship and influence over the MPA



Lesson Plan

1.1 DEFINING THE LEGAL FRAMEWORK

Legal Framework for MPAs Legislating for MPAs

(extracted and modified from text provided by Graeme Kelleher)

There are several different approaches, ranging from new and specific-purpose legislation to continued use of existing legislation with relatively minor modifications. In some cases, MPAs have been established under fisheries legislation and, in others, under forestry legislation or national park legislation. In any country, the right approach requires a detailed understanding of that country's culture, tradition and legal processes. There are, however, several general principles which experience has shown are desirable and which form the subject of this section.

Before legislation is proposed, MPA planners need to decide whether to advocate for a large number of small MPAs within a regime of larger management area or a few large multiple-use MPAs.

“This choice naturally affects issues related to management authority. “

Perhaps the most common mistake in establishing new MPAs is to create legislation for small MPAs without the complementary controls for the wider marine and coastal surroundings. Another fundamental concern is whether the national law should provide a detailed framework of administrative aspects, or only the broad basis for a management regime. The question then becomes, who or what are the drivers for the management plan? In turn, how are the management objectives established and management priorities set, and are they established to meet the purpose and need for the designation of the MPA or to meet local needs? Sometimes powerful local interests in an area favor short-term economic benefits and lead to strong local pressure for over-exploitation of resources. In other cases, the local community will strongly favor sustainable use and protection of marine resources. Therefore, the law should protect management from unreasonable local pressures by including a sufficiently detailed statement specifying clear objectives and a process for achieving them. Where the local community supports an MPA and its objectives, and the community has the capacity, that community should be empowered by law to be directly involved in design and management of an MPA.

On the other hand, particularly in the Indo-Pacific, the authority for designating and managing MPAs specifically lies with the local community

TIP

Lack of comprehensive MPA law should never be allowed to delay action where irreversible damage to an MPA is at stake. Look to alternative measures including Coastal Zone Management (CZM), fisheries laws, or local community management.



TIP

Simple regulations work best and are more likely to be followed at the local level.

(common throughout the Pacific, based on tenure ownership of the marine resources); or with decentralized government whereby the district level government has management authority over MPAs (e.g., Philippines and Indonesia). Even in these cases, the authority for managing MPAs at the local or district level needs to be recognized by the national government in order for the management decision making to be binding. This will also ensure that the authority to enforce the regulatory component of the management plan has been established so that ultimately a provision has been made for who has the authority (at the district or local community level) to arrest and prosecute violations.

Because the enactment process for a new comprehensive law specifically for marine protected areas may require years (regardless of whether the MPAs are managed at the national, district or local level), it is important to make use of existing legislation or other instruments (e.g., executive decrees) to begin work in the short term, even if these approaches are not suitable over the long-term. Simultaneously work can begin both on-the-ground to safeguard the conservation integrity of important sites and with the drafting process for a new law. If the conservation work proceeds well, it is likely the community will become increasingly involved, more aware of the long-term benefits, and committed to the objectives. This will improve the climate for the new law and inform its content along the way.

The law is an important means of promoting national policy, but the lack of a new comprehensive law should never be allowed to delay action where irreversible damage to a critical MPA proposed site is at stake. MPA managers should therefore be alert to additional, complementary or alternative measures such as fisheries permits, tourism regulations, commercial licenses, direct inter-governmental negotiations, or direct community management.

Whatever law is chosen, simple regulations work best. Unfortunately, sometimes national regulations are so complex as to confuse the beneficiaries. In general, simpler national rules are more likely to be followed at the local level. Specific MPA rules should be as simple and clear as possible. A strict no-fishing rule inside a zone (no take zone) is much easier to understand than “prohibition of fishing between May and June, between the high water mark and 1 mile from the shore”.

Important considerations in development of a legal framework for MPAs include (Source: Salm, Clark, and Siirila 2000):

- **Accounting specifically for public participation and programs for public education**
- **Acknowledge existing legal status, ownership and use rights of local resource users**
- **Allowing the maximum variety of use consistent with conservation**
- **Accounting for the interests of and impacts on users and community groups**



- Linkages between sustainable use of living resources and protecting ecological processes and life history patterns
- Clearly defined goals and objectives
- Requirement of management plans
- New legislation should clearly identify its own relationship with existing legislation
- Authority for adequate regulation to control activities or prohibit them
- Provision of adequate enforcement duties and powers
- Provisions for financing
- Coordination with any international, regional or other multilateral treaties and agreements
- Omnibus legislation (i.e., serving several objectives simultaneously)

Twelve Guidelines for Defining a Legal Framework for Your MPA

✓ **1. In establishing an MPA, the following should be specified, whether in umbrella legislation or in site-specific legislation:**

- a) Management Objectives of MPA;
- b) Management rules and penalties applied (with any special rules and administrative measures that may be needed, and safeguards to ensure and enhance compliance by Government, including transparency of decision-making). Rules and penalties might differ in regard to the local community and “outsiders”. This can lead to increased sense of “ownership” in the local community and minimize “the tragedy of the commons”;
- c) Delineation of boundaries;
- d) Providing adequate statements of authority, precedence and procedures (again with sometimes special provisions for the local community);
- e) Advisory and consultation processes;
- f) Criteria for decision-making;
- g) Relationship with other national and local authorities, and procedures for coordination and conflict resolution;
- h) Management plans, zoning and regulation;
- i) Monitoring and review; and
- j) Compensation.

✓ **2. If the approach of very large MPAs is chosen, decide whether each MPA will be created by a separate legal instrument or whether to create umbrella legislation for MPAs in general.**

It is strongly recommended that legislation be based upon sustainable multiple use managed areas which include “no-take” zones (e.g., the Biosphere Reserve concept), as opposed to isolated highly protected pockets





Gorgona National Park (MPA), a former prison and now offshore MPA on the southern Pacific side of Colombia off of Guapi.

in an area that is otherwise unmanaged or subject only to piecemeal regulation or industry-specific rules (e.g., relating to fishing). However, it is recognized that the latter scenario can often be the foundation for the subsequent development of integrated management regimes.

The advantage of umbrella legislation for a country's entire MPA system is that it allows principles to be established for all MPAs, with flexible arrangements for implementation by the executive. The decision whether to create umbrella legislation may depend on the types of threats: if they are mobile, only national legislation may be effective. Such a policy should also give effect to the requirements of the Convention on Biological Diversity (CBD) and United Nations Convention on the Law of the Sea (UNCLOS), as well as to the country's other international obligations.

In designing umbrella legislation the following objectives merit consideration:

- Provide for conservation management regimes over as large areas as practicable;
- Provide several levels of access, such as strict protection, fishing and collecting in different zones;
- Provide for the continuing, sustainable harvesting of food and materials over most of the country's marine areas; and
- Close national legislative and juridical loopholes that allow destructive practices to continue.

✓ ***3. If the approach of a network of small MPAs is chosen, consider establishing them on the basis of community action, supported by legislation.***

A World Bank study showed that communities perceived national laws which have been adopted locally as more acceptable than either indigenous ("bottom-up" laws) or national legislation ("top-down" laws). This is a significant finding, and supports the idea that enabling national legislation should be so designed as to 'marry' the merits of national laws with the effectiveness of local rules.

✓ ***4. Whichever of the above options is chosen, a policy for conservation and management of the marine environment as a whole is needed. This may have to take a legal form.***

An overall policy on the management, sustainable use and conservation of marine and estuarine areas should be developed for the country as a whole, for regions of the country, where appropriate, and for nationally significant sites. Ideally such a policy should also address coordination with management of coastal lands. The process of creating the policy, as well as



its existence and provisions, will help gain recognition for the importance of conservation and sustainable use of marine and estuarine areas, and the selection and establishment of a system of MPAs. Such a policy is required by the CBD and by UNCLOS. It may be established within a national or regional conservation strategy and would appropriately form part of a national development strategy. IUCN Resolutions 17.38 and 19 can be used as bases from which to develop a country-specific policy statement.

✓ **5. Make sure that the legislation states explicitly that conservation is a primary objective of the MPA(s).**

Conservation should be the primary objective and stated as such in the legislation. If this is not so, and if conservation is not given precedence, the establishment of MPAs may be an empty political gesture. Conservation as defined in the World Conservation Strategy means both conservation of biological diversity and conservation of biological productivity. In other words, it includes providing the basis for ecologically sustainable use.

The legislation should therefore tackle the issue of sustainable use, linking it to conservation objectives. Without the cooperation of most users of the marine and coastal environment, especially fishers, neither conservation nor ecologically sustainable use are likely to be achieved. The legislation should overtly recognize the linkage between protection and maintenance of ecological states and processes, and the sustainable use of living resources. It may, for example, assign rights of use to local people as this is a valuable incentive for participation in management and a defense against “the tragedy of the commons”.

For this reason, the legislation may have to include the development of one or more economic activities, such as tourism and fisheries. In such cases, it is vital that the concept of sustainability be introduced from the beginning, and be treated in a wide sense, so as to cover activities that can be sustained from an economic standpoint as well as ensuring that they do not damage other species, resources and processes. The various clauses on sustainable use in the CBD may be useful in this respect.

Objectives concerning (partially) non-economic activities, such as recreation, education and scientific research, are necessary and may be written into the legislation too. They should be secondary goals and consistent with the primary objective of conservation.

✓ **6. Changing the primary objective should be considered for decision through recourse by the highest body responsible for legislative matters in the country.**

To change the primary objective of conservation should require a decision



at the same level as the decision that established that objective in the first place.

The best control mechanism to prevent erosion of the conservation goal is to set precise objectives that are quantified and measurable. These should be established in subordinate legislation such as regulations. This will allow for adaptation to the needs of different sites and permit site-level review of progress.

✓ **7. *Ensure the legal framework is consistent with the nation's traditions.***

The form and content of legislation should be consistent with the legal, institutional and social practices and values of the peoples governed by the legislation.

The customary or accepted ownership and usage rights of a marine area are critical considerations. There may be public or communal rights as well as private ownership. Customary fishing rights need careful consideration. Legislation should reflect these kinds of situations, which can often form the basis for community support of zoned MPAs.

Where traditional law and management practices are consistent with the goal and objectives of legislation, they should be drawn upon as far as possible. This applies both to the traditional, sometimes unwritten, laws of native peoples and to the more recent traditions of a country or people. Where such practices conflict with the objective of legislation – as in the case of open access rights to fishing – education and enforcement will be necessary to change current practice.

✓ **8. *The legislation should take an international perspective.***

The young of many marine animals, and their food, as well as plant seeds, propagules and pollutants, are transported in the water column, often over distances so great that they cover the territorial waters of several countries. Many marine species, such as the great whales, turtles, sea birds, sharks and some fish, migrate over great distances. Legislation and policy should therefore be shaped by and support regional, international and other multilateral treaties or obligations designed to protect these species. Such an approach should ensure that the management initiatives of one country are not prejudiced by the actions of others.

The obligations arising from international treaties such as UNCLOS and CBD are pertinent here.



✓ **9. The legislation should create the legal foundation for the institutions that will establish and manage the MPAs.**

Legislation should identify and establish institutional mechanisms. It should also establish specific responsibility, accountability and capacity for the management of MPAs. In order to ensure that the basic goal, objectives and purposes can be realized.

Legislation should provide a general responsibility to ensure that government agencies work with local government and administration, traditional village community bodies, individual citizens, clubs and other associations with compatible goals, objectives and responsibilities.

If management is to succeed, inter-agency disputes, concerns, obstructions must be minimized. It follows that legislation and management arrangements should grow from existing institutions unless there is overwhelming public and political support for completely new administrative agencies. Therefore:

- Avoid unnecessary conflict with existing legislation and administration;
- Where conflict with other legislation and administration is inevitable, define reconciliation procedures and if possible which piece of legislation takes precedence over others;
- Interfere with existing sustainable uses as little as practicable; and
- Use existing staff and technical resources wherever practicable.

The choice of ministry or agency to be responsible for MPAs is crucial. The national parks or protected areas agency may be the natural choice, but if it does not have experience in marine matters or has limited ability to influence government policy, little may be achieved.

✓ **10. The legislation should address directly the coordination and linkage with other bodies, especially in the management of the coast and of fishing rights.**

The legislation should provide for coordination of planning and management by all relevant agencies with statutory responsibilities affecting the MPA, whether the responsibilities apply within or outside the MPA, with the aim of firmly anchoring the MPA in the broader context of coastal planning.

Provision should be made to define the relative precedence of the various pieces of legislation which may apply to such areas.

The agency primarily responsible for an MPA should be required by legislation to make agreements with other relevant agencies in relation to matters affecting the MPA.



- ✓ **11. Legislation should include provisions to control activities which occur outside an MPA and which may adversely affect features, natural resources or activities within the MPA.**

Often, low or high water marks are jurisdictional boundaries. Other boundaries exist between MPAs and adjacent marine areas. A collaborative and interactive approach between the governments or agencies with adjacent jurisdictions is essential. The ideal is to have integration of objectives and approaches within a formal system of coastal zone management within each country, with collaboration between countries. One mechanism for achieving this is to counter organizations whose managing functions can adversely affect an MPA with the provision/ stipulation that those groups exercise a general duty to contribute to the objectives of the MPA.

UNCLOS makes it a responsibility of every nation to preserve and protect the marine environment in its entirety and to prevent, reduce and control adverse effects from land-based pollution and activities.

- ✓ **12. National legislation should address all of the following items:**

- Use of terms
- Management and zoning plans
- Public participation
- Preliminary research and survey
- Research, monitoring and review
- Compensation
- Financial arrangements
- Regulations
- Enforcement, incentives and penalties
- Education and public awareness

Defining the Administration and Authority

The objective of this section is to guide the reader in setting up a structure for the administration of their MPA with the following considerations:

- Type of structure – who runs the site and has authority over it;
- Responsibilities of the administrative unit;
- Identification of manager and staff;
- Development of an administration plan for the site, including identifying separate budget line items for such administration.

The administrative arrangement and management structure should



address the institutional placement and coordination for the MPA. Will the administration be based out of one or multiple agencies? If multiple, how will administrative coordination work between agencies?

Administration is a component of any management plan. In some cases, MPAs used as a fishery management tool will not require their own administrative support. Monitoring, enforcement, and communication functions can be performed as part of the overall implementation of the fishery management plan. However, many MPAs stand alone and thus require their own administrative structure.

A plan for administration including objectives and performance measures (consistent with the MPA objectives), should be developed as well as identification of specific activities and functions necessary to put the plan into effect. This plan should address management structure, staffing, training, facilities and equipment, and budget and finance. The administration plan may be fully implemented in the first year of operation (if funds are available), or implemented incrementally over a set period of years. The first year of operation may involve only the MPA manager or several staff performing a range of functions from resource assessment to enforcement to office management to community education.

MPA administration includes the following functions:

- ***Writing and interpreting regulations that apply to MPAs,***
- ***Issuing, renewing, and terminating permits for activities within MPAs,***
- ***Communications about MPAs,***
- ***Collecting user fees, managing revenues, and financial management,***
- ***Personnel management (recruiting, training, performance evaluation, and termination of unsatisfactory performers). Personnel management applies to both paid personnel and volunteers,***
- ***Managing physical assets such as offices, information technology (e.g., computers), and equipment (e.g., boats),***
- ***Enforcement,***
- ***Maintaining records of activities that concern MPAs such as permits to use MPAs, fees collected, violations issued, regulations, etc. Records should be public except unless specified otherwise to protect privacy for personnel and sensitive information that affects competitiveness of businesses, and***
- ***Monitoring and MPA performance evaluation.***

MPAs may be managed under a variety of administrative arrangements. The three most general arrangements are centralized (government managed),



community-based (locally managed), and collaborative management (co-management). The principal difference between the three primarily relates to the degree of stakeholder participation in the administrative arrangements and the location of management authority and responsibility. The administrative arrangements may change with time and maturity of the MPA.

Governments are ultimately responsible for natural resource management. Thus, governments may be in charge of MPA administration. There are, however, situations where the MPA's administration has been ineffective because governments either have not committed adequate resources or lack experience managing MPAs. MPAs require constant surveillance which may be beyond the capability of government agencies. Government agencies can also be polarizing.

Advisory committees are established to provide advice on site planning and MPA management. The advisory committee can serve a number of functions including advising in the development and approval of work plans and budgets and evaluating progress. The advisory committees can be composed of leaders from the local community, government agencies, and elected officials. Advisory committees may be more active in management decision-making in MPAs with co-management or community-based management.

Community-based management requires a strong sense of community and local institutions capable of developing and implementing regulations. Local NGOs can be established for this purpose. They combine close involvement with the community and government approved legal authority. They provide a good vehicle for funneling financial support to the MPA.

If co-management is the administrative arrangement selected for the MPA, there needs to be a relatively stable organization in charge of the overall MPA co-management program. A co-management organization is therefore established with the responsibility of sustaining the MPA co-management program, the plan and agreement through time. The organization needs a mix of decision-making, advisory, operational and coordinating responsibilities. It should be a permanent body.

There may be different types and functions of MPA co-management organizations depending upon the situation:

- Executive bodies responsible for implementing plans and agreements on the basis of decisions produced by others, e.g., an association of local businesses responsible for executing a project negotiated between the director of a protected area and the bordering



communities.

- **Decision-making** bodies fully responsible for the management of a given territory, area or set of resources, e.g., the Co-management Board in charge of a defined area.
- **Advisory bodies** responsible for advising decision makers, e.g., a Coastal Council, directly linked with the regional authorities charged with the natural resource management mandate.
- **Mixed bodies** holding partial management responsibility and partial advisory responsibility, such as an Advisory/Management

Committee responsible for advising a Marine Park Director on the decisions to be taken in park management but fully in charge of decisions and activities pertaining to the areas at its periphery.

The stakeholders may decide to set up several co-management organizations, for instance an advisory body and a management body.

The functions of the MPA co-management organization include:

- **Conflict management** to discuss and resolve conflicts among stakeholders;
- **Policy-making** to prevent conflicts by translating the plans and agreements made into rules with appropriate penalties;
- **Implementation** to ensure that management measures are followed by allocating funds and assigning people to different activities;
- **Monitoring** to keep track of the effects and impact of the management measures;
- **Revising co-management plan** and agreements to sustain and update plan and agreements;
- **Financing and fund raising;**
- **Information and data collection and analysis;**
- **Education;**
- **Research**

The MPA manager, usually a full time professional, will lead the MPA. The MPA manager may serve a number of roles including planner, administrator, community liaison, scientist, and politician. This manager may be responsible for achieving management objectives through efficient use of funds, staff and equipment.

The size of the MPA staff depends on the circumstances of the particular MPA and should be well trained. Managing MPAs effectively calls for an understanding of the resource being protected, the people in the area, an ability to work and communicate with local people and visitors, and competence in specialized areas. Staff need to have certain minimum equipment (boats, binoculars, radio, computers, etc.) in order to perform their tasks.



1.2 PRE-PLANNING PROCESS

TIMING FOR THE MPA PLANNING PROCESS

Before launching into the management planning process, it is important to ask some simple questions to ensure you are ready to engage in this kind of process.

If you determine that you are ready, then it's important to plot out the process. Taking some time to get organized and obtain agreement on key elements of the process before you start will help the process to run as smoothly as possible. To start with, it is a good idea to develop a timeline for the planning process and share with your planning team. It is important to set target dates both for the completion of the plan and for the steps in the process. Some management planning processes have taken years; and while this is not necessarily negative, most practitioners recommend the process move along more quickly so as not to lose the interest of your planning team and stakeholders. If possible, strive to complete your plan in one year or less. If you are well prepared before you start the process, it is more likely that you will be able to stick to this timeline.



Handout 1.1: Steps for Developing Effective Management



Handout 1.2: Different Types of Management Plans

Step One: Assessing if you are ready to plan

There is no magic formula to determine if you are ready. However, there are some very basic items that should be considered before you jump into the management planning process.

It is a good idea to spend time ahead of the management planning process identifying and working with various stakeholders to prepare them for the planning process. It's also a good idea to do some projections on the planning process to ensure you have sufficient time, resources, and authority to develop the plan.

Below are several questions designed to assess your readiness. Review and answer these questions with the core group that will promote and pursue the management planning process.

1. Why do you think this is the right time to develop a management plan?

Ask this question first and then go on to discuss all the other questions. At the end of these questions ask yourself again if you feel that you are really ready to start the management planning process.

2. Have you undertaken outreach with the key stakeholders?



It can take months or years to do the basic outreach needed to engage key stakeholders in an MPA management planning process. Typically, a handful of local people will be most motivated to follow a project of this size, but it is important to outreach to other stakeholder groups to understand their concerns and get them involved in the process as well.

3. Is there support for the MPA project by key stakeholders or do you need to do more outreach?

Before you move forward on management planning, be sure that a strong core of key stakeholders representatives understand the project and have had a chance to provide their input. Without this support, the project may not go anywhere or certain stakeholder groups might purposely try to undermine it.

4. Have you provided stakeholders with a basic education on marine ecology and the benefits and limitations of MPA designations?

Stakeholders need to understand the basics of marine ecology and the benefits as well as the limitations of MPAs. There are many examples around the world where practitioners have chosen a MPA site without using sufficient ecological information and the site does not yield the results they expect.

5. Do you have enough basic information about the site?

Have you undertaken basic surveys of the site? Have you identified the target resources for protection (biophysical, social, historical, cultural and economic)? Do you know who the key stakeholders are and who has the authority to manage the site? All this information and more are needed to inform the planning process.

6. Do you have the authority to develop a functional management plan?

It is important that the authority to develop a management plan is secured before the planning process begins. In some cases there may be no formal system for management planning authority and a community may develop a plan for its own use. Even in such a case, it is important to articulate under what authority the plan will be prepared and implemented.

7. Can the stakeholders devote sufficient time to develop the plan?

Key stakeholder groups should be informed so they have enough time over the course of twelve months, or possibly more, to develop the plan. We recommend six to twelve months for developing the plan. If it takes much longer, people may lose interest in the process.





Fish nets drying on the beach at Machailla National Park (MPA), Ecuador.

8. Do you have staff or partners that can facilitate the management planning process?

It is extremely helpful to have a neutral facilitator guide the management planning process. To the degree possible, this person should have some experience in MPAs or management planning processes as well as strong facilitation skills. While a local leader may help to convene the meetings, it's important that they not be assigned to facilitate the meetings as it may preclude them from participating freely in discussions and decision-making.

9. Do you have enough time to undertake management planning and continue to undertake field activities?

Even while you are undertaking management planning, it is very helpful to continue to carry out activities that will help with the on-going management of the site. These activities may include education and outreach, enforcement, biological monitoring, and other activities.

10. Are you ready to start management planning or do you need further preparation?

Based on your answers to the questions above, you then must ask yourself if you are ready to start the management planning process or if you should undertake additional background work before starting the management planning process.

Step Two: Getting organized for the planning process

If you have determined your readiness to start the management planning process, the first thing to do is to get organized. With the core people, or planning team, that will be involved in the management planning process go through the following steps:

1. Clearly agree on why you want to develop a management plan at this time.

The exact reasons you want to create a management plan must be clear to the core team of people involved. There must be agreement on this topic before you move forward. Later in the process, you should be able to clearly articulate the reasons for creating the management plan to the community, stakeholders, and partners, such as government agencies and non-profit partners.

2. Identify a planning team and the lead organization/individual.

The planning team members (and/or the organizations or stakeholder groups they represent) must have sufficient authority to undertake the planning process and sufficient time and resources to lead and follow up on the process. In addition, the planning team should include the following



characteristics:

- a. a strong interest in the area,
- b. considerable knowledge of the area,
- c. the needed authority to undertake management planning,
- d. significant time to devote to the management planning process,
- e. a commitment to the planning process.

It is also helpful if the team can represent different skill sets. For example, some members may have a biological background while others are cultural practitioners and still others, skilled in economics training. The need for a mix of skills will be best determined on a case-by-case basis. However, the more diverse the team, the more knowledge they will bring to the process. Also, depending upon the complexity of your site, you may want to consider involving individuals from different stakeholder groups. Include at least one member with management planning experience or retain an outside person to help with the design and carry out the process.

Finally, identify one person or a small group of people who will be the lead coordinators of the planning process. This role is extremely important.

3. Clearly identify the purpose of the MPA 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 as an MPA. However, it may be necessary to re-examine the purpose because, simply put, how it is stated will help set the course 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. Don't forget to communicate this purpose to the primary stakeholders before beginning the management planning process.

4. Determine the audiences for the plan.

Management plans are prepared mainly for regular use by MPA managers. However, members of the public, the government, commercial interests, and communities are also important users. In some situations, traditional owners, local government officials, and commercial operators can be key users. The style of communication adopted for the management plan should reflect the most important user groups.

5. Clarify and agree upon a procedure for review and 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 approval will need to be identified upfront. Parties should also agree upon a timetable for the submission of a final version of the management plan for review and approval. In addition to



formal review by approving authorities, plan time for ample consultation with key stakeholders who may not have been participating on the planning team.

6. Collect necessary information.

It is important to gather 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 only facilitates the management planning process. You may also want to include more detailed data collection and research projects among the recommended activities of your management plan.

7. Identify the steps to be followed in applying the planning process, their sequence, and the methods to be used. (Please note: you will develop a detailed planning timeline in Step Three.)

Many organizations have their own guidelines on the approach to be followed. If this is not the case, you can design an approach that will best suit your MPA and its management context. The process recommended through this manual should be adapted to local needs.

TIP

If you don't feel ready to start management planning yet, it doesn't mean you have to give up on the idea of management planning. Instead, you can draft a timeline of preparatory activities and set deadlines that help to prepare you for the Management Planning process.

Step Three: Preparing a planning timeline

Management planning can take a long time, particularly if the planners don't start with a realistic timeline for the management planning process, and aren't committed to following the timeline. While it is important to provide enough time for adequate consultation and stakeholder involvement, it is almost equally important that the management planning process not take so long that the participants grow tired of it before its completion.

The core group should identify a date by which they want to complete the plan and then create a timeline to help ensure they finish by that target date. Of course the team has to be flexible and allow for unforeseen changes in the process. If everyone in the core group agrees to a timeline and a set of responsibilities, everyone should do his best to stick to this timeline.

We suggest that one person be tasked with facilitating the core team to fill out the planning timeline. It is helpful to review the entire planning process with the core group so they are familiar with the entire planning process.

Be sure to discuss with the group a realistic completion of each step in the planning process. Time will vary from site to site so look carefully at each



step and determine roughly how many meetings the group thinks each step will take for their particular site. Then proceed accordingly.

What qualities make this area—as opposed to any other area—unique and special enough to require special management?

The site description does not need to be a complete inventory of resources or databases which can be captured in appendices but should draw upon the following information already generated from the planning process:

- but should draw upon the following information already generated from the planning process:
- Legal framework
- Management authority
- Stakeholder identification
- Site characterization
- Resource targets
- Resource management threats

Within the context of the planning process and the management planning team, drafting the site description is an excellent exercise for bringing together all of the information gathered through the planning process to date in order to consolidate and synthesize the information for the management plan. The output is a synthesis of the basic information needed to draft a site description for the management plan.

Worksheet 1.1: “Getting Organized to Start Management Planning”

Planning Step 1.1: Are We Ready To Start Planning?

Objective: *To understand that some key questions (and key issues) need to be answered before a site is ready to start the management plan development process.*

Activity: Work with MPA staff to fill out Worksheet 1.1 “Getting Organized to Start Management Planning”



1.3 ENGAGING STAKEHOLDERS

Extensive stakeholder engagement is a key to securing success in both the development and implementation of an MPA management plan. Stakeholder engagement is an ongoing process of involving interested parties in assessing, planning and implementing MPA management plans. Involving stakeholders at every stage of the management planning process ensures that their perspectives, knowledge and support are reflected in management plan. If they are not involved at every stage of the planning, at the very least the stakeholders should be informed of the process and brought in at key decision-making points that may have a direct or indirect impact on them. The more buy-in - sense of “ownership” - from stakeholders, the more successful the implementation of your plan will be in the long run.

Stakeholders are those with an interest or “stake” in the decisions being made. They are partners in the planning process. Stakeholders include individuals or groups involved in, interested in, or affected by coastal and marine resources. In addition to local communities, coastal stakeholders may include the following:

- Subsistence-level fishers
- Commercial fishers
- Mariculture industry
- MPA management authority
- Local municipal government
- Tourism industry (tour operators, hotels, restaurants, etc.)
- Local conservation groups
- International conservation groups
- Community development organizations
- Indigenous people’s organizations
- Women’s groups
- Scientists
- Educators
- NGOs

If you do not already have a relationship with your stakeholders, please note that building relationships with stakeholders will take time. Don’t lose heart! The investment is not only well worth it, but also absolutely necessary. It is a part of the planning process that you will have to continually revisit to ensure the right stakeholders are counted, that trust is secured on both sides, and that the roles and responsibilities are appropriately assigned.



Fisherman from the 4 countries of the Eastern Tropical Pacific Seascape (Costa Rica, Panama, Colombia, Ecuador) working through a planning process in Ecuador



Objectives of Engaging Stakeholders in the Management Planning Process

The objective of engaging stakeholders in the management planning process is to identify and build relationships with the right ones; and, determine their roles and responsibilities in the planning and implementation of your management plan. The major steps of this process are as follows:

- Identify the stakeholders in and around the MPA
- Identify stakeholders' interests and relationship to the MPA
- Define stakeholder roles in the development and implementation of the management plan
- Identify other roles and responsibilities for stakeholders in MPA management, including mapping, monitoring, and evaluating management effectiveness

Steps for Working with Stakeholders

Even in the early preparation stages of management planning, major decisions need to be made that could have a profound influence on the success of the development and implementation of the management plan. Stakeholder identification and involvement is the cornerstone of a strong foundation that will support the entire planning process. Agreeing to clearly defined roles and responsibilities early in the process is essential to success.

The process laid out below walks through the steps of identifying and involving stakeholders in management planning and implementation.

Step 1: Identifying and Characterizing Stakeholders

Neither a group of stakeholders nor a community is homogenous. Both include people of different economic classes, family groupings, ethnic groups, both genders, various special interest groups, and user groups. Even a group that seems as homogenous as “fishers” includes many subgroups: shrimp trawlers, longliners, small coastal boaters, large international tuna vessel employees, processing and cannery workers, and so on. Each of these stakeholder groups has a different perspective and may respond differently to a proposed MPA management strategy. Involving stakeholders includes recognizing and respecting their diversity.

Not only is it important to understand who the stakeholders are, but also what their relationship is to the MPA. For example, many stakeholders may live and work within close proximity to the MPA; however, some will live and work far away. Regardless of where they live, stakeholders have

TIP

In the process of stakeholder identification, it is not out of the ordinary to unintentionally overlook key stakeholders or to involve new stakeholders that arrive on the scene. It is important to build a keen awareness of the players as they come and go and to understand how they might or might not step into the ongoing management planning process.



Planning Step 1.2: Stakeholder Identification & Analysis

Objective: *To understand the full range of stakeholders and their relationship and influence over the MPA.*

Activity:

- With your MPA staff, draw on a flip chart the stakeholder analysis diagram (see example on handout 1.2)
- Make a list of all stakeholders and their relationship to your MPA
- Put each stakeholder's name in a circle, the size of the circle based on their influence on your MPA
- Place the circle on the flip chart, those with the closest and most direct connection to the MPA should be closest to the center
- This would be a good time to discuss what “power” or “influence” means and different kinds of power.



