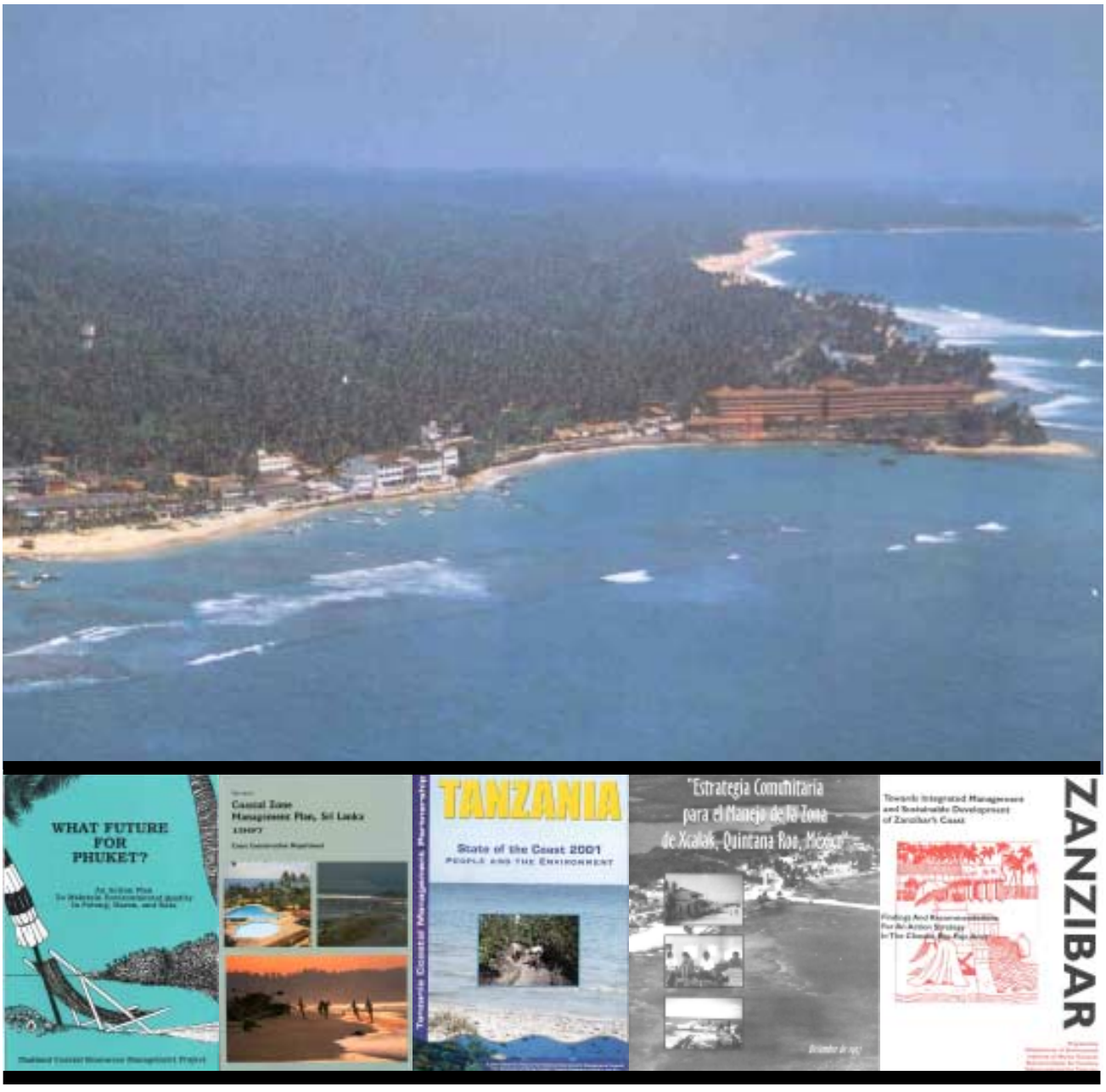
International Experience in Integrated Coastal Resources Management



Presented to the Fiji National Workshop on Integrated Coastal Resources Management
April 9-11, 2002
Suva, Fiji

by Lynne Zeitlin Hale and Donald D. Robadue, Jr.
Coastal Resources Center
Graduate School of Oceanography
University of Rhode Island
Narragansett, Rhode Island USA

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INTERNATIONAL EXPERIENCE IN INTEGRATED COASTAL RESOURCES MANAGEMENT

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1.0 Introduction

By 2000, approximately 98 coastal nations or semi-sovereign states had initiated 345 coastal management efforts, nearly double the number of efforts catalogued in 1993[1]. Coastal countries have tested and adopted a wide array of strategies, each "inventing" the coastal program or policy that fits its unique developmental, environmental, social and political situation. Some countries emphasize specific issues, such as tourism development or shoreline erosion, others are most concerned about certain critical coastal ecosystems or large marine ecosystems, while other programs emphasize coastal and marine biodiversity conservation and place a priority on establishing marine protected areas and no-take reserves. (Box 1) In all cases, they are tackling these issues by pursuing collaborative mechanisms that cut across levels of government as well as employing community-based approaches that build toward sustainable development.

