The Seascapes Guidebook

How to Select, Develop and Implement Seascapes

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Cover photos, top to bottom:

Aerial View of Pulau Wayag in Raja Ampat, Bird's Head Seascape Raja Ampat. Photo by Sterling Zumbrunn.

A clownfish looking out from a sea anemone in the Sulu-Sulawesi Seascape. Photo by Jürgen Freund.

Scientist studying a coral reef during a marine expedition to Buli Bay, Indonesia. Photo by Sterling Zumbrunn.

Fisherman and his family at work at Coron Island in Palawan, Philippines. Photo by Yasu Hibi.

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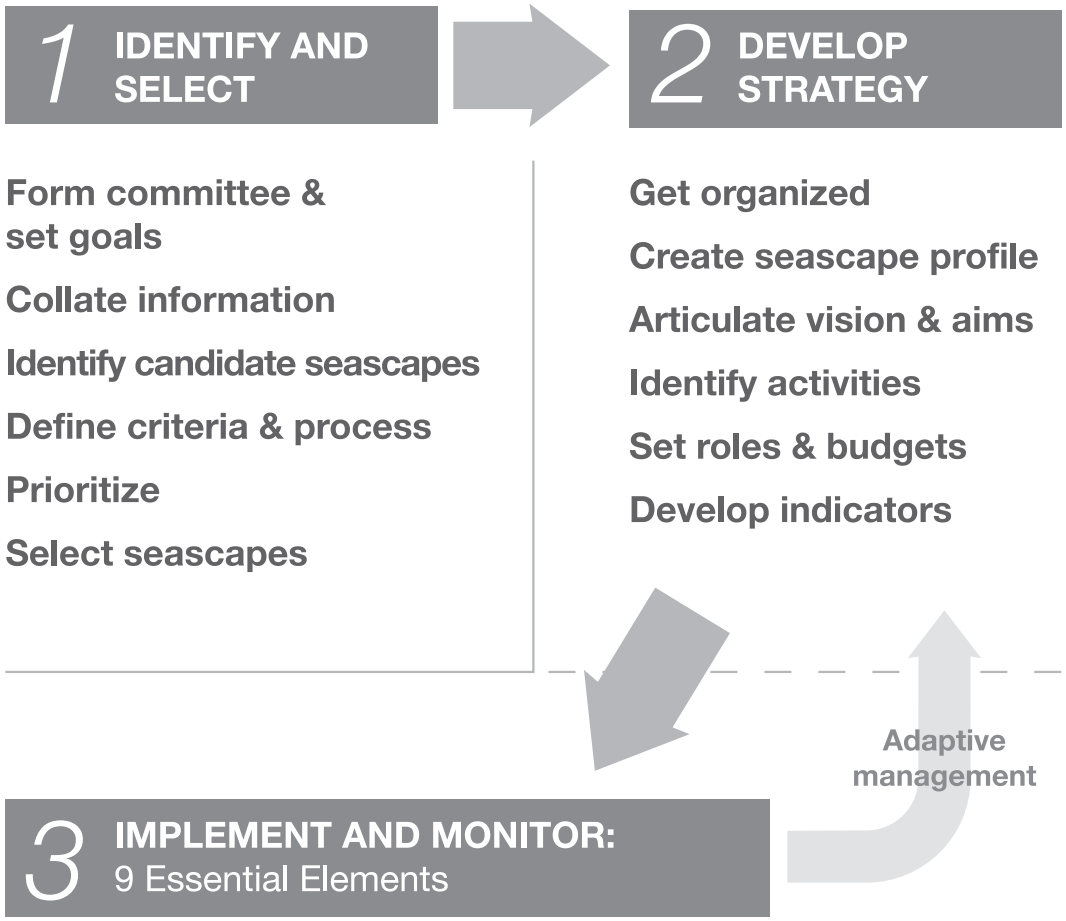
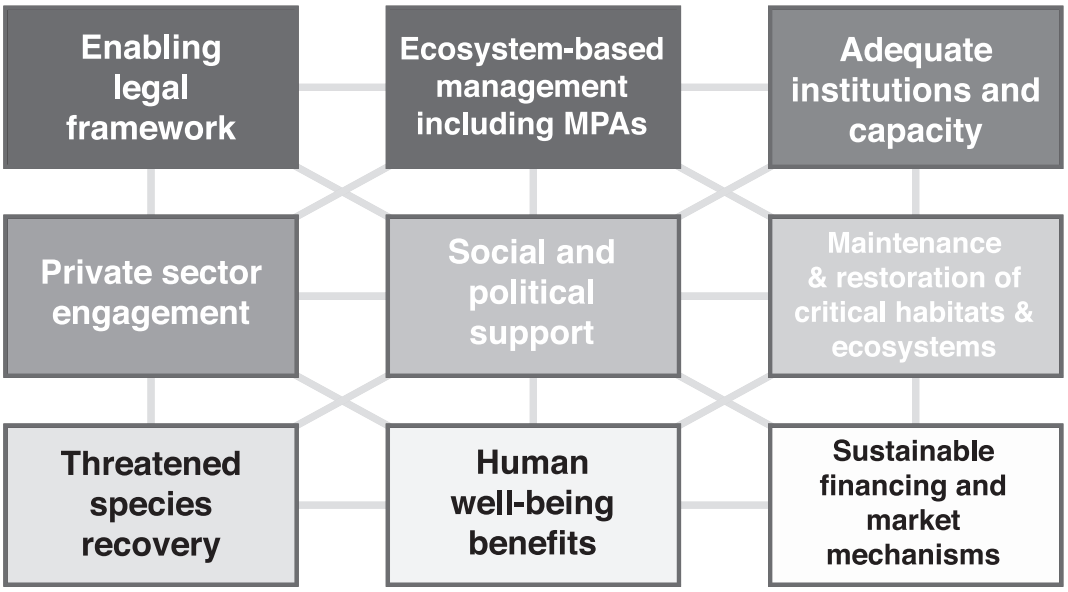
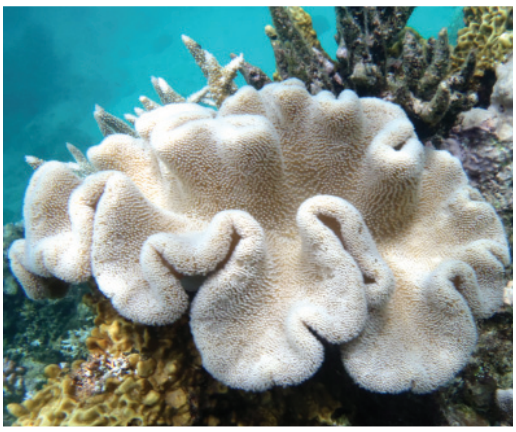




1. About the Guide

Scuba diver examining a coral reef in Raja Ampat, Bird's Head Seascape.

Photo by Sterling Zumbrunn



Healthy soft coral in Papua New Guinea.

Photo by Noel Wangunu

Kids on a boat in the Sulu-Sulawesi Seascape.

Photo by Miledel Quibilan

Sunset in Raja Ampat, Bird's Head Seascape.

Photo by Sterling Zumbrunn

1. About the Guide

This document provides guidance to identify candidate Seascapes, select Seascapes for investment, and develop management strategies for selected Seascapes.

Seascapes are defined as:

"Large, multiple-use marine areas, defined scientifically and strategically, in which government authorities, private organizations, and other stakeholders cooperate to conserve the diversity and abundance of marine life and to promote human well-being."

Although specifically prepared for use by the Coral Triangle Initiative countries, this guide will be useful in other regions as well. It is designed for marine practitioners as they work to develop Seascape management regimes, and draws on the experiences of Seascapes and marine management practitioners from around the globe. The recommended steps can be adapted as necessary to fit varying circumstances and organizational mandates.

The guide was developed primarily through a workshop held in the Philippines in April 2009 in which marine management practitioners from numerous organizations came together to share their experiences. Participants included: Conservation International (CI), the International Union for Conservation of Nature (IUCN), The Nature Conservancy (TNC), Wildlife Conservation Society (WCS), and the World Wide Fund for Nature (WWF).

Box 1. The Coral Triangle Initiative (CTI)

The Coral Triangle Initiative is a collaboration of six countries known as CT6—Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor-Leste—in the most biologically diverse marine region of the world. Each of these nations is home to more than 500 species of coral and an enormous variety and abundance of other marine life.

The CTI has worked to develop a Regional Plan of Action (RPOA) as well as a National Plan of Action (NPOA) for each country. The initiative is supported by the governments of the United States and Australia, Asian Development Bank (ADB), the Global Environmental Facility (GEF), Conservation International (CI), The Nature Conservancy (TNC), and World Wild Fund for Nature (WWF).

In coming together to promote coral reefs, fisheries, and food security, the governments have identified the designation and effective management of priority Seascapes as one of five CTI goals. The Seascape approach has been integrated into the Regional Plan of Action and is increasingly embraced by the CT6 as an effective framework for resource management (see Appendix 1 for the relevant goals, targets, and regional actions under the CTI RPOA).

2. The Seascape Approach

View of a man in a boat and underwater coral reef in Raja Ampat, Bird's Head Seascape.

Photo by Sterling Zumbrunn

Giant Pacific manta ray photographed during a marine expediton in Raja Ampat, Bird's Head Seascape

Photo by Sterling Zumbrunn

Local children in Cagayancillo, Palawan, Philippines.

Photo by Jürgen Freund

Underwater view in Raja Ampat, Bird's Head Seascape.

Photo by Sterling Zumbrunn

2. The Seascape Approach

This section is designed to provide contextual information for those facilitating the Seascape identification, selection, and strategy development process.

Context for Large-scale Marine Management

Over the last few decades, efforts to enhance marine management have grown steadily and become more robust, with increased focus on managing large marine areas. Efforts to institute ocean management practices in the 1970s culminated in the 1982 United Nations Convention on the Law of the Sea (UNCLOS). This international agreement divided the ocean into jurisdictional zones, the most important of which is the Exclusive Economic Zone (EEZ), which covers waters out to 200 nautical miles from shore. Nations have the right to administer this zone and to explore, exploit, conserve, and manage the natural resources therein. Ninety percent of all fish caught are within EEZs. Beyond them lie the "high seas"; these waters make up roughly 60 percent of the world's oceans. They have limited governance mechanisms for managing marine resources and controlling pollution.

National, regional, and international laws and agreements have been created to implement the principles in UNCLOS and to promote marine biodiversity conservation and sustainable development. These efforts have resulted in a variety of management strategies and governance regimes at large scales. It is widely recognized that any strategy to achieve conservation and sustainability on a grand scale must incorporate planning and action at a landscape scale (or marine equivalent), exemplified by ecosystem-based conservation.

Managing Large Marine Areas

A 2010 study by Robert Bensted-Smith and Hugh Kirkman, "Comparison of Approaches to Management of Large Marine Areas," surveyed Marine Ecoregions, Seascapes, Large Marine Ecosystems, Regional Seas Programmes, and Integrated Coastal Management, and identified their unique characteristics and levels of success.

The study concluded that Large Marine Ecosystems, Marine Ecoregions, and Seascapes all apply science at the ecosystem scale in defining their geography. All are reasonable starting units around which to build marine management regimes. The success of each of these regimes depends less on its label than on factors such as opportunity for iteration and adaptation, relevance to development, mobilization of partners, capacity to work at multiple levels, sustained investment, availability of capital to finance agreed-upon solutions, and the skill and determination of field staff. All three approaches have achieved significant results. According to the Bensted-Smith and Kirkman study:

"Ecosystem based management demands sustained attention to ensure robust marine resource governance at the level of coastal communities, as well as to the maintenance of large-scale ecological processes. There are encouraging signs that conservation practitioners are progressing in this direction, irrespective of which methodological flag they are flying."

The study is available at **http://www.fauna-flora.org/wp-content/uploads/Management-of-Large-Marine-Areas.pdf.**

The Seascape Approach

The Seascape approach is aimed at building coalitions among government, corporations, and civil society to improve ocean governance, and highlights the importance of achieving effective governance across sectors and at all levels, from local to regional.

A Seascape is a geographic space, identified by both ecological and strategic criteria, in which an initiative is taking place. Seascapes have high biological diversity, ecological and economic connectivity, and aesthetic and cultural value. Unlike most other large marine management areas, a Seascape is not a mapping unit that exists in the absence of a management initiative; in other words, an area is not considered a Seascape until efforts to pursue the nine essential elements of a functional Seascape (described below) are initiated. Seascapes differ from most other large-scale approaches in the strong emphasis given to developing sustainable, multilevel governance structures. Seascapes typically include government-authorized protected areas that address special management needs, and provide an opportunity for government agencies to coordinate their efforts voluntarily to secure more effective regional management.

Criteria for Seascapes

Three criteria exist for designating a Seascape:

Scope: There is a comprehensive strategy for working on all nine essential elements of a functional Seascape at multiple levels of governance.

Scale: The geographic scale of the Seascape is large enough to encompass work at multiple levels of governance and across network(s) of marine protected areas exhibiting connectivity (cultural, political, economic, ecological), but is not too large to manage effectively.

Commitment: The lead agency and partners are committed to engaging in the Seascape for a significant period, and have a long-term strategy and vision for the Seascape.

The Nine Essential Elements

Functional Seascapes promote comprehensive marine management by focusing on the achievement of nine essential elements.