Handout 1.3: Stakeholder Analysis Diagram

varying degrees of power and influence in regards to MPA decision-making. A marine-based industry with a powerful lobbying arm, or a government ministry may be geographically removed from an MPA, yet have enormous influence, while a local small business or community may have very little influence – or vice versa. This information is important when identifying and characterizing stakeholders.

Collecting this demographic data early on will enrich and strengthen the planning team's task of involving the appropriate or key stakeholders at appropriate points during the process. Ultimately, many of the decisions about involving stakeholders are political – based on identifying both supporters and opponents of your plan and, in most cases, both need to be at the table.

Step 2: Building Trust with Stakeholders

Once you have identified key stakeholders, but before engaging them in the management planning process, it is vital to build relationships. One of the best ways to do this is simply to spend time informally with people. This gives you the opportunity to ask questions, to listen, and to learn about the vast knowledge many stakeholders possess about the issues and resources in the MPA. Ask them for their perceptions of the issues regarding the MPA and their ideas about how to solve problems.

Through spending time with people, trusting relationships that can help MPA management are developed, and MPA managers and stakeholders can begin to problem-solve together. For instance, fishermen can contribute considerable knowledge and awareness of coastal resource health, but they often lack suitable alternatives to mitigate harmful fishing practices. As an example, if you first earn their trust, you can later work together to develop alternative livelihood opportunities. They will be more likely to understand that MPA staff members are there to help rather than simply to place restrictions on them or extract more license fees and taxes. The trusting relationship can provide the confidence they need to see that the risks involved with change are manageable and worthwhile.

There are numerous ways to start to engage stakeholders. MPA managers have used the options below, in addition to others, to open a dialogue with stakeholders, to learn more about the stakeholders' knowledge and perceptions, and to gather important information for the management planning process:

- **Natural group or informal interviews:** Casual conversations with groups of people in their natural surroundings. This technique provides a broad overview of key issues that are important to local communities or distinct groups of stakeholders, and may also be important to the MPA.



- **Focus groups:** Semi-structured discussions with groups of people with common interests or characteristics. Participants are chosen using either statistical or non-statistical sampling methods (e.g., cross-section of ages, different villages, and different user groups). These techniques are useful for identifying and describing group perceptions, attitudes and needs relating to pre-selected topics.
- **Semi-structured interviews:** Interviews using a checklist of topics instead of a detailed questionnaire. The interviewee is encouraged to speak generally on each topic without interruption by the interviewer, but who may prompt on items that have been overlooked. This technique enables unforeseen topics to surface.
- **Brainstorming sessions:** A facilitated discussion with a group of people may be used to identify problems and issues in the community or amongst stakeholder groups. The purpose of a brainstorming session is to encourage stakeholders to think creatively about a particular topic and generate new ideas and opinions. The facilitator writes down all the ideas as they arise and does not encourage lengthy discussions. The ideas can be discussed later, but the purpose of brainstorming is to generate as many ideas as possible.
- **Observational walks and boat trips:** Undertaken by a group and useful for identifying social, environmental and livelihood issues. This technique often helps stakeholders get a new perspective on resources. Note that field trips can work both ways: Community members should visit the MPA, and MPA staff ought to visit the community (e.g., canneries, mariculture operations, fishing vessels, tourism operations).
- **Participatory mapping:** Large sketches of the local area created in a low-tech fashion. These maps, discussed in a group, are used to gather data on both natural resources and social issues, and to encourage stakeholder involvement. Data can be incorporated into more formal maps through GPS recording and GIS techniques.
- **Venn diagrams:** The use of overlapping shapes to illustrate and summarize relationships, conflicts and issues among stakeholders. Stakeholder groups can draw or use pre-cut shapes. The final overlap is captured by the interviewer. This technique can be used during a focus group.
- **Problem trees and solution trees:** Diagrammatic charts of current problems and their root causes and effects. This helps develop

TIP

When working with stakeholders and communities, verify their perceptions of resources with independent observations as occasionally opinions may be based on inaccurate impressions.



the community's ability to assess complex issues and develop a comprehensive grasp of all the interrelated issues.

- **Gender analysis:** The study of gender relations and how they might be affected by a management action such as the establishment of a new MPA or the introduction of zones and restrictions.

Although these techniques are good for openers, there are additional participatory techniques to continue to keep stakeholders engaged, such as participating in enforcement efforts, monitoring, and outreach programs. Stakeholders also make excellent spokespeople for the MPA, serving as links or liaisons to their broader stakeholder community and even the press. As a gesture of respect, consider putting stakeholder representatives in the forefront of any public activities related to MPA planning and management such as workshops, meetings with donors, and media events.

Step 3: Engaging Stakeholders in the Planning Process

You have identified the MPA's key stakeholders. You then utilized participatory activities to dialogue with them and started to build relationships, an ever-evolving and ongoing process. The next step is to determine how and when it would be appropriate for stakeholders to become involved in the management planning process.

Engaging stakeholders can include a range of possibilities. At one end, stakeholders may be completely unaware of what is happening in the MPA and completely uninvolved in decision-making. At the other end, they might maintain a level of consistent engagement, aware of all available information and are active decision-makers who are proactive regarding various management actions. The range of stakeholder engagement is illustrated below:

CONTINUUM OF STAKEHOLDER PARTICIPATION

PASSIVE ⇌ INFORMED ⇌ ACTIVE ⇌ DECISION MAKER

For stakeholders to move toward the more active side of the continuum, they must be empowered. This is an ongoing process that entails providing stakeholders with the knowledge and skills to engage—through environmental education, capacity development and social communication, for example. As stakeholders add to their already considerable knowledge base, they discover they actually do have power, knowledge and administrative support from MPA staff to make a real difference; thus, they are empowered. As stakeholders increasingly discover that MPA managers are receptive to their opinions and suggestions, they become more able to accurately articulate their opinions and better equipped to assist in making



Kas-Kekova MPA (Turkey) project coordinator, Umut Tural with local fisherman stakeholder.



decisions and in designing effective management plans.

Stakeholder empowerment should be an active goal of the entire management planning process because it contributes so much to the success of any MPA management plan. Throughout the process of developing and implementing an MPA management plan, MPA managers should continually assess the level of participation from stakeholders and the community. Who is participating? Is it just a few individuals? The community leaders? How much are they participating, and in what way? Are all stakeholder groups involved? Are both men and women involved? Are there significant administrative, social or political obstacles to participation?

Levels of stakeholder engagement can also fall within a continuum as described below:

- **Instructive approach:** External agencies (usually government) inform stakeholders about changes that will be made without allowing opportunities for feedback. Experience has shown this approach is not as likely to lead to the same long-term success as more inclusive methods.
- **Consultative approach:** Stakeholders provide input on proposals put forth by external agencies but do not participate in major decisions.
- **Limited participation approach:** External agencies make major decisions and then invite stakeholder participation on certain predetermined aspects. Stakeholder participation may be seen by the external agency primarily as a means to achieve, or to reduce resistance to, a predetermined goal.
- **Co-management approach:** Stakeholders (usually community members) participate in analyses and management plan development from the beginning. Participation helps to determine common goals and is viewed as a right, not as a means to achieve a predetermined project goal.
- **Advisory approach:** Stakeholders (or specifically communities) make most major decisions on their own, and then inform the government of their recommendations. The government usually endorses their recommendations.
- **Stakeholders** (or specifically community members) plan and organize on their own, and may or may not inform government of their decisions.

Stakeholders are under many pressures that can either facilitate or hinder their movement toward active participation. MPA management needs to be aware of these forces and how they are affecting participation. Not everybody in a community can or should be involved at all times—that would be impractical—but MPA staff should always have a good sense of who is involved and why.



Stakeholder role playing during training in Kas-Kekova MPA for the MedPAN South Network of 11 MPA countries from North Africa and Eastern Mediterranean.



At each step of the planning process, MPA staff needs to know the following (from Francis et al., 2003):

- Who will be affected by this step?
- Who needs to have input?
- Who has key information?
- Who should be involved and how?
- Who might derail the process if they are left out?
- Who or what might we be forgetting?
engaging stakeholders



Stakeholder group in Mamallapuram, Tamil Nadu, India.

CASE STUDY

Lessons Learned from Tanga (from Salm et al., 2000)

In the Tanga region of Tanzania, coral reefs have deteriorated from among the finest in Tanzania in 1968 to wastelands of broken coral with few fish. Overfishing, accompanied by the use of increasingly destructive fishing methods including dynamite, destroyed the reefs and left fishers increasingly desperate. The fishers were aware of the problem but were reluctant to address it because of their need for food and income. Shifting to alternative livelihoods carried too large a burden of risk for these people whose needs are immediate and who live at or below the poverty level.

A program to address the needs of the local people as well as the environment was designed and implemented, with the assistance of IUCN, at the request of local government authorities. Once the government workers and communities had overcome their mutual suspicions and perceptions and were able to work effectively together, the communities demonstrated a willingness and capacity to invest time and effort into dealing with difficult issues of enforcement and management.

The villagers developed their own management plans for sea and mangrove areas, and these included restrictions on harvest and the closure of certain areas. In return, these areas and the related bylaws have been officially recognized by local and central government, thereby securing exclusive access for members of the community implementing management, according to prescriptions they have imposed upon themselves.

A participatory approach to management of marine and coastal reserves may require reducing the negative perceptions of management



authorities held by communities, and vice versa. The communities may view the management authority staff as tax collectors, police, useless, corrupt and indolent, while the management authority may view the communities as self-indulgent, ignorant and greedy. It takes time to change these perceptions and create good relationships of mutual trust and collaboration. Creating this relationship in Tanga, Tanzania, took eighteen months and was time well-invested.

Step 4: Creating a Management Planning Team

The second major phase in this overall process is actually developing the new management plan. This involves creating and agreeing upon clearly stated goals and objectives, developing a strategy and action plan and establishing any necessary administrative bodies. One way to involve stakeholders in this process is through a series of planning workshops.

Developing the plan is a multi-year process. Patience and long-term commitment to the process are necessary to bring the different stakeholder groups together, overcome inevitable conflicts and administrative obstacles, develop a common vision and finally settle on a practical plan. Keep the long-term goal in mind at all times, and have patience. Many desirable goals and objectives are possible, but funds and staffing always will be limited; thus it will be necessary for the MPA and the stakeholders to focus on a few of the most important management goals and objectives. Identifying preferred outcomes and a shared vision will help the community zero in on the highest priority goals and objectives.

Stakeholders can fill many different roles and responsibilities in the management planning process. Not all stakeholder representation is necessarily needed at this stage. It is best to involve those who have a direct stake, interest or expertise in the issues and target resources you will be addressing. *Although it is important to involve stakeholders in the development of the management plan, everyone should clearly understand who is cited as the legal authority and is the ultimate and final decision maker in this process.*

How to Select Members for Your Team

While the number of team members and their backgrounds will vary, the team should be appropriate for the area it will serve, and represent the range of stakeholders that may be directly affected by your management decisions. Factors that determine team member choices include the specific impacts likely to occur in a region; the governmental operations, infrastructure, and policies that will be affected.





Stakeholder role playing during training in Kas-Kekova MPA for the MedPAN South Network of 11 MPA countries from North Africa and Eastern Mediterranean.

The team may also include external scientific advisors who can direct team members to information sources and summarize scientific information about human-use impacts in less technical formats. Other credible team members might include staff members (if you already have an administrative structure in place). It's a good idea if specific strategies that come out of your planning process reflect a sense of partnership and collaboration, and involvement from the general public will also be important. Depending on the scale of your planning effort, you may want to consider establishing an external advisory board as an adjunct to your team.

The planning team should be briefed early on, provided an overview of what is currently known about the resources in your MPA, such as the condition of these resources, current human uses, and impacts from these uses. It is vital that team members understand what the science can and cannot currently tell us and how confident the scientific community is about various projections. This is a valuable information step, one that establishes a common baseline of understanding among team members, especially since, to begin with, team members will likely have different degrees of understanding and knowledge. The team will also need to address procedural issues and discuss how they would like to move forward in the decision making process.

During the potentially lengthy management planning process, teams and their work plans are likely to change. Teams may find that the management plan will affect more sectors or resource areas in their community than they initially realized, and may need to recruit more members. Conversely, if fewer or different vulnerabilities in certain sectors are found, some members may not be needed. Therefore, periodically evaluating the match between team members and what will be addressed in the management plan will ensure the right personnel are in place during the planning process.

Selecting a Team Leader

The team leader(s) will be responsible for assembling the team and leading its efforts. Ideally, the team leader will be centrally located, understand the MPAs overall objectives, and be able to communicate well with all stakeholders. Other qualities to look for when selecting a capable team leader include:

- A general sense of which agencies, ministries, departments or divisions have authority over areas that are part of the MPA.
- Managerial skills, including an ability to facilitate large meetings on complex topics and keep the team focused.
- The ability to facilitate group interaction and develop a sense of commitment from team members to feel collectively vested



in the same outcome.

- A respected personality without any personal or institutional agendas that might conflict with productive teamwork.
- The ability to communicate clearly with the public, community leaders, and governments.
- A basic understanding of human uses and their impacts on the coastal and marine environment—although this knowledge can be improved through literature reviews, meetings with local experts, seminars, and other modes of public education.

Roles and Responsibilities of the Team

A team should engage in the following five basic stages of work—effectively the MPA's management planning team's Five Milestones:

1. Conduct a study of current human uses, impacts, and conflicts; and of projected uses, impacts, and conflicts.
2. Identify priority planning areas for action based on your study.
3. Set goals and develop your plan.
4. Implement your plan.
5. Measure your progress and update your plan.

Establishing Good Communication with Your Planning Team

An important step in stakeholder involvement is to establish a good working environment for the members of the group, one built on trust and respect. This will not occur as a result of a single meeting, but will develop gradually over the term of the working group. This does not mean there will not be disagreements and difficulties, as there will be. The process of working through these difficulties, and how this is done, can provide an opportunity for listening, learning, and building respect for other points of view. The beginning part of this process takes the longest, as the team is learning how to work together. The effort invested up front will reap major returns later on in the process. Once trust, good communication, and a sense of personal responsibility for the success of the process have been established, the process for coming to decisions will speed up considerably.

A Clear Statement of Objectives and Outputs

Stakeholder-based processes are inevitably faced with conflicts. One way to move the group away from their differences is to find an area of agreement such as the common desire or objective to bring improvement to an area. In starting off by clearly articulating and coming to an agreement on the objective(s) for creating a marine spatial plan, you provide an opportunity to focus the planning team on an area of agreement as opposed to an area of disagreement.

It is also important for the planning team to be clear upfront about the desired outcomes and outputs, before they become engaged in the management planning process. The desired purpose may be simply to



Stakeholder role playing during training in Kas-Kekova MPA for the MedPAN South Network of 11 MPA countries from North Africa and Eastern Mediterranean.



increase the understanding of human use activities and associated impacts within your MPA. Or, it may be to create a management plan, and/or strategies for implementation of a plan. Or, the real purpose may be to bring different sectors together to consider the future of the area. The desired outcomes and outputs may be some, or all, of these. In any case, they should be understood by each planning team member before you engage any further in this process.

Engaging Stakeholders Is Not a One-Shot Deal

Participatory processes do not move forward by themselves. They require a constant infusion of energy. Team members will need continual encouragement and support. Just because they have initially committed to the planning team does not mean they will stay committed throughout the process. A facilitator is needed to drive the process forward with timetables, deadlines, and documented intermediary results. It is important to create milestones along the way so that the team feels they are having a series of small successes. The “small successes” will create positive reinforcement for the team as a whole. Stakeholders need to see evidence of visible and deliverable benefits from the whole process along the way. At the same time, the planning team should never be misled but rather given a sense of what is realistic.

Using a Neutral Party as Facilitator

A successful participatory process always includes a dedicated staff member, who has overall responsibility for coordination and who provides oversight on collaboration among the stakeholder-based planning team members. The role of this person is focused specifically on facilitating dialogue and organization, rather than on writing the contents of the plan. A professional facilitator or moderator will significantly contribute to the sensitive and careful management and involvement of stakeholders. This role requires someone with good communication, facilitation, and negotiation skills and someone who will remain neutral and not give the appearance of favoring any particular stakeholder.

Step 5: Creating an Implementation Team

Finally comes the phase of actually making it happen! The management plan is complete and ready to be implemented, usually through several concurrent management activities such as these:

- Alternative livelihood projects (e.g., for displaced fishers)
- Habitat restoration (e.g., mangrove reforestation)
- Restrictions on fishing activities (e.g., seasonal, gear types, temporal or geographic)
- Establishment of MPA boundaries and marking them with signs or buoys
- Ongoing community education about new regulations and enforcement



- Creation of community surveillance and enforcement teams
- Creation of monitoring and evaluation programs

Step 6: Creating an Evaluation Team

This step includes the coordination of management plan implementation, legislation, law enforcement, revenue generation and ongoing annual program review and budgeting. This step must be guided by a work plan that lays out which individual(s) has direct oversight over a project or program; an implementation timeline; resources required for successful implementation including staff, technical expertise or equipment and financial resources; prioritization of activities; monitoring and evaluation; and partners. Different stakeholders who will be responsible for various elements of implementation may be included in the list of partners.

Long-Term Continuation. Once the initial implementation phase is over, the MPA will enter a long-term phase of continued monitoring and evaluation, continued community outreach and adaptive management to further [continue to] adjust the plan as necessary.

Monitoring and Evaluation. Appropriate indicators must be selected early in the process so that baseline conditions can be measured and reassessed consistently.

The community can and should be involved in the monitoring process. Encouraging the community to play a large role in this process engenders a sense of ownership and responsibility and helps to build consensus on any new strategies that may be necessary.

Community Outreach and Education: Concurrent with monitoring and evaluation, the MPA should invest in a long-term, ongoing process of information management, community education and outreach. This is especially helpful in sustaining community interest and can prevent the community from becoming discouraged if positive results are less than anticipated or if unexpected obstacles threaten to derail the plan. Community outreach may also help advertise positive benefits that have started to occur but may not be obvious to all community members (e.g., an increase in sustainable tourism dollars reaching the local community or a gradual increase in average fish size).



Key Considerations for Working with Local Communities

In many locations around the world, communities are within or adjacent to MPAs. It is important to define the relationship between the MPA and the community early on in the management planning process. Will the community work cooperatively with the MPA management authority? Will there be a formal co-management arrangement or agreement between the community and MPA authority? Or, does the community have ownership or tenure rights to the coastal and marine environment and will, therefore, be recognized as the management authority?

In either case, a working relationship of openness and trust will have to be built with the community. This will take time. In the beginning of the process, it may be useful to involve only a handful of community members who have demonstrated an interest in the MPA rather than opening the planning process to all stakeholders. Involving a manageable number of community members at the beginning allows the opportunity to get to know their perceptions and biases while maintaining forward progress in planning. If too many community members are involved in the beginning, the process may get mired in logistics before planning ever begins. Small also provides an opportunity to understand community dynamics and who the leaders are that truly represent the community as a whole, or sub-groups of the community (fishers, women, church members, etc.).

Consider reassigning MPA staff in order to help them build rapport with the community. Training MPA staff in facilitation and conflict resolution skills, as well as socioeconomic monitoring techniques can be helpful if conducting socioeconomic studies are used to improve relations between staff and community members. By learning from and with community members, MPA staff members develop respect for the knowledge and wisdom of local communities, who will in turn be encouraged that management staff can listen and learn from them.

A good foundation for community involvement comes through participatory socioeconomic and resource assessments at the very beginning of the management planning process. This helps people to clarify the critical issues and priorities from a community perspective. When engaging with communities, be aware of differences in “social dominance” at meetings, as they can mask the needs and priorities of the less prominent individuals or community groups. The structure of any grouping of community members can be quite complex and can be



masked by those whose livelihood is more secure because they have more time to participate in meetings; easier access to communication methods such as email, telephones and even transportation to meeting locations; or maybe are more confident to speak out. Careful attention to wealth and poverty profiles within community groups can help identify those with the greatest dependency on the natural resources and their priorities.

Socioeconomic and resource assessments also need to be gender sensitive. The resources uses and activities of men and women differ, as do their access to and control over resources, and their abilities and vulnerabilities. Assessments should profile these differences. Survey data should always be identified as to the gender of the respondent; this will allow identification of the differential opinions and impact of MPA actions on men and women.

Whenever using community assessment techniques, try to validate findings by triangulation or cross-checking—in other words, by using several different methods to corroborate findings. Secondary sources of information, statistics, and direct observations are valuable sources of information that are independent of stakeholders or community members' perceptions.

Community boundaries often correspond to resource use boundaries. Therefore conflicts with community boundaries need to be resolved early when attempting to establish protected area management responsibilities. Community mapping meetings early in the process can help to identify these boundaries.

Interestingly, management issues that are identified in community meetings usually do not differ markedly from those identified by MPA managers. This is a reflection of the fact that local residents are usually quite knowledgeable about conditions in and around a nearby MPA and that residents' actions and MPA ecosystem health are inextricably intertwined. Consequently, community-perceived issues, and their causes and solutions, can be used to define overall objectives, results and activities for management planning.

Building trust is absolutely critical. A key role can be played by the facilitator or community organizer who interacts with stakeholders in the early stages of gathering information. Be patient; trust may take years to establish.

Planning Step 1.3: Stakeholder Roles in the Planning Process

Objective: *To clarify who each of the MPA stakeholders are, and what their role will be in the planning process.*

Activity: Clarification of stakeholders and their roles and responsibilities in the planning process

- With the MPA staff, fill out Worksheet 2.1a “Involving Stakeholders” matrix
- Move on to Worksheet 2.1b “Designing a Planning Team” to determine which stakeholders and experts are needed as part of your planning team.



Worksheet 1.2a: Involving Stakeholders

Worksheet 1.2b: Designing a Planning Team

Make community meetings and other participatory activities as accessible as possible. Scheduling, both in the season and in the time of day, can encourage and discourage certain sectors of the community from attending. Maintaining community interest is critical. Interest especially tends to flag over the long-term when initial excitement has waned.

LOCAL COMMUNITIES AS MPA MANAGEMENT PARTNERS

Of all the stakeholders we have been discussing, local community members are of particular importance, especially those who live in or adjacent to an MPA. Experience with top-down, centrally controlled approaches to MPA management has clearly shown that if local people are excluded, they can undermine management efforts. For example, in many MPAs, local fishers have been at odds with MPA managers, often protesting their management efforts and intentionally defying any limits put on fishing effort. On the other hand, when the local community or other stakeholders share management responsibilities, are openly involved in decision-making, and understand the benefits of sharing in the responsibility of MPA management, they become partners in the MPA's success. For example, they may use less-destructive fishing methods, harvest only what they need, participate in voluntary closures, and even help to influence their fellow community members to support the goals of the MPA. In addition, local community involvement throughout the management planning process will help to ensure that the plan is integrated into the existing local institutional structures, strongly considers social and cultural factors, and benefits from local knowledge.

It is important to work together to determine the roles and levels of responsibilities of the different stakeholders involved. For example, a particular level of government may be granted legal management authority (e.g., national provincial or district level), which is then implemented at a local level using a bottom-up approach in which management decisions and activities are made with the community, and legally recognized. Whether the legal structure calls for top-down management, bottom-up management or co-management, stakeholders should be included.



1.4 DEVELOPING A VISION

It is common to start the management planning process by developing a collective vision of where the MPA wants to be in the future. The purpose of this step in the planning process is to start the planning team thinking about what the “preferred future” looks like, and thus begin the creation of the vision statement. The vision statement should reflect where the MPA staff and/or planning team collectively thinks the site should be as a result of effective implementation of the management plan.

A **vision statement** is an idealized description of a desired outcome that inspires and helps create a mental picture of where you want your MPA to be in five to ten years. While they serve complimentary purposes vision statements are often confused with mission statements. Always remember the purpose of this vision statement is not to serve as a “real” target that you are going to measure success against to determine if you have succeeded or failed, you should use your goals and objectives to do that. Instead, the vision statement should open your planning team’s eyes to what is possible.

A **mission statement** lets people know what your MPA does (the added value it provides an area designated as an MPA). It defines the fundamental purpose of your MPA and why it exists. A mission lasts for the lifetime of the MPA and does not have a timeline. The vision statement, however, is much loftier in that it describes your MPA’s idea of the future. So you might ask why we don’t start with a mission statement in this management planning process? The assumption is, if you are ready to start the management planning process, a mission statement was already developed as part of the clarification on the purpose and need for designating your MPA.

Some questions to help you think about the preferred future:

- *What does the perfect world look like for your MPA in ten years?*
- *What would you like the condition of the natural resources to be?*
- *What would you like the economic condition to be?*
- *What would you like the social and cultural condition be?*
- *What would you like to leave behind for future generations?*

Your vision statement should:

- *Describe what you want to see happening at your site in the future;*
- *Not assume that the world in the future will be the same as it is today;*
- *Be written in the present tense as if you are living the future*



Stakeholder team developing concepts for a healthy ecosystem in Machalilla National Park (MPA), Ecuador.



Planning Step 1.4: Developing a Vision

Objective: *Provides an opportunity for your MPA planning team to develop their vision statement and collectively determine what the ideal future should look like for your MPA.*

Activity: Building a group vision for each MPA (based on purpose and need for designation of MPA)

- Write down answers to questions shown above on page 35 on post-its and stick on right hand side of poster
- Group brainstorm of “preferred future” by reviewing post-its
- Illustrate with planning team a visual representation of your vision statement

Note: Vision statement will be revisited before starting the planning process.

today;

- *Be specific to your MPA and stakeholders;*
- *Be positive and inspiring;*
- *Align with organizational values and culture;*
- *Use vivid and clear language;*
- *Be idealistic, but not totally unrealistic (something that may actually be achievable).*

Example of a Vision Statement:

- *Our coral reefs have successfully been protected for future generations;*
- *Our community is economically stable through the development of alternative livelihoods;*
- *The provincial and local government has successfully worked with the local MPA community to address solid waste disposal and non-point source pollution from the mainland.*

There are several possible approaches to building a vision statement:

1. Starting from where you are now and building a vision of the future
 - **Situation:** evaluate the current situation and how it came about
 - **Target:** define your ideal state
 - **Path:** map a possible pathway to achieving your ideal state

2. Imagining the future and linking it to where you are now

- **Draw:** what is the ideal image or desired end state?
- **See:** what is today’s situation? describe the gap between today and the ideal state
- **Think:** what specific actions can be taken to close the gap between today’s situation and the ideal state?
- **Plan:** what is required to achieve the ideal state?

A vision statement should be valid through the life of a management plan, usually 5 years. When revising or reviewing your management plan it is a good idea to do the same for your vision statement.



Re-Cap Module 1: Starting the Planning Process



MAIN POINTS

- **Defining the Legal Framework**
 - need to understand under what authority the MPA was established
 - need to understand the authority of the MPA in order to understand reasonable scope of the management plan
 - need to understand authority in regards to fisheries management , energy development, tourism development and coastal zone management
- **Are You Ready to Start the Planning Process?**
 - need to understand the importance of the upfront prep work and that delaying the process can actually save you time in the long run
- **Engaging Stakeholders**
 - understanding difference between primary and secondary stakeholders
 - understanding the relationship between stakeholders and the community
 - understanding degrees of influence and control by different stakeholders
- **Developing a Vision**
 - understanding the difference between a vision and mission statement, and g
 - understanding the real value is bringing stakeholders together to find comm

CONNECTION TO OTHER PROCESS STEPS

- **Vision** is built on the original objectives (purpose and need) for designation of your MPA, it then becomes the underlying basis for goals and objectives for your management plan
- **Stakeholders** should be identified before you start the planning process, included in key steps of the planning process, play a role in implementation and evaluation of the management plan

TYPICAL CHALLENGES

1. **Vision statement** - is an ideal state of what the future might look like, it shouldn't be confused with the goals and objectives – it is much loftier than that. Developing a vision serves the purposes of bringing together stakeholders to collectively build their ideal future state.
2. **Stakeholders.** – need to start very broadly to begin with and be inclusive of anyone who might be touched in any way by your management plan decisions or planning process.

KEY DEFINITIONS

Vision Statement – ideal future state of where you want your MPA to be in 5-10 years down the road as a result of your management plan

Mission Statement – defines the fundamental purpose of your MPA, and the added value of an MPA designation to this area.

Goals – the link back between your vision and forward to your management strategies.

Objectives – how we get there

Stakeholders – anyone who has an interest or stake in your management planning process, or the outcome of your process.

STARTING THE PROCESS

Handout 1.1: STEPS FOR DEVELOPING EFFECTIVE MANAGEMENT PLANS

STEP 1	<p>WHAT DO YOU WANT TO DO? Have you:</p> <ul style="list-style-type: none"> • defined the purpose and need for your MPA? • understood the purpose and need for a management plan? • understood what authority your MPA has? • drafted a vision statement?
STEP 2	<p>WHO IS, COULD OR NEEDS TO BE INVOLVED? Have you:</p> <ul style="list-style-type: none"> • identified the key stakeholder groups ? • identified a planning team? • considered when and how different people/groups should be consulted and involved? • determined how to effectively engage others in the planning process?
STEP 3	<p>WHAT IS KNOWN? Have you:</p> <ul style="list-style-type: none"> • identified existing studies or sources of information relevant to the management plan process? • characterized your MPA (natural resources, socio-economic and political setting)? • established a baseline in which to measure change over time
STEP 4	<p>WHAT MAKES THIS PLACE SPECIAL? Have you:</p> <ul style="list-style-type: none"> • identified what is special about the region or your site? • Identified any unique features, characteristics or resources? • established how well these special values are recognized? • identified specific targets for protection?
STEP 5	<p>WHAT ARE THE THREATS? Have you:</p> <ul style="list-style-type: none"> • identified the key issues affecting your site or the region? • used further analysis to understand the threats, root cause and stakeholders? • prepared a summary of the analysis characterizing the problem? • prioritized the threats?
STEP 6	<p>WHAT ARE THE OBJECTIVES TO GUIDE THE STRATEGIES IN YOUR MANAGEMENT PLAN? Have you:</p> <ul style="list-style-type: none"> • drafted a clear written statement of your objectives to guide future actions? • drafted objectives that reflect your site's vision? • sought agreement from key partners and stakeholders on your objectives?
STEP 7	<p>WHAT ARE YOUR MANAGEMENT STRATEGIES? Have you:</p> <ul style="list-style-type: none"> • developed realistic management strategies that will support you in meeting your objectives? • clarified your anticipated outcomes and outputs? • Identified costs, staffing needs and partnerships for each strategy?
STEP 8	<p>WHO ARE THE PRIMARY STAKEHOLDERS THAT WILL BE IMPACTED BY YOUR ACTIONS? Have you:</p> <ul style="list-style-type: none"> • identified both the negative and positive impacts on stakeholders from your proposed actions? • Identified how you are going to address these impacts on stakeholders? • considered an alternative livelihood scheme?
STEP 9	<p>HOW WILL YOU KNOW IF YOUR MANAGEMENT PLAN IS EFFECTIVE? Have you:</p> <ul style="list-style-type: none"> • identified indicators? • developed a monitoring plan? • developed an adaptive management plan? • secured an administrative framework that supports adaptive management?
STEP 10	<p>WHAT IS YOUR IMPLEMENTATION PLAN? Have you:</p> <ul style="list-style-type: none"> • identified an implementation team? • developed a five-year implementation plan? • developed an annual work plan?