This paper draws upon selected aspects of the rapidly growing and diverse body of world experience of nations at all stages of development in light of some of the challenges and opportunities that Fiji currently faces.

The information and examples presented here emphasize findings from the URI Coastal Resources Center's over 25 years of experience in assisting a wide range of partners both in the United States and developing countries to formulate, implement and assess coastal management programs.

Box 1
Principal Ocean and Coastal Activities

Navigation and Communications
- Shipping
- Port and harbor development
- Navigational aids
- Communication cables

Living Marine Resources
- Fishing (traditional, artisanal, industrial)
- Aquaculture
- Gathering of seaweed
- Gathering of other marine creatures (e.g., sea cucumbers, snails, shells, corals, pearls)
- Tropical fish collection
- Collection of marine mammals for consumption, display, or research
- Watching marine mammals (e.g., whale watching)
- Marine biotechnology applications; use of marine organisms or processes for product development

Mineral and Energy Resources
- Hydrocarbon (oil and gas) exploration and production
- Offshore drilling, pipeline laying, platforms, installations
- Exploitation of sand and gravel aggregates
- Exploitation of other minerals (gold, placer deposits. polymetallic sulfides, manganese nodules)
- Other forms of ocean energy (e.g.. wave energy, tidal power, ocean thermal energy)

Tourism and Recreation
- Hotels, vacation homes
- Tourism infrastructure (transportation services)
- Swimming and diving, underwater parks
- Recreational fishing, boating
- Non-consumptive aesthetic uses

Coastal Infrastructure Development
- Roads, bridges, other transportation infrastructure
- Water supply and treatment
- Reclamation or alteration of coastal waters (e.g.. for building of human settlements, impoundment for aquaculture ponds. diking for recreational facilities)
- Desalination facilities

Waste Disposal and Pollution Prevention
- Siting of industrial facilities
- Sewage disposal
- Dumping of dredged materials
- Disposal of other wastes
- Nonpoint sources of marine pollution (agriculture, runoff, river sedimentation)
- Oil and toxic spill contingency planning

Ocean and Coastal Environmental Quality Protection
- Protection of the ocean's global role in regulating climate
- Protection of the oceans from pollution
- Protection of the oceans from transport and disposal of hazardous materials (radioactive, chemical, etc.)
- Establishment of marine and coastal protected areas, parks to protect special areas or features (e.g., coral reefs, wildlife sanctuaries)
- Marine mammal protection
- Protection of cultural resources (e.g.. religious sites, archaeological sites. Ship- wrecks)
- Protection of the oceans from transfer of alien species (e.g., through ballast waters)
- Prevention and mitigation of harmful algal bloom phenomena

Source: Biliana Cicin-Sain and Robert W. Knecht. 1998. Integrated Coastal and Ocean Management: Concepts and Practices. Washington, D.C.: Island Press. *Table 1.2 in original.*

2.0 Coastal Management is an Approach Recognized as Central to the Conservation and Sustainable Development of Coastal Resources[2]

The term "coastal management" came into use in the United States with the passage of the US Coastal Zone Management Act in 1972, after a protracted debate which touched upon how the country should develop its marine and coastal areas, address the contamination and physical modification of its hundreds of estuaries, and whether the federal government had a role in land use decision-making. The U.S. chose to emphasize a voluntary, state-led approach, providing program guidance, funding for planning and implementation of approved programs' initiatives, and the promise that the Federal Government would make decisions consistent with state policy.

In the 1980s a number of developing countries began to launch coastal management programs. Sri Lanka and Costa Rica were early program innovators, and bilateral donors such as the United States Agency for International Development supported pilot programs in a number of nations in Asia and Latin America. In 1992, United Nations Conference on Environment and Development (UNCED) and the parallel non-government-led Global Forum held in Rio de Janeiro provided unified, global recognition of the need and utility of an integrated coastal governance approach. The Rio Principles on Environment and Development and Chapter 17 of Agenda 21 called all coastal nations to formulate and implement coastal management programs by the end of that decade.

Since the Rio conference on sustainable development, coastal management has been embraced by many developing countries as well as incorporated into a number of global and regional environmental treaties. These include the:

- Convention on Biological Diversity
- Convention on Climate Change
- Global Program of Action on Protection of the Marine Environment from Land-Based Activities
- International Coral Reef Initiative
- Cartagena Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region
- Program of Action for the Sustainable Development of Small Island Developing States

These agreements assign a central role to integrated coastal governance in carrying out commitments to the conservation and sustainable development of coastal areas.

Over the past 25 years, we have learned that no single coastal management strategy or method is more "correct" than another. Indeed, the integrated governance of the world's coastal ecosystems does not occur through the application of any standard recipe. Rather success is found by engaging the layers of government together with the private and civic sectors to tailor a mixture of strategies which match the ecological, social, economic, cultural and institutional conditions and processes at work in the place that is to be managed.

3.0 Places that have Utilized an ICM Approach have Realized Tangible Environmental and Social Benefits.

To date many of the major achievements of coastal management programs have been institutional – better governance. ICM has resulted in better siting decisions for economic facilities and urban infrastructure, cost efficiencies, harmonized policy, conflicts avoided and conflicts resolved. Environmental outcomes have been demonstrated for specific sites, typically at a small scale. Larger scale environmental improvements have been achieved in locations where management initiatives have been sustained over decades. Examples of some tangible successes of ICM programs in developing countries are shown in Box 2.