Enabling conditions

Seascapes generate an enabling framework of laws, conventions, regulations, and policies that facilitate marine conservation at local, national, and regional scales.

Seascapes advance large-scale management of marine ecosystems and species through the use of multidisciplinary scientific information to inform effective planning, implementation, monitoring, and evaluation.

Seascapes build adequate institutional frameworks and capacity, including personnel, infrastructure, and equipment, to make marine governance structures (governmental, commercial, and civil) work effectively and efficiently.

Changes in behavior

Seascapes promote the increasing convergence of conservation and development by linking the viability and profitability of major economic activities with sustainable management of the ecosystem.

Seascapes increase the social and political viability of marine conservation as an integral part of sustainable development, and they build broad support at all scales, from stakeholders in local marine managed areas to national leaders.

Ecological outcomes

Seascapes maintain or restore critical habitats and ecosystems so that ecological processes and ecosystem services are sustained.

Seascapes reverse declining population trends for threatened marine species.

Human well-being benefits

Seascapes improve the social, economic, and cultural well-being of human communities dependent on marine and coastal resources and ecosystems.

Long-term sustainability

Seascapes strive to be financially sustainable, with funding portfolios that are stable, diverse, and large enough to implement all priority marine conservation activities.

As threats to marine environments continue to grow, it is critical to expand the scope and effectiveness of marine management efforts. The Seascape approach has been recognized and applied as a useful framework for the management of marine areas at a scale that can produce significant benefits for marine conservation and human well-being. Broad adoption of the Seascape approach will dramatically expand the scale of global ocean conservation and stewardship

Existing Seascapes

Seascape initiatives are under way around the globe in a wide range of cultural and environmental contexts, covering a wide range of sizes.

Listed below are some locations where the Seascape approach is currently being applied by Conservation International and the Wildlife Conservation Society. Both organizations, along with their many partners, are actively using a Seascape framework to guide their conservation work.

Abrolhos Seascape (A)

The Abrolhos Region is an area located off the southern coast of the state of Bahia, Brazil. As the most biodiverse area in the South Atlantic, the region houses numerous endemic species and various threatened species.

Bird's Head Seascape (B)

This Seascape sits at the epicenter of the Coral Triangle region, in northwest Papua, Indonesia. Recording more than 1,600 species of reef fish and experiencing growing threats from resource extraction and unsustainable development, it unquestionably ranks as a global priority for marine conservation.

Eastern Tropical Pacific Seascape (C)

This Seascape encompasses the national waters, coasts, and islands of Colombia, Costa Rica, Ecuador, and Panama. Its complex biogeography has resulted in high diversity, endemism, and concentrations of species that support both fisheries and tourism.

Glover's Reef Seascape (D)

Just 45 km off the coast of Belize, an astounding 800 patch coral reefs dot the waters of this Seascape. It is a critical nursery and feeding ground for sea turtles, sharks and rays, as well as numerous fish species that gather in massive numbers.

Karimunjawa Seascape (E)

Located in the middle of the Java Sea, Karimunjawa National Park is one of only eight national marine parks in Indonesia. The reefs teem with colorful schools of butterflyfish, parrotfish, emperor fish, and fusiliers.

Patagonian and Southwest Atlantic Seascape (F)

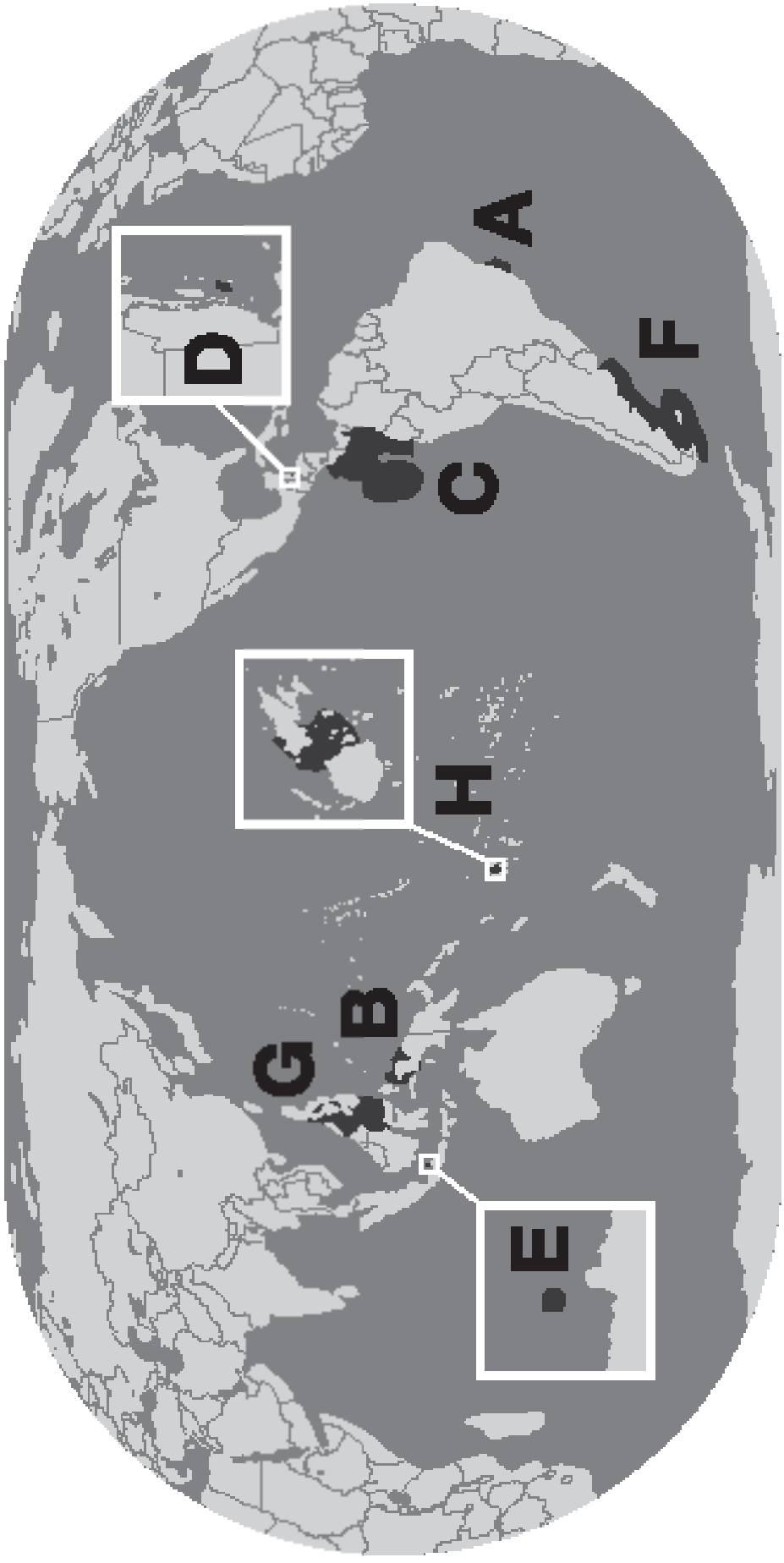
Isolated and sparsely inhabited, these waters harbor some of the world's most spectacular concentrations of marine wildlife, including sea lions, seals, penguins, seabirds, sharks, whales, dolphins, and many species of fish.

Sulu-Sulawesi Seascape (G)

Located in the most diverse marine environment in the world, this Seascape spans the territories and waters of three countries: Indonesia, Malaysia, and the Philippines, and provides livelihoods and food for 40 million people.

Vatu-i-Ra Seascape (H)

Unlike many other coral reef sites that have become degraded, the reefs of Fiji's Vatu-i-Ra Seascape remain vibrant and diverse, making them a high priority for marine conservation in the Pacific Ocean.


A
D
C
F
H
G
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E

3. The Seascape Process

Coral Sea fan in the Sulu-Sulawesi Seascape.

Photo by Jürgen Freund

Timor team maps out study area.

Photo by Rui Pinto

Marine expedition in Raja Ampat, Bird's Head Seascape.

Photo by Sterling Zumbrunn

Local children in Balabac, Palawan, Philippines.

Photo by Jürgen Freund

3. The Seascape Process

1. Identify and Select Seascapes for Investment

The Purpose of this Section

This section is organized around Figure 1 and describes how to undertake the three main steps of identifying, developing and implementing seascapes, with examples.

Background

The process used to identify and select new Seascapes offers an opportunity to systematically apply relatively standard criteria. This guide offers recommendations for the process and criteria, but ultimately each Seascape will need to pursue the method most appropriate to it.

Seascape identification and selection is an art as well as a science. It is important that sound science, natural and social, inform the selection and implementation of Seascapes; however, deficiencies in knowledge should not hinder action. Prior to Seascape selection, existing information should be compiled and studies conducted as far as feasible to fill any information gaps.

The level of analysis needed to identify, select, and ultimately develop a strategy for a Seascape may be thought of as a series of steps that becomes increasingly more detailed. Identification will be the least intensive step, while selection and strategy development will be the most intensive, and additional research and information-gathering will need to be carried out throughout implementation of the strategy to facilitate adaptive management. Each of these phases will build upon and inform the other.

Although Seascapes should be large enough to accommodate critical ecosystem processes and multiple levels of governance, size is not a major determining factor in delineation, and most countries have the potential to delineate several Seascapes. After conducting the initial identification and selection at the national level, it is important to review whether any of the candidate Seascapes offer important regional opportunities, and might therefore be best pursued as transboundary Seascapes. These offer the advantage of being able to draw on the resources of multiple countries to address wide-ranging threats across their waters.

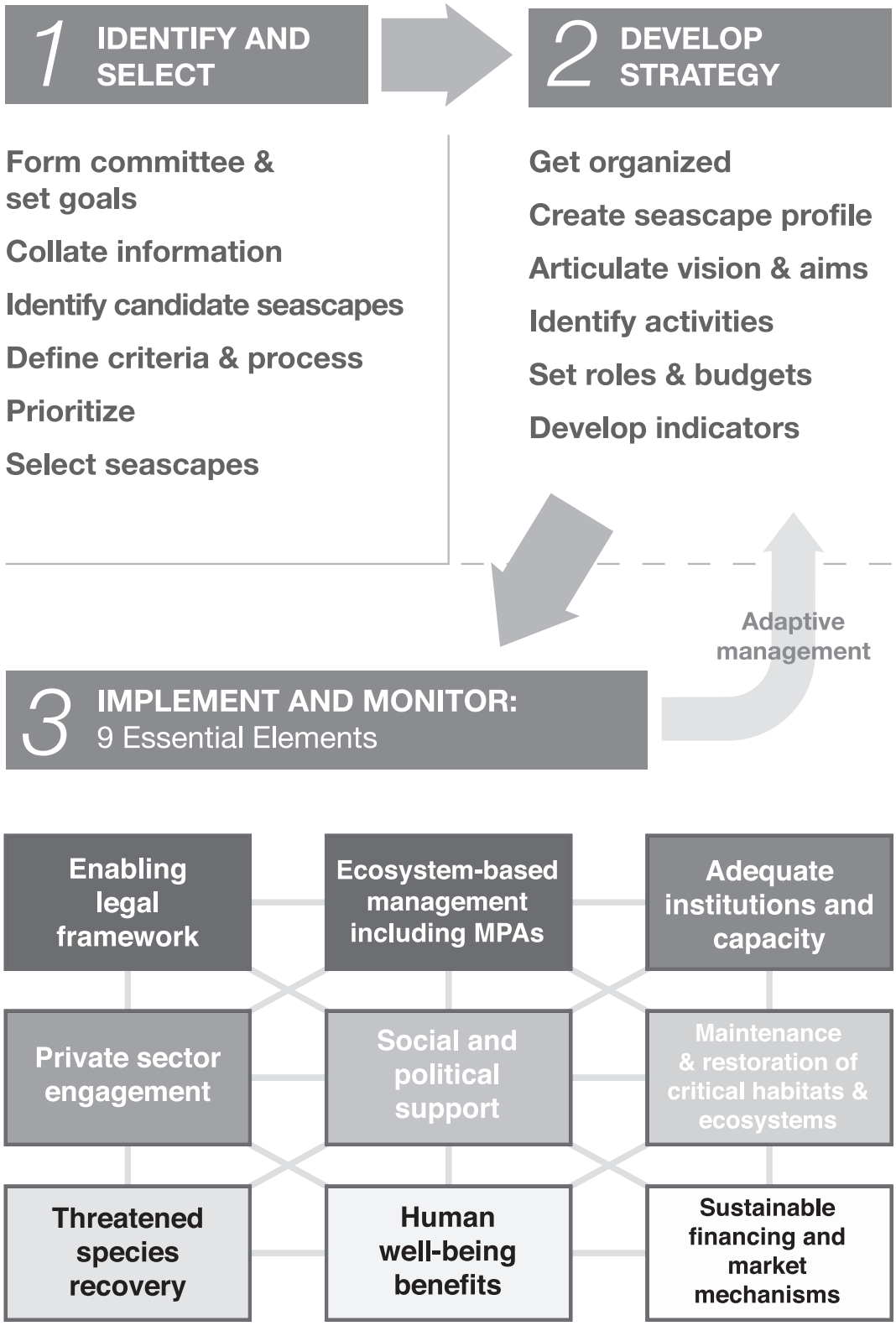


Figure 1: Process for Seascape Identification, Selection, Strategy Development, Implementation, and Monitoring

Step 1: Form committee and set goals

Identification and selection is an iterative process in which a small group of dedicated individuals decides to pursue development of the regime. This core team may include managers, government officials, community members, nongovernmental representatives, and others. They should detail the process and decide who to involve, recognizing that stakeholder support and buy-in is typically stronger when the process is transparent and inclusive from the very early stages of development. This team should form a selection committee of individuals who are able and willing to devote significant time to the processes, and have the authority necessary to represent their organizations. In addition, other stakeholder groups should be consulted in each of the following steps to ensure a transparent and participatory process. Experience in conservation management around the world has shown that the more open the process for developing resource management regimes, the more successful they are in the long term.