Handout 1.2: DIFFERENT TYPES OF MANAGEMENT PLANS

PLANNING SCALES

Site Plans:

Addresses site-specific issues

- Engages local communities
- Prioritizes issues
- Contains detailed management strategies and actions
- Are updated periodically

Regional Plans:

- Applies to multiple sites and or jurisdictions
- Are strategic and specific
- Addresses common region-wide issues
- Involves multiple communities and stakeholders
- MPA planning may be nested in a larger planning framework

Network Plans:

- Involves strategic planning on broad scale
- Focuses on broad planning frameworks
- Articulates broad goals and objectives
- Involves multiple communities and stakeholders
- Involves multiple jurisdictions (including multiple MPA authorities)
- Allows network to become operational based on the type of MPA network (biophysical, governance, social)

PLANNING DOCUMENTS

General Plans:

- Broad frameworks
- Outlines programmatic and administrative structure

Strategic Plans:

- More specific
- Built around meeting (conservation and/or other) objectives
- Performance based on meeting (conservation and/or other) objectives

Subject Plans:

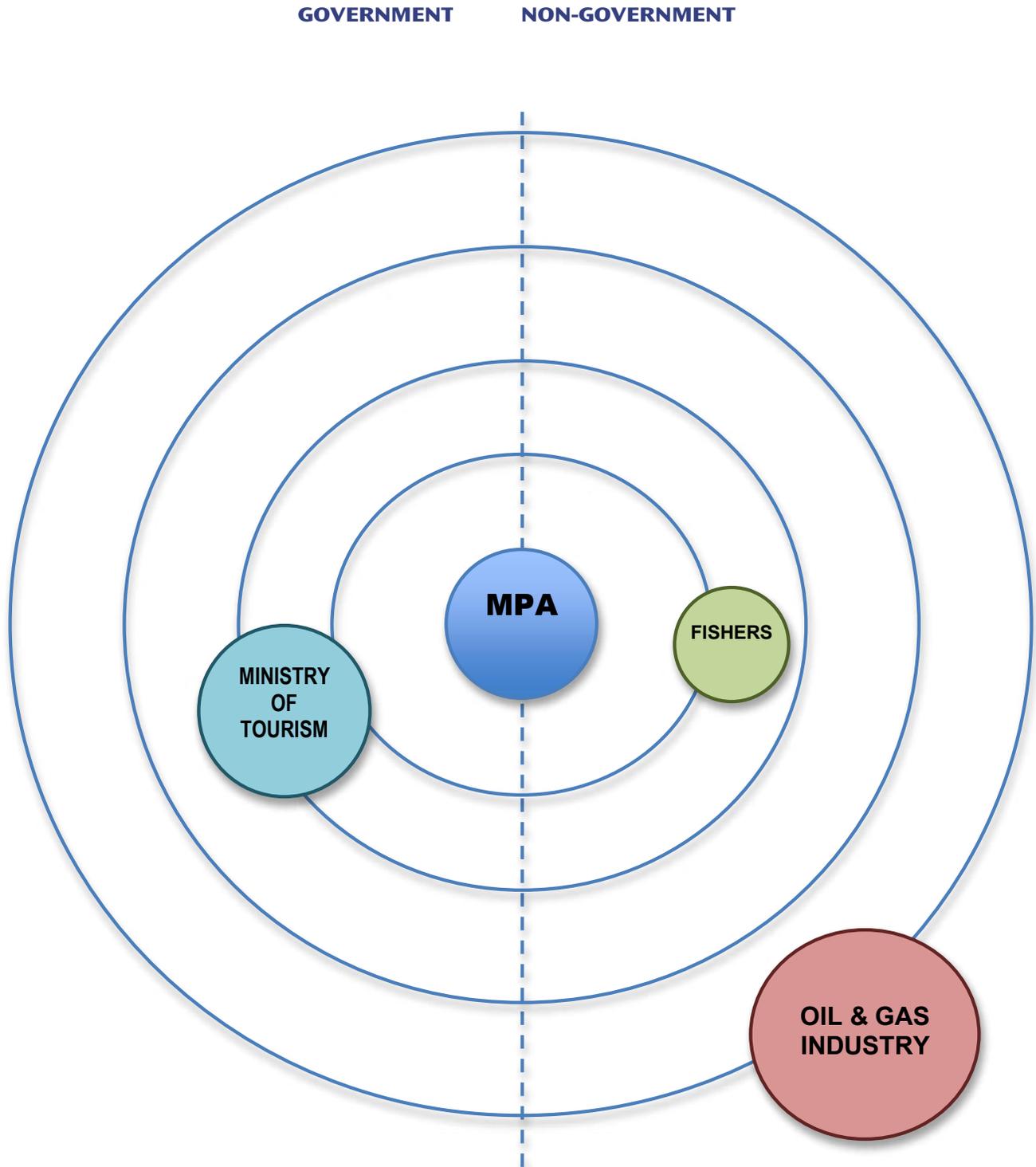
- One or a limited number of subjects
- A range of scales – site to network
- Targeted stakeholder involvement

Programmatic Plans:

- Outlines programmatic areas
- Builds activities around education, monitoring, enforcement, etc., programs
- Programs may be used to address protection of specific target resources or issues

STARTING THE PROCESS

Handout 1.3: STAKEHOLDER ANALYSIS



STARTING THE PROCESS

Worksheet 1.1: GETTING ORGANIZED TO START MANAGEMENT PLANNING

Please fill out the table below to answer key questions about your MPA as this will provide a better understanding on whether or not you are ready to start the management plan process.

1. What is the reason your site was designated as a marine protected area? (is there a stated purpose and need)	
2. Are there qualities (natural, cultural, historical) that make this site unique?	
3. What is believed to be the added value of making your site a marine protected area as opposed to not managing the area?	
4. Does your MPA have management goals and objectives? If so, what are they?	
5. Under what authority was your MPA designated?	
6. What authority has your MPA been given to manage this area (e.g., can you prohibit certain activities, create zones, or enforce laws)?	
7. Does your MPA share jurisdictional authority with other agencies or entities (e.g., national park, military, fisheries agencies, enforcement agencies)?	
8. What type of management plan do you have or will you be developing (e.g., general, strategic, topical)?	

STARTING THE PROCESS

Worksheet 1.1: GETTING ORGANIZED TO START MANAGEMENT PLANNING

<p>9. Who will use the plan and for what purposes? What is the time span of the plan?</p>	
<p>10. Do you already have a relationship with stakeholders? If so, please describe.</p>	
<p>11. Who will approve the plan? Do they understand the function and importance of MPAs? Do they understand the importance of an effective plan?</p>	
<p>12. How will the plan be financed? How secure is the funding? For what time period will you have funding?</p>	
<p>13. Are you interested in monitoring and evaluation of the effectiveness of your management plan?</p>	

STARTING THE PROCESS

Worksheet 1.2a: INVOLVING STAKEHOLDERS

Please use the following worksheet to clarify the stakeholders in and around your MPA and what their roles might be in the management plan development process and implementation of the plan.

List key stakeholders	Describe their interest in the area	Describe the validity of their interest or stake	How important is this group to the planning process?	How should they be involved in the planning process?	How important are they to the implementation of the plan?
<i>Dive boat operators</i>	<i>Derive their living from a healthy marine environment</i>	<i>1. Are excellent partners at teaching best management practices; and 2. Collecting revenues for MPA</i>	<i>1. Key decisions could be made that may impact their livelihood; 2. have first hand knowledge of condition of resources</i>	<i>Should be represented on both the planning and implementation teams</i>	<i>Will have a direct role in outreach, education and possibly monitoring</i>

STARTING THE PROCESS

Worksheet 1.2b: DESIGNING A PLANNING TEAM

Please identify key representatives who should be involved in different aspects of the development and/or implementation of the management plan. From this table you should be able to extract your planning team.

PLACE A ✓ IN ONE OR MORE OF THE FOLLOWING CATEGORIES TO INDICATE AT WHICH PHASE THE REPRESENTATIVE SHOULD BE INVOLVED:

Stakeholder, interest group, agency or expert	Representative's name, title, responsibility & affiliation	Front-end assessment in preparation for plan	Planning phase for management plan	Working with stakeholders	Identifying components of plan	Management plan drafting team	Reviewing and approving plan	Implementation of the management plan	Evaluating effectiveness of management actions
Has a political role in determining MPA management priorities	<i>Argus Asril Rili, District Chair, Ministry of Tourism</i>						✓	✓	✓
Has a political role in determining MPA management priorities									
Has knowledge about the resources (natural, cultural, social, heritage)									
Has expertise in areas of concern (e.g., water quality)									
Has specific MPA management expertise									
Has expertise in group facilitation									
Represents agency or entity with shared jurisdictional authority									
Represents key stakeholder or interest groups									
Represents an agency or entity that will approve and/or fund the plan									
Other:									

How Is Your MPA Managed?

MODULE 2: Front End Assessment Phase

2.1 IDENTIFYING TARGETS

Management Targets for Protection

2.2 THREAT IDENTIFICATION & PRIORITIZATION

Threat Identification

Mapping the Threats

Threat Diagrams

Threat Prioritization



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OVERVIEW

In this module you will identify priority targets (e.g., biophysical, social, economic, cultural, and historical). The purpose in identifying the priority targets is to create a centerpiece around which the rest of the management plan will be constructed. The targets are usually identified as part of the “purpose and need” for designation of a specific area as a marine protected area and can include anything from biodiversity protection to the economic value of an area as a tourism attraction to historic resources such as shipwrecks.

The next step in the process is to identify and understand the threats to those target resources so you can build management strategies that effectively address the threats, thus making progress toward meeting the MPAs management goals and objectives. In this step of the process you will also further analyze those threats to understand the root cause of the threat and the human behavior associated with it.

As most MPAs are limited in terms of financial resources, staff resources, and technical expertise, we will take some time in this front-end assessment phase to prioritize which resource management impacts we will address in the early stages of implementation of the management plan.

The final step in this phase is to assemble a conceptual model – the framework on which we will build the management plan. The conceptual model also lays out the basic information needed to structure your management plan – what is it that you want to protect (target resources), from what are you protecting it, what is the source of these impacts (specific human-use activities). This information will provide the basis for your management strategies.

LEARNING OBJECTIVES

- Identifying the threats to target resources
- Mapping the spatial extent of the targets and the threats to those targets
- Prioritizing the threats
- Building a conceptual model as a basic framework for development of the management plan



Lesson Plan

2.1 IDENTIFYING TARGETS

We will now focus on management targets, or the resources that are most highly prioritized for protection in an MPA management plan. Identifying and prioritizing these targets will help in developing and implementing a management plan that focuses your management efforts and financial and human resources on the highest-priority resources.

Many of the MPA's management targets were likely identified during the MPA designation and site-characterization processes. The targets may be natural, social or cultural resources, economic in nature, or related to biodiversity. For example, management targets may include the following:

Natural resources (geological and ecological)

- Offshore banks
- Seamounts
- Spawning sites
- Upwelling areas

Social and cultural resources

- Areas of historical or cultural importance
- Sacred sites
- Traditional-use sites

Economic

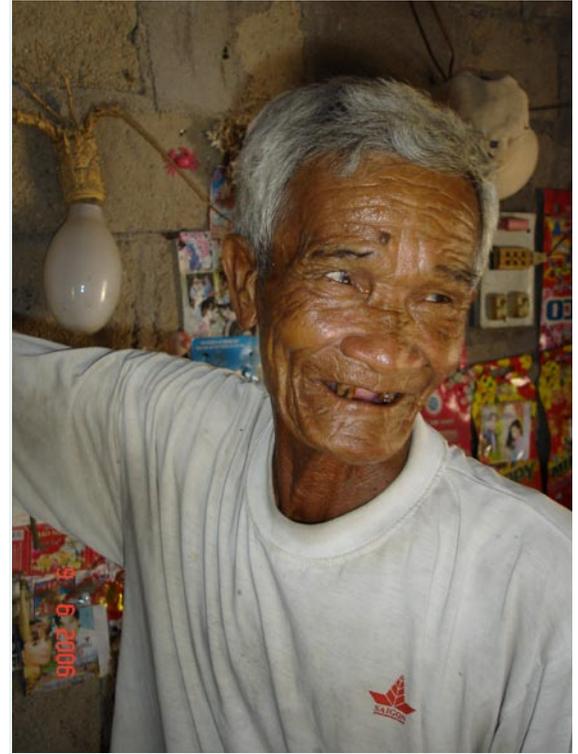
- Areas utilized for tourism and recreation
- Fisheries, including target resource species

Biodiversity

- Endemic species
- Threatened or endangered species
- Critical habitats (feeding, nesting, breeding grounds)

Identifying targets for protection is an excellent way to engage stakeholders in your front-end assessment. One way to do this is through community/stakeholder mapping. In community mapping, stakeholders draw an illustrated geographical map or use an already printed map to show the location of fisheries resources, community resources and supporting infrastructure. The process involves...

- Meeting with local stakeholders to identify where resources, human-use activities and opportunities are located;
- Determining specific problem areas and threats, along with the potential for improvement; and



Reformed turtle harvester and turtle egg collector in Nui Chua National Park (MPA), Vietnam, turned advocate for turtle conservation.



TIP

Mapping the target resources is a great way to engage stakeholders that may not have the time or interest to sit on a planning team. This is also a good way to keep those stakeholders informed about, and linked to your planning process.

- Facilitating open and intensive community discussions on target resources, threats to resources, management strategies, potential problems and opportunities.

Advantages of Community Mapping

Community mapping has several major advantages: (1) The resulting map illustrates where resources, activities, problems and opportunities are located, as well as the dimension and scope of issues or threats. It verifies and expands upon the marine and coastal information collected in preliminary evaluations, and it adds details on specific characteristics—seamounts, underwater canyons, slope, drainage, vegetation, water, soils, and other resources—that may not have been identified without community assistance; (2) The process of creating the map usually elicits a wide range of information from community members, information that dates as far back as the oldest participants can remember or were told to them by their parents and grandparents. For example, community maps can reveal small, productive fishing areas such as reefs that are known to fishers but not necessarily to MPA staff. Community members may also know seasonal information such as spawning aggregations that only happen at certain times; spatial and temporal patterns of gear use; locations of conflict; locations of traditional fishing practices; and so on. Older or retired fishers may be able to identify areas that once were productive fishing areas but no longer are; (3) Involving the community provides a good opportunity for the planning team to ask community representatives about previous trends and traditional community responses, the residents' perceptions of that problem, and so on; (4) Community mapping can clarify differences in local names for marine species, which is essential for an accurate understanding about changes to specific species or habitats.

Drawing Conclusions From Mapping

One person on the planning team should be designated to take notes during community-mapping discussions in order to capture the topics, opinions, comments and reactions of all participants. The discussions will indicate what people consider socially, economically and environmentally important. The direction of the discussions is significant; even if people's perceptions are inaccurate, they show how the community views a situation.

Community mapping may reveal some of the same resources, infrastructure, and other features that the MPA management planning team can map on their own. However, the community map will also include additional information on historical community use of resources—current fishing areas, traditional boundaries, historical areas of different fisheries, and so on. And, again, community members usually have information about tourism attractions, infrastructure and accessibility that may not be known to MPA staff.



IDENTIFYING TARGETS

Analyzing the Management Targets

- Do these targets cover the various types of habitat represented throughout the MPA?
- Are a majority of these targets utilized by a particular user group or economic sector?
- Are any of the targets currently protected under biologically based or culturally based law?

Determine together whether priorities should shift so that representative habitat, social or economic equity and other factors are considered. Update the list of priority targets based on those group discussions.

Planning Step 2.1: Identifying Targets

Objective: *To identify the main targets that will become the focal point of your management strategies in the management plan.*

Activity:

- 1) With your planning team fill out Worksheet 2.1 “Selecting and Ranking Target Resources”
- 2) Use ranking criteria to prioritize top target resources,
- 3) With the team, decide how many of the top target resources you are going to address in your management plan.

Worksheet 2.1: Selecting and Ranking Target Resources



2.2 THREAT IDENTIFICATION & PRIORITIZATION

TIP

When considering threats to your target resources include:

1. *human use activities*
2. *natural impacts*
3. *the cumulative effects of both kinds of stressors*

You may not be able to directly address natural impacts through your management strategies, but you should consider building the principles of resilience and resistance into your planning. This will help to address both human stressors and natural stressors.

Now that priority resource targets have been identified for your management plan, your planning team should work together to identify all possible threats to these targets. What do we mean when we say “threats”? In the context of MPA management planning, we mean those impacts to the target resources that we have the ability to address through management strategies. In most cases, we are talking about human-use activities both inside and outside the MPA that are impacting the target resources. Consequently, when considering the threats to coastal MPAs, we need to look up the watershed, along the coast and out to sea. When considering the threats to both coastal and offshore MPAs look beyond the MPA boundaries as water knows no boundaries.

Most MPAs are also faced with threats resulting from natural perturbations and climate change. Although we may not specifically identify these impacts as resulting from human use, they are threats to consider during the management planning process. Many MPAs are incorporating management measures to build resiliency and resistance to these threats. The best approach is to implement the precautionary principle, which is to say, in the face of uncertainty it is best to err on the side of conservation. In the context of threat identification and analysis, even if we don’t have all the information or knowledge we need to fully understand the impacts, threats, or the source of the threats, the precautionary approach directs us to move ahead and find innovative approaches to address these threats from human-use activities occurring both inside and outside the MPA boundaries.

The steps in the threat identification process are as follows:

- **Identify the threats**
- **Map the threats**
- **Identify the sources of threats and associated user groups**
- **Characterize the threats to the priority resource targets**
- **Identify and understand the cause and effects of each of these threats**
- **Identify the human behavior associated with the threats**
- **Identify the MPA’s ability (strengths and weaknesses) to address these threats**
- **Prioritize the threats that will become the focus of our management actions**
- **Identify user groups associated with these threats**

Identifying the Threats

The process of identifying threats to the resource targets begins with having your planning team brainstorm about all the possible threats to each target and recording each idea. When you have enough information to go on,



begin grouping similar threats and eliminating redundancies. Note those threats that affect several different resource targets. It is very likely you will see a pattern emerge. Lastly, ask your planning team to further edit the list of threats based on those threats that you have the ability to address through your management plan. This step should provide an understanding of the broad range of problems facing the MPA and the common roadblocks to multiple resource targets.

One thing you may notice, if your planning team includes representatives of MPA stakeholder groups, is that each stakeholder group has a tendency to identify threats that are of the greatest concern to them and them alone. This is why it is important to listen to all points of view and give examples wherever possible. Usually through discussion, the threats cited by different stakeholder groups start to converge.

Identifying the Sources of the Threats and Associated User Groups

Once the planning team has identified the threats the next step is to analyze those threats, including who is responsible for them. This information will guide the management strategies so you are actually addressing the root causes of the threats rather than perceived threats. For example, a working group once was formed to address the threat of shipping lanes that were thought to be too close to an MPA. Upon analyzing the threat, however, the working group found that the proximity of shipping lanes was not the problem whereas the probable risk for a catastrophic oil spill was. The working group was then reconstituted so that experts with oil spill response experience replaced shipping industry experts.

Several methods can be used to help to better understand threats, including developing threat characterizations or problem statements. Another method—the one used below—is based on a problem-tree approach, which involves understanding the root causes of a threat and the user group(s) responsible for the root causes.

Your planning team will use the information generated from the brainstorming exercise as the basis for the threat analysis. The team will start by: 1) listing one **target resource**, then 2) identify each **impact or threat** on that target resource, 3) the **behavior** creating the impact, 4) the **stakeholder group** associated with the behavior that is creating the impact, 5) the **root cause** of the behavior – i.e., are there internal or external reasons for that behavior?

You may want to have planning team members form smaller groups and have each group address one threat, all groups address all threats, or some alternate combination.

Planning Step 2.2: Threat Diagram

Objective: *To start to make the link between the threat (impact), the behavior causing the impact, the human use activities (user groups), and root cause(s) that will be the focus of the management strategies in the management plan.*

Activity: With your planning team, use Handout 2.1 “Threat Diagram Example” as a model to follow:

- 1) On a flip chart, identify one target resource.
- 2) Identify all threats or impacts to that target resource (indicated by green circles).
- 3) Identify the specific behavior that is causing the impact itself (turquoise circle).
- 4) Identify the stakeholder group associated with this behavior (black rectangle).
- 5) Identify the root cause of the behavior. It is important to understand the root cause as that will be what you are addressing in your management plan (blue circle).



Handout 2.1:
Threat Diagram Example



Planning Step 2.3: Mapping the Threats

Objective: *To understand the spatial extent of the targets and the threats to those targets.*

Activity: With your planning team, draw on your poster-size maps the location and spatial extent of each of the threats to your targets.

TIP

Because of the importance of threat prioritization and its highly subjective nature, you will want your entire planning team to support the outcome of your threat prioritization process. Agree upon a process upfront, and spend the time to make sure everyone understands and supports that process and outcome.

Mapping the Threats

Mapping provides a sense of scale that may not be effectively illustrated in other ways. The threats your planning team has identified should be mapped in order to illustrate the spatial scale and relationship between resources and threats, which will then help direct management strategies in your management plan to address these threats.

To map the threats use the maps created during the site-characterization and target resources identification processes. These maps already should contain many of the threats. Identify group members to map any additional threats on an overlay to the site-characterization map. Mapping by hand does not have the same accuracy as a GIS-generated map, but it does provide an opportunity to invite local knowledge into the management planning process. Local knowledge is often not captured in scientific databases, but mapping such knowledge can enhance the information about the MPA's target resources and associated threats.

Once the threats have been mapped review the map with the group to ensure relative accuracy and agreement.

Ask the following questions:

1. *Did we accurately map the identified threats? Did we miss any areas?*
2. *Are there any threats we may have overlooked? Were threats from outside the boundaries of the MPA considered?*
3. *Are there any known future human-use activities that might take place in your MPA and pose a threat to target resources?*
4. *Are there any areas that need to be validated or about which we lack information?*

This step should provide an understanding of the spatial extent of the threats to resources and possible information gaps.

Prioritizing the Threats

In order to create an effective and easily implementable management plan, the strategies you apply in your management plan should focus on your priority threats. Failure to prioritize often leads to a hit-or-miss management approach, which can be both costly and ineffective. If you carefully prioritize the threats that are impacting your MPA, you can more precisely develop and apply the strategies to overcome these threats and thus effectively manage the area. Also, most MPAs have limited financial and human resources so we want to make sure these limited resources are used most effectively.



To prioritize threats, each threat must be evaluated against established criteria. Criteria can either be determined by the MPA management authority or by the management planning team. In either case, the planning team needs to agree on the criteria and fully understand the meaning of each criterion. This understanding and agreement needs to be made before your planning team starts the prioritization process. Because this is a subjective evaluation process, each time you apply the criteria there will be some interpretation of that criteria in relationship to the specific threat. Also because this process for prioritizing criteria is subjective, you should leave plenty of time for discussion and consensus-building. A sample of commonly used criteria follows:

- 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 (e.g., is all of the habitat or resource impacted or just a portion of it?)
- c. **Intensity:** How intensely the threat will impact the targets at the site (e.g., will the threat completely destroy the habitat or resource, or will it affect the resource only slightly?)
- d. **Urgency:** How pressing is the need to address the threat at the site (e.g., is the threat active now, or will it manifests tomorrow or perhaps in a few years?)
- e. **Capacity:** The financial and human resources available to address this problem now (e.g., do you have the staff expertise and resources necessary to address this threat, or will it take additional resources)? Before evaluating the threats, however, it is necessary to create a numerical rating system. The planning team should agree upon the rating system to be used. A sample ranking system follows:

Area

- 2 = Only a small amount of area at our site is affected by the threat.
- 5 = A moderate amount of area is affected.
- 10 = All of the area at our site is affected by the threat.

Intensity

- 2 = Low intensity; causes only minor impact or damage.
- 5 = Medium intensity; somewhat impacts or damages.
- 10 = High intensity; seriously impacts or damages.

Urgency

- 2 = Not very urgent; does not require immediate action.
- 5 = Somewhat urgent; will require action soon.
- 10 = Very urgent; requires immediate action.

Planning Step 2.4: Threat Analysis

Objective: *To start to make the link between the threat, the human use activities, user groups, and the behavior that can be managed (through strategies in your management plan) in order to reduce or eliminate the threat.*

Activity: Working with the planning team, use Worksheet 2.2 “Threat Analysis” and for each target:

- 1) identify all existing threats and possible future threats (distinguish between the two),
- 2) identify the spatial extent – how much area of your MPA is affected by this behavior (from mapping exercise),
- 3) the level of severity (how serious is the impact),
- 4) what are the known opportunities for addressing this impact, and
- 5) what are the know obstacles to addressing this impact.

Worksheet 2.2: Threat Analysis



Worksheet 2.3: Prioritizing Threats

Planning Step 2.5: Threat Prioritization

Objective: *To identify those threats that are of highest priority to address in the management plan*

Activity:

1) Use Worksheet 2.3 “Prioritizing Threats”.

2) With your teams, rank each threat and determine the highest priority threats to each target.

3) Present to the whole group the outcome of each team’s exercise.

Planning Step 2.6: Complete the Front-end Assessment Conceptual Model

Objective: *To understand connections between each of the process steps developed up to this point and how they collectively serve as the baseline information for informing the development of your management strategies*

Activity: 1) Using Worksheet 2.4: “Front-end Assessment Conceptual Model”, fill out the conceptual model based on results from steps 2.1 through 2.5.

Worksheet 2.4: Front End Assessment Conceptual Model

Capacity

- 2 = Requires no additional staff or financial resources.
- 5 = Requires a moderate increase in resources.
- 10 = Requires a significant amount of additional staff or resources.

Please note that this process step is based on a “rating” system whereby each threat is rated against the criteria based on its own merit and not in comparison, or ranked against, any other threat. Each threat is considered independent of all other threats.

Summarizing the Threats in a Conceptual Model

When your planning team has completed process step 2.5 they have finished the threat analysis. Next it is time to record the results of your efforts in the logic model which compiles all the planning work accomplished to date. Completing it provides an opportunity to bring all the decisions you have made up to this point into one flow chart that represents the framework you are working from to develop the management plan.

The logic model summary serves three purposes:

1. It provides an opportunity to bring all the planning work accomplished thus far into a visual model so the planning team can see the connection between each of the planning steps.
2. It establishes a record of the decisions upon which you will be developing the management plan.
3. It serves as a good communication tool to share with other stakeholders, local community members and decision-makers.



Re-Cap Module 2: Front-End Assessment Phase



MAIN POINTS

• Identifying Target Resources

- it used to be that MPAs were largely focused on protecting biophysical resources, however, now many MPAs are being designated to protect cultural, historic, economic and other kinds of resources
- need to narrow down the number of target resources so the management plan can stay focused on being effective in a few discreet areas
- for planning purposes, need to understand other laws and authorities for managing target resources such as cultural heritage laws
- mapping target resources and threats is a good way to bring the community together to share their knowledge and express their priority concerns

• Threat Identification and Prioritization

- look specifically at those threats to the target resources that can be addressed through the management plan, impacts like climate change, or future impacts, will be addressed later
- mapping the threats allows you to see the spatial relationship between the threat and the spatial extent of the target resource
- the threat diagram allows us to understand: the impact, source of impact, user group and root cause of impact – this process will help us focus our management actions
- threat prioritization process uses four criteria: area, intensity, urgency and capacity

CONNECTION TO OTHER PROCESS STEPS

- **Target Resources** – links to site characterization and purpose and need for designation of each MPA – what is there of such value in this area that it needs special protection? We will also be building management objectives around the target resources
- **Threats** – directly links to target resources and to management strategies.

TYPICAL CHALLENGES

1. **Target Resources** - may have already been identified in the site characterization as part of the MPA designation process and built into the justification (purpose and need) for the designation of the MPA.
2. **Threat Analysis** – during the threat analysis, the tendency is to jump to solutions– “we need to ban anchoring”, however, what we are really trying to understand is the impact- “damage to coral”, the problem “too many dive boats anchoring in the same place” and the root cause of the problem – “not enough identified dive sites, no options to anchoring”. Then, we can start to understand what management strategies will help address the problem.

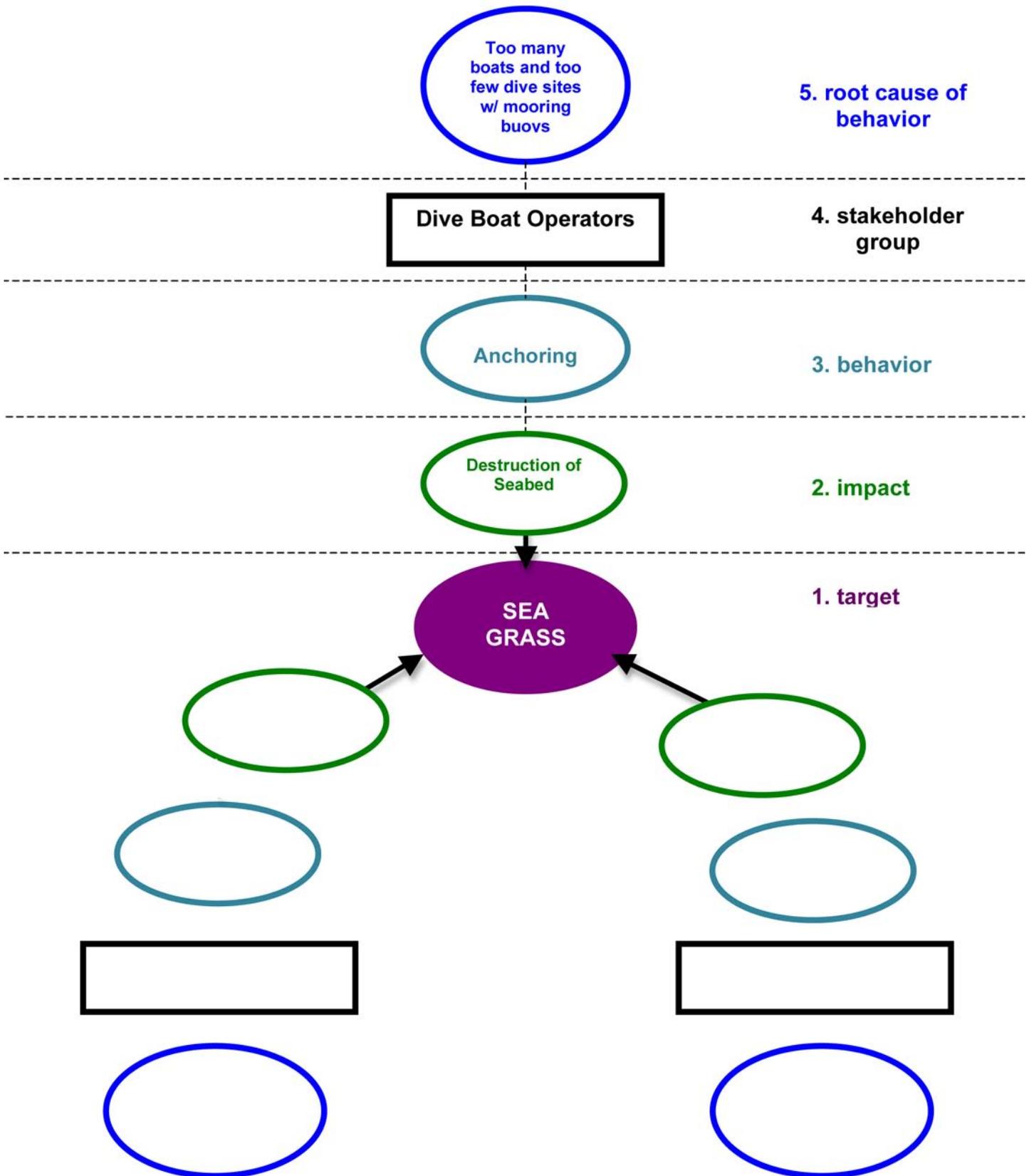
KEY DEFINITIONS

Target Resources – the priority biophysical, social, historical, cultural or economic resources the MPA was designated to protect.

