

Increasing Capacity for Stewardship of Oceans and Coasts

A Priority for the 21st Century

Given the increasing stress on the world's oceans and coastal resources from population growth, climate change, and other factors, it is vital to grow capacity—the people, the institutions, and technology and tools—needed to manage ocean resources. Many initiatives focus on specific projects rather than on growing capacity as a goal unto itself, resulting in activities that are not funded or sustained past the typically short project lifetime. The most successful capacity-building efforts are based on periodic needs assessments and include plans to maintain and expand capacity over the long term.

Marine environments support the livelihoods, economies, and quality of life for communities around the world. But growth of coastal populations and increasing demands on marine resources are putting the future of ocean and coastal resources at risk through impacts such as overfishing, wetland drainage, coastal urbanization, climate change, and pollution of coastal waters.

The rapid decline of many ocean and coastal ecosystems has captured the attention of governments, national and international organizations, and private foundations. There is growing recognition that increasing the stewardship of local and global seas will require a greater capacity to assess, monitor, manage, and govern coastal and ocean resources. Programs to grow this capacity are needed for training scientists, managers, and policymakers and for strengthening institutions that supply the necessary financial support, technology, and tools.

This National Research Council report assesses past and current capacity-building efforts to identify barriers to effective management of coastal and marine resources encountered in coastal nations, particularly in the developing world. The report recommends ways that governments and organizations can help strengthen marine and coastal protection and management capacity, including periodic program assessments, sustained funding, and the development of leadership and political will.



Artwork provided by Ernesto Reyes and Benjamín Flores, members of the art group of Amigos de San Lorenzo, Colón, Panamá.

The goal of capacity building is highlighted by a new twist on a familiar proverb: “Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime; teach a man to fish sustainably and you feed him and his descendents for generations to come.”

The Framework for Capacity Building

Growing capacity requires the combined efforts of donors (who provide financial support) and doers (who share their tools, knowledge, and skills) to develop effective and self-sustaining ocean and coastal management programs. These management programs can take many forms and exist at local, national, and international levels.

Capacity building facilitates the development of a marine ecosystem knowledge base and increases the ability to integrate cross-sectoral information into a decision-making framework. It enables consideration of the area's culture and traditions, adaptation to changing conditions, and networking with practitioners from other areas and disciplines. To address current and emerging challenges in ocean and coastal management, programs should grow capacity for the tools, knowledge, skills, and attitudes for:

- How ecosystems function and change;
- How governance processes influence societal and ecosystem change;
- How strategies can be tailored to the history and culture of the place; and
- How to assemble and manage interdisciplinary teams.

Developing nations face a steeper challenge to develop the capacity for more sustainable management practices. However, all nations share a responsibility to develop the capacity and institutions to more sustainably manage the oceans and coasts that connect nations and continents around the globe.

Barriers to Past Capacity Building Activities

The value of developing the scientific and management capacity for oceans and coasts has been well recognized as a necessary element for stewardship. However, past investments in capacity building often have been fragmented, without standardized criteria for evaluating progress, and too short to achieve and sustain greater capacity for ocean and coastal management.

Most capacity building activities have been initiated to address particular issues such as coral reef degradation or they target a particular region or country facing threats to their marine resources. Unfortunately, there is little coordination among efforts with similar goals or overlapping geographic coverage—resulting in programs that are less effective due to their isolation in time and space. This fragmentation inhibits the sharing of information and experience and makes it more difficult to design and implement management approaches at appropriate scales.

Additional barriers that have limited the effectiveness of capacity building programs include:

- lack of an adequate needs assessment prior to program design and implementation;
- exclusion of targeted populations in decision-making efforts;
- poor management structures that lead to mismanagement, corruption, or both;
- incomplete or inappropriate evaluation procedures;
- the paucity of long-term, programmatic monetary support and a coordinated and strategic approach among donors.

Case Study: Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)

The East Asian seas, bounded by Brunei Darussalam, Cambodia, the People's Republic of China, the Democratic People's Republic of Korea, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, Singapore, Thailand, and Vietnam have been under intense environmental pressure. The depletion and degradation of marine resources in this area has had repercussions for human health, economies, and social structures throughout the region. Because multiple jurisdictions contribute to the scale of environmental degradation, no single government can fix the problems.

PEMSEA was established to help reverse trends of environmental degradation and sustain the natural, sociological, and economic vitality of the region through intergovernmental cooperation. PEMSEA emphasizes a holistic, integrative approach to regional governance using integrated coastal zone management processes and risk assessment procedures. The program initiates networking between local governments to facilitate capacity building efforts, develop intellectual capital, and educate the public about its role as stewards of their environment. PEMSEA has been successful through partnerships with multiple political and social components, including non-governmental organizations. The 2006 evaluation of PEMSEA concludes that it is “a success worthy of close analysis and possible replication.”