Box 2
Examples of Tangible Successes of Coastal Management Programs

Tanzania

- Through a community-based coastal management program, the Tanga District has largely halted the use of dynamite fishing by local fishers
- District officials in Tanga have sufficient capacity to provide assistance to other coastal districts embarking on coastal programs
- Mariculture developments will be reviewed and permitted in an integrated, coordinated way
- The national government is assisting local districts to prepare district action plans for coastal issues.

Sri Lanka

- The spread of illegal coral mining has been stopped; and in two areas with local level ICM programs, illegal mining has been halted.
- New hotels are constructed with adequate setbacks, reducing the demand for public expenditures for expensive shorefront protection works.
- Avoidable and costly environmental impacts of new development have been reduced through early and typically positive interaction between Coastal Program staff and developers.
- Rekawa Lagoon resident incomes are increasing as a result of implementation of an integrated management plan focused on fisheries rehabilitation and tourism development.

Mexico

- Mexico is combining a variety of conservation tools to move toward coastal management, such as biosphere reserves, marine protected areas, island reserves, and regional land and water area zoning plans, which assign coastal areas to categories such as preservation and conservation.
- Mexico's 167 coastal municipalities are now eligible to petition for taking on the responsibility of collecting and managing revenues from use concessions in the federal coastal zone and seek approval for setting policies in these federally - held areas. A portion of the revenues are to be allocated to coastal management programs.

Philippines

- Coral reef condition and fish catch have been improved in numerous locations through the creation and implementation of community fisheries reserves. New eco-tourism opportunities have also resulted.
- Enforcement of existing coastal environmental laws is being improved through improved capacity and deployment of existing field personnel.
- Citizens' rights and responsibilities for mangrove use in specific areas are being negotiated and recognized by government; then formalized in user stewardship agreements.
- Through a multi-year, multi-faceted investment in training, capacity for integrated planning and management has improved significantly at Provincial and municipal levels

4.0 Countries Follow Different Strategies to Advance Towards Integrated Coastal Management

Coastal management programs share the same general end goal – sustainable coastal development, but face very different circumstances and decisions about what the best first or second step might be in order to advance a step or two closer to **better** management of its coastal resources. The severity and national importance of issues varies, as does the strength of the legal and administrative framework, the level of national and local capacity, the amount of experience already gained and the degree of public interest and support. The following brief case studies provide a "snapshot" of the starting points for seven different programs. These are described in more detail in Section 7.

4.1 National Coastal Programs

The nations of Sri Lanka and Tanzania took very different paths to creating and implementing their national programs. **Sri Lanka**, the developing nation with the longest history in coastal management, launched its program in 1981 with the passage of a national law. The law sets out the broad framework for the program by defining its overall goals, focus, structure and authority. The Sri Lanka Coastal Program's early emphasis was on establishing procedures and administrative capacity to regulate activities along shorefront, primarily hotel development; eliminate coral mining (which was prohibited by the Act); and develop and implement a master plan for erosion management. Over time, the program extended its scope to address a range of key coastal issues and fostered and supported decentralization of its permitting functions as well as integrated planning for specific sites along the coast.

Several site-specific coastal management initiatives had been ongoing in **Tanzania** for several years in a few locations prior to a national initiative being launched. In 1997, the process to develop a national policy began with the dual objectives of supporting and extending local initiatives, and enabling the national government to address development issues and opportunities of greater than local concern (e.g. tourism, mariculture, natural gas development) in an inter-sectoral way that balanced local and national interests. While the Sri Lanka program, created new authorities and rules through a coastal law, the Tanzania program is an example of a networked program that relies on effective leadership and coordination of existing authorities and rules.

4.2 Local and Site-based Programs

The number and variety of site-based coastal programs around the world is considerable. In some cases, such site projects have little connection to a national initiative. In other programs, site projects are explicitly launched as pilot or demonstration sites with the expectation that "models" will be developed that can be replicated in other locations. Investments in local projects may also yield valuable insights and lessons about how to address issues of coast wide concern that can subsequently be incorporated in national policy. The attractiveness of site-based management to both nations and donors is due to the many perceived and real benefits such projects offer in a relatively short time. It is a chance to start small on real problems so that implementation can occur quickly and tangible benefits accrue. Such demonstrations of the tangible benefits of an ICM approach are essential for building constituencies and capacity for larger initiatives. In the program summaries presented in Section 7, we describe four quite different local experiences.

In recent years, the cost, sustainability and true "demonstration" nature of some site model programs has been questioned. Site and local programs are perhaps more likely to succeed over the long term if they are nested within a supportive national (or provincial) framework program that can provide technical, policy and financial support to the local programs.

Box 3
Locally oriented ICM programs (See section 7 for more detail)

Xcalak Village Community Strategy, Mexico
This small effort lead to a self-initiated marine park and a major role in negotiations over future development in the Costa Maya region, through the ecological ordinance. It is occurring within the larger process of decentralizing environmental management in Mexico and a multinational effort to protect the Meso-American Reef.