Threats – those impacts to target resources that we have the ability to address through the management plan

FRONT-END ASSESSMENT

Handout 2.1: THREAT DIAGRAM EXAMPLE



FRONT-END ASSESSMENT

WORKSHEET 2.1: Selecting and Ranking Target Resources

1) Please answer each of the following questions about the target resources you have chosen. Your response should be either “major”, “moderate” or “minor”. Please note the score attached to each of these responses. 2) Add up the scores to all of your responses to the questions for each target resource. The top scores will determine the top priority target resources to be addressed in the management plan. You may want to determine ahead of time if you are going to limit the total number of target resources you are going to build your management plan around.

Ranking: Please answer all questions for each target specified below. You can only use 16, 8 or 2 for scores, nothing in between.

Major - 16 • Moderate - 8 • Minor – 2

TARGET RESOURCES	1. How important is this target resource to the designation of your MPA?	2. How important is this target resource in terms of the (ecosystem or other) services it provides?	3. How critical is this natural resource to the local community and economy?	4. How much interest might this target resource garner from the broader public (beyond your local community)?	5. Is this target resource in good condition and/or could it be easily restored?	6. How urgent is it that this resource receive immediate protection?	TOTAL
Species of Concern:							
Habitats of Concern:							
Special Features:							
Socio-economic:							
Socio-economic:							
Cultural & Historical:							
Other:							

FRONT-END ASSESSMENT

Worksheet 2.2: THREAT ANALYSIS

TARGET RESOURCES	THREATS	CURRENT OR POTENTIAL	IMPACT OF THREAT		OPPORTUNITIES	OBSTACLES
List each of your 4 target resources below	List all human-use threats to each target resource	Distinguish between current threats already occurring and potential known threats in the future.	Spatial Extent (rate low, medium, high or very high)	Severity	List current and potential future opportunities for addressing the threat	Obstacles to addressing the threat
Sample: <i>seagrass beds</i>	<i>Piggery at Jason's landing (point source pollution)</i>	<i>Currently one farm, potential for future farms</i>	<i>M (currently, only Soft bay affected as only 1 pig farm)</i>	<i>M (at current level, as only 1 pig farm)</i>	<i>Possibility of working with farmers on BMPs</i>	<i>Limited number of livelihood alternatives</i>
	<i>New dock for inter-island ferry boat (shading)</i>	<i>Future –within the next 2 years</i>	<i>H (specific to area under dock w/ additional damage during construction)</i>	<i>H (specific to area under dock w/ additional damage during construction)</i>	<i>New technology available to provide transparent docks</i>	<i>Dock already permitted and BMP provisions not included</i>
	<i>Dirt from road building used as landfill</i>	<i>Happened last year</i>	<i>VH (currently only Fula Bay affected)</i>	<i>VH (seagrass bed completely destroyed)</i>	_____	<i>Plans in place for expansion of housing on landfill</i>
1.	<i>Anchoring of dive boats</i>	<i>Currently happening, potential for more dive boats</i>	<i>L (currently occurring in 3 locations)</i>	<i>L (only because small number of dive boats at this time)</i>	<i>Working with dive boat operators on BMPs and limiting number of boats</i>	_____
2.						

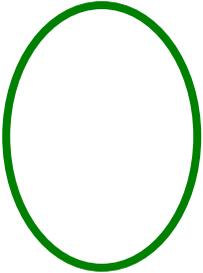
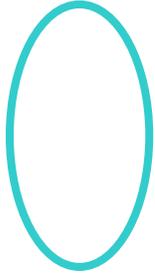
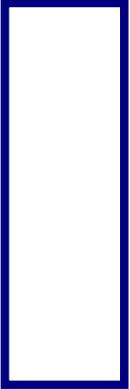
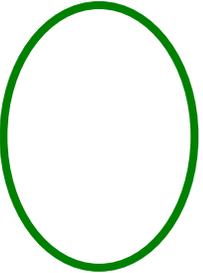
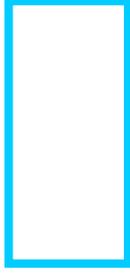
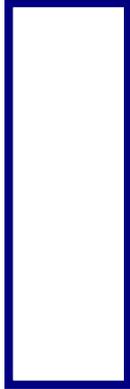
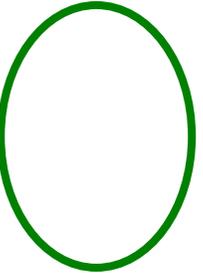
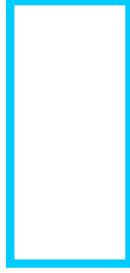
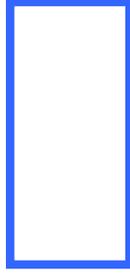
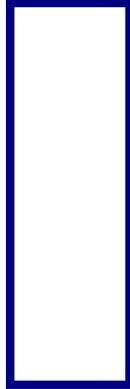
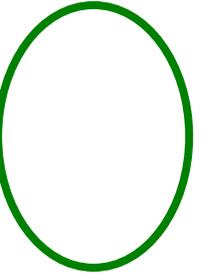
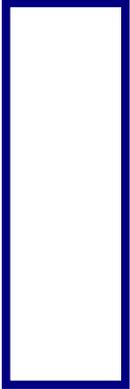
FRONT-END ASSESSMENT

Worksheet 2.2: THREAT ANALYSIS

3.									
4.									
5.									

FRONT-END ASSESSMENT

WORKSHEET 2.4: Front-end Assessment Conceptual Model

PRIORITY TARGET RESOURCES	PRIORITY THREATS (IMPACTS)	BEHAVIOR CAUSING IMPACT	STAKEHOLDER CAUSING IMPACT	ROOT CAUSE OF BEHAVIOR
				
				
				
				

How Is Your MPA Managed?

MODULE 3: Establishing Management Standards

3.1 DEVELOPING ISSUE STATEMENTS

Developing Issue Statements

Building a Conceptual Model for the Management Plan

3.2 DEVELOPING GOALS & OBJECTIVES

Differences Between Goals and Objectives

Developing SMART Objectives



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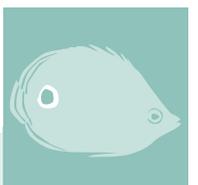
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OVERVIEW

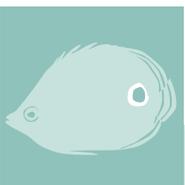
During the front-end assessment phase you identified and laid out all the key pieces of information for developing the management plan – targets, threats, root causes of threats, and responsible stakeholders. Now that you have that information, it is time to develop an issue statement for each of the target resources and threats. The issue statement clarifies what you will be addressing in the management plan and the root cause and/or associated human behavior that your management strategies will focus on changing.

The next step after the issue statement is to identify what your management goals and objectives are for each of your targets – in other words, what are your management priorities – biodiversity protection, livelihoods for local communities, putting aside areas as research sites or for multiple use. Clarifying goals and objectives will help you frame what kind of management outcomes you would like to achieve through the management plan such as the conclusive condition of your MPA and target resources – what would you like the condition of your MPA and target resources to be as a result of your management plan.

It is important to note that during your actual management planning process all of the steps you go through may not necessarily occur in the same sequence as this guide, that's because many of these steps will be occurring simultaneously or opportunistically. The order is not as important as ensuring a planning process that covers all these steps and makes sense for your MPA.

LEARNING OBJECTIVES

- Developing an issue statement to more fully understand the condition of each target resource
- Developing goals and objectives to make a clear statement for what you want the condition of your target resource to be as a result of your management plan



Lesson Plan

3.1 DEVELOPING ISSUE STATEMENTS

Now that you have completed your threat analysis and understand the root cause of the issues impacting your target resources, it's time to develop an issue statement to guide the development of your management strategies. The issue statement clarifies the cause and effects of each of your threats, and in doing so identifies what needs to be addressed in the management plan.

Issue statements must be stated in terms of underlying causes, framed in such a way that they lead to solutions. For example, coral reef degradation is in itself not the problem, but rather the symptom of a problem. If, instead, the issue is defined as dive boats anchoring on coral reefs, the issue starts to be framed in a way that [that] can lead to a solution – to address impacts from anchoring. The issue statement also articulates the root cause of the problem. Anchoring is causing the impact, but the reason for anchoring on coral reefs may be due to too many dive boats in a single location, not enough alternative dive sites, lack of mooring buoys, etc. There are often multiple root causes, and all of them will need to be addressed in the management plan. Each one of these causes suggests an appropriate management strategy.

On the other hand, issue statements need to avoid being too specific and prescriptive. For example, the issue is not just that dive boats should be prohibited from conducting dive operations on coral reefs. Rather, there might be a range of options such as: controlling the number of dive boats at a given time or on a given day on a given reef; providing mooring buoys so boats don't have to anchor; providing education about the mooring buoys; providing and educating dive boat operators about optional dive sites and about best management practices. Solutions could include a range or a package of options for addressing impacts to coral reefs, so don't try and find a solution in your issue statement, simply state the issue.

To adequately explore an issue, it is important to frame it. Framing an issue means defining it – that is, placing boundaries around and giving direction to the inquiry. The frame is the road map or outline that guides the investigation of the issue. In framing the issue you should: a) choose the least number of terms possible to describe the issue, and b) choose the most precise terms to describe the issue. There are many approaches to developing an issue statement. The one we use follows this format:

1. What are the specific impacts related to this issue (biophysical, socioeconomic, governance)? a) *loss of habitat and food for fishes and*

TIP

Working with stakeholders through the process of developing an issue statement is an excellent approach to recognizing common concerns, AND getting everyone to take on a piece of the responsibility for addressing the issue.



Dried shark fins sold in a local market in Xiamen, China.



Planning Step 3.1: Developing Issue Statements

Objective: *To further clarify the problem (threat) and root causes thereof to ensure that management strategies (next step) address those threats.*

Activity:

1) Use Worksheet 3.1: “Worksheet 3.1: Issue Statements”.

2) With your planning team fill out the worksheet (refer to threat diagram) by answering the following:

- Threat to target
- Specific impacts to target
- Root cause(s) of impact
- User group responsible for impact

3) Then link your responses together into an issue statement at the bottom of the worksheet.

4) Go through a similar process for each target resource.

invertebrates on Tuva Reef (biophysical), b) divers complain about decreased satisfaction in wildlife viewing experience (socioeconomic), or c) unauthorized dive boats entering into MPA waters are not enforced by Coast Guard (governance).

2. Describe the root cause(s) of the impact. *a) dive boats unaware of existing mooring buoy system; b) dive boats unaware of cumulative impacts anchoring has on coral reefs; c) dive boats unaware of permit systems required for diving in MPA, or unauthorized dive boat intentionally diving in MPA as few pristine areas remain outside of MPAs.*

3. What can be measured (indicator) to gauge the level of impact? *percentage of broken coral in representative plots near popular dive sites.*

4. Threshold where impact becomes unacceptable? *2% increase in broken coral in representative areas over 10 year period*

EXAMPLE OF ISSUE STATEMENT: *Tuva Reef is an important habitat to both living marine resources and divers, yet are being damaged by boat anchors due to lack of: awareness about impacts on corals from anchors; adequate alternatives to anchoring; and fully explored alternative dive spots.*

The issue statement is focused on the underlying cause – *anchoring due to lack of awareness, alternatives to anchoring, and alternative dive sites* - making it easier to find a (range of) solution(s) in the management plan.

The process of developing an issue statement is a good way to bring stakeholders together to agree on some of the most common issues your MPA is facing. In many cases we have found that stakeholders, particularly user groups, have the same concerns as MPA managers. Working together to identify a pathway to address these issues or threats will help you move forward together in garnering support for the development and implementation of your management plan.

Worksheet 3.1: Issue Statements



3.2 DEVELOPING GOALS & OBJECTIVES

Developing goals and objectives is considered one of the most difficult steps in any planning process. The reason for this perceived difficulty is generally a lack of clarity about the difference between goals and objectives. One of the first steps to writing clearly defined goals and objectives is to understand their purpose and role in the management planning process.

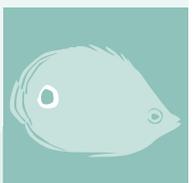
Goal	OBJECTIVE
Broad - your dream or vision stated in practical terms	Specific - How to achieve your vision – A good objective should be <i>Outcome Oriented</i>
Opposite of the problem	Helps to solve the problem
Easy for the public to understand	Guides management strategies

Goals are the link back to your vision and the link forward to your management strategies

The goals can also be expressed as a set of economic, social, and environmental aspirations. Depending on the MPA's priorities, these goals could set targets or standards in such areas as ecosystem functioning, biodiversity conservation and sustainable use, poverty alleviation, and the participation of indigenous and local communities. Usually these goals are derived from the basic tenets espoused by the concept of marine conservation: low impact activities in the MPA, local community benefits, conservation finance and environmental education. These goals will probably remain constant over time though some of the strategies designed to carry them out may change with circumstances.

Objectives are how we get there

To help realize these broad goals and vision, the planning team will need to set shorter term objectives. These may include clear targets and timetables in order to ensure that any activity in the MPA has acceptable environmental impacts while meeting stakeholder needs or any other priorities. Examples may include adopting legal and other measures needed for establishing and supporting conservation areas, setting aside a certain amount of area as zones to meet the requirements of sustainable development, strengthening marine protected area networks, employing economic policy tools and



TIP

*Before engaging your planning team in developing goals and objectives, clarify the focal point:
Your MPA, or
Your management plan, or
Your target resources*

encouraging the private sector to actively support conservation efforts. *Objectives may be either performance based or process based.*

While working your way through this topic focus on goal development, remember that, in general...

- goals are broad, while objectives are precise.
- goals reflect your vision and mission, while objectives reflect actions.
- goals are easier for the public to understand, while objectives are tools for MPA staff.

In the context of management planning for MPAs, goals can be focused on several different components of the plan:

- Overall goals for the MPA,
- Overall goals for the management plan, or
- Goals directed at the priority target resources.

Criteria for defining objectives

For each goal you should develop a series of specific, programmatic objectives that must be met if your management planning efforts are to be considered successful. *Objectives are specific statements detailing the desired accomplishments or outcomes of your management plan strategies.* If the project is well conceptualized and designed, realization of a project's objectives should lead to the fulfillment of the management plan's goals.

A good objective is SMART:

- **S – Specific**
- **M – Measurable**
- **A – Achievement-oriented**
- **R – Realistic**
- **T – Time-limited**

A good objective meets the SMART criteria shown above. Defining an objective that meets all of these criteria is not as difficult as it may seem: just make it as specific as possible. Some typical examples of good objectives are the following:

- After three years, two interpretive trails will be designed, constructed and in use by 75% of the visitors viewing marine wildlife from the MPA dune area.
- By the end of year five of the implementation of the management plan, incomes of those households participating in the handicraft



production project will have increased by at least 25%.

- After two years of plan implementation the amount of trash collected on the beach on the Fifi Island will have decreased by 75%.
- During the first six months of 2013 the MPA should form an Ecotourism Program Advisory Committee for the purpose of assisting the program director to implement program activities, evaluate the program's progress, and provide advice concerning how best to deal with the private sector and other institutions.
- Five naturalist guides from local communities will be trained in marine biology and conservation and fully employed by the MPA by the end of year one of the implementation of the management plan.

Objectives can be written in several different ways. One approach is to state your intent, for example, “*to install interpretive signs at...*”. The other way is to state the desired end result, for example “*to improve compliance...*”. The form you use will depend on personal preference and the context in which they are to be used.

You can measure whether or not you have met your objectives by developing indicators or tangible evidence of attaining your goals e.g., “*number of signs that have been installed*”. You may also want to think about what milestones would help to break down your work into achievable stages e.g., “*two signs installed in the first year and additional three signs installed by year 5 . . .*”. As your work proceeds, any reporting should focus on your progress towards achieving your objectives. This is the means by which you and others can monitor performance.



Multi-stakeholder team developing goals and objectives in Gorgona National Park, Colombia.



DEVELOPING GOALS & OBJECTIVES

Ineffective vs effective goals and objectives:

INEFFECTIVE GOAL	EFFECTIVE GOAL
To save Bai Long Bay	To restore the health of reef fisheries of Bai Long Bay
INEFFECTIVE OBJECTIVES	EFFECTIVE OBJECTIVE
Establish managed areas to increase fish abundance.	By the end of three years, increase the abundance of target fish species by 10% in the 4 areas of Bai Long Bay where there is healthy fish habitat.
Involve community members.	50% of community members will actively participate in MPA volunteer programs by December 2015.
Reduce violations.	Violations of MPA regulations will be reduced by 50% by January 2017.

Systematic approach to developing “SMART” objectives:

Threat	Outcome the strategy is trying to achieve	Where?	When?
1. Over-fishing causing decline in target fishery	- A 10% increase in the abundance of target fish species	- In the 4 identified areas of Bai Long Bay where there is healthy fishhabitat	In the next 3 years
2. Lack of enforcement	- A 50% reduction in violations of MPA regulations	- In all waters included in the MPA	By January 2017



Now test the objectives against the “SMART” criteria:

OBJECTIVE 1: By the end of three years, increase the abundance of target fish species by 10% in the 4 areas of Bai Long Bay where there is healthy fish habitat.

1. Is it specific?	Bai Long Bay, healthy fish habitat, 10% increase, target fish species
2. Is it measurable?	10% increase, 3 years
3. Is it achievement-oriented?	Increase fish abundance
4. Is it realistic?	Yes: Stakeholders are supportive, focuses on healthy fish habitat, expects reasonable gains
5. Is it time-limited?	3 years

Conclusion: It is a “SMART” objective!

Planning Step 3.2: Developing SMART Objectives

Objective: *To develop clear and concise and measurable objectives that will be used as indicators of success for your management strategies.*

Activity: Use Worksheet 3.2: “Developing SMART Objectives” and together with your planning team develop management objectives for each of your target resources:

- 1) First fill out the target resource you are building the objective for.
- 2) State all known threats or impacts on that target resource.
- 3) State what you want the condition of that resource to be over a given amount of time as a result of your management plan.
- 4) State specifically where you want this change to take place.
- 5) State over what period of time (or target date) you want this change to have taken place.
- 6) Combine all these 5 pieces of the objective into one “SMART” objective statement.

Worksheet 3.2: Developing SMART Objectives



Planning Step 3.3: Building a Conceptual Model for the Management Plan

Objective: *To clarify where you are now in terms of the condition of each of your target resources and establish a clear picture of where you want to be as a result of your management plan.*

Activity: Use Worksheet 3.3 “Conceptual Model for Management Planning” and complete the information on the following:

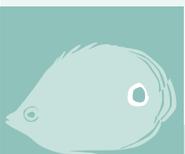
1. Target Resource (what you want to protect)
2. Issue Statement (the current condition of the resource)
3. Objective (where you would like to be as a result of your management plan)
4. LAC (level of acceptable change or standard; at what point is your management strategy not working and you need to change what you are doing)
5. What are you going to measure (what are you going to use as an indicator of change)

Summarizing Where You are Now and Where You Want to Be in a Conceptual Model

During this initial phase of the actual planning process, you developed an issue statement to further articulate the source of the problem (where you are currently). You then developed goals and objectives as a measurable statement of where you want to be, within a given amount of time, as a result of implementing your management plan. You will now bring this information together into a second conceptual model to provide guidance for the development of your management plan.

As a reminder, bringing different steps of the planning process together into conceptual models helps the planning team link the process steps together and provides a kind of road map of information to support the next steps of the planning process.

Worksheet 3.3: Conceptual Model for Management Planning



Re-Cap Module 3: Establishing Management Standards



MAIN POINTS

• Developing Goals and Objectives

- goals express your vision statement in words, it is broad in nature and depicts an ideal future situation, but should be something that is realistic
- clearly articulated objectives are the core of an effective management plan, all management strategies are developed for the purpose of meeting the objectives
- all objectives should meet the “SMART” criteria: Specific, Measureable, Achievement-oriented, Realistic, Time-limited
- objectives can be developed around many different aspects of the planning process, we will be developing objectives based on the condition of the target resources that each MPA wants to achieve as a result of the management plan

• Developing Issue Statements

- clarifies the cause and effects of each of your threats, and in doing so identifies what needs to be addressed in the management plan
- must be stated in terms of underlying causes, framed in such a way that they lead to solutions
- elements of an issue statement include: 1) specific impacts, 2) root cause, 3) indicator (measure level of impact), 4) threshold where impact becomes unacceptable

CONNECTION TO OTHER PROCESS STEPS

- **Goals and Objectives** are directly linked back to your vision statement and then forward to your management strategies. Your management strategies are specifically developed to meet your objectives. Since the objectives are measureable, they also link to management effectiveness indicators.
- **Issue Statements** – link back to the threat analysis and link forward to the management strategies.

TYPICAL CHALLENGES

1. **Goals and Objectives** – always a challenge to distinguish between the two, so we generally drop the goals because they are really just a realistic articulation of the vision, and focus on the objectives which are very specific and measureable
2. **Issue Statements** – seems like the threat analysis, but it is actually a synthesis of the threat analysis capturing the most important components and putting them into a single sentence or two. The issue statement will carry over into your planning model as the key issues or impacts that you will be addressing in your management strategies.

KEY DEFINITIONS

Goals – a broad, yet realistic depiction of the MPA’s vision statement expressed in words.

Objectives - specific and measureable statement of what is to be achieved in terms of protection of the target resource as a result of the MPAs management strategies.

Issue Statements – clarifies the cause and effects of each of your threats on your target resources.

Worksheet 3.1: ISSUE STATEMENT (where are you now?)

Statement of the Issue to be Addressed in the Management Plan

1. Target resource	2. What are the specific impacts related to the problem?	3. Describe root cause(s) of impact.	4. <u>Indicator</u> What can be measured to gauge level of impact? (Indicate which impact(s) are being monitored.)	5. Standard Level of acceptable change (at which time you will have to take another management strategy)	6. Are you currently using the indicator in #4 to evaluate the condition of your target resource? If YES, describe. If NO, how would you find out?
<i>Seagrass beds in Bai Long Bay</i>	<ol style="list-style-type: none"> 1. Substrate of seabed is destroyed by anchors 2. seagrass beds disturbed 3. loss of important habitat to living marine resources 4. decrease in quality of experience for divers 	<ol style="list-style-type: none"> 1. Dive boats are concentrated in Bai Long Bay due to lack of well explored alternative dive sites 2. There are no alternatives but to anchor in Bai Long Bay 3. Dive operators do not fully understand impacts from anchors on seagrass beds 	<p>Percent of healthy seagrass coverage in three representative plots near popular dive sites in Bai Long Bay</p>	<p>2% decrease in healthy seagrass coverage in representative areas over 5 years</p>	<p>Yes, currently have a seagrass monitoring program in one site in Bai Long Bay</p>
<p>7. Issue Statement: <i>Bai Long Bay seagrass beds are an important habitat to both living marine resources and divers and are being damaged by boat anchors due to lack of awareness about impacts on the seagrass from anchors; adequate alternatives to anchoring; and fully explored alternative dive spots.</i></p>					

ESTABLISHING MANAGEMENT STANDARDS

Worksheet 3.2: DEVELOPING SMART OBJECTIVES

(what you want to achieve in regards to your target resources as a result of your management plan)

A. Target Resource	B. Threat(s)	C. Outcome as a Result of Management Strategy (e.g., describe the change as quantifiable)	D. Where (e.g., exact location(s) or % of area)	E. When (by date or number of years based on stated starting point)
1.				
Objective 1:				
2.				
Objective 2:				
3.				
Objective 3:				
4.				
Objective 4:				

Is it SPECIFIC? Is it MEASURABLE? Is it ACHIEVEMENT or outcome oriented? Is it REALISTIC? Is it TIME limited?

IT'S A SMART OBJECTIVE!

ESTABLISHING MANAGEMENT STANDARDS

Worksheet 3.3: CONCEPTUAL MODEL FOR MANAGEMENT PLANNING

Target Resource	Issue Statement (what is the current condition of the resource – from worksheet 3.1)	Objective (where you would like to be as a result of your management plan – from worksheet 3.2)	Standard - LAC (level of acceptable change, the threshold at which you need to do something different)	What are you going to measure? (what indicator will you use to measure change)

How Is Your MPA Managed?

MODULE 4: The Planning Phase

4.1 IDENTIFYING SITE STRENGTHS & WEAKNESSES

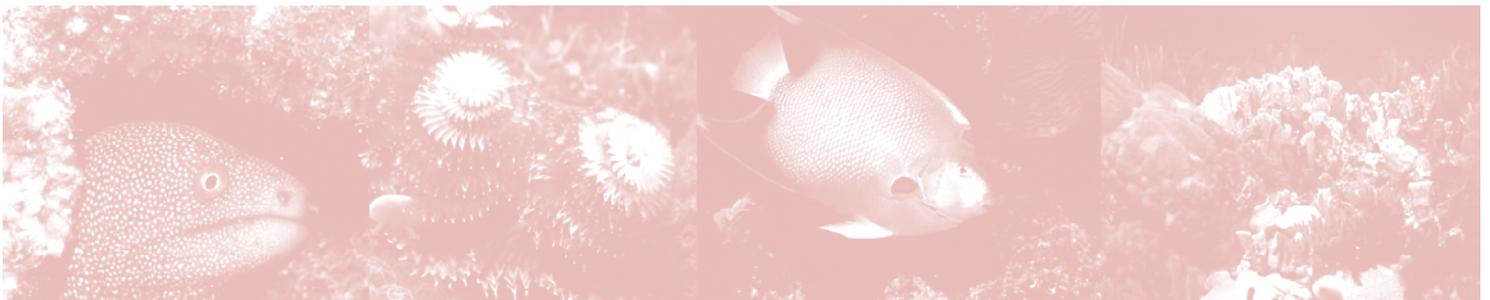
SWOT Analysis for Determining Realistic Management Strategies

4.2 DEVELOPING MANAGEMENT STRATEGIES

Selecting Management Strategies

Management Strategy Analysis

Fitting the Pieces Together Into the “Management Strategies” Model



OVERVIEW

Up to this point, all the process steps you have been working through have been in preparation for starting the development of the management plan. You will now begin to see how each step is not just a building block, but is the foundation of the management plan. The priority targets your planning team decided upon will be the cornerstone upon which you will build your management objectives and set standards or thresholds for protection. The priority threats your planning team decided upon will be the focus of your management objectives and ultimately your management strategies. Your management strategies will address the impacts generated by user groups, often through addressing the human behavior at the source of the impacts. Your final management strategies will link directly back to your management goals and objectives; how well they are linked will determine the effectiveness of your management plan.

LEARNING OBJECTIVES

- Identifying site strengths and weaknesses as a basis for developing realistic management strategies
- Identifying characteristics of a good management plan
- Selecting and analyzing management strategies
- Fitting the pieces together into a management strategies model

Photo Credit Chapter 4: Left: Steve Kipnis, Middle Left: Florida Keys National Marine Sanctuary, Middle Right: Chris Huss, Right: Mike White

All other photos in this section: Anne Walton



Lesson Plan

4.1 IDENTIFYING SITE STRENGTHS & WEAKNESSES

STAKEHOLDER-BASED DECISION-MAKING MODELS

- **Areas of Agreement:** *Often used among groups that have common goals, backgrounds or interests. Those areas where the group readily comes to agreement are accepted as the areas to move forward on, while other areas not agreed upon are put aside for later discussion. Advantage: Easy to move forward and stay focused on common interests.*
- **Majority Vote:** *Can be used in groups that have common goals and backgrounds or with groups with diverse interests. The majority vote decides what will be accepted to move forward on and what will not. Advantage: Easy to move forward quickly. Disadvantage: Little opportunity to understand other points of view.*
- **Consensus:** *Everyone in the group must come to a pre-determined level of acceptance of the recommendation put forth. Advantage: Everyone in the group understands other points of view and ultimately supports the decision, whether to a greater or lesser degree. Disadvantage: Takes good facilitation skills, patience and time.*

The importance of developing realistic management strategies has been mentioned before. To this end, we have created a series of checks and balances to ensure that the management planning team creates a realistic and implementable management plan. This step in the planning process allows the planning team to take some time to reflect on the strengths and weaknesses of the MPA, its setting, partnerships and institutional support mechanisms to determine which strategies might be realistic based on the capacity of the MPA.

A SWOT analysis is recommended although it is not the only tool you can use. “SWOT” indicates strengths, weaknesses, opportunities and threats. Built into the SWOT diagram is a place for the management objectives and consideration of management strategies you might want to propose. You can also use the SWOT analysis after you have selected your management strategies to evaluate them against the capacity of the site (human resources, financial resources, expertise, partnerships, community support, etc.) to implement this strategy.

In the end, all of the strategies and objectives should be analyzed as a whole package. Through this method a pattern of likely successes and failures are readily identifiable. And, this would be a good time to discuss with the planning team which management strategies or approaches might be most appropriate for the site, and which might not be met with success. It is important not to completely discard any specific strategy as they may rank more favorably when put through additional checks and balances.

The planning team will be making important decisions about the strategies that will become part of the management plan. If a decision-making process has not been established by the planning team, now would be a good time to discuss your options – whether it be through majority vote, consensus or any other means.



IDENTIFYING SITE STRENGTHS & WEAKNESSES

Example of questions to ask in your SWOT analysis:

INTERNAL	
<p>Strengths</p> <ul style="list-style-type: none"> • What aspect of the environment are you managing well? • What are the strengths of your staff? • What is special and unique about your site? • What are your assets (funding, equipment, people, data)? 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Is it difficult to enforce your zones? • Is there lack of management capacity (expertise) at your site? • Is your financing sustainable? • What are your site’s vulnerabilities?
<p>Opportunities</p> <ul style="list-style-type: none"> • Is the community supportive of your MPA? • Are there opportunities for partnerships and collaboration? • Are there recent events, developments or influences that might contribute to conservation of your site? 	<p>Threats</p> <ul style="list-style-type: none"> • Are there threats to the natural resources of your site? • Are there threats to the livelihood, or on-going economic viability of your local community? • What natural events are impacting your natural resources?
EXTERNAL	

Use your SWOT results to better understand your MPA and address the six questions below regarding how best to develop a plan that reflects the strengths and weaknesses of your site.

You’re SWOT results . . .	
Which of your identified strengths . . .	<ol style="list-style-type: none"> 1. . . . do you need to maintain in your future work? 2. . . . must you build on (increase) or strengthen?
Which of your identified opportunities . . .	<ol style="list-style-type: none"> 3. . . . do you need to emphasize or optimize when building your management plan?
Which of your identified weaknesses . . .	<ol style="list-style-type: none"> 4. . . . will you need to address prior to implementing your new management plan? 5. . . . requires you to opt out of certain management strategies?
Which of your identified threats . . .	<ol style="list-style-type: none"> 6. . . . requires that you take action to counter the impacts from those threats?