Case Study: Co-Management in the Banco Chinchorro Biosphere Reserve

The Banco Chinchorro Biosphere Reserve is located on the southeast coast of the Yucatan Peninsula in Mexico. Its 346,187 acres encompass a geographically unique reef formation home to diverse ecosystems and several marine and terrestrial species of ecological and commercial importance. Banco Chinchorro is a high priority site for conservation and sustainable use because of its great biodiversity and habitat value. In 1996, this reserve was declared a natural protected area, mainly to reduce illegal fishing and to control tourist activities (cruise ships bring 3,000 people daily to the nearby town of Majahual). The program was developed with the cooperation of fishermen and government authorities.

Licensed fishermen financially support the program by providing \$0.20 for each kilogram of conch and lobster they catch. The reserve's enforcement and surveillance program is supported by the World Wildlife Fund, while much of the rest of the reserve is supported by funds from the Mexican government. These co-management activities have eliminated certain forms of destructive fishing in the area and helped preserve much of Banco Chinchorro's biodiversity.



Future Capacity Building Efforts

Improving ocean stewardship and ending the fragmentation of current capacity-building programs will require a new, broadly adopted framework that emphasizes cooperation, sustainability, knowledge transfer within and among communities, education and training opportunities, and establishment of effective governance structures. The report identifies the following specific features that would increase the effectiveness and efficiency of future capacity-building programs:

Program Assessments

Regular, regional assessments will be needed to help programs adapt to changing needs in long-term efforts. These assessments should examine environmental, social, and economic conditions, as well as the existing governance structure, to document changes with the implementation of ecosystem-based management practices. Program assessments should form the basis for regional action plans to guide investments in capacity building and set realistic milestones and performance measures based on some common criteria as well as site-specific characteristics. Such action plans should include concrete agreements on the roles and responsibilities of donors and doers in strengthening capacity.

Sustained and Diverse Funding

The success of ecosystem-based management efforts depends upon the ability to sustain implementation beyond the typically short-term investments (2-5 years) of current programs supported by individual donors. Future programs should be designed with

Case Study: Mobilizing Political Will in Tanzania

In the mid-1990s, Tanzania received donor support to develop an integrated coastal management strategy and begin pilot management projects. However, Tanzania's government did not allocate any budgetary resources to implement the strategy and the projects were sporadic and short term. Because ocean and coastal resource management was not a focus of top management discussions, growing capacity in these important sectors did not become a priority for the country's policymakers.

The situation began to change from 2002–2004 when key Tanzanian policymakers were presented with studies on the issues and opportunities in ocean and coastal areas. Additionally, the press regularly covered the plight of coastal residents (among the poorest in the nation) and the need for better management of fishery resources. These factors contributed to the mobilization of political will for growing capacity for good governance of the country's marine and coastal resources.

Ultimately, the Tanzanian government added a Marine and Coastal Environmental Management Project to its development agenda. This program will develop capacity for establishing a sound governance regime for fisheries in Tanzania's exclusive economic zone and help protect the marine environment in coastal areas. The program aims to increase capacity at national, district, and community levels for resource management to add value to harvested resources, to develop public and private partnerships, and to improve product marketing.

strategies for longer-term funding, such as coordinated and diverse investments from local, regional, and international donors. In addition, practitioners should receive training in financing mechanisms, such as user fees and taxes, to ensure the sustainability of the management programs.

Development of Leadership and Political Will

One of the most commonly cited reasons for failure and lack of progress in ocean and coastal governance initiatives is “lack of political will.” One strategy for building project momentum and broadening support is to identify, develop, mentor, support, and reward leaders. Leadership is important in all areas of capacity building—research, education and training, institutions and governance, and within civil society—from the local level to the global. Effective leaders convey a shared vision that motivates and empowers people, focuses activities, and provides confidence in the management process.

In addition to effective leadership, political will requires building a base of support for ocean and coastal stewardship through greater awareness of its long-term societal benefits. Public discussion of the costs and benefits of environmental sustainability—stimulated by the media, information

campaigns, and educational programs—heightens awareness and strengthens political will for change.

Networking and Regional Cooperation

Networking of practitioners involved in capacity building increases communication and helps build support for ecosystem-based management. Well-structured networks connect communities reducing the sense of isolation, and building solidarity and a sense of the “bigger picture” among members. The report recommends that networks should be developed to bring together those working in the same or similar ecosystems with comparable management or governance challenges to share information, pool resources, and learn from each other.

The report also recommends the establishment of regional centers to encourage and support cooperation among neighboring countries. These centers would help to integrate management approaches to address region-specific issues of concern, providing an issue-driven, problem-solving approach to capacity building. Integrated—but decentralized—networking and cooperation would offer a powerful alternative to the current pattern of investment in costly, short-term and disconnected projects.

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