Chwaka-Paje Action Plan, Zanzibar
The Chwaka Bay-Paje demonstration project was launched as a first step towards development of a national coastal management program for Zanzibar. The site was selected because it contained problems and opportunities related to a rapidly developing tourism industry within an area that contains resource-dependent traditional villages. This situation is representative of many parts of Zanzibar's coast.

Provincial Planning in Phuket Island, Thailand
Coral reef conservation served as an entry point into an integrated effort to attempt to influence the trajectory of tourism and its impacts along the rapidly developing west coast of Phuket Island. The context proved difficult as national and provincial development interests were at stake, and the process raised questions about the flow and distribution of the benefits of growth as well as the burden of paying the costs.

Decentralized Planning, Alaska
The US Coastal Zone Management framework mainly provides incentives and technical assistance to foster the preparation and implementation of state ICM policies and plans, which reflect to a large extent the unique situations and circumstances of each state. The Alaska program demonstrates how a coastal program was the catalyst for rural areas of the state, which are largely, but not exclusively inhabited by Alaskan natives, to organize into governance units that included traditional tribal and non-tribal representation to develop and oversee implementation of local ICM programs.

4.3 Issue – Specific (Enhanced Sectoral) Programs

Not all ICM programs include regulatory functions or are place-based. Guidelines for good development practice crafted to apply to the specific environments of a country or region have often been a starting place toward more comprehensive approaches. Working with key stakeholders—within government, communities and the private sector—to together develop guidelines on how and where development should occur can jump-start a governance process. Guidelines developed through a participatory process can get incorporated into government processes; and through outreach and extension campaigns, can lead to voluntary adoption by developers. (See examples in 7.7 and 7.8)

Box 4
Major Functions of Integrated Coastal Management

Area Planning

Plan for present and future uses of coastal and marine areas; provide a long-term vision**.**

Promotion of Economic Development

Promote appropriate uses of coastal and marine areas (e.g., marine aquaculture, ecotourism).

Stewardship of Resources

Protect the ecological base of coastal and marine areas; preserve biological diversity; ensure sustainability of uses.

Conflict Resolution

Harmonize and balance existing and potential uses; address conflicts among coastal and marine uses.

Protection of Public Safety

Protect public safety in coastal and marine areas typically prone to significant natural, as well as human-made, hazards.

Proprietorship of Public Submerged Lands and Waters

As governments are often outright owners of specific coastal and marine areas, manage government-held areas and resources wisely and with good economic returns to the public.

Source: Biliana Cicin-Sain and Robert W. Knecht. 1998. Integrated Coastal and Ocean Management: Concepts and Practices. Washington, D.C.: Island Press. *Table 2.3 in original.*

5.0 Coastal Management Programs can be Initiated at Any Level, and Evolve Over Time to Increase their Scale, Scope, and Impact

Coastal management programs have been initiated for reasons as diverse as the countries involved in starting them. Sri Lanka found that engineering methods for addressing coastal erosion were inadequate for protecting tourism and transportation infrastructure along the coast, both vital sectors of its economy. The island nation of Barbados also needed to protect its tourism offerings from coastal erosion, then broadened its concern to resolving shore use conflicts and improving the quality of new tourism development projects. The first coastal program in the U.S., in San Francisco Bay, California, was spurred by fear of federal plans to fill thousands of hectares of the bay to create new land, and the City of Berkeley's use of the bay to dispose of its municipal solid waste. Ecuador began with national government concerns about the declining productivity of its shrimp mariculture industry and loss of mangrove habitat from shrimp farming and urbanization. Our home state of Rhode Island created its Coastal Resources Management Council to deal with concerns about proposals to construct large energy facilities including an oil refinery and nuclear power plants in Narragansett Bay.

Sometimes a local issue or conflict sparks a national call for coastal management, and in other cases national leadership looks ahead to create a framework for supporting the creation of state and municipal capacity for better coastal decision-making. In either situation, integrated coastal management (ICM) plays an important role in advancing towards sustainable forms of coastal development by pursuing a linked sequence of interventions within the normal ebb and flow of the policy process at the targeted level. The process might be initiated by leaders from outside government or from within, and begins by:

(1) identifying and assessing the issues or conflict in the stretch of coast in question, moving beyond the immediate parties concerned about the issue to involve a much broader public;
(2) setting objectives and preparing a plan of policies and actions; and
(3) utilizing a (hopefully representative) mechanism to negotiate and formalize a course of action through a law, decree or interagency agreement.

Policy implementation (step 4) takes place once funds and resources to carry out some selected set of actions is secured, the capacity to carry out action is created and the measures set out in an agreement are made operational. The cycle is completed after (step 5) progress is evaluated and, most importantly, adjustments are made to program objectives, scope or projects and activities.

This cycle shares much in common with the cycle of carrying out a project or learning a skill, except that it takes place squarely within the realm of public debate and decision-making, and is subject to the debate, delay, uncertainty and modifications which a democratic process is expected to introduce.