TIP

Before you engage your planning team in selecting management strategies, determine and come to FULL agreement on the decision making process for evaluating, prioritizing and analyzing your proposed strategies. Do NOT wait until after you have selected your strategies to determine how you are going to come to agreement and set priorities!

Planning Step 4.1: SWOT Analysis – A Guide for Developing Realistic Management Strategies

Objective: *To draft realistic and implementable management strategies based on the management capacity of each MPA.*

Activity: Use Worksheet 4.1: “SWOT Analysis – A Guide for Developing Realistic Management Strategies”. Work with team to perform SWOT Analysis to develop realistic management strategies based on internal and external strengths and weaknesses.



Handout 4.1:
MPA Management Plan Contents

Worksheet 4.1: SWOT Analysis for Developing Management Strategies

4.2 DEVELOPING MANAGEMENT STRATEGIES

At this phase of the planning process, the management planning team should be ready to start framing the strategies or activities for the management plan.

As with the other planning phases, not all steps covered in this guidebook are necessary for every MPA planning process and the order may be adjusted to meet site-specific or planning-team needs.

As part of developing an effective management plan, to the extent possible, you also will want to understand all the implications and impacts of each of your proposed management strategies. To that end, this phase of the planning process includes a series of checks and balances: (1) determining whether the proposed strategy is directly or indirectly addressing the threats to the target resources and (2) putting the management strategies into a model to see if they are going to achieve your stated objectives. The SWOT analysis you just conducted is one of those checks and balances. However, over the next couple of steps you will continue to evaluate your proposed management strategies.

CHARACTERISTICS OF A GOOD MANAGEMENT PLAN

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 clear explanations for all judgments
4. **Logical:** Based on a thorough assessment of the site and including clear rationale for all objectives and activities (e.g., based on the best biological 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 that can be monitored
7. **Focused:** Effective as a tool for site management, meeting the needs of managers and satisfying legal or other obligations



These checks and balances will help your planning team select the most appropriate strategies to address the threats to the target resources while ensuring that no predictable future consequences could potentially block successful implementation of the plan—for example, unintended negative social or economic impacts to the local community. Also, since most MPAs have limited financial and human resources, each strategy in the management plan must be a good investment of those limited resources, with the maximum return concerning target resource protection.

As with all phases of management planning, the planning team plays a critical role. At this point, you may also want to select the drafting team, who actually will be writing the management plan. The two to three individuals on the drafting team may or may not be part of the planning team. If they are not part of the planning team, include them in the process as observers or regularly communicate with them regarding management planning progress.

Considerations for developing management strategies

For those who have never worked on an MPA management plan before or who are trying to improve an existing management plan here is a checklist of five broad management categories to consider:

FIVE BROAD MANAGEMENT CATEGORIES TO ADDRESS IMPACTS ON TARGET RESOURCES

1. **INFLUENCE BEHAVIOR:** use of education and outreach to help users understand the impacts of their behavior and how to make choices to modify their behavior to lessen impacts on target resources.
2. **MODIFY BEHAVIOR:** use of best management practices (requires education and outreach); use of voluntary compliance (assumes user groups want to do the right thing once they know what the right behavior is).
3. **CONTROL BEHAVIOR:** use of regulations or prohibitions to control specific behaviors that are not compatible with protection of target resources; use of rationing (limiting use of an area), allocation (distributing limited use among competing groups) or zones (specific uses in specific areas) to control where and when specific types of uses occur.
4. **DETER BEHAVIOR:** use of interpretive enforcement or law enforcement actions to intercept or respond to inappropriate behavior; encouraging users to act in responsible ways and making explicit the prohibitions against and the consequences of undesired behavior.
5. **UNDERSTAND IMPACTS FROM BEHAVIOR:** monitor and evaluate to better understand current impacts and to anticipate future impacts on the target

Planning Step 4.2: Selecting Management Strategies

Objective: *To understand that management strategies consist of a range of approaches to managing, controlling or prohibiting different types of human behavior and their impacts on target resources.*

Activity:

- 1) Review Handout 4.2 “Decision Flow Chart”, and Handout 4.3 “Developing Management Strategies”.
- 2) Then, work with your team to fill out Worksheet 4.2: “Selecting Management Strategies”. This worksheet will provide some guidance on the range of, management strategies, based on different approaches to addressing impacts from human behavior.



Handout 4.2:
Decision Flow Chart



Handout 4.3: Developing Management Strategies

Worksheet 4.2: Selecting Management Strategies



Planning Step 4.3: Cross-walking the Management Strategies with the Zoning Plans

Objective: *To ensure that the management plan and zoning plan complement one another, and collectively constitute a complete plan in terms of meeting your MPA's management objectives.*

Activity:

- 1) With your planning team, refer to your zoning plan and fill out Worksheet 4.3: "Linking the Management Plan and Zoning Plan".
- 2) Use the checking system on the right hand side of the worksheet to ensure the plans work together, and, if not, go back and adjust either your zoning plan or your management plan.

Worksheet 4.3: Linking the Management Plan and the Zoning Plan

resources from human-use activities; understanding these patterns also will contribute to the understanding of change over time and the success (or failure) of management actions.

You do not need to consider the list of management categories shown above as a definitive list. These are the most common types of management strategies used in an MPA but you may have your own ideas.

Cross-walking the Management Strategies with the Zoning Plans

It is certainly difficult for MPA managers to juggle the interests and needs of the local community, user groups, and the objectives of species and habitat conservation – all in one area. Yet most of the time, this is what has to be done in a MPA. Zoning is one way to achieve such a balance, and when well-planned and implemented, zoning can be an effective tool for meeting multiple objectives within a MPA.

Zoning refers to the spatial or temporal allocation of specific uses and activities within well-defined portions of a larger management area. In this context the larger area is a MPA. Zonal management is a way to delineate areas of the coastal and marine environment for specific allowable or prohibited activities in time or space.

The use of zoning in MPAs can be used as a management tool to reduce competition or conflict between human uses of the MPA, while still allowing for conservation objectives to be met.

The process of developing a management plan includes considering the creation of zones to control use and access, and to address user conflicts. Some MPAs are simple and have just one zone while others follow the biosphere reserve model of concentric zones. Still other MPAs create a series of zones to manage activities such as boating, research, tourism, industrial use and general access. In any case, one of the first steps in the zoning process is to review your MPA's regulatory authority to ensure that you have the authority to control and regulate human-use activities in your MPA. Zonal management is very different from the longstanding concept of open access to the oceans. Different forms of zoning have occurred on land for thousands of years, and there have been traditional and customary marine tenure systems in certain locations throughout history as well. It is only more recently that formally planned zonal management systems are being applied to marine and coastal areas around the world.

Developing mutually agreed upon, effective and enforceable zones is both science and art. The science of zoning and regulations deals with the placement and size of zones and with drafting appropriate regulatory



language to help achieve the MPA's objectives. Zoning and regulations should, first and foremost, be based upon an accurate understanding of the biological and social, economic and cultural features of the area. The second step in the zoning and regulation development process is to review the site characterization. Presumably during the site characterization phase, the planning team was able to map the biological, physical, human, and use values of the MPA. Use this map as a reference when determining the location and spatial extent of zones.

The art of zoning and regulations refers to the cooperation of stakeholders on identifying mutually beneficial and enforceable zones and regulations. Often times, this process requires trade-offs in terms of determining which management objectives can be met by the zoning plan. The process of developing zones and regulations can be very complex and should take into account input from both stakeholders and technical experts. Their input should be considered in light of the objectives that have been developed for the area.

The Basis for Zoning

Before a zoning scheme can be developed, it is useful to consider the overall basis for zoning. Zoning in a MPA can be based entirely around protecting the ecological sensitivity of various habitats or around culturally or historically significant areas. Zoning in a MPA might also be based entirely on where various human use activities occur. Realistically, a zoning scheme will usually fall somewhere in between the two and aim to balance resource protection needs with user requirements.

Balancing Goals of MPAs with Objectives of Zones

A MPA often has multiple goals, and the use of zoning within a MPA can be implemented to address one or more of the following goals:

- Protect the ecosystem, species, or habitat critical to the survival of species
- Protect sensitive cultural or historical sites
- Reduce or eliminate conflict between resource users
- Manage resource users
- Provide a buffer between managed and unmanaged areas
- Reserve suitable areas for particular human uses while minimizing adverse impacts
- Reserve areas for specific purposes such as research and education

Setting up zones to achieve these goals requires consideration of specific and measurable objectives such as increasing fish abundance and diversity, stabilizing and improving living coral cover, increasing the catch of fishers operating in allowable zones or outside the MPA, and attracting diving tourists.



Exploring the concept of carrying capacity in an MPA training on Gorgona Island National Park (MPA), Colombia.



TIP

Lines on maps often polarize people and draw attention away from reaching the broader goals of the MPA. Avoid drawing any lines on maps until there is some agreement between stakeholders on the goals and objectives.

A generalized zoning scheme might include one or more of the following zones:

- **Tourist or marine park zone** – a zone in which fishing and collection are excluded so that visitors and the local community can appreciate reef life relatively undisturbed by human activities
- **Replenishing area** – areas closed to use or extraction, permanently or temporarily, to increase the biological productivity of the area or surrounding areas
- **Seasonal closure** – a designated time when extraction within an area is prohibited to allow for spawning, breeding, etc.
- **Limited use zone** – an area set aside for specific uses or where activities are regulated to a certain extent (e.g. a zone in which only artisanal fishing is allowed)
- **Scientific research zone** – areas set aside for scientific research only
- **Preservation or conservation zone** – areas in which very little or no human activity is allowed, particularly high impact uses

A zonation design for a MPA is really a balancing act on a spatial and/or temporal scale. There is no definitive list of zones and what they may or may not achieve. The use of zoning in a MPA depends upon the site, its unique characteristics, and the decisions of stakeholders. It is important to discuss zoning principles for MPAs early and often with stakeholders. Lines on maps often polarize people and draw attention away from reaching the broader goals of the MPA. Avoid drawing any lines on maps until there is some agreement between stakeholders on the goals and objectives.

It is also important to be realistic about what is possible for a certain MPA. For instance, it is difficult to divide small MPAs into zones. Also, creating too many zones within any size MPA can lead to confusion and ultimately an ineffective MPA. On the other hand, the right configuration of zones can provide for a graduated restriction of uses of the marine environment that meets the needs of users and ecosystems.

Basic Steps for Developing Zones and Regulations

- **STEP 1:** Review the MPA's regulatory authority to ensure that the MPA has the authority to control and regulate human-use activities in the MPA.
- **STEP 2:** Review your site characterization to develop a common and agreed-upon understanding by the management planning team of the location and extent of biological, physical, human-use and value (economic and intrinsic) setting of the MPA.
- **STEP 3:** Review the planning team's management plan goals and objectives as you will want to use zones and regulations as management



tools to meet those specific goals and objectives.

- **STEP 4:** Review the priority management strategies which the planning team has just completed to determine where there might be gaps in meeting the management objectives fully. Determine if zoning will help to fill those gaps.
- **STEP 5:** Using your map as a reference, determine how zones and regulations may be used to help meet management objectives, while also separating out user conflicts. Then, analyze the conservation, socioeconomic and governance implications of each of the zones based on their individual size and location; finally, collectively assess what the cumulative impacts of your whole zoning plan might be.

(see module 5 for more in depth information on zonal development)

Evaluating Management Strategies

The purpose of evaluating management strategies is to determine whether the proposed strategies are appropriate for addressing the impacts to target resources. This step of the planning process is a pre-cursor to the next step, prioritizing management strategies.

Because you are working within the confines of limited staff and financial resources, you should not include in the management plan any strategies or activities that produce anything less than the maximum return and benefits for the target resources you are working toward protecting. Using a series of pointed questions, you will be able to determine if each of the proposed management strategies is directly or indirectly hitting your target. At the end of this strategy evaluation process, you will use the conceptual model (Process Step 4.5) to inform you about the outputs and outcomes of each management strategy. If you find that the majority of your responses are not affirming the appropriateness of the strategy, then make the appropriate adjustments to them.

Planning Step 4.4: Management Strategy Evaluation

Objective: *To understand the practical application (and implications) of when a strategy is implemented at the site level.*

Activity:

1) Use Worksheet 4.4 “Management Strategy Evaluation” as a check-and-balance to ensure each management strategy is both helping you to meet your management objectives and can be practically implemented at the site level.

Worksheet 4.4: Management Strategy Evaluation



Planning Step 4.5: Fitting the Pieces Together into the “Management Strategies Model”

Objective: *To examine proposed management strategies to determine if they are meeting the objectives for protection of each of the target resources.*

Activity:

1) Use Worksheet 4.5 “Management Strategies Model” to see whether each of the proposed strategies is addressing the stated problem (threat) and meeting the management objectives established for each target resources.

2) Work the model both ways, from left to right and right to left. At each stage ask “if, then . . .” to see if your model hangs together.

Worksheet 4.5: Management Strategies Model

Building the conceptual model for the management plan

A conceptual model is a flow diagram for the management plan with defined objectives, inputs, outputs, and outcomes connected through causal links. It provides a visual depiction of what outcomes a program will produce and how it will produce them. Planning models like these are also called “logic models.”

Components of a management plan conceptual model include external and internal influences which are explained further below.

External influences:

- **Long-Term Outcomes:** Describe the intended ultimate effect or impacts of your management strategies on the issues (human uses and associated behavior) you are trying to address. These effects or impacts might be social, economic, environmental or individual consequences.
- **Mid-Term Outcomes:** Describe the expected impacts on the environment or audience’s behavior based on the continuation of the strategy towards meeting your management objectives.
- **Short-Term Outcomes:** Describe the expected immediate impacts of you’re your management strategies (e.g., audience reactions or abilities, change in the environment).

Internal influences:

- **Outputs:** Physical products resulting from strategies needed to achieve the desired outcomes (e.g., publications, plans, signage, curriculum).
- **Strategies:** What you spend your time doing in order to achieve the desired outcomes, to produce the necessary outputs or obtain resources.
- **Resources:** The time, money, human resources, office space, utilities, equipment, supplies, management, partner support and so on needed to accomplish the program.



Re-Cap Module 4: The Planning Phase



MAIN POINTS

• Identifying Site Strengths and Weaknesses

- we have created a series of checks and balances to ensure that the management planning team creates a realistic and implementable management plan
- this step in the planning process allows the planning team to take some time to reflect on the strengths and weaknesses of the MPA
- a SWOT analysis is recommended, although it is not the tool you can use

• Developing Management Strategies

- characteristics of a good management plan include: 1) clear, 2) concise, 3) accurate, 4) logical, 5) acceptable, 6) practical, 7) focused
- management strategies are intended to help you meet your management objectives
- management strategies are directed at changing the human behavior that is creating the impacts on your target resources
- in order to evaluate the effectiveness of each management strategy, we put the strategies through the second set of checks and balances – a subjective questionnaire on how the strategies are addressing the root cause of the problem

CONNECTION TO OTHER PROCESS STEPS

- **Developing Management Strategies** directly links to addressing impacts on target resources, meeting management objectives and measuring management effectiveness.

TYPICAL CHALLENGES

1. **SWOT analysis** – often the external influences are overlooked or not well understood in terms of their negative impacts or positive benefits
2. **Management Strategies** – often have difficulty linking 3 most important items to be addressed:
 - a) the only thing we can really manage is human behavior, so need to select a strategy that targets the type of behavioral change would be most effective,
 - b) in changing behavior we need to be sure that it addresses the root cause of the impact on our target resources, c) by addressing this behavior we are actually meeting our management objective

KEY DEFINITIONS

Long-Term Outcomes: Describe the intended ultimate impacts or objectives of the program on the issues, they might be social, economic, environmental or individual consequences.

Mid-Term Outcomes: Describe expected impacts on the environment or audience's behavior based on the continuation of the program or a number of projects.

Short-Term Outcomes: Describe the expected immediate impacts of the program or project (e.g., audience reactions or abilities, change in the environment).

Outputs: Physical products resulting from strategies needed to achieve the desired outcomes.

Strategies: What you spend your time doing in order to achieve the desired outcomes, produce the necessary outputs or obtain resources (also know as actions or activities)

Resources: The time, money, human resources, office space, utilities, equipment, supplies, management, partner support and so on needed to accomplish the program

THE PLANNING PHASE

Handout 4.1: SAMPLE 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

- Description of the management planning process that was used to develop the document
- Vision and conceptual model
- SWOT analysis
- Goals and objectives
- Management activities
- Zoning and regulations

Handout 4.1: SAMPLE CONTENTS OF AN EFFECTIVE MANAGEMENT PLAN

7. OPTIONAL SECTIONS

- Description of the management planning process that was used to develop the document
- Vision and conceptual model
- SWOT analysis
- Goals and objectives
- Management activities
- Zoning and regulations

8. APPENDICES (Suggested)

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

THE PLANNING PHASE

HANDOUT 4.2: Behavior-based Management Strategies Decision Making Flow Chart

IF . . . human use activities are impacting your MPA and you determine that . . .

User groups don't have enough information or don't know about the issue, and they have an impact on the environment	_____	_____	_____	<p>1. THEN INFLUENCE BEHAVIOR through education and outreach</p>
They have enough information and understand the impacts they are creating	and they care about it.	_____	_____	<p>2. THEN MODIFY BEHAVIOR through BMPs or voluntary compliance</p>
They have enough information and know about the impacts they are creating	but they don't care about it.	_____	_____	<p>3. THEN INFLUENCE BEHAVIOR by providing compelling evidence of the impacts and benefits to them</p> <p>CONTROL BEHAVIOR through zones, regulations, permits and enforcement</p>
They have enough information about the impacts	and they care about it,	but they lack viable options and alternatives that minimize impact or do not damage the environment	_____	<p>4. THEN CONTROL BEHAVIOR by containing activities to specific zones</p>
They have enough information about the impacts	and they care about it,	and they have options,	but they lack the skills or capacity to adopt alternatives and change behavior	<p>5. THEN BUILD CAPACITY train them in the necessary skills, or provide them with viable alternatives</p>
They have information on and about the impacts	and they care about it,	and they have options, skills, and access to resources,	but laws, policies, economic forces, or other barriers prevent them from practicing conservation	<p>6. THEN DEVELOP POLICY Link the target groups to partners or build capacity to lobby policymakers. Facilitate change, and advocate removal of barriers. Provide incentives. REDIRECT Recommend to other agencies to address impacts.</p>
They have information on and about the impacts	and they may or may not care about it,	and they have options, skills, and access to resources,	but the activity cannot be modified in any way to be compatible with the MPA management objectives	<p>7. THEN EXCLUDE ACTIVITY anywhere in your MPA by using a regulation to prohibit that use</p>

HANDOUT 4.3: Developing Management Strategies

Management Category		Description of Management Strategies
		CONTROL BEHAVIOR
Zoning for Specific Uses	Used primarily to 1) cluster activities that are similar in terms of impacts and spatial/temporal requirements; and/or 2) to specifically separate activities that are not compatible with one another. ⇒ Zoning for specific uses might include: wind farms, military operations, sand and gravel mining, marine transportation, offshore mariculture	
Zoning by Objective	Primarily used to meet management objectives of MPA. ⇒ Zoning by objective might include: economic development areas, conservation areas, multiple use areas	
Zones for Prohibiting Specific Uses	Used to prohibit a specific use that is not compatible with the primary objectives of the MPA. Prohibition zones may be spatially discrete areas, or might apply to the entire MPA. ⇒ Prohibition zones might include something like the exclusion of oil and gas development anywhere in the MPA.	
Temporal Zones	Temporal zones are most often applied to coincide with specific periods in the life history of a living marine resource. ⇒ Examples of temporal zones might include the closing of a beach to tourism during turtle nesting season or fishing closure during spawning season.	
Regulations	Regulations are used to regulate which specific activities can or cannot (which are prohibited) in an MPA or a specific zone. Each zone will most likely have it's own set of regulations. ⇒ For example, regulations for a "fishing zone" might specifically state that hook and line fishing is allowed, while any bottom contact gear is prohibited.	
Permits	Allows certain activities to take place within the MPA or in specific zones based on the conditions of the permit. ⇒ Example of a research permit is one that allows for research activities to take place in the conservation zones. If no bottom contact takes place as a result of the research activity. In addition to this requirement, the research PI may be required to file a research methods plan prior to receiving the permit, or required to share data with the MPA.	
		MODIFY BEHAVIOR
Best Management Practices (BMPs)	Best Management Practices set a standard for how an activity is to be conducted (required) or should be conducted (voluntary). ⇒ An example of a BMP for a dive boat operation is that before each dive a site orientation is required to be given by the dive master for the divers to explain the dive site, fragile environments and diving etiquette.	
Voluntary Compliance	Voluntary compliance can apply to BMPs and seeks to educate the user group about the impacts from their specific activity with the intent that they will choose to comply with the recommendations of a voluntary action or BMP. ⇒ An example of voluntary compliance would be to ask fisherman not to fish during spawning season.	
Enforcement	Increase enforcement presence on the water and shoreline, and improve interpretive enforcement (education and outreach) to increase compliance with regulations. This action is recommended for every MPA. ⇒ Invest in training and paying local community members to conduct on-going shoreline observations and maintain presence on the water.	
		CREATE INCENTIVES
User Fees, Access Fees or License Fees	A fee system puts an economic value, not so much on the marine resources in your MPA, but rather on the ability to use the marine space or have access to the resources in your MPA. ⇒ For example, license fees (or user fees) can be used along with a license, that might give the right to fishing boats or dive boats to access the marine resources in your MPA.	
Right of Way Fees	Right of way fees are most often used for giving the right (or priority) to transit a waterway to an industry or type of vessel.	

THE PLANNING PHASE

WORKSHEET 4.1: SWOT Analysis – A Guide for Developing Realistic Management Strategies

INTERNAL	
Strengths	Weaknesses
Opportunities	Threats
EXTERNAL	

THE PLANNING PHASE

Worksheet 4.3: LINKING THE MANAGEMENT PLAN WITH THE ZONING PLAN

ZONING PLAN					MANAGEMENT PLAN				EVALUATION		
Name of Zone (list all zones)	Zone Objective	Allowed Activities	Permit Required (conditions)	Prohibited Activities	Target Resource(s) Protected by this Zone?	Target Resource Objective	Current Human Use Activities Impacting this Target Resource	Proposed Management Actions	Does Zoning Plan Already Address All Impacts on Target Resource(s)?	Do Zoning Plan and Management Plan Now Complement Each Other?	Are There Gaps in Protecting the Target Resource(s)
Low Impact Tourism Zone	Allow for sustainable recreational use while generating income for local communities	Sailing Diving Kayaking Swimming	X	Industrial No motorized vessels except dive boats	seagrass coral reefs	Increase coverage of seagrass by 5% decrease damage by anchors on coral by 20%	Diving Diving trawling	Education on additional dive sites, mooring buoys Same as above Prohibit trawling	Does not currently address anchoring impacts	Yes, with additional dive sites, mooring buoys	No

THE PLANNING PHASE

Worksheet 4.4: MANAGEMENT STRATEGY EVALUATION

Use the matrix below to conduct a subjective evaluation of the collective management strategies you are proposing to address the impacts on each target resource (refer to Worksheet 4.2 for your management strategies). It might be a good idea to eliminate any management strategies that don't meet this basic criterion. Please note that this worksheet can accommodate an evaluation of up to 3 target resources. If you have more than that number of target resources, you will need to fill out another one of these worksheets.

QUESTIONS	Target Resource #1	Target Resource #2	Target Resource #3
Please list each of your target resources:			
Do the management strategies you are proposing adequately address the root cause of the problem?	Yes / Partially/ No	Yes / Partially/ No	Yes / Partially/ No
Do you have the authority to implement all of the proposed management strategies?	Yes / No	Yes / No	Yes / No
Are the management strategies direct or indirect in terms of how they addresses user behavior?	Direct / Indirect	Direct / Indirect	Direct / Indirect
Does the management strategy affect a large or small number of user groups ?	Small / Large	Small / Large	Small / Large
Are those users who will be primarily affected by your management strategies those who are directly responsible for the impact(s) in question?	Yes / No	Yes / No	Yes / No
Do the management strategies affect an activity to which users attach minimal, moderate, or great importance?	Minimal / Moderate / Great	Minimal / Moderate / Great	Minimal / Moderate / Great
Is user group resistance to the management strategies likely or unlikely?	Unlikely / Likely	Unlikely / Likely	Unlikely / Likely
Consider the costs to managers in terms of management strategy implementation and administration, including facility construction, operation, and maintenance, staff workload, and communication and enforcement costs. Are the costs feasible/affordable?	Yes / No	Yes / No	Yes / No
Are the management strategies ones that avoid or minimize creating new additional problems?	Yes / No	Yes / No	Yes / No

THE PLANNING PHASE

WORKSHEET 4.5: Management Strategies Model

TARGET RESOURCES <i>What are you trying to protect?</i>	SMART OBJECTIVES <i>What are you trying to achieve?</i>	MANAGEMENT STRATEGIES TO ADDRESS THREAT <i>What activities will you undertake to meet your objective?</i>	OUTPUTS <i>What product will be created to meet your objective?</i>	SHORT-TERM OUTCOME <i>What will change as a result of your management action?</i>	MID-TERM OUTCOME <i>What will change as a result of your management action?</i>	LONG-TERM OUTCOME <i>What will change as a result of your management action?</i>	INDICATOR <i>How do you know if you're meeting your objective?</i>	RESOURCES TO IMPLEMENT <i>What resources are needed to carry out your strategy?</i>
Seagrass	Increased coverage of seagrass beds by 5% in the next three years in sampling sites in Bai Long Bay	Educate dive operators	Training course for dive operators	50% of operators complete training by 2013	100% of dive operators complete training by 2014	By 2015 all dive operators voluntarily adopt BMPs	Number of dive boat operators trained	½ time staff, development of training course and materials
		Install mooring buoys	Buoys installed	Train MPA staff to install and maintain buoys	Mooring buoys system in place	By 2015 100% compliance w/ mooring buoy	Number of dive boats anchoring in Bai Long Bay	Train 3 staff, purchase buoys, compressor, boat
		Identify new dive sites	Publication of dive sites	Distribute info on new dive sites to dive operators	By 2015 - 8 new dive sites in use	Number of dive boats in Bai Long Bay is < 50% of fleet	% of dive boat in Bai Long Bay on any given day	Hire contractor, provide boat, publish sites and distribute
		Permit dive boats	Permitting system in place	Develop projection for carrying capacity of dive boats	All dive boats complying with permit system	Carrying capacity numbers are tested and quantified	Number of dive boats using MPA is compatible with objective	½ time staff, set up online permit system

How Is Your MPA Managed?

MODULE 5: The Planning Phase

5.1 ADDITIONAL MANAGEMENT STRATEGIES

Additional Management Considerations

5.2 PRIORITIZING MANAGEMENT STRATEGIES

Prioritizing Management Strategies

Completing the Management Strategies Model

5.3 IMPACTS ON STAKEHOLDERS

Management Action Impacts on Stakeholders

Stakeholder Roles in Implementation of Management Plan

5.4 MPA NETWORKS

Building Network-wide Management Strategies



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 OSPAR Network of Marine Protected Areas: http://www.ospar.org/eng/html/MPA_eng.htm
- Photo Credit Chapter 5: Left: Harold Hudsons, Middle Left: Florida Keys National Marine Sanctuary, Middle Right: Frank and Joyce Burek, Right: Frank and Joyce Burek
 All other photos in this section: Anne Walton



OVERVIEW

The development of your management plan has been focused on addressing the threats to your target resources. In addition to these “threat-based” management plans, each MPA needs to be supported by an administrative structure, infrastructure and financial plan. The management strategies themselves will need to be further supported by an enforcement plan, supplemental science and education plans, partnerships and interagency coordination plans. These are all important components of the management plan that need to be considered, and incorporated into the plan before all the management strategies are prioritized. These “additional management strategies” also require the allocation of staff time and resources, so decisions will need to be made at this time about what will stay in the plan as a priority for the next five years.

LEARNING OBJECTIVES

- Understanding the purpose and need for additional management considerations
- Selecting and analyzing additional management strategies
- Prioritizing management strategies
- Folding all the management strategies (“threat-based” and “additional management actions”) into a single management plan
- Considering which management strategies may be applied at the network scale



Lesson Plan

5.1 ADDITIONAL MANAGEMENT STRATEGIES

There are numerous optional management plan components that play an important support role to the management plan. Many of these components are critical to MPA operation and successful implementation of the management plan. You may choose to incorporate these components into the management plan or treat them as stand-alone pieces that complement the management plan.

1. Administrative Plan: You will want to develop an administrative plan based on the size, complexity and professional needs for implementing the management plan. The administrative plan should include a general staffing plan, roles and responsibilities and a hierarchical relationship of staffing positions. In order to maintain a high level of professionalism for staff, it is worth carefully considering competency standards for each position and capacity training to ensure that staff have opportunities to continually grow into their positions (often referred to as human resource management). A common problem among MPAs is their inability to retain well-trained staff. To the degree you can maintain high levels of professionalism, you are more likely to retain staff. As most MPAs don't have adequate funding for staff, consider building strong partnerships with a network of MPAs in order to share staff with special skills (e.g., GIS specialist); with educational and research institutions; and with NGOs.

2. Equipment and Infrastructure Plan: Part and parcel to any MPA are operations, which includes physical infrastructure. There is a practical need for infrastructure in that it provides office space and other buildings (e.g., visitor centers, labs), maintenance equipment, boats, energy systems, vehicles, radio and telecommunications, SCUBA equipment and mooring buoys. Infrastructure also provides a physical presence for the MPA management authority, making you more accessible to the public, a deterrent to possible violators, and a source of information to visitors. Building infrastructure requires a large investment, however, and should be weighed based on the return of the investment.

3. Partnership Plan: It can be very helpful to identify the roles and responsibilities of various partners for MPA management plan implementation. Most MPAs have multiple partners involved in management, including government management authorities, educational and research institutions, key stakeholders and community members, and NGOs. You may want to prepare a description of roles and responsibilities for each of the major partners involved in implementation. This plan should be built in consideration of, and to complement the administrative plan.



Using words of wisdom as a management approach in Mamallapuram, Tamil Nadu, India



TIP

It is becoming common for NGOs and other entities to fund management planning processes or even the early stages of management plan implementation. However, when the term of the funded project is over, so is the funding. Plan for this scenario well before completing the management plan to ensure long-term funding sources are available for implementing the management plan.

 **4. 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 MPAs, there is no active enforcement group dedicated solely to MPA enforcement. Enforcement may be carried out by MPA enforcement officers, the military or coast guard, the municipal government such as fisheries officers, or by local community members using social pressure. If you are going to have a zonal plan and/or regulations, your management plan needs to clearly state with whom the management authority lies, its enforcement approaches or tactics, including fees or fine schedules or other punishments. An enforcement plan should also include “interpretive enforcement,” an outreach plan to contact and inform user groups about the importance of the MPA, its boundaries, and the location and purpose of zones and regulations.

 **5. Budget and Financing Plan:** Any plan is only as useful as there is sufficient long-term funding to implement it. As a result, it is very helpful to identify both the full and incremental costs of implementing the management plan. Funding scenarios should be directly linked to management plan priorities. In other words, as funding becomes available, the highest priority management strategies should be implemented. If the MPA is government-sanctioned, it might be worth including funding agencies/authorities early on in the management planning process. The more the finance ministry or agency understands about the MPA and its importance, the more likely they are to provide funding for the management plan. You might consider having an agency representative on the planning team; at the very least, meet with them on a regular basis to inform them of your process and progress. Other sources of funding might include user fees, direct revenue, enforcement fines, concessionaire fees, environmental trust funds and donor contributions.