Establishing goals is the first step, and will help identify any outstanding important issues that may need to be addressed later on. For example, do you want to identify all possible Seascapes for a country before selecting a certain number for investment, or do you want to focus on a particular region of the country or world? Do you want to consider transboundary Seascapes? Setting specific goals will help you to focus the scope of the initiative in a way that will help guide the process.

Step 2: Collate information

The most important criteria when identifying a Seascape is the potential for ensuring progress on the nine essential elements. It is important to keep in mind that resources might not be available to do the complete studies necessary to fill all knowledge gaps. We recommend that the more detailed analyses be focused on the Seascapes you know you will invest in.

Collecting information, either by interviewing experts or compiling existing data, is always useful and will most likely be part of developing your Seascape profile at some point. This is especially true for geographic areas (such as remote locations) and disciplines (socioeconomic, political, legal, etc.) for which published material is scarce or unreliable. The expert workshop is an effective way to access the knowledge of a large group of people from various disciplines at once, as well as build consensus on the situation in your Seascape. **(For more information, visit the Ecosystem-Based Management Tools Network website at http://www.ebmtools.org.)**

The following information is essential to understanding whether an area is a potential Seascape:

- **Biological significance (including biological diversity, important ecosystem features, and key natural resources):** If an area is not of national, regional, or international significance, it should not be considered a candidate for Seascape designation. Bear in mind that areas of national significance can qualify as Seascapes even if they are not a global conservation priority.
- **Political will and stakeholder interest:** Without political will, a potential Seascape is unlikely to succeed. This does not mean political will cannot be generated, though it may require considerable investment of time and money.
- **Governance:** An effective governance system is essential to a Seascape's success. Often the most cost-effective approach is to work with existing systems, though governance systems also can be created, as may be necessary in the case of multinational Seascapes.
- **Major barriers (such as major resource conflict, war, extreme law-and-order problems):** While some areas may have extremely important biological diversity, there may be overriding issues that prevent the creation of a Seascape at this time. These types of areas may remain candidate Seascapes for possible investment if the barriers are removed or naturally dissipate.
- **Pressures:** The extent of economic and social pressures affecting the areas under consideration

(such as fishing, oil and gas development, aquaculture, population increase, and land-based pollution) may also act as barriers to Seascape development.

Step 3: Identify candidate Seascapes

The preliminary identification of candidate Seascapes should be based on:

- Collation and overlay of secondary information, including biological, political, and socioeconomic features
- Potential success in Seascape management
- Expert opinion

In many cases, practitioners identify candidate Seascapes based on pre-existing biological analysis. For example, in the Philippines major Seascapes were identified to correspond to six marine biogeographic regions that had previously been delineated by top marine scientists. Similarly, potential Seascapes for the Coral Triangle had been identified by a group of practitioners facilitated by The Nature Conservancy (2004). Since Seascapes are management units, rather than defined strictly in biological terms, one can adjust the boundaries of a biologically identified area to capture other key aspects of the nine essential elements.

Identification is an iterative process in which experts identify candidate Seascapes through rounds of detailed analysis. This might start with biologically determined areas, then overlay governance systems, local marine tenure systems, important fisheries, areas of high political will, areas that are geographically efficient to manage, and any other factors that will impact the potential for success. This process may be carried out electronically or in workshops to create a series of map overlays displaying information relevant to the nine essential elements.

If biologically important areas have not been identified for a country, or the scale of analysis is either too small or large to be helpful, you may want to do additional analysis of biological information. It is important to agree first on the biological features that are most important for management. Given the large number of categories possible, we recommend identifying a relatively small set of major features, such as habitat type, ecosystem, important species, and threatened species.

If a country is lacking in data, you may need to rely on expert opinion to identify areas of particular importance. By overlaying maps that display the known location of such features, one could come up with a preliminary assessment of areas that might hold several key features, and therefore be higher priorities for management. This process might also help identify gaps in knowledge for future research.

If possible, carrying out a Rapid Assessment Program (RAP, also known as a Rapid Ecological Assessment) will help provide key information. However, given the typical cost of $70,000 to $125,000 USD, some practitioners elect to carry out RAPs only when a Seascape has been selected for investment.

Once candidate Seascapes have been identified, it is valuable to develop a characterization of each as a basis for selection. Characterize the fundamental aspects of each of the nine essential elements by developing a map and a short companion document for each Seascape that includes information on:

- Biological significance, including important biological features and their status
- Key socioeconomic factors (such as population, key demographic features, sources of income, private enterprise)
- Governance framework for the area and legal context for management
- Political and stakeholder interest and level of support
- Institutions in the area (such as schools, government facilities, key agencies)
- Infrastructure (such as roads, dams, ports)
- Any important enabling conditions or possible major barriers to Seascape management success
- Pressures, including threats to the region and obstacles to effective management

- A description of the benefits and challenges
- Any additional key justification

As you characterize the candidate Seascapes, you may find that some features suggest that their geographic boundaries should change. This is fine, as long as there is a clear justification for the new boundary. The identification process provides one level of boundary delineation; during the selection process, the boundaries will be further solidified. The final boundary for a Seascape will not be determined until the strategy is complete.

Step 4: Define criteria and process

To ensure a transparent process and increase stakeholder buy-in, it is important to agree first on the criteria and the steps for prioritizing and selecting Seascapes for investment. Ideally, the selected candidate(s) will be those that have the highest potential to become functioning Seascapes through the realization of all nine essential elements.

Some broad categories of criteria that you may want to consider include:

- Social and political support for Seascapes management
- Ecological criteria
- Socioeconomic criteria
- Governance criteria
- Opportunity criteria

You may also want to assign weight to the selected criteria based on those characteristics that the selection committee feels are most important. A detailed list of possible criteria for each of the above categories can be found in Appendix 3.

The process of prioritization can be a relatively straightforward comparison of the candidate Seascapes. Collect and standardize relevant data to refine your characterization of each candidate based on the selected criteria. If necessary (and feasible), conduct additional studies to fill any information gaps. Where possible, use quantifiable characterizations (i.e., number of species present, economic value of fisheries, number of partners) or qualitatively rate the Seascapes (cultural value, how pristine it is, potential for progress on each of the nine essential elements).

We suggest prioritizing all candidate Seascapes and documenting the results before making a final selection. This will help provide justification for selection and possibly guide future investments in Seascape management.

Step 5: Prioritize

Use the quantitative and qualitative characterizations developed in previous steps to prioritize the candidate Seascapes. Depending on the criteria and process defined by the selection committee, this may involve voting, qualitative ranking, or purely quantitative tabulations, but the process should be clearly defined, transparent, participatory, and well documented to ensure broad buy-in. Each country or group of stakeholders is likely to use different criteria and a slightly different process, so rather than suggest a uniform approach, we provide an example of how this was done in the Philippines (see page 20).

Box 2: Geographic Prioritization for Marine Conservation in Indonesia[1]

In 2009, a team of marine scientists and managers carried out a geographic prioritization process in Indonesia. The main purpose was to provide the government with new guidance on marine biodiversity conservation priorities in order to complete the design of an effective and representative national system of Marine Protected Areas (MPAs) and MPA networks. While the process did not specifically identify or select priority Seascapes for investment, it set a strong foundation for management action that can now be carried out through follow-on processes.

The prioritization exercise had three primary objectives:

- To solicit input from internationally recognized experts to establish the essential marine biodiversity of Indonesia
- To provide a scientifically justifiable ranking of

the marine ecoregions of Indonesia in terms of their priority for marine biodiversity conservation investment by the government of Indonesia, the Coral Triangle Support Partnership (CTSP), and other interested parties

- To identify priority "gap" areas currently lacking coverage by MPAs in order to guide further development of a comprehensive national system of MPAs in Indonesia

Twenty marine scientists were first surveyed by electronic questionnaire for their expert opinions on which marine ecoregions were most important for conservation and which are important for resources something missing here. To ensure comparability of expert inputs and rankings, it was necessary to select a standardized delineation of the marine regions.

Criteria for selecting the most important ecoregions included representativeness, vulnerability, and irreplaceability. Following the surveys, a two-day workshop was held where more than 30 additional experts provided input to help refine the survey results. Using these results, a ranking of ecoregions based on their biodiversity and the criteria was produced. This formed the basis for funding in Indonesia under the CTSP and will provide the foundation for further analysis to choose locations for the creation of more than 7 million additional hectares of MPAs.

[1] Huffard, C.L., M.V. Erdmann & T. Gunawan (2009), Defining Geographic Priorities For Marine Biodiversity Conservation in Indonesia. Based on data inputs from G. Allen, P. Barber, S. Campbell, L. Devantier, M.V. Erdmann, M. Halim, T. Hitipeuw, Guswindia, B. Hoeksema, M. Hutomo, B. Kahn, Y. Noor, M.K. Moosa, K. S. Putra, Suharsono, E. Turak, J. Randall, R. Salm, C. Veron, C. Wallace, 103 pp.

Step 6: Select Seascapes

Once a list of prioritized candidate Seascapes has been developed, the committee will need to present its findings to relevant decision-making bodies involved in marine resource management, including government agencies, international institutions, and donors, who will select Seascapes that they will support politically and financially. Below we provide examples of how Seascapes have been selected in several parts of the world.

Box 3: Selection of Existing Seascapes

Currently active Seascapes were selected through different means. Of the three Seascapes currently supported by Conservation International, the Sulu-Sulawesi has its origins in the Ecoregion concept, incorporating a high degree of science and utilizing the multilateral governance structure offered by a trinational agreement. The Bird's Head Seascape was supported by extensive research to understand ecological processes, and strategies have been adapted accordingly. The geography of the Eastern Tropical Pacific Seascape emerged more opportunistically, starting with the enthusiasm of certain ministers for the idea of a Galapagos-Cocos Corridor and eventually expanding to a much larger area.

In the Patagonian and Southwest Atlantic Seascape, Wildlife Conservation Society and partners used the Seascape Species Approach (see page 32) over the course of three years with a series of technical workshops involving 55 scientists from 26 institutions and eight countries. A group of 33 candidate species was identified and narrowed down to seven that use all the oceanic regimes and management zones, and also represent all potential threats identified in the Seascape. Conservation actions aimed at alleviating these threats were then developed, and form the basis for management actions at the Seascape.

In Belize, the Glover's Reef Advisory Committee and other local experts first completed a participatory spatial assessment of human activities for the atoll, which identified the four main threats to the reef. This laid the foundation for the project and fed into the process for selecting Seascape species and identifying conservation actions for the atoll. With input from international and local experts on the ecology and species of the reef, a suite of seven Seascape species was chosen. Human, biological, and conservation models of the Seascape were developed and approved by the stakeholders and formed the basis of the conservation strategy. The Seascape Species Approach provides a framework for strategic planning and helps the WCS Belize Marine Program focus its conservation actions and efficiently allocate scarce resources.

Case study: Seascape selection in the Philippines

The Philippines identified six candidate Seascapes corresponding to marine bio-geographic regions that had been previously delineated by top marine scientists. Of the candidate regions, the existing Sulu-Sulawesi Seascape already incorporates the Sulu, Celebes, and Visayan seas. This left the West Philippine Sea (WPS), Northern Philippine Sea (NPS), and Southern Philippine (SPS) Sea to select the next priority Seascape from.

Because the candidate areas were recognized as equally important from a biological standpoint, prioritization and selection for Seascape investment was based on more pragmatic considerations such as investment opportunities, governance feasibility, and economic efficiency. Opportunities for success in the nine essential elements were considered in the selection process.

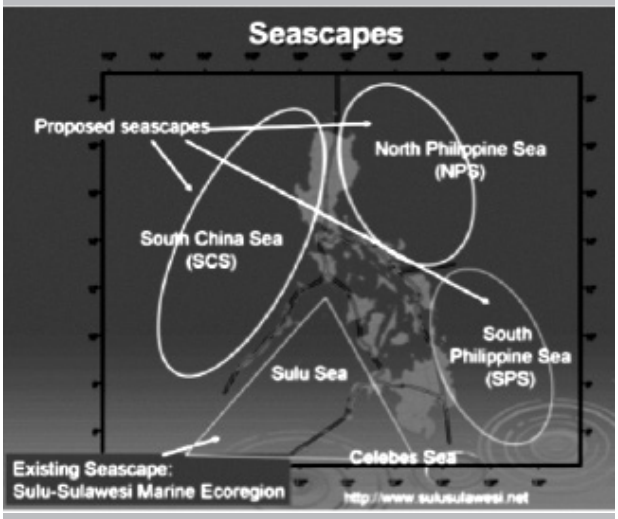


Figure 2: Existing and Proposed Seascapes in the Philippines

The prioritization exercise consisted of three steps:

1. Consolidate/standardize data to allow comparison of Seascapes

This step involved building on data collected in the candidate Seascape identification process (biophysical, socioeconomic, and governance/institutional) and consolidating it with academic studies and development projects.