The results of an ICM initiative are layered and work at different time scales. The program should be working as close to the points of leverage or control as possible. In some cases, the decision-making process can yield a choice, which is easily carried out and keeps the ecosystem in question intact and free from future degradation. In Rhode Island, for example, a proposal to site a twin-reactor nuclear electric generating facility adjacent to a coastal lagoon was forever preempted when an agency decided to allocate the site for conservation purposes instead.

The more typical situation does not yield such clear cut, immediate results. The Sri Lanka coastal program, for example, faced many hotel operators who insisted on building in rapidly eroding areas, plus hundreds of people who mined the barrier coral reef, plus hundreds of others who excavated sand from river mouths. All contributed to the nation's erosion problem. In moving toward the formally approved ICM plan, all these stakeholders have been involved in developing policies and solutions which are now implemented. Sri Lanka has also strengthened its institutional mechanisms and received funding and personnel from the national government as well as international donors to carry out its plan.

An initiative must also anticipate the impact of factors beyond its immediate control. When the power to undo a plan or reverse a course of action is in hands of a few powerful others or many unorganized individuals the program must focus on influencing the choices these individuals make, and thereby their behavior. The new targeted behaviors might include institutional changes, positive gains from a public-private partnership, or the broad-based adoption of new, less damaging resource use practices by a whole category of user.

It is changed behavior that then results in changes in environmental and socioeconomic conditions. Indicators might include the amount of public access to and recreational opportunity available at the shore compared to an earlier benchmark, the amount of tourism infrastructure still at risk from erosion or storm events of a particular magnitude and frequency, the value of property or level of public health resulting from coastal water quality improvements, and the remaining extent of previously designated critical natural features. Many ICM programs target outcomes at this level, even though they may not have full jurisdiction or control over all the factors and decisions required to realize the outcomes. That is why most effective programs rely upon agreements with other agencies, and reach out to negotiate with private and non-governmental actors to bring the full array of resources to bear.

Over time, the catalytic, consensus-building and collaborative implementation roles played by ICM programs for a specific critical area or coastal issue can lead either to expanded functions for the program, or more likely convince other agencies and levels of government to utilize the same general approach in order to move from a narrow, sectoral outlook to a more integrated collaborative one. For example, a traditional fisheries management agency might take on habitat protection, aquaculture or even coastal community development roles.

6.0 The Essential Ingredients of Integrated Approaches to Coastal Resources Management

The examples provided in Section 7 will help illustrate the variety of settings and circumstances where integrated coastal management has been tested and applied. There is a broad-based agreement on what ICM is–and what kind of natural resource or environmental management that it tends to replace. This section generalizes from the eight cases and our more than 25 years of experience to set out some of the common features which are worth keeping in mind during discussions about what contribution ICM can make to Fiji.

6.1 A Geographic Focus

ICM projects and programs are concerned with both the area of the ocean affected by the land and the area of land affected by the ocean–although the boundaries of coastal programs vary widely depending on issues to be addressed and capacity of implementing institution. An ICM focus helps to supplement or adjust sectoral programs such as the management of coastal fisheries, protected areas, resort tourism development initiatives or river basin projects.

6.2 Leadership

ICM has been initiated by private and civic sector leaders as well as by governments. Effective and committed leadership at both the political and practical levels is essential for a successful coastal program. Coastal programs are not sectoral, so they will never have all the autonomous authority required to achieve desired outcomes. Hence leaders who can recognize and act on opportunities, seek and obtain cooperation from key actors, and keep the program a priority for the nation, are essential for success.

6.3 Local and National Ownership

A coastal management program articulates in specific terms a nation's shared goals and policies for a geographically specific region or regions. It is essential that the process by which this vision is developed and refined is "owned", that is, endorsed and attracting the active involvement and investment of the government, civic and private sectors and the broad base of people of the country. International experience repeatedly demonstrates that programs are successfully implemented and sustained where there are constituencies who are active advocates for improved resource management. Participatory methods engage people who have a stake in the outcome of the management effort, and give them a voice in management decisions.

The mechanisms by which the public is involved must be tailored to the culture and traditions of a place, but should strive to assure that key participants at both the national and local level participate in all phases of the policy process. ICM is founded on sustained participatory processes and enduring mechanisms that enables multiple layers of government to interact with the diverse range of stakeholders who have interests in the quality and allocation of coastal resources.

6.4 Integration of Scientific Information in the Policy Process

ICM programs support and utilize applied research to make complex and dynamic coastal ecosystems more understandable, and to enable rational decision-making based on the application of the best available knowledge and technology to solve use and conservation problems. The natural and social sciences, including the important contributions of traditionally held ecological knowledge, are vital to understanding how ecosystems function, to clarifying the origin of human-induced problems, and to finding solutions that can be implemented. It is important that science has clearly defined roles within the planning process. Science can be used to help characterize problems over time and establish management priorities; link causes to specific environmental problems; understand ecological systems in order to develop policy options and legitimize management decisions; and, monitor existing conditions in order to evaluate the effectiveness of policies and attainment of plan objectives.

Judgments on what research and what technology will be most useful and appropriate in a given setting is best made by managers and scientists working together through all the steps in the coastal management process.