 **6. Implementation Timelines:** Implementation timelines are linked to both the management plan priorities and the budget. A timeline is an important organizing and planning tool that allows you to pace your management activities in accordance with your predetermined management priorities, staffing capabilities, partnerships and levels of funding. Your timeline will feed directly into the site and staff work plan. It is also a great tool for communicating to the public what, when and how you plan to implement the management plan, setting up realistic expectations for the MPA, government authorities and local communities. Built into every timeline needs to be an element of flexibility. Inherent in all resource management settings is the uncertainty of unplanned, catastrophic, emerging or priority events or occurrences (e.g., oil spill) that will immediately change your priorities.



7. Monitoring and Evaluation Plan: The monitoring of biological, social and governance indicators will help you determine if management strategies are moving you toward meeting your management objectives. If so, then you have an effective management plan; if not, then you may need to discover what the indicators are telling you. It may be necessary to adapt a new or modified management strategy. Evaluations also help to inform MPA management about the need to improve project and management efficiency and how to go about it. The implementation of evaluation plans and monitoring does require staff time and financial resources, so this must be considered during the planning process.

8. Livelihood Diversification Plan: In many cases—particularly for MPAs created to protect fisheries resources—livelihood diversification planning is the responsibility of the MPA. In some cases, it may be mandated as a requirement of the MPA or a funding requirement for MPA designation and management planning projects. Determinations on the type(s) of livelihood diversification programs should be linked to the livelihoods potentially impacted by the MPA’s zoning plans and regulations. Livelihood diversification planning requires specific staff skills; identification of funding sources; development of credit schemes; and an understanding of social, economic and food-security consequences. When developing a livelihood diversification plan, review the positive and negative impacts of your management strategies to stakeholders to better understand what to suggest. This may help you to prioritize groups to start working with on diversified livelihoods.

9. Education and Awareness Building Plan: The importance of a well-executed and supported education and awareness building plan cannot be overstated. Education and awareness programs should be developed to target specific audiences, with tailored messages to each. Education and awareness building activities can target decision-makers, informing them about the importance of the MPA. Management strategies may target resource managers, informing them about resource management decisions. You may also want to target stakeholders to update them regarding successes and the added value of having an MPA, to educate them about any restrictions or zones in the MPA. Most of all, education activities should focus on informing, building stewardship and a sense of responsibility, and changing behavior towards transforming every individual into a conservationist. Children and young adults make an excellent audience as they will influence the older generation.

10. Interagency Coordination Plan: Most MPA boundaries overlay areas where there are other jurisdictional authorities. A coastal, nearshore or even island MPA’s authority may be shared, superseded, or ceded to other authorities such as state, municipal or provincial concerns [authorities]. Local communities may also have tenure, communal or tribal

Planning Step 5.1: Developing Additional Management Components

Objective: *To ensure that all the pieces for successful implementation are considered within the context of the management plan.*

Activity: With the planning team, use Worksheet 5.1 “Developing Additional Management Components” to determine which programmatic activities have not already been captured in the framework that specifically addresses resource management issues. You will be adding these to the rest of your plan in order to bring it to completion.

Worksheet 5.1: Developing Additional Management Components



authority. MPAs also overlap authority with the military, Coast Guard, fisheries enforcement or drug enforcement agencies. It is important to make an effort early on to maintain communication and coordination with these organizations [agencies] or communities. Geographic extent of, types of, and relationships between different authorities should be clarified among agencies and clearly communicated within the management plan. Shared jurisdictional authority provides an opportunity for strong partnerships among agencies and between agencies and other stakeholders. In addition, other government bureaus [agencies] have the authority to approve the MPA management plan or provide funding for the management plan. Again, coordinating early in the management planning process and getting “buy-in” from other agencies will lead to successful implementation of the management plan.

11. New and Emerging Issues: One of the most overlooked areas for  consideration in an MPA management plan is “new and emerging issues.” The reason being such issues seem to warrant no immediate importance, if they are noticed at all. The reason it is overlooked is that these issues do not seem to be of immediate importance, if they are noticed at all. New and emerging issues can be associated with technology such as wave or wind energy; can be a result of natural perturbations such as sea-surface temperature change and associated coral bleaching; or the result of a catastrophic event such as a tsunami, hurricane or flood. New and emerging issues can also be associated with factors that are not even imaginable when putting together a management plan. The best management planning includes an integrated system whereby MPA staff continually monitor and evaluate current events and activities in anticipation that new information, opportunities and challenges will arise. Another way to plan for new and emerging issues is to build flexibility into your management plan so that resource management priorities can easily shift as necessary.



5.2 PRIORITIZING MANAGEMENT STRATEGIES

During the last several planning steps you have developed objectives, identified strategies to meet those objectives, and evaluated those strategies to determine how well they address the root problem (impacts). The next step is to rank your strategies based on their practical application at the site level.

One of the biggest problems with MPA management plan development has to do with the inability of many sites to successfully implement their plans. This is the time to evaluate whether or not the elements of your plan are realistic, and which management strategies should be given highest priority based on the likelihood of success of the plan as a whole. Problems encountered in the implementation of the plan may stem from flaws in the development of the plan – from content and style to creating unreasonable expectations about what can actually be achieved. As we all know, most MPAs have neither sufficient staffing nor financial resources to carry out all of the proposed and desired management strategies developed during the planning process. By ranking your proposed management strategies, you can start to address both the realistic capacity of your site to implement the plan, as well as some of the other pitfalls to success implementation (see side bar).

Two items to consider when you prioritize your management strategies: 1) do you want to rank or rate your proposed management actions and 2) what will you use for prioritization criteria? The most important approach is one of consistency throughout the prioritization process, both in terms of rating or ranking and choice of criteria.

We use a ranking process (comparison of one proposed management strategy to all other proposed management strategies) as opposed to a rating process (evaluating each proposed management strategy independently of one another). The reason for this being that some decision-makers want to compare values of proposed management strategies. Others feel it is better to look at the value of each proposed strategy without making the judgment of how it compares to other management strategies. Either way works. In the end, however, no matter which approach you use, the planning team will need to come to consensus on the top priority management strategies.

We have found that the criteria we use for prioritizing management strategies is fairly standard criteria and can be used for either the ranking or rating of management strategies. It is up to the planning team to establish and agree on the criteria they want to use. It is important, however, to do so before you start the prioritization process.

IMPLEMENTATION CHALLENGES TO CONSIDER

- *Insufficient budgets*
- *Insufficient site capacity*
- *Insufficient staff capacity*
- *Unrealistic management plan strategies*
- *Failure to assign responsibilities for implementation of management strategies*
- *Financial, managerial and/or political instability*
- *Failure to establish clear and realistic priorities*



Planning Step 5.2: Prioritizing Management Strategies

Objective: *To use a relative comparison model to determine the most appropriate (based on given criteria) priority management strategies.*

Activity:

- 1) With your planning team, use Worksheet 5.2 “Prioritizing Management Strategies”. Evaluate and prioritize all proposed management strategies (including the “other considerations” that you just added from exercise 5.1.
- 2) Discuss with your team the outcome of the exercise and come to agreement on the priority strategies

Worksheet 5.2: Prioritizing Management Strategies

A sample of the criteria:

- **CAPACITY** your MPA has the ability to implement this strategy now (adequate staff, expertise, partnerships, equipment, opportunities).
- **ENABLING ENVIRONMENT** you have the authority to implement this strategy and the political will to support this strategy.
- **FUNDING** the potential for funding this strategy based on immediate availability of funds, the ability to raise funds, and the partnerships that could be drawn on to provide financial support.
- **SUPPORT** from the public that exists right now for implementing this management strategy. Balance support against the amount of conflict that may result with or within stakeholder groups as a result of implementing this strategy.
- **THREATS** describe the total number of threats addressed by this single management strategy.
- **TARGETS** list the total number of target resources that will benefit from this management strategy.
- **URGENCY** describe how urgent is it to use this strategy to address impacts to your target resources.

After you have completed the prioritization process, it is a good idea to retain a record of the proposed management strategies, no matter how low of a priority rating each strategy has. This allows you to access management strategies with even the lowest priority rating if the right opportunity presents itself. This also allows you to retain a record of the full range of recommendations that came out of your planning process. The record may be not only useful for your MPA, but for your constituency as well.



5.3 IMPACTS ON STAKEHOLDERS

MPAs are used by many stakeholders, so it is important to consider how and to what degree management strategies may impact these stakeholders. This is, in part, why it is important to have stakeholder input at key decision-making points in the development of the management plan.

Impacts to stakeholders from proposed management strategies can be negative or positive. Strive to understand (1) what the potential impacts might be and whether they are negative or positive, (2) who they might impact, and (3) how stakeholders will react to the management strategy.

If, through analysis, you find that a management strategy will most likely impact stakeholders negatively, re-evaluate the proposed strategy to determine if it can be modified to reduce the negative impact on stakeholders while effectively addressing the impacts to target resources. For example, instead of closing off the entire MPA to fishing, focus on areas for closure that are spawning aggregation areas or fish nurseries (e.g. seagrass beds).

If impacts are potentially positive, clearly identify benefits to stakeholders; establish a communication plan to inform stakeholders about those benefits; and regularly measure, assess and communicate those benefits to stakeholders so they appreciate and understand the value of the MPA management strategy.

If MPA managers don't have enough background information to evaluate the potential impacts to stakeholders, they might want to go directly to those affected to gather that information. If the planning team or a member of the planning team wants to meet directly with stakeholders, first send someone who the stakeholders trust. Then consider implementing some of the participatory techniques described previously in the section on "Working with Stakeholders." Planning a meeting with an organized process for extracting information is more likely to net useful results. Meeting with stakeholders should be structured to help them understand impacts and develop with possible solutions that meet the MPA's management objectives and stakeholders' objectives.

Planning Step 5.3: Impacts on Stakeholders

Objective: *To understand that every management strategy, particularly zones and regulations, could have an impact on different stakeholder groups.*

Activity:

1) Brainstorm with your planning team to determine potential impacts (+ and -) on user groups from each management strategy (particularly regulations and zones) and fill out Worksheet 5.3: "Stakeholder Analysis".

2) Work with your team to project what you think the stakeholder response to your management strategies will be and fill out Worksheet 5.4: "Stakeholder Response Matrix".

Worksheet 5.3: Stakeholder Analysis

Worksheet 5.4: Stakeholder Response Matrix



5.4 MPA NETWORKS



Handout 5.1: Key Aspects of MPA Networks



Handout 5.2: Checklist of Operational Steps

An MPA network can be defined as a collection of individual MPAs operating cooperatively and synergistically at various spatial scales, and with a range of protection levels that are designed to meet objectives that a single MPA cannot achieve. In isolation, small MPAs, for instance, may not support migratory fish populations or marine mammals. To ensure that young marine organisms are available to replenish and sustain populations within MPAs and key times in the life history of these animals are protected, the area of protection must be fairly large. However, in many regions economic, social, and political constraints make it impractical to create one single large MPA of sufficient size to support viable, self-sustaining, populations of all species. Establishing networks of several to many small to moderately sized MPAs may help to reduce socioeconomic impacts without compromising conservation and fisheries benefits (PISCO 2007). Furthermore, well-planned networks provide important spatial links needed to maintain ecosystem processes and connectivity, as well as improve resilience by spreading risk in the case of localized disasters, climate change, failures in management or other hazards, and thus help to ensure the long-term sustainability of populations better than single sites (NRC 2000).

As science and experience continues to provide more evidence of the importance of biological connectivity and resilience in the face of climate change, natural disasters, and economic, political, and social fluxes, networks of MPAs are increasingly valuable management tools. MPA networks can contribute to sustainable development goals by fostering integrated ocean and coastal management through three inter-related functions and benefits:

- **Ecological** – a network can help maintain functional marine ecosystems by encompassing the temporal and spatial scales of ecological systems.
- **Social** – a network can help resolve and manage conflicts in the use of natural resources.
- **Economical** – a network can facilitate the efficient use of resources.

The implementation of MPA networks that cover all major marine habitats and ecosystems will be a major step in restoring and sustaining the health of the oceans. If widely adopted, MPA networks can help stem the losses of marine resources and recover not only marine life, but entire ecosystems. When effective, MPA networks can magnify benefits of individual sites, protect large-scale processes, slow the loss of endangered marine species, and restore depleted fisheries.



Key Concept

Components of a resilient MPA network include:

- Effective management
- Risk spreading through inclusion of replicates of representative habitats
- Full protection of critical areas that can serve as reliable sources of seed for replenishment/preserve ecological function

The objectives for scaling up to MPA networks are to:

- Conserve biological diversity and associated ecosystems;
- Protect critical spawning and nursery habitats;
- Protect sites with minimal direct human impact to help them recover from other stresses such as increased ocean temperature;
- Provide settlement and growth areas for marine species and spillover benefits to adjacent areas;
- Provide focal points for educating the public about marine ecosystems and human impacts upon them;
- Provide for nature-based recreation and tourism;
- Provide undisturbed control or reference sites that serve as baselines for scientific research and for designing and evaluating other areas; and
- Provide a means of sharing costs and benefits among local communities, the private sector, regional and national governments, and any other actors or stakeholders.
- Provide appropriate administrative framework to ensure that there is consistent management and monitoring within the network.

MPA networks, formed through the scaling up of single MPAs to zoned networks with multiple use MPAs, can provide an ecosystem-based management approach (Christie et al. 2007). Large scale, multiple-use protected areas demonstrate the concept of ecosystem management, where the geographical extent of protection is based on the movements of organisms and physically linked processes. In recognition of these linkages, MPA managers and planners should consider protection of ecosystem function, structure, and integrity, in addition to individual resources (such as specific species or habitats) and physical characteristics (Agardy and Staub 2006) when developing MPA networks. MPA networks are set in a world context that varies by place that will affect their success. Considering and adapting to the following contextual variables is essential:

1. Institutional and governance considerations acknowledge institutional structures and the importance of integrating actions within a broader management context.
2. Economic and social considerations form the three pillars of sustainable development alongside ecological design criteria.



Artisanal fisherman mending nets in southern India



3. Spatial and temporal considerations acknowledge that ecosystems function at different spatial scales and change over time due to factors such as human activities and climate change.
4. Scientific and information management considerations build upon the use of the best available information for both planning and management purposes.

Process Steps:

The six areas of best practice for planning MPA networks include:

- Clearly defined goals and objectives
- Legal authority and long-term political commitment
- Incorporate stakeholders
- Use of best available information and precautionary approach
- Integrated management framework
- Adaptive management measures

Five guidelines form the core of MPA network design and can be addressed by employing specific planning and implementation approaches. These design principles should be applied in the context of emerging best practices and the broader considerations involved in making MPAs happen. The following guidelines are intended to provide a framework on which managers and planners can initiate, assess, and modify the MPA network design to reach an effective MPA network:

1. Include the full range of biodiversity present in the bio-geographic region,
2. Ensure ecologically significant areas are incorporated,
3. Maintain long-term protection,
4. Ensure ecological linkages, and,
5. Ensure maximum contribution of individual MPAs to the network.

Planners and network designers should consider three broad categories of objectives:

- **Ecological objectives.** These typically seek to protect, manage and/or restore marine ecosystems and their components, including systems, structure, function, and integrity, as well as wildlife and geographic features. Planners must especially consider those objectives that a single MPA cannot achieve.
- **Economic objectives.** To determine a network's economic objectives, network planners must understand current resource uses, users, and economic prospects for the area. They must assess how the region will benefit from the network and who may suffer negative economic



impacts. Economic considerations should involve a short- and long-term view of costs and benefits, as well as a perspective on how local needs may interface with national sustainable development goals. Economic objectives may seek to distribute benefits to offset short-term costs incurred by limiting unsustainable uses or to achieve national poverty reduction goals.

- **Socio-cultural objectives.** MPA networks should contribute to local communities' quality of life. Fostering understanding, ownership and support for MPA networks includes assessing the full range of benefits that biodiversity provides, including those that directly affect human health and well being. Exploring social and cultural values, how those values are threatened, and the costs and benefits involved in meeting socio-cultural objectives will help ensure success. Such values might include citizens' pride in the uniqueness of a natural area, local traditions that involve activities such as fishing or hunting, and places considered sacred to local groups.

Examples of Different Network Types

Clearly defined goals in Mesoamerican Reef (MAR) region: In the efforts to scale up the MPA framework in the Mesoamerican Reef (MAR) region, the TNC MAR Program has set as a goal the development of a network of MPA that are resilient to bleaching events through representation and replication and conservation of key biological processes. This network goal has helped planners and managers concentrate the initial efforts on the elements of representation and replication, and critical areas through regional assessments for identification of priority conservation sites.

Legal authority and long-term political commitment: Developing a Framework for a National System of MPAs for the United States of America

Presidential Executive Order 13158 directed the establishment of a National Marine Protected Areas Center to:

- develop a framework for a national system of MPAs;
- lead consultation with federal, state, territorial and tribal agencies, regional fishery management councils and other entities to promote coordination of federal, state, territorial, and tribal actions to establish and manage MPAs;
- partner with government entities to conduct research, analysis, and exploration; and
- provide federal, state, territorial, tribal, and local governments with the information, technologies, and strategies to support the system.





Twelve MPAs in Bird's Head Seascape, Indonesia, taking a network approach to marine spatial planning.

The challenge presented by Executive Order 13158 is an enormous one. It involves identifying national and regional goals through a process that brings together diverse levels of government, multiple agencies within each of those levels, and varied stakeholders, each with their own goals and priorities. This is a work in progress; however, networking across many levels of government (including federal, states and territories, tribal, and regional institutions), multiple agencies, and the broad stakeholder community (individuals, industry, environmental organizations, etc.) covering three oceans and the Great Lakes makes access to information critical.

The MPA Center is currently developing a framework for a national system of MPAs. To do so, it is collecting stakeholder input through meetings and workshops with federal and state government partners, regional dialogue sessions for the interested public, ongoing dialogues with industry and environmental organizations, presentations at meetings and conferences, and the MPA Center's website.

It is too early in the process to gauge the success of this effort. Yet the 30 members of the MPA Federal Advisory Committee, drawn from across industrial sectors, non-federal governments, environmental organizations and academia were able to reach consensus recommendations in June 2005 on the goal of a national MPA system, its objectives, and how it could be established. This consensus bodes well for the ultimate success of this ambitious effort.

For further information, see:

- The “National System” section of the www.mpa.gov web site, which includes routinely updated information about the developing process, presentations, documents, and the results of public and agency meetings.

Incorporating stakeholders: Develop and maintain effective coordination and Linkages Across Sectors and Jurisdictions in the Great Barrier Marine Park

The Great Barrier Reef Marine Park (GBRMP) is the world's largest MPA covering 344,400 km² (an area nearly the size of Japan, or bigger than the United Kingdom, Holland and Switzerland combined). The entire GBRMP is a multiple-use park, with eight different zone types designated in specific areas to separate conflicting uses. The zoning, which is a cornerstone of the GBRMP management approach, recently underwent a major review and a new zoning plan became law on 1 July 2004.

In the zoning review, the proportion of the GBRMP protected by ‘no-take’ zones (locally-known as ‘green zones’) increased from less than 5% to more



than 33% and now 'representative' examples of each of the 70 broad habitat types across the entire Marine Park are protected in 'green zones'. Anyone can enter a 'green zone' and activities such as boating, swimming, sailing and snorkeling are allowed; however, all extractive activities such as fishing or collecting are not allowed.

Given that the entire staff of the Federal managing agency directly responsible for the GBRMP (the Great Barrier Reef Marine Park Authority or GBRMPA for short) is only 160 people, how do they effectively manage such a huge and complex area? The primary way is through effective coordination and linkages across sectors and jurisdictions; this includes:

- Day-to-day management (DDM) activities (e.g., field patrols, enforcement, aerial surveillance, intelligence gathering) are undertaken by a range of State agencies (such as Queensland Parks & Wildlife Service, Queensland Boating & Fisheries Patrol, Queensland Water Police), in conjunction with Federal agencies like Coastwatch, Customs National Marine Unit, and the Australian Maritime Safety Authority.
- All DDM activities are coordinated by a special unit within GBRMPA who also work closely with each agency and the Federal Department of Public Prosecutions.
- This coordination provides a very effective surveillance and enforcement capability across the entire GBRMP, maximizing the resources of and cooperation between numerous agencies.
- There is complementary legislation for adjacent Marine Park areas under Queensland (State) jurisdiction; hence a user does not need to know the boundary between State and Federal waters as the rules in all waters are virtually identical.
- Zone boundaries in the new Zoning Plan have been simplified (using latitude/longitude coordinates) so that users can more easily identify boundaries and so that enforcement staff can more clearly identify infringements. As far as is possible, zone boundaries along the coast use recognizable features as well as the precise coordinates to locate coastal boundaries.
- Regular users like tourism operators are encouraged to assist management of the GBRMP through a number of cooperative measures (e.g. compliance with Best Practice approaches, monitoring programs such as Bleachwatch, COTSWATCH, Eye on the Reef, etc, and training and accreditation)
- Sectors such as agriculture and aquaculture etc are encouraged to assist management through industry Codes of Practice, and involvement in Regional Planning initiatives.

More information is available at < <http://www.gbrmpa.gov.au>>



Planning Step 5.5: Scaling up the Individual Site Management Strategies to the Network Level

Objective: *To start to make the link between the management priorities of individual sites, and those priorities of the MPA network.*

Activity:

- 1) With your planning team, refer to objectives generated in module 3 and identify network-wide objectives.
- 2) Identify any management strategies that would address common impacts to target resources (at the network scale).
- 3) Use post-its to transfer the management objectives and common management strategies to Worksheet 5.5: “Building Network-wide Management Strategies”.
- 4) Agree on common network-wide strategies with your team and share with other MPAs in your network.

Worksheet 5.5: : Building Network-wide Management Strategies

Network Principles

Use of best available information and precautionary approach:

Network designers should base their decisions on the best information currently available rather than delaying the process to wait for better information. Perfect data sets rarely exist, and, delaying implementation of an MPA network is likely to allow the resource to degrade even further. When decisions are made to proceed despite scientific uncertainty, network designers must create safeguards and engage in careful monitoring to temper the potential risks.

Rather than waiting for perfect data, involved parties must use the best information available. Any new data that emerges can be put to use through adaptive management. But network designers and managers must also be prepared to justify their progress and evolving management to network opponents. In cases where scientific uncertainty exists and implementation proceeds despite risks, designers, decision makers, and managers should be careful to include safeguards and monitoring. It is best to err on the side of conservation in determining appropriate protections for ecologically valuable areas.

When designing MPA networks, some will be tempted to delay action to gather more scientific information. Such delays only make it more difficult to develop MPA networks by agreed timetables. In some cases, delays can cause further degradation to the marine resources that the network is intended to conserve, potentially adding to the long-term difficulty and cost of achieving management goals. The bottom line is that delaying MPA design and implementation rarely, if ever, benefits marine conservation.

Integrated management framework:

When developing effective MPA networks within the broader coastal and ocean framework designers should consider:

- Political and jurisdictional complexities for ocean, coastal, and terrestrial authorities;
- The proximity of rural and urban populations to the coast and their dependence and impacts on marine and coastal areas;
- User groups whose use patterns can compete with or displace each other;
- The unique and diverse ecological value of the area in question as well as areas nearby; and
- Use patterns of terrestrial environments.

Adaptive management measures:

Managers should begin evaluating performance from the start. In order to adjust management decisions, re-formulate objectives and find the



most effective ways of addressing MPA network priorities, managers must establish an evaluation plan in each step of the management process: during the definition of objectives, the selection of management methods, the definition of the network's scale, and during fundraising and budget allocation.

Adaptive management can also be used to improve management capacity and effectiveness, particularly through professional development programs for network managers and staff. Management capacity building can also leverage opportunities to attract and provide additional expertise and technology to the site. Management capacity building training within a network of MPAs provides a forum for sharing knowledge, expertise and lessons learned among sites, as well as opportunities to coordinate and communicate.



Re-Cap of Module 5: The Planning Phase



MAIN POINTS

- **Additional Management Strategies** - up to this point, the development of the management plan has been focused on meeting our management objectives, now we need to consider additional components necessary for effective implementation such as an admin plan, enforcement plan, sustainable finance plan, monitoring, community outreach, planning for new and emerging issues, etc.
- **Prioritizing Management Strategies** - this is the time to evaluate whether or not the elements of your plan are realistic, and which management strategies should be given highest priority based on the likelihood of success of the plan as a whole. Problems encountered in the implementation of the plan may stem from flaws in the development of the plan – from content and style, to creating unreasonable expectations about what can actually be achieved. For this we use a ranking system (comparing all strategies to one another), against a set of implementation criteria, although it is possible to use other criteria.
- **Impacts on Stakeholders** - from proposed management strategies can be negative or positive, in this section we will strive to understand (1) what the potential impacts might be and whether they are negative or positive, (2) who they might impact, and (3) how stakeholders will react to the management strategy.
- **Scaling-up to the Network Level** - when effective, MPA networks can magnify benefits of individual sites, protect large-scale processes, slow the loss of endangered marine species, and restore depleted fisheries, so now we will cross-walk the management strategies to apply them at the network level, so the MPAs can start to function as a network.

CONNECTION TO OTHER PROCESS STEPS

- **Prioritizing Management Strategies** - links back to SWOT analysis, forward to impacts on stakeholders and management effectiveness measures
- **Scaling-up to the Network Level** - links back to development of network-wide management objectives and forward to the BHS and Raja Ampat road maps.

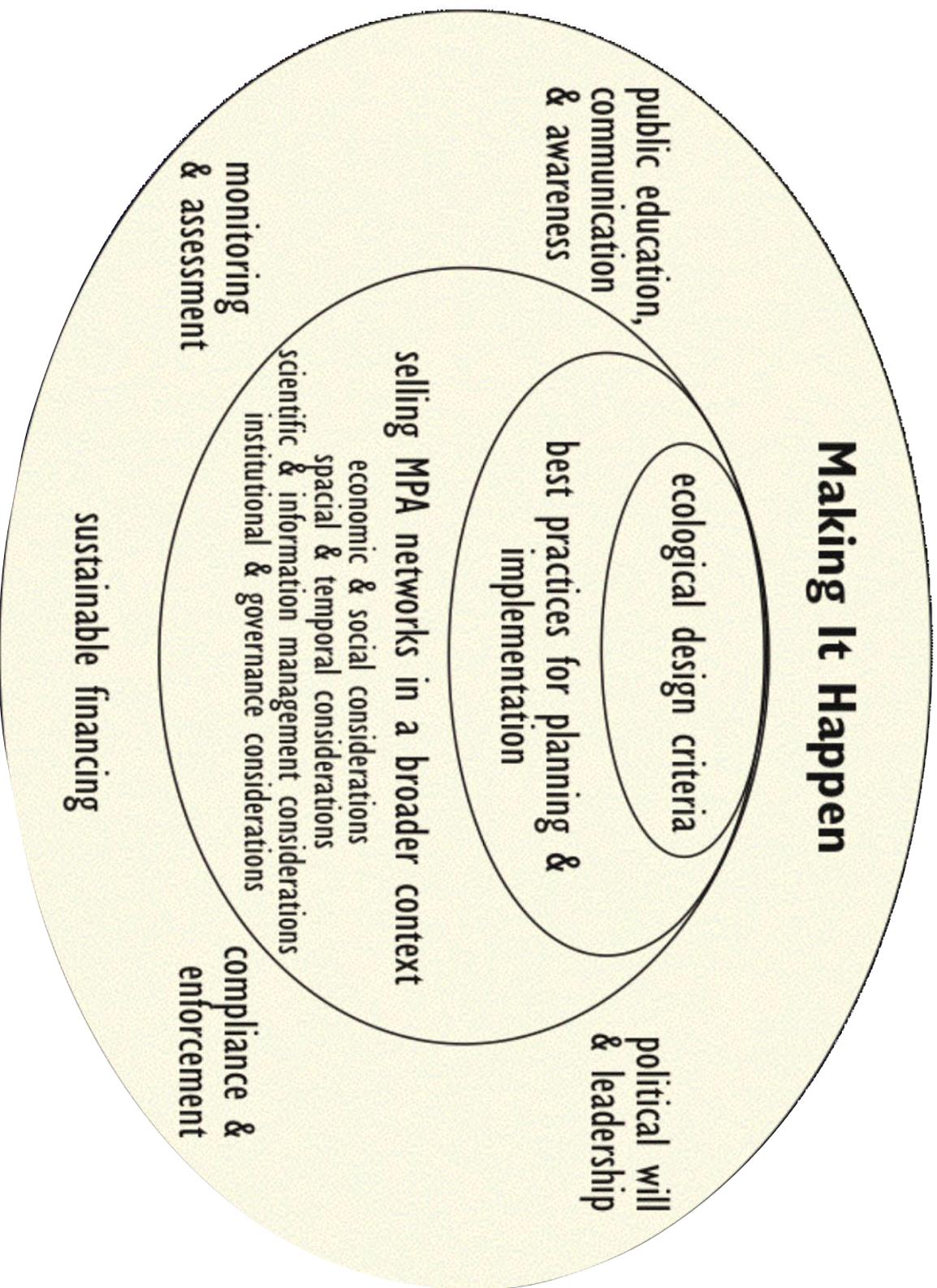
TYPICAL CHALLENGES

1. **Additional Management Strategies** – often a difficult decision on whether to incorporate these into the management plan or create a separate operations plan
2. **Prioritizing Management Strategies** – this is a subjective exercise so it is important to decide before the prioritization what kind of decision making process will be used – majority vs consensus. Tendency is also to rank strategies similarly, so need to use some closely analyze each strategy
3. **Impacts on Stakeholders** – important to go back and evaluate management strategies and see if they can be “tweaked” to lessen the impact
4. **Scaling-up to the Network Level** – this is an opportunity to create some efficiencies in your management strategies by working on them jointly

KEY DEFINITIONS

- Capacity**- your MPA has the ability to implement this action now (adequate staff, expertise, partnerships, equipment, opportunities).
- Enabling Environment**- you have the authority to implement this strategy and the political will to support this strategy.
- Funding**- the potential for funding this action based on immediate availability of funds, the ability to raise funds, and the partnerships that could be drawn on to provide financial support.
- Support**- from the public that exists right now for implementing this management strategy. Balance support against the amount of conflict that may result with or within stakeholder groups as a result of implementing this strategy.
- Threats** - describe the total number of threats addressed by this single management strategy.
- Targets** -list the total number of target resources that will benefit from this management strategy.
- Urgency** -describe how urgent is it to use this strategy to address impacts to your target resources.