Map-based information also was used. Figures 3 and 4 show the areas of coral reef in the three candidate Seascapes and how they contribute to the CTI targets on Marine Protected Areas (MPAs).

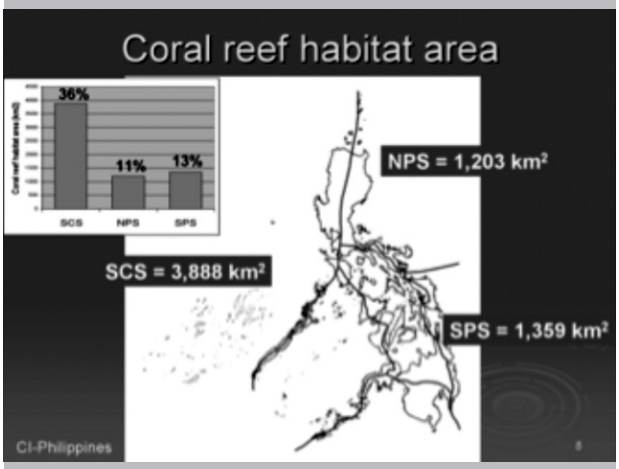


Figure 3: Example of Quantitative Characterization of Candidate Seascapes

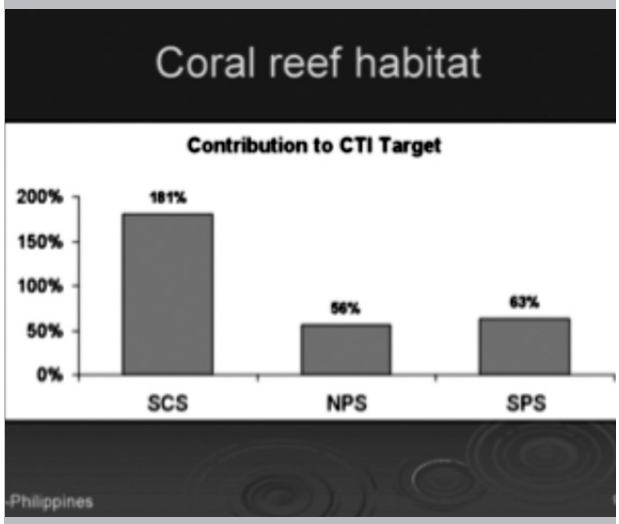


Figure 4: Another Example of Quantitative Characterization of Candidate Seascapes

2. Review existing standards for prioritization and scoring

A small group of experts consisting of Conservation International staff and a government representative met to review existing methods for prioritization/ selection of key biodiversity areas. Various methodologies were considered that could be used to compare and select the next Seascape.

The first method used the nine essential elements of a functioning Seascape as criteria to select the candidate with the greatest potential to become a functioning Seascape.

The second method was pulled from the Philippine Biodiversity Conservation Priorities (PBCP), which identify 36 marine priority areas. Of these, 14 are classified "extremely high" priority, 12 are "very high," and 10 are "high" (Ong, Afuang and Rosell-Ambal, eds). These areas were overlaid on the map of candidate Seascapes to identify the candidates with the greatest number of "extremely high" priority marine areas.

The third selection method considered was based on the MPA Gap Analysis applied to the Philippines and Malaysia (Marine Environment Resources Foundation, CI-Philippines, and Borneo Marine Research Institute, 2009). Two filters are suggested by this method: a coarse filter based on the MPA targets set by the CTI Regional Plan of Action (RPOA), and a fine filter that looks at a menu of specific site attributes, such as nesting or breeding grounds of turtles, whale sharks, or cetaceans, and presence or incidence of trigger species. Priority is given to the candidate Seascape that contributes most to the CTI targets, using the coarse filter in combination with the fine filter to allow some additional criteria to influence the selection.

These last two methods focus exclusively on biodiversity parameters, while the first method allows for socioeconomic and governance criteria to inform Seascape selection as well. Ultimately, the expert group recommended using three parameters for scoring: 1) biophysical; 2) socioeconomic; and 3) governance/institutional criteria. It was agreed that the specific scoring protocols for these parameters would be determined by the larger consultation meeting to follow.

3. Voting through expert consultation

The final step in the Philippines' prioritization exercise was the expert consultation organized by the Department of Environment and Natural Resources.

Participants discussed a proposed method for evaluating and voting on candidate

Seascapes. They organized two sessions of one hour each, with the first focused on assigning weight to the selection criteria, and the second on letting all participants vote for the next Seascape based on those criteria. Participants broke into groups based on expertise to control for bias in weighting criteria, and each group cast a collective vote after deliberation.

Weight assignments were determined before voting, since votes would be influenced by the importance given to various parameters (as percentages), the recognition of elements making up each of the parameters, and comparison with existing knowledge on each candidate Seascape. The groups prepared a menu of attributes or indicators to define the three types of criteria:

- Institutional and governance criteria included relevant conservation projects in the Seascapes, their relative levels of funding or investment, alliances among local governments and with the private sector, and supporting management plans or policies.
- Socioeconomic criteria included population, poverty, degree of dependence on coastal resources, and presence of development activities.
- Biophysical criteria included the area and condition of MPAs or key marine biodiversity areas, presence of endangered species, opportunities for corridor management, and the like.

Participants decided to give greater weight to the biophysical criteria because they are the main rationale for setting up the Seascape, and while institutions or governing bodies might not be functioning properly at the time of selection, they could be developed.

The groups then voted on the three candidate Seascapes. The West Philippine Sea was unanimously selected, with similar rankings across all the groups, as the next Seascape for the Philippines.

2. Develop a Seascape Strategy

The Purpose of this Section

Once a Seascape has been selected for investment, it is helpful to develop a multi-stakeholder strategy to guide the use of financial and human resources to improve its overall conservation status.

Background

This guide emphasizes a results-based planning approach that articulates the results or objectives that will be achieved in the Seascape and the specific activities, human resources, and funding needed to achieve them. For the purposes of this guide, a strategy is synonymous with an action plan or a strategic work plan.

We define a Seascape strategy as a document that clearly identifies a set of objectives or results that stakeholders want to achieve to improve management of the Seascape, as well as a detailed set of activities and the resources needed to achieve those results.

Developing a strategy can be a very consuming process in terms of time, human resources, and funding. As a result, some Seascape programs will elect to undertake more streamlined planning early on, and initiate known priority management actions while they work to develop a more comprehensive Seascape strategy. Taking action early in the Seascape management process can help a great deal in generating enthusiasm, trust, and momentum for Seascape management. Just pursuing a planning process without action on the ground can sometimes become tedious for stakeholders. However, it is important to develop a Seascape strategy as soon as it is practical for the organizations promoting management of the Seascape.

The process we outline in this guide can be used to create an early action plan or to create a full Seascape strategy. The difference lies primarily in the greater intensity of research and consultations undertaken to complete a full Seascape strategy. An early action plan would typically be prepared with a smaller group of people and focus on known priority actions; a full Seascape strategy will be as consultative as possible and include a wide range of stakeholders, but the basic steps to develop a strategy will apply to both.

Are we ready to develop a Seascape strategy?

Answer the following questions first to ensure that you are ready to move forward and develop a Seascape strategy:

- Why do you want to prepare a Seascape strategy at this time?
- Will having a strategy help you advance your management efforts?
- Are major stakeholders supportive of creating a Seascape strategy?
- Are they committed to engaging in the Seascape for a significant period of time?
- Do you have the authority to undertake strategy development?
- Do you have someone to help lead the strategy development process?
- Do you have sufficient time and financial resources?

Once you are certain that you are ready to develop a Seascape strategy, the steps in this document can help guide you.

Ultimately, practitioners in a Seascape should use a planning approach that is familiar and comfortable to them. Regardless of the exact approach or timeline, all strategies should at a minimum answer these key questions:

- What is the current status of the Seascape (in relation to the nine essential elements)?
- What do we want to achieve through Seascape management?
- How will it be achieved?
- Who will achieve it, by when, and with what funding and support?
- How will we know it has been achieved?

The strategy development process will answer each of these key questions and clearly identify key objectives and activities to enhance management of the Seascape. We align strategy development with

the nine essential elements. For the strategy to be effective, it should identify the current status of each element and the objectives and activities that will be pursued to achieve success under each of them at multiple levels of governance.

Contents of a Seascape strategy may include:

- Brief description of the process used to create the strategy
- Stakeholder identification
- Situation analysis of the nine essential elements
- Biological and socioeconomic targets
- Vision
- Threats and obstacles
- Short-, medium-, and long-term objectives and milestones (including objectives for each of the nine essential elements)
- Activities to achieve the objectives
- Activity timeline
- A zoning plan (or a time frame for developing one)
- Regulations (or a time frame for developing them)
- Staffing and financing plan
- Monitoring and evaluation plan

THE STEPS

The key questions will be answered in a series of six iterative steps:

Step 1: Get organized

Worksheets 1 through 4 in Appendix 4 can be used to assist with this step.

Before you start, it's important to know who will approve the strategy, who will participate in the strategy development process, who will lead it, what it will cost and where the money will come from, who will use the strategy when its complete, what steps will be followed, and on what time frame.

This step should be carried out with the core group that is interested in creating a Seascape strategy. In most cases, this will consist of key government agencies, the national coordinating committee, and possibly development partners such as nongovernmental organizations (NGOs).

Identify the authority for creating and adopting the strategy

Identify who will ultimately approve and adopt the strategy, and ensure that this party is involved in creating it. Clarify and agree upon a procedure for approval of the final strategy. If the approval of external parties (e.g. funding bodies, advisory committees, and government agencies) is required, the procedures to be followed should be identified. The parties should also agree upon a timetable for submission of a final version for approval.

Identify your planning team and coordinator

The planning team members must have sufficient authority to undertake the strategy development process on behalf of their agencies or organizations, and must have sufficient time and resources to lead and follow up on the process. The planning team should include the following characteristics: a strong interest in the Seascape, considerable knowledge of the Seascape, authority to undertake strategy development, significant time to devote to the process, and a commitment to the process. Include at least one member with strategic planning experience, or retain an outside person to help with the design and carry it out. You might also consider involving individuals from different stakeholder groups, including community representation (see below). It is helpful if the team can represent different skill sets. For example, some members may have a biological background while others may be cultural practitioners, and still others may have economics training. The mix of skills will best be determined on a case-by-case basis, but the more diverse the team, the more knowledge its members bring to the process.

Finally, identify one person or a small group of people to be the lead coordinator(s) in the planning process, ideally on a full-time basis for several months to a year or more. This role is extremely important.

Identify users of the strategy

Seascape strategies are prepared for use by area managers, stakeholders, members of the public, the government, commercial interests, neighbors, traditional owners, local government officials, and/or commercial operators. The presentation style adopted should reflect the most important user groups. If government is the most important user group, develop the strategy in a way that its objectives and activities can be easily incorporated into the ongoing planning cycle and process of key agencies. It is much better to follow established processes than to try to create a new approach that will be difficult to implement.

Identify stakeholders and how to involve them

Stakeholders are defined as individuals or organizations that have a legitimate interest (legal or traditionally established) in the area or its resources. Their level of involvement in the process can range from day-to-day participation in decision-making by a broad range of stakeholder groups, to collecting input from stakeholder groups, to simply informing stakeholder groups about decisions that have been made once the plan is complete. The approach will vary greatly depending on the Seascape and the sites within it. In general, experience suggests that the greater the level of involvement of stakeholders and communities throughout the planning process, the greater the likelihood of lasting success. Options might include organizing stakeholders into sub-groups to achieve objectives at different operational levels. (This will be discussed further in “Step 3: Articulate vision and aims” on page 29) Before you start planning, undertake a basic stakeholder analysis to identify who should be involved and how (see Worksheet 2).

Identify the steps you will use and develop the planning timeline

It is important to design an approach to Seascape planning that is appropriate to the local context. The process recommended in this guide can be followed step by step, or adapted to local needs. It is critical that the planning team have clear agreement on the steps to be followed before the planning process begins. It is also critical to create a planning timeline with an agreed end date and milestones to help organize and coordinate production. Developing a strategy can take a very long time, and while it’s important to provide for adequate consultation and community involvement, it is also important that the process not take so long that stakeholders grow fatigued.

Identify the costs and source of financing for the planning process

Once you have identified the steps you will use to carry out the process, it’s important to identify both the costs and source(s) of financing. You will need funding for mapmaking capacity, workshops and travel, and possibly key research to improve understanding of the Seascape.

Step 2: Create a Seascape profile

This step should be carried out with relevant government agencies, NGOs and local organizations, universities and other institutions, and experts to help you:

- Articulate the current status of the Seascape
- Create a qualitative baseline from which to measure change over time

The health of natural resources is completely dependent upon key social and governance elements as outlined in the nine essential elements, so a baseline understanding of those elements also needs to be established to guide future action.

A clear picture must be gained of the context and circumstances in which the Seascape will operate, and include the current status of each of the nine essential elements. Much of this information will have been gathered as part of your identification and selection process; however, creating a profile for your Seascape may uncover a need to fill information gaps or provide more detailed analysis.