6.5 Learning and Adaptive Management

ICM is itself a sustained and iterative process, replacing the fragmentation inherent in single-sector management by preparing plans or negotiated agreements spanning across jurisdictions (e.g., national government, local government, nongovernment) and sectors. It operates through coordinated, multi-institutional planning and decision-making mechanisms, usually with the purpose of forging new forms of integration and to experiment with new resource management techniques. Programs need to develop mechanisms for sustained learning on how to improve efficiency and effectiveness based on the results of monitoring and previous implementation experience. They must be able to seize new opportunities and adapt their work plans and priorities to the often rapidly changing political, economic and socio-cultural conditions in which they operate. Such an incremental and adaptive approach requires a flexible program design and agile administrative mechanisms that will permit, even encourage, programs to be flexible. Specific mechanism that enhance learning during the development of a coastal management program include:

- use of a series of pilot projects to test management strategies;
- completing the loop between planning and implementation as quickly as possible;
- learn "by doing";
- monitoring of program activities in a manner that provides timely, useful and useable information that managers can and will act upon; and
- creation of "space" for regular, participatory self-assessments of program objectives, strategies, activities and outcomes.

6.6 A Phased Strategic Approach to Selecting Issues and Addressing them in a Goal-Driven/ Action Oriented Manner

No single program, even an integrated one, can solve all the problems of the coastal region**.** Initiatives need to maintain a strategic focus throughout the development and implementation process Deciding which issues to address; and where and when to address them is among the most crucial decisions that

a program makes. Programs can fail when they try to do too much at once, are spread too thin, or become too rigid, thus becoming a barrier to solving the problems they were created to address.

ICM projects and programs can grow to encompass multiple objectives (e.g., sustainable economic development, biodiversity protection, food security) that aim to both conserve and sustainably utilize natural and human resources.

6.7 Implementation Actions Can (and Should) Occur Concurrently with Planning

Early implementation of actions, which solve simple coastal management problems, need to occur during the coastal management planning phase, and not wait until planning is "finished." Such actions are more than demonstrations of good faith and intentions. Tangible expressions of improved management help build support for the coastal management process, provide specific opportunities for horizontal and vertical coordination and provide a basis for learning successful approaches and constraints to implementation. It is crucial, however, that such actions are selected through a participatory process; have clear objectives linked to the coastal management process; build or strengthen the community and inter-institutional partnerships essential for coastal management; be modestly scaled; and, be within the capacity of agencies and stakeholders to implement.

6.8 Integration Across Sectors and Scales of Management

The integration in coastal management distinguishes this endeavor from traditional sectoral approaches and programs.

Integration among governance levels. Unitary states may choose to centralize planning and decision-making regarding coastal development because coastal resources are held in common trust, national agencies do not have capable decentralized units of government with the technical capability and authority to analyze and make good decisions, or the apparatus of regulation and enforcement is weak. Federations may find it necessary to make similar choices, preferring to retain jurisdiction over major types of decisions rather than build or delegate decision-making capacity to states or provinces. These arrangements may be effective for decision-making on large, complex projects where multiple ministries have to be involved, but are less workable for decisions involving a great many small actors, or mobilizing local resources out a policy that must involve several actors.

The complex overlay of issues and institutions along coastlines makes it impossible for a single agency to meet the challenges of management alone. Success lies in forging partnerships among institutions, among user groups and those who provide technical assistance. Building such productive and sustainable partnerships is not easy; and incentives are essential

Coastal programs can be designed to share authorities and create needed capacity through several levels from national and provincial to municipal and even village governments, creating a dialogue that links the layers and promotes a sense of shared purpose.

Integrating among sectors, institutions and disciplines. Reaching out across technical and administrative divisions is imperative in coastal management planning, research, policy formulation and imple-

mentation. Technical and governance complexity requires the formation and nurturing of multidisciplinary teams whose members are prepared to think and act strategically, resolve conflicts, administer complicated projects, understand how coastal ecosystems function and work collaboratively with coastal residents.

ICM's point of departure is on addressing human activities and their multiple benefits and impacts on coastal resources. The success of biodiversity conservation and preservation efforts can be enhanced by attending to the needs and concerns of people in adjacent areas where use conflicts need to be resolved.

6.9 Individual and Institutional Capacity

Many coastal management studies, plans and even regulations that have little or no discernible impact on either the resolution of user conflicts or the degradation of coastal ecosystems have been prepared and adopted. A major reason for this is the scarcity of people of the place with the required skills and knowledge to carry out the steps in the coastal management process.

Investments that build capacity for effective coastal management seem more likely to produce positive dividends than the upheavals brought by institutional restructuring. There is considerable evidence that reallocating responsibilities among governmental agencies, restructuring ministries and creating, for example, new ministries of the environment do not necessarily bring the anticipated benefits. Major human activities will continue to be organized and managed by sector. The challenges lie as much in promoting collaborative behavior, and rethinking the objectives of development, as in restructuring how responsibility and power is allocated within the bureaucratic structures of government.