HANDOUT 5.1: Key Aspects of MPA Networks



Source: Establishing Marine Protected Area Networks: Making It Happen

HANDOUT 5.2: Checklist of Steps to Consider in Becoming an Operational MPA Network

I. EDUCATION, OUTREACH & COMMUNICATION

- Implement system-wide communications, education and awareness building
- Increase visibility, understanding and awareness of MPA network or system
- Provide wider public opportunities to engage in the MPA system or network
- Facilitate the sharing of experiences, challenges and successes amongst MPAs in the network or system
- Maintain effective communication between MPA managers/staff across all MPAs in network or system
- Provide opportunities for electronic networking, twinning arrangements and learning partnerships for MPA managers and staff from throughout the MPA network or system
- Support a network or system-wide communications team

II. RESEARCH & MONITORING

- Plan for system-wide monitoring
- Develop easily accessible data sharing system

III. MANAGEMENT

- Continually strengthen capacity of MPA managers, MPA staff, policy makers and key staff stakeholders to effectively manage MPA network or system
- Determine range and scope of activities to be undertaken by MPA network or system
- Work with MPA managers, government and NGOs to address current and future management challenges
- Continually engage key stakeholders in planning and implementation
- Implement integrated management approaches across MPAs in network or system
- Develop long-term sustainable financing plan for network or system
- Build in compliance and enforcement standards across the MPA network or system

IV. GOVERNANCE OF NETWORK OR SYSTEM

- Develop consistent support system (political will) for the network regardless of changing government regimes
- Maintain effective coordination and linkages across sectors and jurisdictions
- Share costs and management responsibilities by building local support and leveraging opportunities from governments

V. EVALUATION

- Support an evaluation team
- Evaluate milestones and/or indicators of success
- Develop adaptive management framework
- Plan for celebrating successes and recognizing achievements

THE PLANNING PHASE

Worksheet 5.3: STAKEHOLDER ANALYSIS

Please fill out the table below to identify which stakeholders will be positively and/or negatively impacted by your proposed management strategies.

PROPOSED STRATEGY:	POSITIVELY AFFECTED (+)	NEGATIVELY AFFECTED (-)
DIRECTLY AFFECTED		
INDIRECTLY AFFECTED		

PROPOSED STRATEGY:	POSITIVELY AFFECTED (+)	NEGATIVELY AFFECTED (-)
DIRECTLY AFFECTED		
INDIRECTLY AFFECTED		

PROPOSED STRATEGY:	POSITIVELY AFFECTED (+)	NEGATIVELY AFFECTED (-)
DIRECTLY AFFECTED		
INDIRECTLY AFFECTED		

THE PLANNING PHASE

Worksheet 5.4: STAKEHOLDER RESPONSE

Please fill out the table below to identify specific impacts on each stakeholder group, what their anticipated reaction might be, and your MPA's response.

MANAGEMENT STRATEGY	STAKEHOLDER GROUP(S) AFFECTED	POSSIBLE IMPACT OF PROPOSED STRATEGY ON STAKEHOLDERS	POTENTIAL REACTION & IMPLICATION OF PROPOSED STRATEGY	RECOMMENDED COURSE OF ACTION OR RESPONSE

THE PLANNING PHASE

WORKSHEET 5.5: Building Network-wide Management Strategies

1. TARGET RESOURCE . _____

OBJECTIVE	HUMAN USE ACTIVITY	1. UNDER-STAND IMPACTS	2. INFLUENCE BEHAVIOR	3. MODIFY BEHAVIOR	4. CONTROL BEHAVIOR	5. OTHER

1. TARGET RESOURCE . _____

OBJECTIVE	HUMAN USE ACTIVITY	1. UNDER-STAND IMPACTS	2. INFLUENCE BEHAVIOR	3. MODIFY BEHAVIOR	4. CONTROL BEHAVIOR	5. OTHER

1. TARGET RESOURCE . _____

OBJECTIVE	HUMAN USE ACTIVITY	1. UNDER-STAND IMPACTS	2. INFLUENCE BEHAVIOR	3. MODIFY BEHAVIOR	4. CONTROL BEHAVIOR	5. OTHER

How Is Your MPA Managed?

MODULE 6: Zonal Management

6.1 Zonal Management

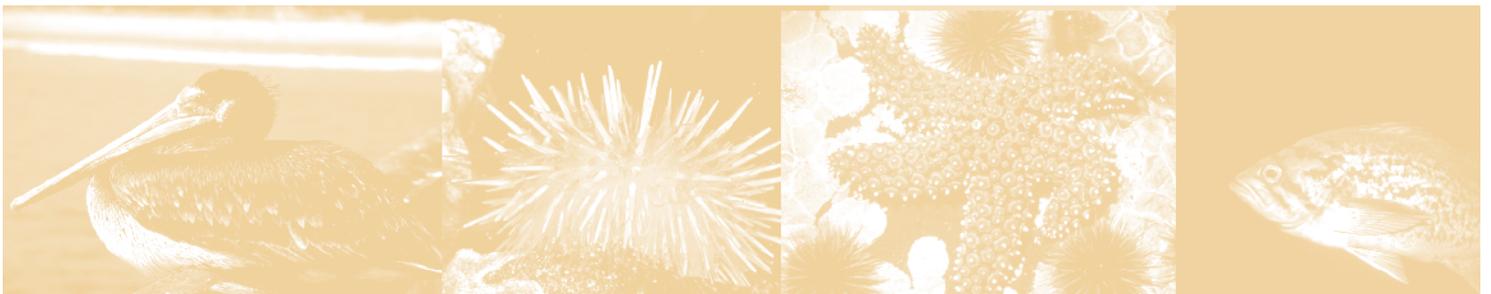
Zonal Planning vs Marine Spatial Planning

Developing Zones & Regulations

Spatial Planning Decision Support Tools

Best Practices for Boundary Selection

Mapping Out Proposed Zones



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Hockings et al. 2007 "Evaluating Effectiveness" IUCN

Tools for regional planning to advance marine and coastal ecosystem based management can be accessed at www.marineebm.org/index.htm

IUCN Tools for assessing MPA network development: <http://www.iucn.org/themes/wcpa/biome/marine/checklist.html>

OSPAR Network of Marine Protected Areas: http://www.ospar.org/eng/html/MPA_eng.htm

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OVERVIEW

Zonation refers to the spatial or temporal allocation of specific uses and activities to well-defined areas within a larger area. Using zoning in MPAs can reduce competition or conflict between human uses of the area while still allowing for conservation purposes. Zoning in a MPA can be based around protecting the ecological sensitivity of various habitats or on where various human use activities occur.

LEARNING OBJECTIVES

- To understand from real life situations the process for developing zones and issues related to implementation and management of zones
- To understand the difference and the commonalities between zoning and marine spatial planning; and to understand the challenges and the benefits
- To understand how to use zoning and various management regulations inside the zones
- To understand the complexities of sorting out conflicting uses in an MPA
- To understand that every management action, particularly zones and their associated regulations, could have an impact on different stakeholder groups



Lesson Plan

6.1 ZONAL MANAGEMENT

Zoning within MPAs

Zonal management is very different from the longstanding concept of open access to the oceans or the marine environment. Different forms of zoning have occurred on land for thousands of years, and there have been traditional and customary marine tenure zoning systems in certain locations throughout history as well. It is only more recently that formally planned zonal management systems are being applied to marine and coastal areas around the world.

One of the most famous examples of marine zonal management is the Great Barrier Reef Marine Park in Australia. There are numerous other models of zonation being used in MPAs, from simple to complex. Many MPAs incorporate a zone strictly restricting all resource exploitation to promote marine conservation and enhance fisheries. Whatever the particulars of the zoning scheme, it is important to design and plan zones to match the objectives of the MPA. It is also necessary to involve all stakeholders and user groups of the MPA in the zonal planning process.

Purpose of zonation

Zonation refers to the spatial or temporal allocation of specific uses and activities to well-defined areas within a larger area. In this case the larger area is a MPA. Many MPAs with zonation schemes are called marine sanctuaries, marine national parks, or just marine parks, such as the large Bunaken National Marine Park in Indonesia or the Great Barrier Reef Marine Park in Australia. However, zoning is a management strategy that can be used by MPAs much smaller than the GBRMP.

The use of zoning in MPAs can often reduce competition or conflict between human uses of the area while still allowing for conservation purposes.

Zoning can be limited to within a MPA, or the MPA can be a part of a larger coastal and/or marine zonation scheme.

Custodial zoning is done within the MPA. Zonation establishes particular use allocation zones where fishing, scuba diving and snorkeling, other water sports or recreation and various other activities can and cannot occur.

Regulatory zoning is when a MPA may be included in a larger coastal planning process that designates certain areas for particular uses, including commercial fishing, hotels or other tourist ventures, and nature reserves.



Planning team developing a tourism zoning plan in Gorgona National Park (MPA), Colombia.



It is important to have legislation for zonation schemes. Legislation can be at the national level (such as a federal law or Act of Parliament) but it is especially helpful at on a local level. Local ordinances and/or regulations can have more flexibility and better enforcement possibility to meet the needs for a particular MPA or coastal zonation scheme.

The basis for zoning

Before a zoning scheme can be developed, it is useful to consider the overall basis for zoning. Zoning in a MPA can be based entirely around protecting the ecological sensitivity of various habitats. Zoning in a MPA might also be based entirely on where various human use activities occur. Realistically, a zoning scheme will usually fall somewhere in between the two and aim to balance ecological need with user requirements.

Balancing goals of MPAs with objectives of zones

A MPA often has multiple goals, and custodial use of zoning within a MPA can be implemented to address one or more of the following goals:

- Protect the ecosystem, species, or habitat critical to the survival of species
- Reduce or eliminate conflict between resource users
- Manage resource users
- Provide a buffer between managed and unmanaged areas
- Reserve suitable areas for particular human uses while minimizing adverse impacts
- Reserve areas for specific purposes such as research and education

Setting up zones to achieve these goals requires consideration of specific and measurable objectives, including increasing fish abundance and diversity, stabilizing and improving living coral cover, increasing the fish catch of fishers operating in allowable zones or outside the MPA, attracting diving tourists, and producing and circulating the zoning plan for the MPA.

A generalized zoning scheme might include one or more of the following zones:

Tourist or marine park zone – fishing and collection are excluded so that visitors and the local community can appreciate reef life relatively undisturbed by human activities

Replenishing area – areas closed to use or extraction, even temporarily, to increase the productivity of the area or surrounding zones

Seasonal closures – a designated time when extraction within an area is prohibited to allow for spawning, breeding, etc.

Limited use zone – an area set aside for specific uses or where activities are



regulated to a certain extent, for instance a zone where only artisanal fishing and no other extraction is allowed

Scientific research zone – areas set aside for scientific research

Preservation or conservation zone – areas set aside where very little or no human activity is allowed

A zonation design for a MPA is really a balancing act in spatial areas or throughout times or seasons. There is no definitive list of zones and what they may or may not achieve. The use of zonation in an MPA depends upon the site, its unique characteristics, and decisions of stakeholders. It is important to discuss zonation principles for MPAs early and often with stakeholders.

Lines on maps often polarize people and draw attention away from reaching the broader goals of the MPA. Avoid drawing any lines on maps until there is some agreement between stakeholders on the goals and objectives.

It is also important to be realistic about what is possible for a certain MPA. For instance, it is difficult to divide small MPAs into zones. Creating many zones within a MPA can lead to confusion and ultimately an ineffective MPA. On the other hand, zones can provide for a gradation of restriction of uses of the marine environment. Zoned MPAs with the goals of balancing multiple uses can therefore sometimes be easier to implement and enforce if they can satisfy the requirements of many resource-users.

General model and buffer zones

When designing new or improved existing zonation within a MPA, it is useful to first consider examples and models for multiple-use zoning schemes. One basic principle for zoning is to have one or more areas within the MPA strictly protected, and buffered by areas with fewer restrictions.

For instance, one generalized zoning model for MPAs is to have a core “no-take” sanctuary surrounded by one or multiple buffer zones which each permit specific and/or regulated activities.

A buffer zone provides a transition space between a highly protected area such as a no-take area and surrounding zones where heavier activity is allowed, as well as between the MPA and areas outside the MPA that are less managed.

It may be easiest to visualize buffer zones around islands, but they can also be applied along and out from coastal areas.





Planning team developing a fisheries zoning plan in Machailla National Park (MPA), Ecuador

Zone names and labels

Most zones in multiple-use MPAs fall into the general categories outlined in the first section – preservation, limited-use, scientific, and so on – but depending on the MPA there will be many different naming systems for zones. Zonation could be as simple as a marine reserve within a marine park. Or a MPA could be divided into scientific, water sport, and recreation zones. A slightly more expansive zoning system in a larger MPA could be:

- **C**—Core natural area – central strict conservation, or no-take area, with limited human access
- **B1**—Buffer around core managed for conservation with minimal research and diving allowed
- **C2**—Secondary core natural areas, recreation allowed
- **BR**—Buffer throughout the rest of the MPA that allows limited artisanal fishing and recreation

Labels, Signs, Buoys, Markings

No matter what the zones are called, multiple-use zoning schemes need clear markings of which zone is which and what activities can occur there, whether on the zoning plan map or out in the water. On paper, zoning maps in color or zones clearly labeled according to a legend need to be drawn and circulated to coastal users, stakeholders, and enforcement teams. Maps posted on signboards on beaches or in tourism brochures/handouts inform or remind visitors and the community of the zoning scheme. Where possible, it is a good idea to have marker buoys or signs to label zone boundaries in the water.

No take zones or marine reserves

No-take areas mean just that – they are areas closed to all forms of extraction, including fishing, gleaning, collecting, and so on. No-take areas are often called marine reserves or sanctuaries, depending within which country they are located. No-take areas are important tools for protecting biodiversity and can be useful in fisheries management, especially when designed and implemented in close consultation with the local community and stakeholders.

Protecting and Rebuilding Biodiversity

Multiple research studies have shown that species richness, biomass, and the size and amount of organisms are higher inside no-take areas than outside. This higher biomass and diversity might be because the area selected to be no-take had more fish to begin with, except that these trends have also been seen in areas selected to be no-take for other reasons such as reef recovery, sometimes in as little as three years.



Increasing Fisheries Production

A basic principle linking no-take reserves to fisheries management is that of spillover. It is logical to think that no-take areas allow fish to grow older and bigger, which means that they should produce more eggs and juveniles. Fish density within the no-take area will increase, with the overall effect of export of larvae and movement of adults outside of the MPA and into 'fishable' waters. Some research studies have demonstrated a **spillover** effect from no-take areas, and often local fishers believe their catch has increased following the establishment of a no-take reserve.

Design Principles

The benefits of an effective no-take reserve or zone within a MPA can be substantial after it is established, and there are many important points to consider in designing and establishing a no-take area. One of the most important considerations for a no-take area's success is that of stakeholder consultation.

Stakeholder consultation

Establishing a no-take area usually means closing an area to fishing and extraction. Closing an area in many cases displaces fishers to adjacent waters or even puts them out of a job. Communities near to or reliant on proposed no-take areas may become more receptive to the idea if there are real possibilities of increased fish catches or future tourism revenue.

Ecological design considerations- there are many considerations for no-take areas:

Size and shape

The optimal area of a no-take area will depend on local conditions, but it should be large enough to allow for protection of target species. If it is too small or has overly-contoured boundaries, fish may migrate out too often into fishing grounds.

Location

The objectives of the no-take area as well as the opinions of stakeholders should be considered when deciding the location. Areas that are important in the life cycle of target species, such as spawning areas, breeding sites or nursery grounds, are good locations to set up no-take areas for both fisheries enhancement and biodiversity conservation.

Habitats

In an ideal situation, a no-take area will include a variety of habitats that are important to ecosystem health – reef, reef flats, seagrass beds, mangroves, algae beds, beaches and sand flats. It may also be possible to use adjacent habitats as a basis for a network of no-take areas, rather than protect just one kind of habitat.



Presenting a range of tourism zoning alternatives in Gorgona National Park (MPA), Colombia.



Species

A no-take area can be for a specific organism or set group of target species. For instance, an area can be designed and designated as a whale shark sanctuary, or depending on features of the area chosen, a reserve for a complex of bottomfish species. The species present and those targeted for protection will affect the size and location of the no-take area. Territorial reef species with small home ranges will benefit from a smaller area while more mobile species will need a larger no-take area to effect meaningful protection.

Currents

Larvae and juvenile fish are frequently passively transported by currents, therefore, location of no-take areas upstream of important habitats and fishing areas may maximize the restocking effect of waters outside the no-take area.

Time

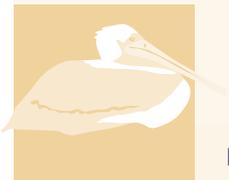
One final consideration for no-take areas is that of time. Although the benefits of a no-take reserve in the form of increased fish biomass and density can be seen within a few years for species with short life cycles and rapid growth, such as in tropical areas, they are not immediate. Stakeholders and managers should be prepared to give a no-take area time to be effective before they expect results.

Zone planning process

A zoning plan provides guidance whenever there is more than one allowable use of an area. A zoning plan does not replace the general management plan for a MPA, but it can be a part of it or an annex to it. The plan should identify the boundaries of the different zones and explain how each area can be used. As with the outer boundaries of the MPA, once agreed to and approved, it is essential that zones are clearly marked. General principles to keep in mind for zoning are consultation, mapping, policy formation, and enforcement.

Stages in the development of an MPA zoning plan:

1. **Initial information gathering and preparation** – information about the nature and uses of areas to be zoned and production of materials to assist public participation; formulating the objectives of zoning for the MPA.
2. **Public participation and consultation** – public comments on the accuracy and completeness of information gathered for zoning should be sought before drafting the zoning plan, evaluation by all of objectives of zoning for the MPA. Public participation is often in the form of scheduled and publicized meetings or hearings.
3. **Draft plan** – preparation of a draft zoning plan with explanation of the scientific rationale for each zone.
4. **More public participation** – circulation of draft plan to the public for comment. It is a good idea at this point to hold more public meetings or hearings before finalization of zones.



5. **Zoning plan finalization** – MPA authority or executing agency incorporates public comments and produces a revised final plan. It is useful to have versions of the plan in both the local language and English or another widely spoken language so that tourists will understand the zoning regulations.

Zoning plan requirements:

- Compliance with all legislative requirements and any international obligations
- Based on adequate data and technically sound data
- Build upon existing use and resource management programs
- Capable of administration, including enforcement and surveillance
- Incorporate monitoring and enforcement for effective implementation and evaluation of policies
- Ensure fair treatment for users and efficient review of permits
- Consider local, regional and national interests
- Balance interests of competing user groups for political acceptability
- Balance public interests and private options
- Provide certainty for future use and have flexibility to modify allocation of areas
- Cost-effectiveness

Developing effective boundaries for zones

Summary of Best Practices for Developing Boundaries

- Create a definable and inclusive boundary-making process by identifying a boundary team.
- Take a proactive and collaborative approach to boundary making by including relevant agencies and stakeholders in the process.
- Assess the quality and availability of information suitable to support the boundary making decision.
- Evaluate the source scale of the data or map to determine the appropriate precision for reporting measurements.
- Test newly generated boundaries for accuracy and completeness.
- Publish the boundary description in appropriate government notices for public access and comments.

(extracted from: Marine Boundary Working Group, Federal Geographic Data Committee)



Technical Considerations

The zone team needs to understand the legal, management and technical consequences of using particular boundary components including straight lines, buffers, shoreline and geographic features and place names.

Often MPA or zone boundaries reference an existing natural feature such as a shoreline, or by using a spatial offset such as the distance from a point. The tools used in marine navigation and enforcement may help the zone team choose whether a reference to a feature is appropriate. While physical demarcation helps user groups to locate the boundaries of the zone(s) (with markers and buoys), the cost of this demarcation for large zones may be prohibitive. For this reason, most MPA and zone boundaries are delineated on a map or in a geographic information system (GIS).

Some tips on creating boundaries include:

- Create boundaries that are clearly defined and easy to interpret.
- Make the boundaries and boundary information as simple as possible.
- Develop legally definable boundaries by using clear terms and precise location descriptions.
- Pay special attention to the parts of the boundary that are ambulatory. If these [arts of boundary move (e.g. shoreline) then these parts of the boundary will need to be reviewed.

Developing regulations for zones

Understanding Your Authority

The zone team needs to understand the authority under which the MPA was created, and what authority the MPA has for creating zones, or prohibiting certain activities from taking place within the MPA. The scope of authority of the MPA may reveal express limits or restrictions to MPA zones and the ability of the MPA management authority to prohibit certain uses of the area (e.g., oil and gas development or fisheries).

In most countries, the regulatory authority over the marine environment does not lie within a single jurisdiction. Multiple national, state, provincial or municipal authorities govern the submerged lands, water and living marine resources both within and outside an MPA. In some cases, particularly in the Pacific Islands region, ownership of the coastal and marine environment is privately held. The boundary between state and private ownership varies from country to country.

At this time it is also important to understand the enforceability of regulations (the prohibition of certain activities within each zone) against the activities of foreign-flag vessels and nationals in regards to the principles of international law. For example, if the boundary of the MPA is within the



territorial sea, then international law recognizes that the coastal state/country has full sovereignty over the area subject to the right of innocent passage of foreign-flagged vessels in the territorial sea.

Writing Regulations

The person drafting the regulatory language must write a careful, unambiguous, and legally complete description of the each activity that is either prohibited and/or allowed in each zone, leaving no question about either.

A regulation or set of regulations (or prohibition) almost always start with a preamble which: 1) names the regulation and specific zone, and the agency or MPA management authority administering the regulation and zone; 2) describes the general area and location of the zone; 3) states the purpose of the regulation and zone; 4) describes the features of the zone; 5) and adjacent jurisdictions. The preamble should also note any documents that provide information crucial to the description.

The body of the regulation or prohibitions should include language necessary to state specifically what are permissible and what prohibited activities in the zone are. Each choice of words, punctuation and formatting needs to meet the legal requirements, intent and interpretation for developing a regulation, using the clearest and least ambiguous language. The regulatory language for each zone may be combined with the boundary description for that specific zone, or cross-referenced to that zone depending on the standard format used in your country.

At all times, the person or team developing the regulatory language and zones must keep in mind the precision or accuracy needed to meet the original purpose of the MPA, then end users who will be impacted and the ease of enforcement of the rules, all of which will determine the appropriate language.

Developing zones and regulations and mapping proposed zones

The process of developing a management plan includes considering the creation of zones to control use and access and to address user conflicts. Some MPAs are simple and have just one zone, while others follow the biosphere reserve models on concentric zones. Still others create a series of zones to manage activities such as boating, research, tourism and general access. One of the first steps in the zoning process is to review your MPA's regulatory authority to ensure that you have the authority to control and regulate human-use activity in the MPA.

Developing mutually agreed upon, effective and enforceable zones are both art and science. The science of zoning and regulations deals with

Planning Step 6.1: Developing Zones & Regulations

Objective: *To understand how to use zoning and regulations as a management tool.*

Activity:

- Use Worksheet 6.1: Developing Zones and Regulations
- Review your objectives and priority threats
- Determine which activities you would like to regulate and their corresponding zone
- Use your MPA map as reference



Exercise 6.2: Mapping Out Proposed Zones

Objective: *To understand the complexities of sorting out conflicting uses in an MPA.*

Activity:

- Using Worksheet 6.1 to inform your group where and why you need zones, map out your zones and regulations.
- Notice areas where you may have conflicting zones or regulations, determine how you are going to work out those differences.
- Come to a consensus agreement on the zones and regulations.
- Compare your groups' map with that of the other group and discuss the difficulties in creating zones when all stakeholders are not at the table.

the placement and size of zones and with drafting appropriate regulatory language to help achieve the MPA's objectives. Zoning and regulations should, first and foremost, be based upon an accurate understanding of the biological and social features of the area. The second step in the zoning and regulation development process is to review the site characterization. Presumably during this site characterization phase, the planning team was able to map the biological, physical, human, and use values of the MPA. Use this map as a reference when determining the location and spatial extent of zones.

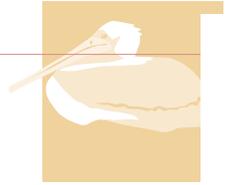
The art of zoning and regulations has to do with working with stakeholders on identifying mutually beneficial and enforceable zones and regulations. The process of developing zones and regulations can be very complex and should take into account input from various stakeholders. Their input should be considered in light of the objectives that have been developed for the area.

Basic steps for developing zones and regulations

- **STEP 1:** Review the MPA's regulatory authority to ensure that the MPA has the authority to control and regulate human-use activities in the MPA.
- **STEP 2:** Review your site characterization to develop a common and agreed-upon understanding by the management planning team of the location and extent of biological, physical, human-use and value (economic and intrinsic) setting of the MPA.
- **STEP 3:** Review the management plan goals and objectives established by the planning team, as you will want to use zones and regulations as management tools to meet those specific goals and objectives.
- **STEP 4:** Review the priority management actions the planning team has just completed to determine where there might be gaps in fully meeting the management objectives.
- **STEP 5:** Using your map as a reference, complete Worksheet 6.1 to determine how zones and regulations may be used to help meet management objectives.



Re-Cap Module 6: Zonal Management



MAIN POINTS

• Zoning within MPAs

- It is important to plan and design zones to meet the management objectives of the MPA
- Stakeholders should be involved in the planning of the zones
- Zoning can be limited to within an MPA, or the MPA can be part of a larger coastal and/or marine zonation plan
- Understand the authority of the MPA for creating boundaries

• General Model and Buffer Zones

- it is useful to consider looking at existing models for multiple-use zoning schemes
- A common model is the use of a core area (highest protection), surrounded by a core zone, then a transition zone
- Multiple-use zoning schemes need clear marking and explanations of what is allowed and not allowed

• Zoning Plan Requirements

- Must comply with legislative requirements and international obligations
- MPA must be capable of administration, including enforcement and surveillance of zones
- Ensure fair treatment for users, and efficient review of permits
- Create easily definable and identifiable zone boundaries
- Understand your authority for creating regulations and enforcing the zones

CONNECTION TO OTHER PROCESS STEPS

Objectives always provide the guidance for what you are trying to achieve with your management plan, and zones are another management tool within your management plan for meeting these objectives

Management Strategies include a range of management tools, and zones are another tool for helping to meet your management objectives

CONNECTION TO OTHER PROCESS STEPS

1. **Multiple-use Zoning** - is the use of a suite of zones to meet all of these different management objectives. Make sure that zones adjacent to each other are also complementary, and the package as a whole works together, without leaving holes between zones.
2. **Boundaries** – make sure they are enforceable, and easy to describe to someone that does not have use to technology (use visual cues).
3. **Regulations** – should be written so they are clear about what activities can and cannot take place.

KEY DEFINITIONS

Zoning – MPA management tool that delineates areas of an MPA for the purpose of controlling use and access, and addressing user conflicts.

Regulations – a legal and enforceable prohibition or restriction on activities that can or cannot occur in any particular zone.

Boundary – the spatial delineation of the extent of the area within a specific zone, including above the surface of the water, on the surface, the water column, seabed or beneath the seabed of a given area.

Permits – provides legal and conditional permission for accessing or carrying out specific activities within a particular zone.

ZONAL MANAGEMENT

Worksheet 6.1: DEVELOPING ZONES AND REGULATIONS

The process of developing a management plan includes the consideration for developing zones to control use and access, and address user conflicts. Some MPAs are simple and have just one zone, or follow the biosphere reserve model and use concentric zones. Other MPAs create a series of zones to manage activities such as boating, research, tourism and general access. Use your map as a reference when listing potential zones and regulations. During the next exercise you will overlay your recommended zones on the map.

1) Use map as a reference; 2) review objectives to determine how zones and regulations may be used to meet your objectives; 3) use post-its to list the activities and corresponding zones and regulations in the table below. NOTE: make sure to identify on your map the following elements before you decide on your zones: important target resources (even those that have not been identified as a priority for your management plan), threats and sources of those threats, social activities, economic activities.

DESCRIBE ACTIVITY TO BE RESTRICTED OR CONTROLLED	WHAT OBJECTIVE DOES THIS MEET?	DESCRIBE THE PROPOSED ZONE	HOW WOULD YOU ENFORCE THE ZONE?	OTHER CONSIDERATIONS

How Is Your MPA Managed?

MODULE 7: Management Effectiveness

7.1 MEASURING MANAGEMENT EFFECTIVENESS

Introduction to Measuring Management Effectiveness
Measuring Management Effectiveness

7.2 DETERMINING WHAT NEEDS TO BE MONITORED

Determining What Needs to be Monitored
Selecting Indicators
Developing A Monitoring Plan
The Management Effectiveness Model

7.3 ADAPTIVE MANAGEMENT

What is Adaptive Management?



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Photo Credit Chapter 5: Left: Frank and Joyce Burek, Middle Left: Emma Hickerson, Middle Right: Frank and Joyce Burek, Right: Dr. Mary Wicksten

All other photos in this section: Anne Walton



OVERVIEW

Monitoring and evaluation (M&E) (which includes measuring management effectiveness), is an essential component of any good management plan. Managers need information to improve their performance and stakeholders, including funders, need results to ensure accountability. This module looks at methods that can be used to measure – or monitor – how well an MPA is being managed. M&E is a two-part process, measuring management effectiveness followed by evaluating management effectiveness.

This module covers the planning stages of the whole process, and is divided into three components:

- Determining what needs to be monitored – i.e., identifying the indicators for the monitoring program that will be used to measure effectiveness;
- Designing and planning the monitoring program and evaluation process, and
- Incorporating adaptive management techniques into the process.

LEARNING OBJECTIVES

- Understanding the purpose and need for building an evaluation plan as part of effective management plans
- Identifying appropriate indicators for monitoring programs
- Incorporating consideration of key values (biodiversity, socio-economic, governance) of the MPA into monitoring and evaluation
- Determining whether management is having its intended impact and is effective
- Analyzing what to do if management indicators reveal the MPA strategies are not having the intended effect



Lesson Plan

7.1 MEASURING MANAGEMENT EFFECTIVENESS

Long-term monitoring programs, using appropriate management indicators, are necessary to determine whether management objectives and outcomes are being achieved. Ecosystem and biodiversity health and the well-being of local communities dependent on the MPA should be monitored, as well as the management process. For example, if an MPA objective is to maintain the health of coral reefs, then the question becomes, *What should be monitored to see if there are any changes?* If they are deteriorating, this could indicate a decline due to: (a) natural causes, in which case the MPA manager may not be able to take mitigating action, (b) ineffective management strategies, in which case management will need adapting and improving, or (c) causes external to the MPA e.g., from adjacent watersheds, in which case the MPA manager will need to consult with those responsible to try and find a solution. Similarly, if an objective is to improve the livelihoods of local people, a monitoring program would be required to show whether family incomes are improving as a result of the MPA - through increased fish catches, tourism revenue or other livelihood opportunities offered by the MPA, or are declining - fishing has been curtailed. An assessment of management effectiveness will help to show where refinements and improvements to existing monitoring programs are needed, and whether new programs are required.

Monitoring and evaluation activities in an MPA are likely to include:

- Long-term monitoring of environmental and socio-economic parameters;
- Regular tracking of implementation through planning and reporting schedules;
- Evaluations and reviews of donor-funded projects;
- Review of management plans;
- Assessments of management effectiveness.

Where possible, local people should be involved in monitoring as this will help to increase their sense of involvement in the MPA. Volunteer participation may reduce costs in carrying out the monitoring.