Primary factors to include in the Seascape profile include:

- Physical setting (boundaries, physical geography, oceanography)
- Ecological features, including current condition of all resources
- Socioeconomic factors (demographics, economy, dependency on natural resources)
- Primary stakeholders
- Governance system and political will
- Threats and problems, including obstacles to management
- Ongoing management actions
- Opportunities
- Status of the nine essential elements

Appendix 3 contains additional types of information that would be useful for creating a profile.

Below are brief descriptions of several different methods that can be used to gather information necessary to create your Seascape profile. When choosing which to use, it is important to take into account the resources available (time, staffing, and finances) to allocate to this process. For example, Rapid Assessment Programs (RAPs) can be costly and take significant time to organize, but they quickly provide important detailed information that might not be gained from expert workshops, and increase awareness of the biological and socioeconomic importance of specific areas. Remember to take advantage of existing information and expertise before deciding to invest in any new data gathering.

Key Biodiversity Areas (KBAs)

Defined by Bibby (1998) as sites of global significance for biodiversity conservation that are large enough or sufficiently interconnected to support populations of the species for which they are important, the KBA method uses four criteria for its priority-setting process: threatened species, restricted-range species, congregatory species, and bioregionally restricted species and assemblages. This method would be ideal for finding information on the ecological elements of maintaining and restoring critical habitats and ecosystems, as well as threatened species recovery. As the KBA method of analysis is focused on biology and ecology, it may be combined with another method to round out information on all nine elements.

The International Union for Conservation of Nature's "Identification and Gap Analysis of Key Biodiversity Areas: Targets for Comprehensive Protected Area Systems" is available at ***http://cmsdata.iucn.org/downloads/pag_015.pdf.***

Marine Ecoregional Assessments (MEAs)

For the past decade, The Nature Conservancy and World Wildlife Fund have used ecoregions as fundamental geographic units to assess biodiversity in defining visions of conservation success, and to inform action types, places, and priorities. Ecoregions are relatively large units of land or water that contain distinct assemblages of natural communities sharing a large majority of species, dynamics, and environmental conditions (WWF 2000). They contain multiple assessments, including biological, geophysical, and threat, all focusing on the ecological status of the selected area.

For more information, visit the Ecoregional Assessments website at ***http://conserveonline.org/workspaces/cbdgateway/era/index_html.***

Marine Spatial Planning (MSP)

Marine spatial planning uses area-based management to address the multiple human and non-human factors impacting the oceans. Maps and other data are used to gather, manage, and apply information in order to build a single comprehensive approach to marine activity management. The data gathered by this process should provide information on the private sector, such as transportation, tourism, offshore oil, gas, and mining operations, fishery production, institutional bodies (jurisdictional and management), ecosystems, and species.

The Nature Conservancy's "Best Practices for Marine Spatial Planning" is available at ***http://pacmara.org/tikiwiki/tiki-download_file.php?fileId=102*** (refer to Section 3, Data Collection and Management).

Rapid Assessments Programs (RAPs)

The goal of an RAP is to quickly generate and disseminate information on biodiversity for conservation purposes. Multidisciplinary teams of scientists and resource experts determine the biodiversity significance and conservation opportunities of selected areas; this produces species lists that serve as indicators of overall biological richness, as well as recording several measures of overall ecosystem health. Parallel assessment of human community needs and concerns can be done to assess the socioeconomic and political situation of the selected area. Results from the surveys are applied to recommendations for engagement in such areas as MPAs, public policy/coastal management, communication and environmental education, and the private sector. RAPs typically take three to four weeks and should provide information on the nine essential elements, though survey exercises may need to be expanded for larger Seascape areas.

For more information, visit Conservation International's RAP website at ***https://learning.conservation.org/biosurvey/RAP/Pages/default.aspx.***

Red List Assessments

Red List species assessments are based on standardized IUCN Red List methodology. Most are carried out in intensive, week-long Red List workshops that focus on a specific taxonomic group or geographic region. The world's leading scientists are invited to contribute and synthesize species-specific data, and to collectively apply the IUCN Red List categories and criteria. Information is recorded on species distribution, population status, habitat and ecology, past and present threats, utilization and conservation measures, and then reviewed for accuracy. Red List workshops provide the most current and highest quality data available, and ensure peer-reviewed scientific consensus on the probability of extinction for each species examined. Assessments provide conservation managers, policymakers and scientists with the environmental tools to enable species-specific conservation action, Key Biodiversity Area identification, global and regional policies on threatened species, and conservation policies. Moreover, Red List Assessments allow monitoring of the success or failure of conservation actions over time. All species accounts are publicly accessible online at the IUCN Red List of Threatened Species website ***http://www.iucnredlist.org.***

More information is available at the IUCN Red List Assessment website: ***http://www.iucnredlist.org/technical-documents/assessment-process.***

Situation Analysis

IUCN uses situation analysis to understand the broader context of a project site. A situation analysis includes the following elements:

- Analysis of the state and condition of people and ecosystem, including identification of trends and pressures. This may entail looking at the condition of institutions and legal frameworks, trends in human well-being (such as health, poverty, and food security), and pressures from the private sector.
- Identification of major issues related to people and ecosystems that require attention, such as the need to strengthen relevant institutions and build sustainable and/or alternative financing mechanisms and capacity for ecosystem-based management.
- An analysis of key stakeholders, including social and political support.

IUCN's "Situation Analysis – An Approach and Method for Analyzing the Context of Project and Programme" is available at ***http://cmsdata.iucn.org/downloads/approach_and_method.pdf.***

Climate Change Assessments

As you develop a Seascape profile and strategy, it is important to understand patterns of vulnerability to climate change impacts. Methodologies for vulnerability assessment generally assess the exposure of an area or resource to climate events, sensitivity to impacts from climate change, and the resilience or adaptive capacity of the system and communities living there. These factors make it possible to identify areas and natural resources

that appear to be more or less vulnerable to climate change impacts. Generally speaking, ecosystems that are more intact and have fewer cumulative impacts from non-climate threats will tend to be more resilient and less sensitive to climate change impacts. Likewise, some natural features can offer a natural resistance and/or resilience. For example, areas with upwelling of cool water may tend to stay lower in temperature and therefore be less likely to show coral bleaching, or may recover from it more quickly. Areas with strong currents and/or flushing may tend to retain less sediment and other pollutants, and therefore recover faster from bleaching. In carrying out a vulnerability assessment, it is important to identify areas that have these types of features to better understand how protecting certain areas may help reduce overall vulnerability to climate change impacts.

While carrying out a full vulnerability assessment may not be possible before you complete your Seascape profile, it can be extremely important in providing information for your Seascape strategy.

Tools that can help in carrying out vulnerability assessment and adaptation planning include:

Conservation International's Marine Climate Change Program has developed a Climate Change Vulnerability Assessment approach that integrates the latest climate science with the specific social, ecological and governance conditions of a region. The Galapagos Islands, Madagascar and the Verde Island Passage in the Philippines have all adopted this approach and are now implementing climate change adaptation projects, planning and policies in response. More information can be found at ***http://www.marineclimatechange.com/marineclimatechange/Home.html***

IUCN's "A Framework for Social Adaptation to Climate Change Sustaining Tropical Coastal Communities & Industries" is available at ***http://www.iucn.org/cccr/publications.***

U.S. Agency for International Development (USAID)'s "Adapting to Climate Variability and Change: A Guidance Manual for Development Planning" is available at ***http://pdf.usaid.gov/pdf_docs/PNADJ990.pdf.***

Box 4: Delineation of the Bird's Head Seascape and Marine Protected Area Network

Selection and delineation of the Bird's Head Seascape and MPA Network was based on three primary factors: science, stakeholder will, and a manageable governance framework. A Rapid Assessment Program (RAP) played a key role in preliminary understanding of area resources. Surveys helped to clarify how resources were being used, managed, and in some case destroyed, and how local communities perceive their resources, and their interest in protecting them. Following the surveys, stakeholder meetings led to several declarations by both government and local traditional leaders that indicated interest in setting up MPAs.

Partners carried out 24 major research projects that greatly refined our understanding of important areas for fisheries, large-scale oceanographic processes, and reefs likely to be highly resilient to climate change; areas of importance to communities from a religious perspective; marine tenure claims on areas; and general community understanding of, and support for, marine conservation ideas. This information was critical to understanding the best areas to establish MPAs. It's important to note that the Seascape could have been much larger biogeographically than the area that was ultimately selected. However, partners decided to focus Seascape efforts in only two provinces, as going beyond them was likely to be less feasible logistically and politically.

The Bird's Head Seascape boundary and MPA network were developed over time based on all of these inputs. Some areas were selected almost immediately based on RAP studies alone, while others came more slowly. Ayau was a late choice, based on

emerging data that it was the site of major grouper spawning aggregation and that it had a strong traditional community structure. Teluk Mayalibit, another late choice, does not include many coral reefs, but is important as a spawning area for various mackerel species and mangrove crabs, as well as being the cultural heart of the original Maya inhabitants of Raja Ampat. It is also home to nine traditional, resource-poor communities that are completely dependent on marine resources for their livelihoods.

In sum, the Bird's Head Seascape and MPA network were designed based not on one exercise, but as the result of multiple levels of inquiry into the biology and sociology of the area, along with some political opportunism.

Step 3: Articulate vision and aims

Worksheets 5 through 8 in Appendix 4 can help with this step.

Articulating what you want to achieve through Seascape management is the core of your strategy. How each Seascape develops this is up to individual preference. To be effective, however, each strategy should include the following core features at a minimum:

- Vision
- Criteria for Seascape management
- Target natural resources and habitats
- Problems/solution modeling
- SMART objectives

We offer well-established, results-based planning techniques that have been used in numerous conservation projects, from small individual marine managed areas to large ecosystems. Using these processes will help articulate the core features above. The Seascape approach offers an important supplement to standard results-based planning by aligning with the nine essential elements.

The first four components of this step—the visioning process, development of criteria, identification of target natural resources, and problem/solution modeling—are best carried out through a series of stakeholder meetings.

The final component, development of what we call SMART objectives for the short, medium, and long term, is best completed by the planning team using results obtained in the stakeholder meetings.

We explain each component in turn and provide worksheets to help carry them out.

Articulate your vision

The vision is an imagined or envisioned future that meets your goals for the environment, natural resources, culture, economy, social activities, and other aspects of your Seascape. The vision will serve as the ultimate goal for Seascape management. It should reflect what you would like to achieve in terms of the nine essential elements. Most planners suggest articulating the vision for the next ten years.

While a summary statement may be helpful to communicate your vision to particular audiences, it may be more effective to give yourself as much a space as you need to articulate what you want for the future of your Seascape.

One of the best ways to develop this vision is to imagine that you have traveled ten years into the future. What would you see in your dream for your Seascape, in terms of infrastructure and activities in the community? What would people be doing? What would the natural resources look like? What would people's income and quality of life be like? What would you see in terms of the nine essential elements?

Your vision statement should:

- Describe what you all want to see happening in your Seascape in terms of the nine essential elements and other relevant factors
- Not assume that the future will be the same as the present

- Be written in the present tense, as if that future were now
- Be positive and inspiring
- Be realistic but ambitious

Develop criteria for Seascape management

Managing all natural resources across a Seascape is not possible. Planners must prioritize what it is they would like to achieve with their resource management actions, both in terms of specific resources and areas to be conserved and managed.

To select the resources and areas that are most important for management, it is important first to identify criteria to help guide the selection of natural resource targets and important habitats for conservation. For example, is it essential to your Seascape that you effectively manage a certain percentage of representative habitats? If so, then representative habitat will be one of the criteria that you use to guide identification of your natural resource targets.

The nine essential elements provide some initial criteria; however, it is important to go into more detail to provide guidance for management actions. We suggest that a working group be established to identify aspects of the Seascape that you want to manage, as well as specific natural resources and habitats to come under management.

While each Seascape must develop and prioritize its own criteria, we recommend that the following be considered:

- Critical habitat types
- Representative habitat
- Unique habitats (those that have restricted ranges)
- Biological diversity
- Endemism
- Rare biological phenomena (such as migratory routes)
- Connectivity
- Threatened or endangered species
- Economically important species (at different economic scales)
- Unique or range-restricted species
- Keystone species
- Vulnerability or resilience/resistance to climate change impacts
- Human well-being
- Sustainable use of natural resources

Identify and map target natural resources and habitats

The purpose of this exercise is to identify the specific natural resources and habitats that are priorities for management within your Seascape. Since natural resources are the main target of our management initiatives, including both habitats and species, we will call them “natural resource targets.”

Natural resource targets can include:

- Priority ecosystems (a near-shore coral reef ecosystem, estuaries, an atoll)
- Specific critical habitat types (sea grass beds, mangroves, coral reefs)
- Specific population of a species (migratory birds, grouper, parrotfish, sea cucumbers)
- Charismatic and/or endangered species (turtles, dugongs)
- Special geological or oceanographic features (upwelling area, a blue hole)
- Special biological events or features (grouper spawning aggregation, migration corridor)

The natural resource targets are extremely important. All components of the Seascape strategy, including the objectives, activities, and zoning, will be designed to increase the effective management of target natural resources.

The process for identifying natural resource targets will be informed by existing processes, including RAPs, Ecoregional Planning, KBA planning, and others. The key is to use the best available data and expert opinion to identify which areas of the Seascape contain the most biologically important assemblages of marine species, ecosystems, and ecosystem processes.