6.10 Matching Program Activities to the Capability of the Institutions

ICM is viable in both developed and developing nations at every stage of development and at every scale from village to national and even in ecosystems shared by more than one country. One of the most common mistakes in the design of first generation coastal management programs is to set objectives and place workloads on implementing institutions that outstrip their capacity and financial resources creating an "implementation gap". The result is that tasks are poorly executed, the time required to meet key objectives lengthens and the credibility and efficiency of coastal management endeavors are put at risk. It is important to realistically match the scale and objectives of a program with the capacity of the institutions involved and the strength of the constituencies affected. While this focus may not yield the "best" plan from a technical standpoint, it does help to produce a "realistic" plan containing recommended actions, which can be implemented and provide a solid foundation of experience and success from which to build.

Box 5
Typical Integrated Coastal Management Program Activities

Area Planning
Studies of coastal environments and their uses
Zoning of uses
Anticipation of and planning for new uses
Regulation of coastal development projects and their proximity to the shoreline
Public education on the value of coastal and marine areas
Regulation of public access to coastal and marine areas

Promotion of Economic Development
Industrial fisheries
Artisanal fisheries
Mass tourism
Ecotourism
Marine aquaculture
Marine transportation
Port development
Marine recreation
shore minerals
Ocean research
Access to genetic resources

Proprietorship of Public Submerged Lands and Waters
Establishment of leases and fees for use of publicly held coastal and marine resources and spaces
Establishment of joint ventures to exploit non-renewable resources (e.g., offshore oil)

Stewardship of Resources
Conduct of environmental assessments
Conduct of relative risk assessments
Establishment and enforcement of environ mental standards
Protection and improvement of coastal water quality (point sources, nonpoint sources)
Establishment and management of coastal and marine protected areas
Protection of marine biodiversity
Conservation and restoration of coastal and marine environments (mangrove forests, coral reefs, wetlands, etc.)

Conflict Resolution
Studies of multiple uses and their interac tions
Applications of conflict resolution methods
Mitigation of unavoidable adverse effects on some uses

Protection of Public Safety
Reduction of vulnerability to natural disasters and global changes (e.g.. sea-level rise)
Regulation of development in high-risk areas through such methods as establishment of "set-back lines"
Construction of coastal defense measures(e.g., seawalls)
Creation of evacuation plans or other mea sures in case of coastal emergency

Source: Biliana Cicin-Sain and Robert W. Knecht. 1998. Integrated Coastal and Ocean Management: Concepts and Practices. Washington, D.C.: Island Press. *Table 2.4 in original.*

7.0 Case Studies of International ICM Experience

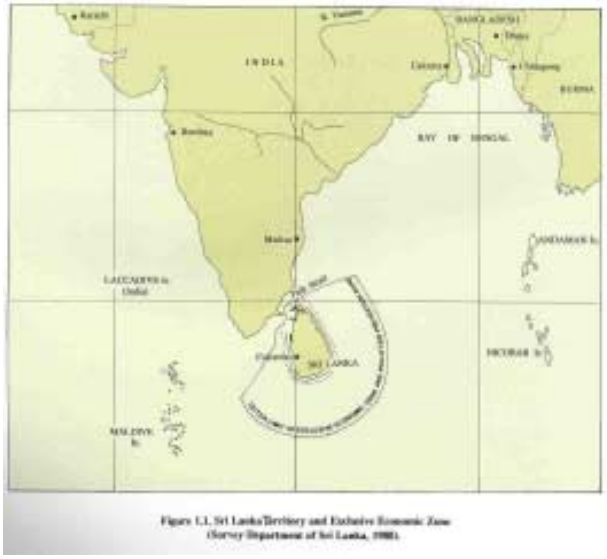
National ICM Programs

7.1 Sri Lanka Coastal Management Program[3]

This mature program was launched by the Coast Conservation Act of 1981. Its emphasis is on regulation of activities that occur along the shorefront. The National Coastal Management Plan adopted in 1990 and amended in 1995 sets forth policies on a limited number of coastal issues, and provides a framework for planning and management of "special areas."

The island nation of Sri Lanka has 2,825 km of coast line. It passed its Coastal Management Act in 1981 (it was gazetted in 1983). The Act vested considerable authority and responsibility for both coastal planning and implementation within a single national agency – the Coast Conservation Department (CCD). CCD was given responsibility for:

- Design and implementation of a permit program for all development in a legally defined coastal zone;
- Scientific and socio-economic studies to provide information for a national coastal plan;
- National coastal management plan preparation and updates; and
- Shoreline protections works design and construction.