Process of Drafting a monitoring and evaluation (M&E) program for the MPA Management Plan

Drafting a M&E program can be broken into the following tasks: first to

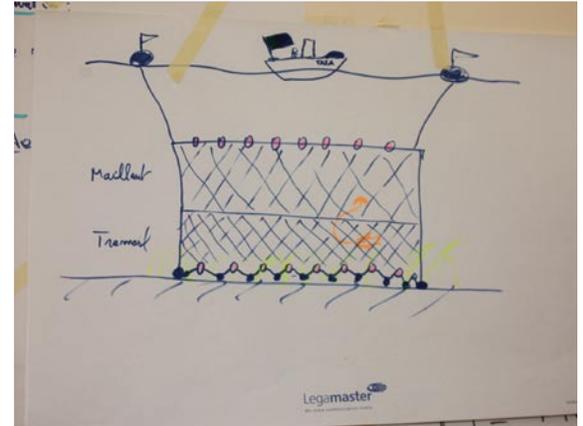


Illustration of gear impacts from a sustainable fisheries training in Kas-Kekova MPA, Turkey

TIP

- *Where budgets allow, appoint someone to oversee all components of the M&E plan.*
- *Monitoring activities should be set up as soon as an MPA is established, following the initial baseline surveys and assessment.*
- *Develop an overall M&E plan that covers all components – ensure that monitoring programs are in place for all the MPA objectives.*
- *Involve stakeholders in all components of M&E whenever possible.*
- *Ensure that data from all monitoring programs and tracking tools are collated, analyzed, interpreted and made available.*

determine what needs to be monitored; and second to designing and planning the monitoring and evaluation program.

I. Determine what needs to be monitored

- a. Determine the scope of the overall M&E program
- b. Identify the MPA goals and objectives
- c. Select indicators relevant to each goal and/or objective
- d. Review and prioritize the indicators

II. Design and plan the monitoring and evaluation program

- a. Identify and/or design the monitoring methods
- b. Assess the resource needs to run the monitoring program
- c. Develop a comprehensive M&E work plan and timeline

Tasks are explained further below. M&E terminology, methods and approaches can be confusing. Distinguishing between the terms “monitoring” and “evaluation” is useful even if overlaps develop. Definitions are incorporated into the explanations.

Determine the scope of the overall M&E program

The first step is to decide on the scope as the resources and capacity of the MPA for measuring management effectiveness may well be limited. Specific M&E requirements (e.g., for donor-funded projects) must also be considered and incorporated into the overall program. A careful balance is needed between investing resources in management itself and in assessing its impact. Many MPAs invest time and resources in collecting data that are never used. Conversely, during evaluations it is often found that key information has not been collected. Monitoring of single environmental variables (e.g., coral reef health) or tracking of implementation through mechanisms such as annual reports, financial accounting and project reviews, are important but cannot alone show whether the MPA objectives are being met. An analytical and integrated approach is needed, with the data from each monitoring component being collated, analyzed and applied.

Identify the MPA goals and objectives

List all the goals and objectives. These may:

- already exist (e.g., in the management plan, declaration or legislation for the MPA) and be appropriate.
- already exist but need revision
- in the case of a new MPA, need to be developed.

Objectives are generally listed under broader categories called goals, although some MPA management plans use the terminology ‘mission statements’ and ‘purposes’, which are similar to goals and objectives and

can be used in the same way. Most MPAs have a mixture of biophysical, socio-economic and governance objectives.

Objectives should be specific statements that describe the desired outcomes of the MPA and what management is aiming to achieve. A good objective should be:

- S**pecific
- M**easurable
- A**chievable
- R**ealistic
- T**ime-bound (see chapter 3)

7.2 DETERMINING WHAT NEEDS TO BE MONITORED

Select indicators relevant to each goal and/or objective

Appropriate *indicators* must be selected - i.e., units that represent a much broader suite of characteristics or parameters. It is never possible to monitor every species or process. Often unrealistic indicators, ones too difficult to measure regularly with available skills and capacity or that fail to measure impact or success are chosen initially and require adjustments in later M&E programs. A baseline assessment is a descriptive document that identifies threats, ecological, and socioeconomic characteristics, and their status at the time the MPA is established. Sometimes the baseline assessment identifies values and targets of the MPA that can be monitored over the long term. 'Effective management' is a multi-dimensional judgment that involves biophysical, socio-economic and governance issues consideration. Generally a range of different indicators will be needed to determine whether the goals and objectives of the MPA are effective. Each MPA is likely to have a different set of indicators.

Given the limited human capacity and financial resources of MPAs, indicators should be selected that are as simple and straightforward to measure as possible. To avoid selection of inappropriate indicators, base your selections on careful analyses of the:

- objectives and the types of changes wanted as well as how progress might be measured.
- available human, technical and financial resources.

Two types of indicators are necessary:

- **impact indicators** which measure changes in the system (e.g., coral abundance as a measure of coral health), and
- **process indicators** or 'performance standards' which measure the



Morning fish market near Machailla National Park, Ecuador

TIP

'Effective management' is a multi-dimensional judgment that involves biophysical, socio-economic and governance issues consideration. Generally a range of different indicators will be needed to determine whether the goals and objectives of the MPA are effective. Each MPA is likely to have a different set of indicators.



Planning Step 7.1: Selecting Indicators

Objective: *While selecting the most relevant indicators, keep in mind that it is important to use or modify existing monitoring programs (to the extent reasonable) and not create a whole new management effectiveness program.*

Activity:

- 1) Work with your planning team using Worksheet 7.1 and Handout 7.1: “Selecting Indicators”.
- 2) Refer to your current monitoring programs and new management plan framework to see where you can draw on these monitoring programs.



Handout 7.1: Selecting Indicators

Worksheet 7.1: Selecting Indicators

degree to which activities are being implemented (e.g., number of patrols undertaken).

An appropriate indicator should closely track the objective that it is intended to measure. For example, abundance and diversity of coral species would be good indicators if there is an objective to maintain healthy coral reefs. Selection should also be based on an understanding of threats. For example, if climate change events are a potential threat, indicators should include sea surface temperature and coral bleaching. Note that it may be difficult to attribute a change or effect to one particular cause. For example, an increase in nesting turtles could be due to good management of the beach or to a decline in harvesting of turtles outside the MPA.

A good indicator should be precise and unambiguous so that different people can measure it and get similar results. Each indicator should concern just one type of data (e.g., numbers of nesting turtles rather than numbers of turtles in general). Selecting indicators for visible objectives or activities (e.g., mooring buoys installed, reef survey undertaken) is easier than for objectives concerning behavioral changes (e.g., awareness raised, women’s empowerment increased).

Review and prioritize the indicators

This step is necessary as it is most unlikely that the MPA will have the resources for monitoring all the indicators that have been identified. A few good indicators are usually better than many weak ones, even if this means a compromise; for example not being able to determine overall biodiversity health. A good indicator should fulfill the following criteria and this checklist will help with the final selection and prioritization:

- Be clearly defined and understood by all stakeholders.
- Be simple to measure and interpret, cost-effective, and able to be collected, analyzed and reported in a timely fashion and on qualitative or quantitative terms.
- Be consistent, so that it is always measuring the same thing and does not change over time; it should be precise and unambiguous so that different people can collect data that are of the same quality.
- Reflect changes in the parameter being measured over temporal and spatial scales.
- Reflect the human capacity available; e.g., coral species diversity would be an inappropriate indicator if there is no one to identify corals-to-species level.
- Be present frequently enough in the sample area for meaningful data to be gathered; e.g., very rare species or events are generally not good indicators as there will be many ‘zero’ observations and trends will be difficult to determine.

Identify and/or design the monitoring methods

This relates to sampling protocols and timelines. There is a vast array of information and guidance on monitoring methods. Most MPAs will have some monitoring programs underway already and these may provide a good basis for development of a full M&E program. A few key things to incorporate are below:

- Quantitative measurements (i.e., those that lend themselves to numerical data) are most objective, however if qualitative data (i.e., those based on individual judgments according to a pre-determined set of criteria) are available they may have value.
- The timing or seasonality (i.e., time of year) and frequency (e.g., weekly, monthly, biannually, annually, seasonally) of data collection should remain fixed as much as possible once a monitoring program has commenced. Alterations to timing or frequency of sampling can reduce the strength (“statistical power”) of that test, and limit the conclusions that can be made. The right frequency for sampling will depend on the parameter being monitored. For example, annual monitoring of tree growth may be adequate, but monitoring of sediment levels in an estuary might need to be done weekly.
- Determine appropriate sample size (e.g., number of transects, number of sample sites). In general, the larger the sample size, the more conclusive the interpretations. Sample size, however, needs to be balanced against the human and financial resources available for monitoring.
- Agree on the terms, format and abbreviations before data are collected (i.e., create a data dictionary) and establish training programs so they are used consistently; always indicate measurement units and be clear about how dates are to be recorded. Maintain a logbook as a back up to computer records. Direct recorders to fill in all fields on data sheets to show that no data are missing and to note any problems or irregularities. Transcribe data on to clean datasheets after returning from the field if necessary and make photocopies so that the originals can be stored.
- Monitoring is best carried out by, or with the full involvement of, MPA personnel and relevant stakeholders. It may be necessary - and is often beneficial - to use external researchers or consultants to design studies, collect data, and interpret results. In such cases it is essential that the results are passed back to the MPA personnel and used for future management decisions. Involvement of stakeholders (local communities, tourism operators, etc.) can raise awareness about the MPA and provide useful information and feedback.
- Because monitoring often appears less immediately important than day-to-day management issues, M&E responsibilities should be

Planning Step 7.2: Determining What Needs to be Monitored

Objective: *To understand that when we monitor for management effectiveness, we are monitoring to determine whether our objectives have been met.*

Activity:

1) With your team, use Worksheet 7.2: “What Needs to be Monitored?” to build your monitoring framework. Remember to consider your existing monitoring program for the purposes of efficiency.

Worksheet 7.2: What Needs to be Monitored?



Planning Step 7.3: Developing A Monitoring Plan

Objective: *To understand how management effectiveness monitoring plans are an integral part of management planning.*

Activity:

1) With your planning team, use Worksheet 7.3: “Developing a Monitoring Plan”. Evaluate this worksheet both vertically and horizontally to determine where some efficiencies might be created by using single monitoring programs for measuring effectiveness of multiple objectives.

Worksheet 7.3: Developing a Monitoring Plan

specified in the terms of reference of relevant staff and adequate time made available for analysis and interpretation. Compliance with the tasks specified in the M&E plan should be monitored and adjustments made as appropriate.

Assess the resource needs to run the monitoring program

Resources needed to run the monitoring programs include human staff participants, equipment, and funding. A plan structure can start by:

- Identifying the number of people needed and the extent to which existing MPA staff can be used and whether external assistance is required to collect the data
- If training is needed, identify how this can be undertaken
- If external assistance is necessary, determine potential sources (e.g., local academic and technical institutions, NGOs, government staff, local and/or overseas volunteers, consultants) to tap
- Determine the equipment needed and indicate if it is already available or would have to be acquired
- Prepare an estimated budget

Develop a comprehensive M&E work plan and timeline

Given the complexity of M&E a comprehensive plan should be developed for the MPA of the following:

- Separate plans may be required for particular components (e.g., for coral reef monitoring, which will involve specific methods, schedules and personnel). The various sectoral components should be integrated into a comprehensive M&E plan.
- A timetable for the main activities and components;
- Indicators and descriptions of methods;
- Data storage and analysis processes
- Responsibilities for each component;
- Reporting requirements (i.e., formats, frequency) for the protected area agency, donor, and/or other management authorities;
- Budget (note that funding for different components may come from different sources).

7.3 WHAT IS ADAPTIVE MANAGEMENT?

What is adaptive management?

Adaptive management is a concept that arose in resource management literature in the early 1970s and over time has become an integral part of MPA management planning. In many ways, adaptive management has been thought of as a “common sense” approach to marine resource management. However, when adaptive management, that is when management effectiveness monitoring, is integrated into the planning process, it in fact becomes a tool to tell us whether our management actions are meeting our management objectives, and why or why not.

Adaptive management is the integration of the design of an effective management plan and a monitoring program to systematically test the assumptions of that plan in order to learn and adapt to the results

Adaptive management involves several specific steps described below and in the adaptive management cycle diagram (Figure 8.1) (Margoulis & Salafsky 1998):

- Establish a clear and common purpose
- Design an explicit model of your system
- Develop a management plan that maximizes results and learning
- Implement your management and monitoring plans
- Analyze data and communicate results
- Use results to adapt and learn

Testing assumptions

Adaptive management is about systematically trying different management actions to achieve a desired management outcome or objective. As demonstrated through the management plan development process, this is not a trial-and-error process, but rather a set of management actions based on identification of priority targets, the threats associated with these targets, understanding the root cause of the threats, identifying human behavior associated with the threats, and selecting management actions that addresses the root cause and associated human behavior. This then becomes the model, or assumptions that you have based your choice of management actions on. You then implement these actions, and monitor the actual results to see how they compare with your assumptions. Your monitoring program should help you to develop an understanding of what management actions are working, and what is not – and, also why.

The role of adaptive management

Adaptive management is about responding to the results of your monitoring and evaluation program. If your management actions did not achieve their



intended results it is because:

- Your assumptions were wrong;
- your management actions were poorly executed;
- the conditions in your MPA have changed;
- your monitoring was faulty;
- or a combination of the above.

Adaptive management then means that either you review and change your assumptions, and/or you change your management actions to respond to the results obtained through your monitoring program.

Communicating results

Whether your management actions have been effective or not, it is important to communicate the results to the MPA manager and staff, key constituents, stakeholders, government agencies and funders.

Documenting the results of your management actions will your MPA manager to select more effective management actions to meet the established management objectives, and not repeat the mistakes of the past. It will also enable other MPAs to learn from your mistakes and benefit from your experiences. It also allows funders to evaluate your progress, while understanding that you are taking proactive measures to find better solutions.

Re-Cap of Module 7: Management Effectiveness



MAIN POINTS

• Measuring Management Effectiveness

- long-term monitoring programs, using appropriate indicators, are necessary to determine whether outcomes and objectives are being achieved
- drafting a M&E program can be broken into the following tasks: first to determine what needs to be monitored; and second to designing and planning the monitoring and evaluation program.

• Determining What Needs to be Monitored

- “effective management” is a multi-dimensional judgment that involves biophysical, socio-economic and governance issues be considered
- it is never possible to monitor every species or process, therefore, appropriate indicators must be selected - i.e. units that represent a much broader suite of characteristics or parameters
- an appropriate indicator should closely track the objective that it is intended to measure

• Adaptive Management

- the adaptive management process is a tool to tell us whether our management actions are meeting our management objectives, and why or why not

CONNECTION TO OTHER PROCESS STEPS

- **Measuring Management Effectiveness** - links back to outcomes and objectives, and forward to monitoring, evaluation and adaptive management
- **Determining What Needs to be Monitored** - links back to outcomes and objectives, and forward to evaluation and adaptive management
- **Adaptive Management** - links back to monitoring and evaluation and forward to planning

TYPICAL CHALLENGES

1. Determining What Needs to be Monitored

– biggest challenge is determining the scope of the management effectiveness program so that it is realistic given other site activities, budgets and staff expertise. Additional issues include poor site characterization to begin with (inadequate baseline data); and selecting truly representative monitoring indicators that link to management objectives and outcomes.

2. **Adaptive Management** – often becomes a stumbling block because: a) when a management strategy is not working, it is difficult to know exactly why, and b) institutionally MPAs are not always structured to be responsive to making timely management changes

KEY DEFINITIONS

M&E - a two-part process, measuring management effectiveness followed by evaluating management effectiveness.

Adaptive Management - Adaptive management is the integration of the design of an effective management plan and a monitoring program to systematically test the assumptions of that plan in order to learn and adapt to the results.

SELECTING YOUR INDICATORS

Step 1: Review your objectives and outcomes

- a) Select the objectives and outcomes that you want to evaluate (see Worksheet 3.2)

Step 2: List all possible indicators

- a) Identify the indicators that correspond to the objectives you identified in Step 1
- b) Write down the relevant indicators that you want to use in your monitoring and evaluation program.

Step 3: Review and prioritize the indicators identified

- a) Think about the feasibility of measuring each indicator (Do you have the data, or could you collect it? Does a partner organization have relevant data?)
- b) Circle / highlight the indicators you might be able to measure initially.
- c) Think about how the indicators relate to each other (Are there indicators that might be easily monitored / measured at the same time?)

PLANNING YOUR EVALUATION

Step 1: Assess resource needs for measuring your indicators

- a) Estimate the human resources you will need to measure and analyze your prioritized indicators.
- b) Determine what equipment you will need.
- c) Estimate the budget you will need.
 - Consider how frequently you would like to measure each indicator, and think about what kind of annual funding this would require.
 - Are there activities you are already conducting that could easily incorporate some monitoring at a low cost?
- d) Assess the human resources, equipment and budget currently available. If these are not sufficient, you will need to think about how to secure additional resources.

Step 2: Determine the audiences who will receive the evaluation results

- a) Identify the target audience(s). Your front-end assessment information can help you consider who will be interested in the results.
- b) Determine the priority primary audience(s)

Step 3: Identify who should participate in the evaluation

- a) Think about the skills and expertise needed to conduct the evaluation.
 - Do you have the necessary expertise?
 - Do you have staff with the necessary expertise?
 - Are there partners who can help?
 - Will you need to hire people with particular skills or expertise to help?
 - Is it appropriate and feasible to involve community members?
- b) Determine staff and non-staff (e.g. partners, contractors, volunteers) who will conduct the evaluation.
- c) Create the evaluation team and determine the people responsible for each task.

Worksheet 7.2 : WHAT NEEDS TO BE MONITORED?

This worksheet will help you organize your monitoring programs based on the types or categories of indicators you will be using – biological, socio-economic or governance monitoring programs. By focusing your monitoring programs on indicators, you will be able to narrow your monitoring programs, rather than develop complex, multi-objective monitoring programs.

BIOLOGICAL MONITORING PROGRAM

WHAT ARE YOUR BIOLOGICAL AND NATURAL RESOURCE OBJECTIVES?	BASED ON YOUR OBJECTIVES, WHAT HABITATS OR SPECIES INDICATORS NEED TO BE MONITORED?	HOW OFTEN DO YOU NEED TO MONITOR THESE INDICATORS?	WHAT IS YOUR SAMPLING SIZE?	WHAT TECHNIQUE WILL YOU USE TO MONITOR THESE INDICATORS?
1.				
2.				
3.				
WHAT SPECIES AND HABITATS ARE IMPORTANT TO THE COMMUNITY OR OTHER STAKEHOLDERS?	BASED ON THIS, WHAT HABITATS OR SPECIES INDICATORS NEED TO BE MONITORED?	HOW OFTEN DO YOU NEED TO MONITOR THESE INDICATORS?	WHAT IS YOUR SAMPLING SIZE?	WHAT TECHNIQUE WILL YOU USE TO MONITOR THESE INDICATORS?
1.				
2.				
3.				
DO YOU NEED TO MONITOR ANY BIOPHYSICAL FACTORS TO SATISFY A MANAGEMENT AUTHORITY?	IF SO, WHAT HABITATS OR SPECIES INDICATORS NEED TO BE MONITORED?	HOW OFTEN DO YOU NEED TO MONITOR THESE INDICATORS?	WHAT TECHNIQUE WILL YOU USE TO MONITOR THESE INDICATORS?	
1.				
2.				
3.				

Worksheet 7.3 : DEVELOPING A MONITORING PLAN

Target _____

OBJECTIVE	INDICATOR	MONITORING TECHNIQUE	FREQUENCY	EQUIPMENT	PERSONNEL	ESTIMATED BUDGET

How Is Your MPA Managed?

MODULE 8: The Implimentation Phase

8.1 THE IMPLEMENTATION PHASE

Challenges with Implementation of the MPA Management Plan

Approval of the Plan

Developing Implementation Plans

8.2 DEVELOPING ANNUAL WORK PLANS

Purpose and Need for Annual Work Plan

Developing a Road Map



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OVERVIEW

After going through a long and detailed MPA management planning process, many MPAs find one of the biggest challenges is implementation of the plan. If you have followed a process similar to the one laid out in this training course, your planning process should be solid and well documented. However, there can be additional hurdles that can still be addressed before the plan goes through the approval process and is formally adopted.

This module identifies some of those hurdles and ways to avert delays before the implementation phase. Five-year prioritization plans and annual work plans will bring a reality check to what and when different components of the plan can realistically be implemented.

LEARNING OBJECTIVES

- Understanding some of the common hurdles to implementing an MPA management plan
- Understanding the approval process for the management plan
- Understanding the basic components of a five-year prioritization plan
- Understanding the basic components of an annual work plan



Lesson Plan

8.1 THE IMPLIMENTATION PHASE

The implementation phase can prove to be one of the most challenging steps in the management plan process. Delays can arise in the approval of the plan. Funding may be inadequate or unreliable and can't support the implementation of the full plan. Legal or jurisdictional questions or disputes may arise. Inadequate staffing or staff capacity can stall the implementation of management actions.

One place to start to ensure success in the implementation of the management plan is with the planning process itself. Frequently encountered problems can include (modified from Lee and Middleton 2003):

- Insufficient attention given to budgetary questions;
- unrealistic assumptions about the management capacity of the MPA's staff;
- poorly formulated and articulated management objectives;
- vital details (such as the scope of the problems to be addressed) are deferred for further study (although this may be difficult to avoid);
- a failure to allocate responsibilities for implementation of the plan;
- vague and unspecific commitments that do not provide a basis for on-the-ground actions;
- undue emphasis on certain aspects of management, such as tourism or recreation, which may divert resources away from other important aspects of the protected area;
- financial, managerial or political instability;
- a failure to set clear priorities, many plans contain options or tentative recommendations rather than firm decisions on what the MPA has decided to do, diminishing the authority of the plan; and
- management plans that are impractical, they cannot be used as a basis for action.

Approval of the plan

This is a procedural step involving submission of the final plan for approval by the competent authority. Procedures will vary from country to country, but in most cases there will be a formal process of adoption or approval to give authority to the plan, often laid down in legislation and clearly documented.

For example in Australia, federal national parks management plans are required to be submitted to the Minister for Environment and Heritage



for approval. The plan is also tabled in both houses of Parliament for a statutory period of 15 sitting days during which time Members may raise objections or seek clarification in relation to the document.

Developing implementation plans

The management plan sets out strategies to be implemented. These should be realistic and necessary for the management of the marine protected area. They should not be wish lists or include items which do not relate to the management objectives. This process gives clear legal authority to the management plan and provides a strong foundation for compliance and enforcement actions.

Two approaches are in general use.

Either :

- the management plan does not include detailed resource and financial information for each year, these are documented separately;
- or**
- the management plan includes information of this kind, usually laid out for a 5-year period, and reviewed on an annual basis.

The reasons for adopting the first approach are complexity and scope of the tasks, and that it is difficult to forecast costs accurately more than a year or two in advance. Moreover, over the five to ten year period of the management plan, it is possible that large adjustments may be required either due to changes to the MPA itself, to the surrounding area or to the staffing/financial situation of the managing organization, or as a result of significant successes or failures. Therefore, many MPAs use the management plan to identify the range of strategies needed and from which the more detailed and accurate operational plans (such as work plans) are produced.

Even where this approach is adopted management plans can still serve as essential budget documents since governments and donors are unlikely to fund actions not included in the plan. Moreover, a suite of management plans for all MPAs under the agency's responsibility provide the foundations for its business plan, with clear indications as to why the funding is required, management priorities and how resources will be allocated.

Agencies which operate on the basis described above include the Kwa Zulu Natal Nature Conservation Service and the Kenya Wildlife Service. Both use management plans as the starting point for the preparation of annual work plans. Any changes required to ensure that the work plan is relevant and up-to-date are considered and adjusted annually.

The second approach is adopted when countries or agencies decide to outline details of the financial and operational information as part of



the management plan. Where the second approach is adopted and this information is included it would be in the form of a work plan which should cover the strategies to be carried out with an estimate of costs over the entire period of the management plan. This can be set out as a summary in spread sheet format. It should include: the timescale involved; the resources of staff and money required; the priority to be accorded to the work; and criteria for success and failure to be used to measure progress. Depending on how financial resource planning is carried out in the organization, it may be useful to split the work plan into two parts:

- repeated and on-going tasks (maintenance program)
- developmental or capital projects, or “one off” actions.

Detailed annual operational plans for your marine protected area should also be prepared on a rolling basis. These should be linked to annual budgets and provide an accurate projection of the work to be carried out in a MPA each year derived from the management plan. As with the work plan, it may help to distinguish between repeated or on-going tasks, and developmental or capital projects. *Operational plans would not normally form part of the management plan but serve as a management tool setting out how it will be implemented.*

Some variations in presentation

There are several ways in which information relating to implementation can be grouped in the Management Plan or any supporting document:

By zone

If management zones have been identified, the strategies, times and costs for the marine protected area may be grouped together thus:

- strategies which are required for each zone;
- strategies which are wide in their application, affecting more than one zone; and
- strategies that extend outside the protected area.

By objective

In some cases, strategies – along with associated timelines and pricings – are grouped into ‘management strategies’ for each objective.

Division into projects

In other cases, management strategies are broken down into units of work called “projects”. This can facilitate implementation as each project can be clearly described, individually priced and timetabled. Documentation relating to the project can be used to guide members of staff, or contractors, charged with carrying out the work.

Within this approach, each project is assigned a priority. The priority order

Planning Step 8.1: Setting Priorities Over the Next 5 Years

Objective: *To understand that for any MPA, staff and financial resources are limited, therefore activities need to be prioritized based on established criteria.*

Activity:

1) Work with your implementation team and fill out Worksheet 8.1: “Five-Year Prioritization Plan” as it pertains to the targets your planning team has been working on.

2) In developing your priorities, keep in mind that it will take at least five years to complete all outputs/outcomes.

3) Determine which outcomes/outputs build off of others.

Worksheet 8.1: Five-Year Prioritization Plan



Planning Step 8.2: Developing a One-Year Work Plan

Objective: *To understand how work plans are the implementation vehicle for the management plan.*

Activity:

1) Work with your implementation team and fill out Worksheet 8.2: “Annual Work Plan” for the targets you have been working on.

2) Refer to SWOT Analysis to understand strengths and weaknesses of site. Work plan should also be guided by budget and number of staff.

Note: one way to leverage additional support for your work plan is to consider partnerships with NGOs, other agencies or stakeholders.

is used to guide an annual allocation of resources. One way to organize priorities is as follows:

- Priority 1: projects which need to be completed within a given year. These might include projects which are essential to safeguard key characteristics of the site, those that relate to legal implications of site tenure, and those that have implications under health and safety and public liability.
- Priority 2: projects which are important for routine management of the MPA. They should be completed in a given time period, but with an element of flexibility.
- Priority 3: projects which, though desirable, may only be undertaken when time or other resources are available following completion of projects under Priorities 1 and 2.

Worksheet 8.2: Annual Work Plan



Re-Cap of Module 8: The Implementation Phase



MAIN POINTS

• Implementation Phase

- can prove to be one of the most challenging steps in the management plan process
- delays can arise in the approval of the plan. Funding may be inadequate or unreliable, and can't support the implementation of the full plan. Legal or jurisdictional questions or disputes may arise. Inadequate staffing or staff capacity can stall the implementation of management actions
- one place to start to ensure success in the implementation of the management plan, is with the planning process itself by laying out 5 year priorities including timelines, budgets, partnerships and staff responsibilities

• Develop Annual Work Plans

- annual work plans should be developed on a rolling basis
- MPA work plans can be organized by: zones, by objectives, or by projects
- all work plans need to have a set of defined criteria for prioritization

CONNECTION TO OTHER PROCESS STEPS

- **Five Year and Annual Work Plans** - connect back to the SWOT analysis is determine site strengths and weaknesses, also connects back to strategy priorities.

TYPICAL CHALLENGES

1. **Implementation Phase** – sometimes difficult to anticipate what the challenges might be so important to understand *who* needs to sign off on the management plan, *how* long you anticipate that taking, *what* the source of funding for the plan will be, *what* your site's capacity is to implement the plan.
2. **Five Year Work Plans** – most useful for prioritizing management strategies, then spreading them out over a 5-year period so they can be addressed based on the prioritization.
3. **One Year Work Plan** – takes the priorities for each year and assigns a budget, identifies staff, links with other strategies and identifies implementation partners.

KEY DEFINITIONS

- Road Map** - the incremental steps for developing a management plan laid out against a timeline. Serves as a guidance document for the implementation steps of the management plan.
- Five Year Work Plan** - a plan that lays out the priorities for implementing the management plan strategies.
- One Year Work Plan** - functions as an operational plan for implementation of management strategies.

IMPLEMENTATION PHASE

Worksheet 8.2: ANNUAL WORK PLAN

MANAGEMENT STRATEGIES			ACHIEVEMENTS				TIME FRAME				IMPLEMENTATION TEAM				PLANNED BUDGET		
Objective	Activity	Indicator	Q1	Q2	Q3	Q4	Lead	Staff	Partners	Source of Funds	Budget Descript	Amount					
PROGRAM AREA:																	

Definitions of terms and concepts used in guidebook

Adaptive management – The cyclical process of systematically testing assumptions, generating learning by evaluation the results of such testing, and further revising and improving management practices. The result of adaptive management in a protected area context is improved effectiveness and increased progress towards the achievement of the goals and objectives.

Bio-regional planning – planning for the entire area that is unified in some way by common ecosystems, biodiversity, culture, and economics.

Ecosystem-based management (EBM) – managing a complex system of natural living marine resources and abiotic factors and their interactions on an ecological scale.

Indicator – A unit of information measured over time that documents changes in a specific condition, providing tangible evidence of obtaining your management objectives.

Integrated Coastal Management (ICM) - the management of sectoral components (e.g., fisheries, forestry, agriculture, tourism, urban development) as part of a functional whole (a holistic approach to management). MPAs are a component within a larger framework of ICM.

Large Marine Ecosystem (LME) – regions of ocean space encompassing coastal areas from river basins and estuaries to the seaward boundaries of continental shelves and the outer margins of the major current systems.

Marine Protected Area – Any area of intertidal or subtidal terrain, together with its overlying waters and associated flora, fauna, historical, and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment (IUCN).

MPA Network – an organized collection of sites designed to link individual areas and comprehensively represent the regions spectrum of marine life characteristics.

Marine Reserves – AN area that is completely (or seasonally) free of all extractive or non-extractive human uses that contribute impact (some exceptions are permitted for scientific/research activities).

Mission Statement – describes the overall purpose of the group (the ends) and the strategies/actions (the means) that are to be taken by the group. The mission statement can then be complemented with the values of the group and the assumptions that they are functioning under.

Natural Resource Targets - the priority resources that you aim to protect and conserve in your MPA management plan.

Natural Resource Threats – factors or conditions that impact or influence the natural resource target.

Objectives – a specific statement detailing the desired accomplishments or outcomes of your management activities.

Outcome – The consequence, effects, or real impacts of management activities. Outcomes assess the extent to which the management objectives are being achieved.

Output – Resulting products and/or services, or achievements of a planned work program that arise from a management activity.

Stakeholders – person or group that has a vested interest in the site or natural resources of the marine protected area.

Vision statement – a picture of the preferred future

Zoning – MPA management tool that delineates areas of an MPA for the purpose of controlling use and access and addressing user conflicts.

Terminology used in publication in bold; followed by synonyms:

Activities; actions, strategies

Management plan; strategic plan, action plan, general plan, programmatic plan, subject plan, site plan, regional plan, seascape strategy

Indicator; indicator of success, performance measure, performance area

ICM; coastal zone management, integrated coastal zone management

Zoning; zonal management, marine zones

Stakeholders; user groups, communities, interest groups

Marine Reserves; no-take zones, refugia, reserves, fully protected area