Given the growing importance of climate change,

areas of the Seascape that may be most vulnerable to its impacts should be identified, as well as areas that may be the most adaptable to those impacts. Finally, it is valuable to consider patterns of connectivity if this information is available.

Use the criteria that you have developed in the previous exercise to guide the process of identifying important resources and areas, where they exist. For example, if economically important species for artisanal fishing was ranked as a high priority for your Seascape, you should devote considerable effort both to identifying what those species are and where they exist at different stages of their life history.

Recommended process:

- Form a small advisory team to guide the process for natural resource target identification. A sufficient number of experienced practitioners should be brought in to serve as advisors on how best to go about identifying important targets and to help identify biologically important areas. This team should build on the group that was formed to identify the criteria in the exercise above.
- Review and refine the criteria for Seascape management.
- Identify priority natural resource targets to meet the criteria for Seascape management.
- Collate maps with current data and information on natural resources targets, including location and condition.
- Ensure that all your natural resource targets are shown on the map to the degree allowed by current data. If no data is available for certain targets, fill in the missing information with expert input or fieldwork, if necessary and feasible.

Identify priority areas for conservation (operational units)

Once management criteria and natural resource targets have been identified and mapped, it is time to identify priority areas (operational units) for conservation. This process can be carried out in three distinct steps.

1. Identify biologically important areas

These will typically include considerable overlap with any target natural resources. For example, areas with critical habitats, priority species, economically important species, and unique biological phenomena may rank high in terms of biological importance.

Identifying biologically important areas can be done in several ways. Each of the major international conservation organizations has a methodology it applies. We have highlighted the Wildlife Conservation Society's Seascapes species approach on page 38. The key to successful Seascape management is using a process that is acceptable to the main stakeholders.

One of the most efficient and effective ways to identify biologically important areas is to hold one or more expert workshops. These would include taxonomic, habitat, and resource use experts who have knowledge and data about the location and condition of resources identified as priorities for the Seascape. Typically the sponsoring agency would compile and map as much information as possible before holding an expert workshop. If possible, maps showing the extent of particular habitats should be prepared ahead of time, so experts can identify the highest priority areas for their particular taxonomic species or habitat. This information would be accompanied by explanations about the relative status of the target natural resource in those areas. This would all be digitized during the workshop, and areas with the greatest degree of overlap would be identified.

2. Identify conservation operational units

The biologically important areas identified should be overlaid with governance units and important socioeconomic areas, including areas used as resources for fishing, tourism, development, etc. This is an effective means of identifying in a spatially explicit way areas of overlap and potential conflicts between the resource needs of the Seascape species and habitats, and people.

The planning team should use this information to identify units that may be managed collectively. These operational units should be as practical as possible in terms of prevailing biological, social, and governance factors in the Seascape. Special emphasis should be given to practical considerations for management within existing governance units. For example, a biologically important area may extend beyond a particular governance unit, but not be included in a particular operational unit because it is not practical to manage it. On the other hand, this biologically important area may be so important that it is necessary to manage across governance units.

Box 5: Process for Identifying Resource Targets and Areas for Management from the Wildlife Conservation Society

Wildlife Conservation Society has developed the Seascape Species Approach, a step-by-step process that allows conservation practitioners and stakeholders to identify actions and allocate scarce resources available for conservation at a particular site. This approach is based on selecting a suite of Seascape species for management that will be the focus of conservation actions. Best used in a participatory setting, this approach can be used to define ecologically meaningful conservation areas, identify where and why human-wildlife conflicts occur and design conservation efforts to curb them, monitor program effectiveness, and adapt conservation efforts resulting from these projects.

General approach to defining Seascapes based on the needs of species

i. Select the potential Seascape site based on global and/or regional conservation priority-setting efforts: A conceptual model of the larger site can be created at this stage to begin identifying the program's broader goals and objectives.

ii. Select a suite of Seascape species: Selection should be based on five criteria: (1) requires large area to meet ecological needs; (2) relies on an array of different habitats; (3) vulnerable to human resource-use practices; (4) culturally and/or economically significant; and (5) plays important roles in ecosystem structure and function. Custom decision-support software to help rank and facilitate the selection is available at ***http://www.conservationsupport.org/WhatWeDo/LandscapeSpeciesAnalysis/tabid/3737/Default.aspx.***

iii. Define the biological Seascape: Once you select your species, you will need to identify the biological Seascape, which defines the ecological requirements for each of the selected species in a spatially explicit manner.

iv. Define the human Seascape: It is also worthwhile to identify the human Seascape, which is a representation of the places where human resource use and activities occur that could potentially have negative impacts on the marine environment. Ideally, a participatory approach that involves key stakeholders should be used to prioritize and map human activities. The human Seascape can have a "past" version that shows historical influences up to the present, and a "future" version showing how the distribution of the activities may change in the future.

v. Examine the intersection of human and biological Seascapes: This is an effective means of identifying areas of overlap and potential conflict between the resource needs of the Seascape species and humans in a spatially explicit manner.

vi. Focus conservation actions on avoiding or mitigating conflicts: The conservation actions that could help to avoid or mitigate potential and actual conflicts are described and prioritized.

vii. Monitor the effectiveness of conservation actions and changes in threats to wildlife and Seascape conservation: A long-term monitoring program should be developed and implemented to track ecological, socioeconomic, and environmental changes to the Seascape and Seascape species over time.

3. Prioritize the operational units for conservation management

The same general methods used to prioritize Seascapes for investment may also be used to prioritize the operational units for conservation management. Once a list of manageable units has been identified, the planning team may use any number of ranking methods to put the units in order, as long as the process is clearly defined and transparent.

Identify desired results through problem/ solution modeling

Also referred to as conceptual modeling, the problem/solution modeling process is the primary means to access critical information about what is going on in your Seascape and how to better manage it.

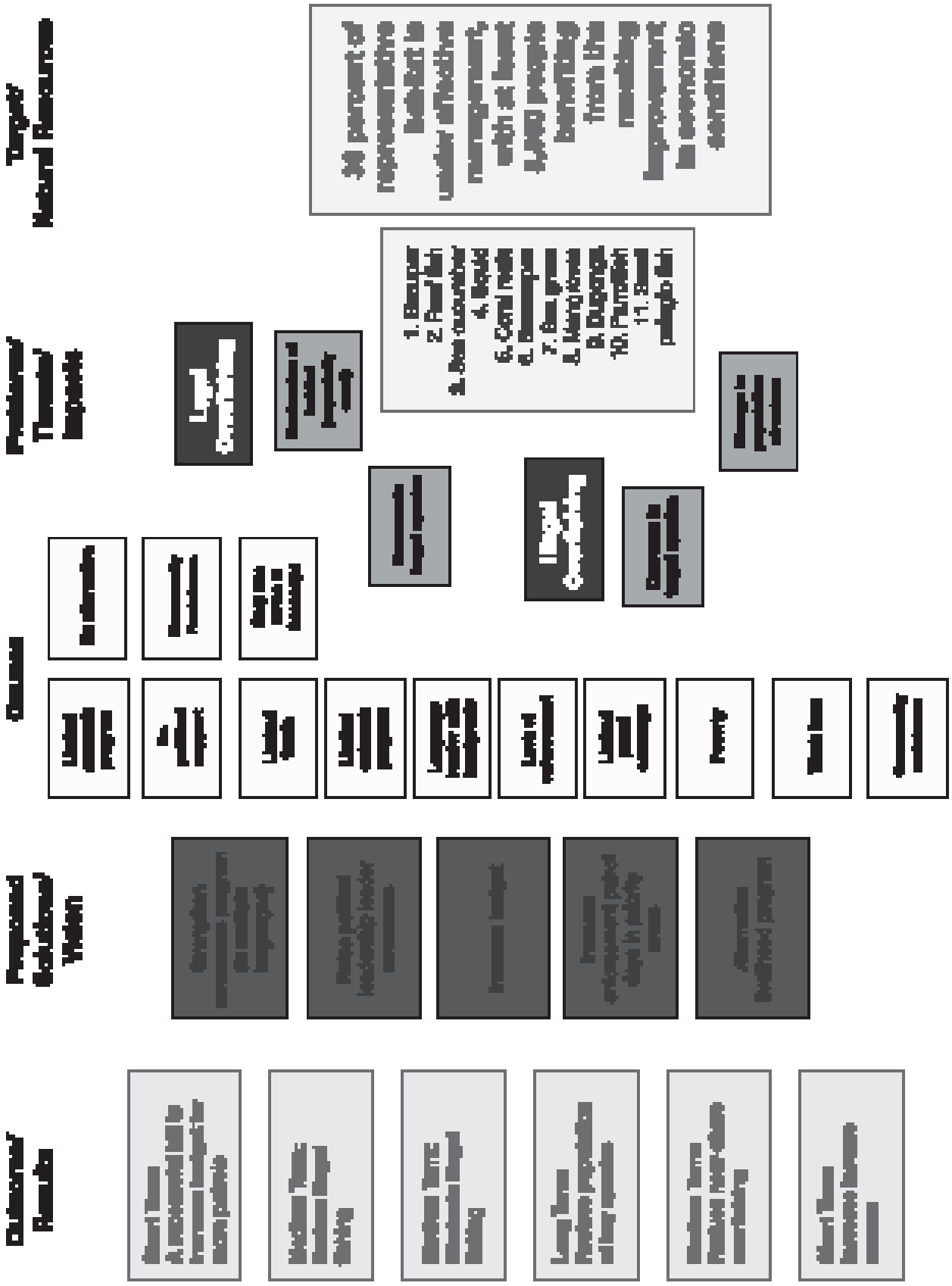
In this process, you identify the following factors in relation to your site (see page 34 for a sample model):

- Location of the natural resource targets and threats
- Threats to your natural resource targets
- Impact of each threat on your natural resources targets
- Causes of the threats
- Threat priority
- Possible solutions
- Short-, medium-, and long-term results your solutions will help to achieve

You may find that you need to carry out problem/ solution modeling for each operational unit to develop sufficient detail in your strategy.

Note that doing a full problem/solution model with stakeholders can take a very long time. You may elect to have parts of the model developed by the stakeholders, and the rest completed by the planning team. Ask the stakeholders to focus on the vision, threats and their impacts, and possible solutions.

Figure 5: Sample Problem/ Solution Model



The planning team can take this information and complete the full model by adding the causes of threats and the desired results.

Develop SMART objectives

We suggest translating your desired results into objectives that are ***SMART***:

- Specific
- Measurable
- Achievable
- Results-based
- Time-limited

By ensuring that your objectives are SMART, you have a much improved chance that they can be achieved and that problems and/or threats can be overcome. Each desired result can be translated into a short-, medium-, or long-term objective by using the table in Worksheet 8.

Step 4: Identify activities

Worksheets 9 and 10 in Appendix 4 can be used to assist with this step, which will identify key activities and initial steps toward developing zones and regulations. It should be carried out with the core group of practitioners or the planning team focused on creating the Seascape strategy.

Identify needed management activities

To achieve your objectives, you must have a well-thought-out activity plan. We suggest identifying all activities that will be necessary to achieve your objectives, what activities are currently going on, gaps, and what needs to be done to fill them. Depending on the complexity of your Seascape, you may need to develop an activity plan for the overall Seascape and for individual operational units.

Some common management activities include:

- Capacity-building activities (e.g., training for staff and volunteers)
- Enforcing the rules and regulations of the managed area
- Public education and outreach activities (school tours)
- Monitoring activities (community coral reef monitoring)
- Activities to avoid or mitigate potential conflicts
- Infrastructure (mooring buoys or a field station)
- Performing targeted biological and social research for management purposes

Also see section 3 “Implement and Monitor” for more ideas on how this has worked in existing Seascapes.

Prioritize activities

As human and financial resources are always limited, it is very valuable to set priorities. This will not only help conserve resources but also help direct management activities to the highest-priority problems and/or threats. It is extremely helpful to do this at least annually to help ensure that your Seascape is still applying the highest-priority activities to address the highest-priority threats.

Prioritizing activities is best done with the group of practitioners that will be responsible for carrying them out. Intuition and the specific context of the Seascape should help the planning team interpret the results of this exercise and adapt the priorities as they feel appropriate.

Develop an activity plan

It is important to put the major activities into a plan that includes:

- Who specifically will be responsible for the activity
- The deadline for the activity
- Estimated financial resources needed
- Who needs to be involved
- Status of the activities, to be updated periodically through a review of the plan

On a monthly or quarterly basis, you can use this plan to develop tasks that must be undertaken to complete each activity.

Step 5: Set roles and budgets

Worksheets 11 through 13 in Appendix 4 can

be used to assist with this step, which provides guidance on the human resources and partners needed to carry out the activity plan, budget, and details on financing.

Develop the human resource plan and partners' roles and responsibilities

Look at each of the priority objectives individually and discuss how many and which people will be needed to carry out its activities. For example, if one objective is to eliminate illegal fishing across three operational units, you might consider factors such as their size, available technology, and options for organizing an enforcement program. Given the complexity of most Seascapes, one of the most effective approaches is to look for partners to help fill key roles. It may be very helpful to come up with a key staff roster that will be filled by the main agencies that are moving the strategy forward, and a separate list of the possible roles and responsibilities of partner organizations. The key is to make sure you have enough people working to achieve your objective. We recommend filling out the general staffing and roles and responsibilities plans in Worksheets 11 and 12, then working iteratively to ensure that the documents are well aligned.

Develop the budget

This is a detailed estimate of all the costs to complete objectives and activities. Budget development will be dependent on the internal process established by your planning team.

Your activity plan should estimate the costs to carry out each activity, and can form the basis for a line-item budget that is organized as follows:

- Staff
  - Salaries and benefits
  - Travel expenses and per diems
- Consultants
  - Fees
  - Travel expenses and per diems
- Workshops and meetings
  - Participant travel
  - Participant expenses
  - Meals and facility expenses
- Office costs and equipment
  - Vehicles
  - Communications
  - Office equipment
  - Office rent
  - Postage and shipping
  - Photocopying and printing
  - General supplies

Develop the financing plan

The financing plan looks at how future expenses in the budget will be covered, which means examining both the current and future financial situations. When looking at current funding, it is important to understand tasks and commitments made under contract, including the disbursement time frame, financial reporting schedule, and possible renewal options. In considering future finances, try to anticipate different types of expenses: project growth, future shortfalls, and unforeseen circumstances such as equipment repairs, extra expenses, loss of a funding source, or currency devaluation. When identifying potential future funding sources, make sure you understand the tasks needed to secure and maintain any contracts and/or grants awarded.

As part of identifying roles and responsibilities in the step above, it will be important to choose a person or group who will be responsible for tracking and monitoring the finance plan. This will promote buy-in and ownership.

In many cases, fundraising will be a key challenge. Depending on the source of funding, the (potential) funder may be a key actor in developing the activities and budget. As a minimum, this process should take account of the anticipated preferences of the intended donor audience. The aim is to create a compelling plan that is amenable to communicated to potential donors. It is often beneficial to design your financing plan in a "modular" way, so that key pieces can be pulled out from the plan to respond to specific funding opportunities (e.g. you may want to pull out the research component to respond to a specific call for proposals).

Step 6: Develop indicators

Worksheets 14 and 15 in Appendix 4 can be used to assist with this step, which provides guidance

toward creating an evaluation plan, and will help you realize your objectives by looking at the effectiveness of activities and providing feedback.

Identify indicators of success

To evaluate the effectiveness of your strategy, you need to establish a group of indicators against which successful achievement of your objectives can be measured. The indicators can be biological, socioeconomic, or political, and should demonstrate achievement in the nine essential elements.

Developing a monitoring plan

Management plans must include a thorough mechanism to track any changes related to management activities. This will not only help justify the existence of the Seascape to funding agencies, but also provide key information to help manage it adaptively over time. Most donors require thorough monitoring programs because they want to know if their funding is positively impacting the conservation targets.

The elements of monitoring programs depend largely on the specifics of the area and management objectives. Many of the indicators you have developed will provide information to help monitor your progress over time. The monitoring program should track ecological and environmental changes. Biological and socioeconomic monitoring require a great deal of specificity about target species, habitats, and socioeconomic factors.

Hold periodic external evaluations

In addition to internal monitoring and evaluation exercises, it is important to bring in an outside party periodically to assess the management plan. An outsider is more likely to provide an unbiased look at the progress of activities toward the achievement of the Seascape's objectives, and will bring a new perspective and expertise to the management plan.

Adaptively manage

Adaptive management is the process of learning by doing. It uses the design, management, and monitoring of a project to gather information continually on the effectiveness of its decision-making process. As information is gathered it is assessed, and changes are made as needed, providing a flexible decision-making process that constantly improves itself. For example, coral reef monitoring data can help managers understand how well management actions are influencing reef health. Continual negative changes are an indication that new threats are emerging, or that current approaches to reef management need to be adjusted.

3. Implement and Monitor

The implementation stage of the Seascape process encourages work in all of the nine essential elements. The relative balance among these will vary from place to place, depending on prevailing threats and ongoing activities. The key is to ensure that you are moving effectively over time toward implementing the main objectives that collectively support the nine essential elements. Below we provide some examples of how Seascapes around the world have achieved success in implementation of these nine essential elements. The contacts listed at the start of this document would be happy to provide further information about the activities undertaken in existing Seascapes.

In order to evaluate the effectiveness of strategy and implementation, you will need to monitor your implementation progress against the indicators established in Step 6. Diligence is required to ensure that you closely follow the timeline in your monitoring plan. Many projects do not devote adequate resources to monitoring, and therefore may not be fully aware of their level of progress and need for adaptive management of their strategy. To monitor implementation of your strategy adequately, you may need to assign one or more staff members to oversee the process. Your plan should ensure that you are monitoring both the process of implementing the Seascape strategy and the results, in terms of threat reduction, improvements in the enabling environment, changing resource conditions, etc.

The key to understanding whether your implementation is effective is knowing whether or not you are making progress toward achieving your short-, medium-, and long-term objectives and milestones. If you find you are not meeting them, you may need to change or improve your activities or reassess their validity. Changes to objectives may sometimes be necessary, but should not be taken lightly. It is important to thoroughly assess first whether you can improve performance by adjusting activities. The Seascape approach and identification of the essential elements were built from the ground up, informed by the field experience of marine management practitioners. The Seascapes have achieved success in the nine essential elements through hard work and effective strategies. Hopefully they will inspire you to create and successfully implement your own Seascape strategy.

Examples of Success

Enabling conditions

Enabling legal framework

Seascapes generate an enabling framework of laws, conventions, regulations, and policies that facilitate marine conservation at local, national, and regional levels.

Sulu-Sulawesi Seascape: The former president of the Philippines, Gloria Macapagal-Arroyo, developed the nation's first executive order for biodiversity conservation. This precedent-setting executive order was inspired by a desire to effectively manage the Sulu-Sulawesi Seascape. It calls for the development and dissemination of regulations and guidelines for the protection and management of critical habitats, and mandates that biodiversity impact assessments be integrated into the national environmental-impact and risk-assessment process.

Ecosystem-based management including MPAs

Seascapes advance large-scale management of marine ecosystems and species through the use of multidisciplinary scientific information to inform effective planning, implementation, monitoring, and evaluation.

Vatu-i-Ra Seascape: Community-based protected areas are being identified and designated within the broader management framework of Ecosystem Based Management (EBM), so that threats from a variety of sources can be minimized. To assist developing nations, Wildlife Conservation Society-Fiji has produced a guide that details the lessons learned from four years of researching and implementing EBM in the western Pacific. The guide is designed for use by conservation practitioners and shares experiences with implementing EBM in Fiji, Indonesia, and Palau.

Adequate institutions and capacity

Seascapes build adequate institutional frameworks and capacity, including personnel, infrastructure, and equipment, to make marine governance structures (governmental, commercial, and civil) work effectively and efficiently.

Karimunjawa Seascape: Wildlife Conservation Society provided training, workshops, and internships to help strengthen the ability of the three main village administrations to engage more actively and effectively in management of the park. The development of village-based management plans that align with the conservation objectives of the park has been key to helping these communities address marine resource management issues and create adaptive strategies to help them comply with park rules. This has contributed to a more effective management system and reduced the incidence of illegal fishing.

Changes in behavior

Private sector engagement

Seascapes promote the convergence of conservation and development by linking the viability and profitability of major economic activities with sustainable management of the ecosystem.

Sulu-Sulawesi Seascape: A recent exchange brought leading shrimp businessmen from Sandakan, Malaysia, to the United States to learn about proper use of turtle excluder devices (TEDs) in shrimp trawls. This collaboration has resulted in reduced threats to sea turtles in the Sulu-Sulawesi Seascape.

Social and political support

Seascapes increase the social and political viability of marine conservation as an integral part of sustainable development, and they build broad support at all scales, from local stakeholders in marine managed areas to national leaders.

Eastern Tropical Pacific Seascape: Strategic planning for the Seascape engaged 46 representatives from 30 organizations, including naval, environmental, fisheries, and tourism authorities from the four ETPS countries (Costa Rica, Panama, Ecuador, and Colombia); principal NGO partners and donors; and experts in legal issues, social participation, governance, and natural science.

Ecological outcomes

Maintenance & restoration of critical habitats & ecosystems

Seascapes maintain or restore critical habitats and ecosystems so that ecological processes are sustained.

Bird's Head Seascape: The success of patrol efforts and engagement of judges and prosecutors in marine environmental crimes has resulted in numerous arrests and successful prosecutions, leading to a drastic drop in incidents of blast fishing, one of the primary threats to coral reef habitats in the Seascape.

Threatened species recovery

Seascapes reverse declining population trends for threatened marine species.

Glover's Reef Seascape: A combination of Seascape management, improved fisheries legislation, and local capacity-building is leading to the first signs of improvement in numbers of fish. During the 2010 annual spawning season, Wildlife Conservation Society scientists documented the largest spawning aggregation of Nassau grouper since the monitoring program started, with more than 3,300 individuals recorded at maximum, nearly three times the population from the previous year.

Human well-being benefits

Human well-being benefits

Seascapes improve the social, economic, and cultural well-being of human communities dependent on marine and coastal resources and ecosystems.

Sulu-Sulawesi Seascape: Implementation of effective conservation efforts in Cagayancillo, including the creation of no-take zones where fishing is prohibited, has increased fish catch from 4kg/hr to 8-10 kg/hr in fair weather, and household income has risen from 2,800 pesos to 4,200 pesos. Because of these tangible benefits, the local community greatly supported the creation of 661 hectares of marine protected areas.

Long-term sustainability

Sustainable financing and market mechanisms

Seascapes strive to be financially sustainable, with funding portfolios that are stable, diverse, and large enough to implement all priority marine conservation activities.

Eastern Tropical Pacific Seascape: Creation and capitalization of a ground-breaking trust fund will ensure that core management costs for the Malpelo Sanctuary in Colombia are covered permanently. The fund serves as an important model for other, similar offshore sites.

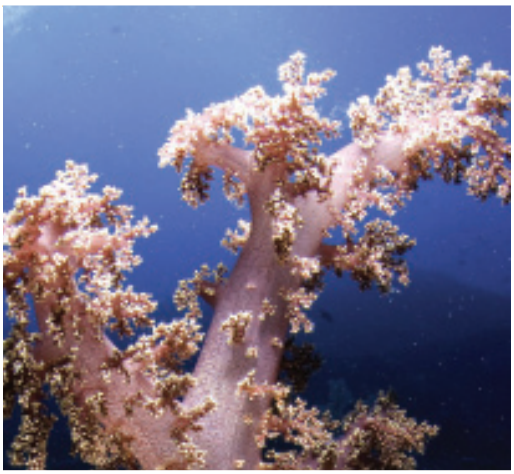
4. Appendices

Large school of fish in Raja Ampat, Bird's Head Seascape.

Photo by Sterling Zumbrunn

Young turtle being released by children in Ayau, Bird's Head Seascape.

Photo by Heintje Rontinsulu



Underwater coral near Nusa Penida Island, southeast of Bali, Indonesia.

Photo by Sterling Zumbrunn

Local girl photographed in Turtle Island Wildlife Sanctuary, Sulu-Sulawesi Seascape.

Photo by A.G. Saño

Appendix 1: Seascapes Workshop Participation List

Name	Affiliation
Abbie Trinidad	CI
Brian Smith	WCS
Evangeline Miclat	CI
Frazer McGilvray	CI
Ketut Putra	CI
Laure Katz	CI
Luz Baskiñas	WWF
Marthen Welly	TNC
Mirza Pedju	WWF
Moonyeen Alava	IUCN/GMSA
Niquole Esters	CI
Romeo Trono	CI
Scott Atkinson	CI
Sheila Vergara	CI
Stuart Campbell	WCS
Surie Alip	Facilitator

Appendix 2: Seascapes in the CTI Regional Plan of Action

The first goal of the CTI Regional Plan of Action is to designate and effectively manage priority Seascapes. Two targets support that goal:

1. Priority Seascapes designated, with investment plans completed and sequenced
2. Marine and coastal resources within all priority Seascapes are being managed sustainably

Within each of these targets are several regional actions:

Target 1: Priority Seascapes designated, with investment plans completed and sequenced

Regional action 1

Through regional collaboration, conduct Rapid Seascape Assessments for the entire region to delineate and identify priority Seascapes for investment: Examine ecological, economic, social, and political factors to identify which Seascapes should be designated as priorities.

Regional action 2

Develop investment plans for all identified priority Seascapes, including joint investment plans for those Seascapes involving two or more countries:, Identify goals and key actions needed for each Seascape, and outline required financial investments and potential investment sources. Develop an overall scheme to sequence investments over the ten-year time frame of the CTI Plan of Action. [Note: One action to be explored for each Seascape will be designation of Particularly Sensitive Sea Areas (PSSAs)].

Target 2: Marine and coastal resources within all priority Seascapes are being managed sustainably

Regional action 1

Adopt a general model for sustainable management of Seascapes: Working closely with existing Seascape partners (e.g., associated with Trinational Sulu-Sulawesi Marine Ecoregion (SSME) and BSSE Bismarck Solomon Seas Ecoregion (BSSE) processes), jointly adopt a set of "Key Elements for Sustainably Managed Seascapes," describing a general model for a successful Seascape program that addresses economic, social, political, and ecological characteristics, public/private partnerships, and Particularly Sensitive Sea Areas, with more specific elements developed for each Seascape based on local conditions.

Regional action 2

Establish Seascape capacity-building and learning mechanisms: Within and between Seascape programs and across countries, develop and strengthen capacity-building activities (including learning mechanisms) designed to (i) share best practices and on-the-ground lessons learned; (ii) develop critical skills and knowledge; and (iii) strengthen technical and institutional capacity. Capacity-delivery mechanisms could include, for example: Trinational committees and working groups of the SSME and BSSE processes; periodic Coral Triangle Seascape conferences; regional, national, and Seascape-scale training and learning centers; and a network of Seascape and MPA practitioners.

Regional action 3

Through joint and single-country efforts, start to mobilize the financial resources necessary to support priority Seascape programs (based on Seascape investment plans): Mobilize the financial resources necessary, including new and additional funding, to support designated priority Seascape programs across the region from both domestic and international funding sources.

Regional action 4

Conduct periodic monitoring and evaluation of priority Seascape programs: Periodically monitor and evaluate progress based on the "Key Elements for Sustainably Managed Seascapes" and quantitative targets established for each Seascape.

Appendix 3: Possible Seascape Selection Criteria

As part of the process of selecting and prioritizing Seascapes for investment, it is important to identify criteria against which you will evaluate each candidate Seascape. Ideally these will somehow address each of the nine essential elements. Possible criteria include:

Support for Seascapes management:

- Potential for progress on nine essential elements
- Expressed government support for Seascapes management
- Willingness of local communities
- Presence of local champions
- Opportunity for large-scale governance
- Financial opportunity

Ecological:

- Biodiversity (representation, viable populations, ecological processes, resiliency)
- Common threats
- Biological connectivity (MPAs can be networked)
- Oceanography
- Fisheries
- Primary production
- High ecological value/supports key ecological processes
- Linked habitats
- Spawning and aggregation sites
- Intensity and distribution of threats
- Level of "pristine-ness"

Socioeconomic:

- High cultural value
- Social connectivity (social networks can be created)

Governance:

- Political connectivity
- Stakeholder support
- Shared resource base
- Existing jurisdictional boundaries and regulations
- Political will (political advocacy, buy-in, representation)
- Internal governance
- Opportunity for large-scale governance

Opportunity:

- Manageable number of partners
- Existing management regimes
- Existing capacity (institutional presence: NGO, public, and private sectors)
- Potential for threat abatement
- Existing networks of MPAs
- Financial opportunity
- Simplicity of management
- Potential for recovery
- Existing scientific knowledge

Appendix 4: Worksheets

Worksheet 1: Key questions to get organized

This worksheet will help you begin the process of organizing your Seascape strategy	
Where is the authority for creating and adopting the strategy?	
Who will be included in your planning team, and why?	
Who will coordinate the strategy development process? Name both an organization and an individual.	
Who will use the strategy, and for what purposes?	
Is it important to divide your Seascape into planning units? If so, what are the best units to use?	
In addition, you may want to ask:	
What planning has been done for the area in the past?	
How will you build on or integrate with this?	
What basic information have you collected about the Seascape? *(For example, ecological and cultural resources and their condition, physical and socioeconomic features, land and ocean uses, etc.)*	
What other information needs to be collected before you can start planning?	
Others as appropriate	

Worksheet 2: Involve stakeholders

This worksheet will help you identify and record which individuals and organizations have a stake in your Seascape, and how you will go about involving them in the strategy development process. How you engage various stakeholder groups can end up being a great help or hindrance to your initiative.

You may find it helpful to divide the Seascape into operational units to simplify this process. (We discuss a process for identifying operational units in, "Develop a Seascape Strategy," on page 23.) If you do this, fill out a worksheet for each operational unit as well as for the whole Seascape, to see if any stakeholders are identified that were not identified for the operational units. Stakeholder analysis is an iterative process and should be revisited several times during the strategy development process to ensure all key stakeholders are engaged.

What are the main groupus of people involved in the Seascape or planning unit?	**Describe their interest in the Seascape**	**Describe the validity of their interest or stake**	**How important is this group to the strategy development process?**	**How and when would you like to involve them in the strategy development process?**

Worksheet 3: Create a strategy development timeline

The strategy development process benefits greatly from identifying the steps, activities under each step, and time frame for carrying them out. You can use any timeline format that works well for you. We provide an example below.

Strategy development steps:

1. _____
2. _____
3. _____
4. _____
5. _____

Strategy development step and activity	**Due date**	**Leader**	**Due date shown in 12-month calendar**											
			1	2	3	4	5	6	7	8	9	10	11	12
Getting organized														
1. Core group meeting														
2. Complete organized worksheet														
3. Complete stakeholder worksheet														
What is the current status of the Seascape?														
1. Seascape profile development														
2. First stakeholder meeting														

Worksheet 4: Funding needs and sources of finance

As you move along in the Seascape strategy process, it is important to identify the funding needs and potential sources of finance for the undertaking. Various formats can be used; we provide one example below and recommend that you build it in Microsoft Excel to make it easier to make changes and track totals.

Funding need	Details	Amount	Source 1	Source 2	Source 3	Unsecure
I. Staffing and benefits						
1.						
2.						
II. Contractors						
1.						
2.						
III. Workshops						
1.						
2.						
IV. Supplies and equipment						
1.						
2.						
V. Travel						
1.						
2.						
VI. Operating costs						
1.						
2.						
VII. Indirect costs						
1.						
2.						
TOTAL						

Worksheet 5: Articulate your vision

Ask key stakeholder groups to articulate their vision for the future, relative to the nine essential elements of Seascape management. You may find it useful to do this in a plenary to reduce the time needed to compile responses.

Essential element	Vision: Ideal 10 years from now (be specific)
Enabling legal framework	
Ecosystem-based management, including marine protected areas	
Adequate institutions and capacity	
Social and political support	
Private-sector engagement	
Maintenance and restoration of critical habitats and ecosystems	
Threatened species recovery	
Human well-being benefits	
Sustainable financing and market mechanisms	
Other factors (be specific)	

A small group can work to summarize the information in the table into a narrative explaining the vision for the Seascape. Remember that this does not need to be a short statement. It can be as long as necessary to adequately summarize your vision, though you may find it useful to create a short vision statement as well.

Worksheet 6: Develop criteria for Seascape management

Identify criteria for selection of natural resource targets and habitats for management. The four shown below are just examples. You should identify all your criteria and describe their importance to management of this particular Seascape. Next, prioritize them to help guide you in identifying which areas of the Seascape are most critical for management action.

Criteria	Importance to management of this Seascape	Priority
Representative habitat		
Unique habitats (those with restricted ranges)		
Biological diversity		
Human well-being		
(List others)		

Worksheet 7: Identify and map target natural resources and priority habitats for management

Criteria	Natural resource target or habitat	Why it is important	Current status	Priority	Priority explanation
Critical habitat					
Human well-being					
etc.					

After you identify your natural resource targets, be sure to map their locations using accurate geo-referenced information, if possible. Otherwise, you can use expert opinion to map them.

Worksheet 8: Develop SMART objectives for the short, medium, and long term

SMART objectives are Specific, Measurable, Achievable, Results-based and Time-limited.

Using your problem/solution model, answer the questions in the table for each solution, and you will have a SMART objective as in the example below.

	Result	Where?	When?	Target level of change
Long term	Increase abundance of target fish species	In three operational units where there is the best fish habitat	In the next five years	Any increase over baseline level
Medium term	Reduce violations of marine resource regulations	In the three target operational units	In the next two years	50%
Short term	More active enforcement	In the three target operational units	In the next year	Double patrol coverage

Now we can write sample objectives and test them against the SMART criteria.

Long-term objective: Increase abundance of target fish species within five years in the operational units with the best fish habitat.

Medium-term objective: Fifty percent reduction in violations of marine resource regulations in the three target operational units within the next two years.

Short-term objective: Double patrol coverage in the three target operational units in the next year.

Check the objectives against the SMART criteria:

- **Is it Specific?** *Target operational units*
- **Is it Measurable?** *Fifty percent*
- **Is it Achievable?** *Reduction in violations*
- **Is it Results-based?** *Yes, with an increase in patrols*
- **Is it Time-limited?** *Two years*

You can see how this series of objectives becomes a chain toward achieving your ultimate long-term objective (result) and vision. This is why some practitioners prefer to consider the shorter-term objectives as milestones along the path toward achieving the longer-term objective. The terminology is not so important. What is critical is that the chain of objectives be sufficient to achieve the results you are after in the long-term; in other words, the short-term objectives are sufficient to achieve the longer-term objectives. Otherwise you may need to add objectives, or refine them to be more ambitious.

Worksheet 9: Seascape objectives and activities

This worksheet is designed to help you identify the major management activities that need to be undertaken to achieve each objective. We suggest that you organize your objectives by the solution category under which they were developed (which you can do by reviewing your conceptual model). Activities will tend to be more detailed for short-term objectives and less detailed for the longer-term ones. In Worksheet 10 we will develop an annual activity plan.

Solution	Short-term objective (1 to 2 years)	Medium-term objective (3 to 4 years)	Long-term objective (5 to 7 years)	Priority management activities
Enforcement	Double patrol coverage in the three target operational units in the next year.			• Secure necessary funding for extra patrol positions • Prepare Terms of Reference for new patrol officers • Hire and train new officers
		Fifty percent reduction in violations of marine resource regulations in the three target operational units within the next two years.		• Identify areas of highest violations • Consistently maintain patrol program • Monitor violation levels
			Increase abundance of target fish species within five years in the operational units with the best fish habitat.	• Consistently maintain patrol program, especially in areas of high abundance for target fish • Monitor violations involving target fish species • Consistently monitor abundance of target fish

Worksheet 10: Develop an annual activity plan

Write down each objective, then discuss and list as a group all associated management activities that need to be undertaken in the next year to achieve it. As you identify each one, fill in the other information under the relevant columns. The status column can be filled out periodically as part of monitoring the progress of implementation.

Objective	Priority management activities	Who	Due date	Cost	Tasks to complete the activity	Due date	Status as of _____
Objective 1: Double patrol coverage in the three target operational units in the next year.	Activity 1: Secure necessary funding for extra patrol positions	Project manager	By end of quarter two	50,000 USD	• Develop budget detail • Prepare and submit proposal • Lobby government for appropriation of funds	• Month 1 • Month 2 • Month 1-6	
	Activity 2: Prepare TOR for new patrol officers	Enforcement coordinator	By end of quarter one		• Review and update existing TOR • Secure review and approval of project manager and government • Finalize TOR	• Month 1 • Month 2 • Month 2	
	Activity 3: Hire and train new officers	Enforcement coordinator	By end of quarter three		• Advertise for officers • Complete recruitment • Update training module • Provide training	• Month 6 • Month 8 • Month 8 • Month 9	
Objective 2	Activity 1:						
	Activity 2:						

Worksheet 11: Develop a human resources plan

Title	Name	Organization	Direct supervisor	Location	Role	Responsibilities
Project manager						
Project coordinator						
Finance manager						
Admin. assistant						
Site managers						
1.						
2.						
3.						
4.						
5.						

Worksheet 12: Identify partner roles and responsibilities

Partner organization	Lead person/ contact	Where they work	Role in Seascape	General responsibilities	Activities engagement

Worksheet 13: Develop the budget and financial plan

Category	Funding source	Year 1	Year 2	Year 3	Total project cost
Staff					
1					
2					
3					
4					
Subtotal					
Consultants					
1					
2					
3					
4					
Subtotal					
Workshop & meeting					
1					
2					
3					
4					
Subtotal					
Materials					
1					
2					
3					
4					
Subtotal					
Office costs & equipment					
1					
2					
3					
4					
Subtotal					
Total project cost					

Worksheet 14: Identify indicators of success

Write down the objectives that have been identified in previous steps, and then list the potential process indicators and biological, socioeconomic, political, and other indicators for each objective. Process indicators help you monitor whether key processes have been completed, while the other types of indicators can help measure progress toward the medium- and longer-term results you are trying to achieve.

Objective	Process indicators	Biological indicators	Socioeconomic indicators	Political indicators	Other indicators

Worksheet 15: Monitor progress on the implementation of your Seascape strategy

Periodically fill out this worksheet with the project staff and governing body of the Marine Managed Area (MMA). We suggest once per quarter. In addition, be sure to update the status column of the activity plan (Worksheet 10) at least once per quarter, though it's better if you can do it once a month.

Question	Answer with detail
Have we carried out the activity items specified in the activity plan? (Also update the status column in the activity plan)	
Are we monitoring the indicators that were identified for each objective? If not, why? Do they need to be changed?	
Does our monitoring indicate that we are making progress toward each of our objectives?	
Do we need to identify additional activities to achieve the objectives?	
Will achieving the objectives as currently stated enable us to overcome the threats to our target resources? If not, can they be adjusted?	
Are there any shorter-term milestones that we want to set to be sure that our activities collectively will help us achieve our objectives?	
Are there additional or different activities needed to help us in the process?	
Are our objectives too ambitious or unrealistic? Do they need to be adjusted?	

Answering these questions honestly and changing the plan accordingly are critical for effective adaptive management. Since activities often need to change, we recommend that activities and tasks be included in an annual activity plan in an appendix to the Seascape strategy.

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OUR **VISION**
We imagine a healthy, prosperous world in which societies are forever committed to caring for and valuing nature, our global biodiversity, for the long-term benefit of people and all life on Earth.

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