Location map of Sri Lanka

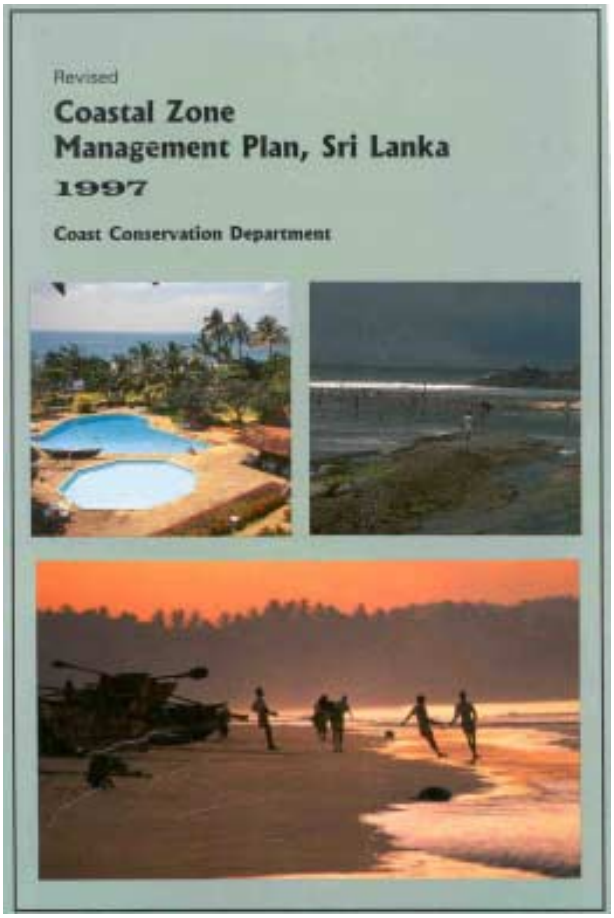
From its inception, CCD staff implemented as they planned. CCD staff reviewed coastal permit applications, met with developers, enforced coastal set-back requirements, constructed coastal protection works, commissioned research, met with representatives of other agencies to review projects, organized public awareness projects, and carried out a variety of other implementation activities. During the 1985 to 1989 period they also prepared their first National Coastal Management Plan (adopted by Cabinet in 1990). In its first generation plan, CCD chose to focus on a limited subset of coastal issues – coastal erosion, coastal habitat protection, and historic, scenic and archeological sites.

Coastal tourism development along the southwestern coast

During this period CCD also recognized the limitations of a national coastal program that tried to regulate all coastal activities from the capital city. In the 1990 to 1995 period alone, CCD with a coastal management staff of less than 15, reviewed more that 2700 coastal permit applications, supervised Environmental Impact Assessments for 10 major developments, launched several major policy and awareness-building initiatives, and began revision of the national plan. In short, the national office was attempting to take on **all** the work of nation's efforts to better manage their coast.

Shore line erosion

CCD staff recognized from the beginning, that the volume of permit applications and the relatively minor nature of many coastal projects would ultimately require some delegation of authority. Successful delegation of permitting authority and responsibility proved difficult. First, local government in Sri Lanka, as in other places is overburdened and under capacitated. CCD had few incentives to offer local government, and local officials correctly viewed the permitting of coastal development as an activity that would not be "appreciated" by resource users and small developers, local government's constituency. CCD recognized that it needed to provide Districts with extremely clear procedures, training, and incentives if they were to take on this burden.



CCD also recognized that the coastal program had to move from being an agency that basically said yes or no to individual developments to one that was also making a tangible and positive difference in the lives of coastal people. The strategy that CCD adopted was to begin to promote special area management plans (SAMPs) as a mechanism to deal comprehensively with coastal management issues at specific sites. Potential SAMP sites were selected by CCD based on four criteria: severity of the issues; biodiversity; feasibility; and economic significance. In their revised coastal management plan (1997),

CCD calls for SAMPs for 23 coastal sites; then provides guidance on the process for SAM planning. As with the permitting program, CCDs national guidance is based on its "lived" experience. CCD pioneered the SAM concept in Sri Lanka, developing two successful models in the Rekawa and Hikkaduwa lagoons.

In sum, the major change that occurred in Sri Lanka's program has been a much greater interaction between national and local levels of government and a greater role for local government. In the first generation program, the national government tried to "do it all." In the second generation, national government retains a regulatory role for major coastal developments, an over site role to local government in relation to minor permit review; and a catalyst/ facilitator role with regard to SAMPs. In addition, CCD continues to play a national leadership and coordinating role – keeping coastal issues on the national agenda, promoting awareness of and support for these issues, and improving the available information base for coastal management.

7.2 Tanzania National Coastal Management Strategy[4]

Within the context of Tanzania's National Environmental Policy, a National Coastal Strategy is being formulated. The Strategy's purpose is to support and extend locally successful ICM initiatives, and enable the national government to encourage sustainable economic development along the coast. The Coastal Strategy creates no new authorities, rather it focuses on cooperative, intersectoral and local/nation actions to achieve jointly developed objectives.

Tanzania is in the process of developing a National Coastal Strategy with the assistance of USAID and the University of Rhode Island. The nation has approximately 800 kilometers of mainland coast and is severely underdeveloped. Outside of urban areas, the major source of income for coastal communities is fishing, mostly at a subsistence level, but increasingly at commercial levels. Marine fisheries provide protein for coastal communities and contribute $6.5 million to the national economy. Women and children directly depend on the collection of shellfish and are often involved in processing and selling fish. Mangroves provide wood for building and fuel, while reefs are mined for lime and coral rock. In addition to the human use of the resources, coastal ecosystems (reefs, mangrove forests and sea grass beds) have high biodiversity and productivity and provide shoreline protection.

Of the opportunities Tanzania has for development, many are coastal, including export fisheries, mariculture (both prawn & seaweed farming) and tourism. As coastal areas become more populated and activities become more intense, it is increasingly likely that the natural resource base will be degraded. Because Tanzanians depend on a quality coastal environment, pressure from development and over-utilization can have significant impacts on the nation's economy and social fabric. It is clearly in the national interest that this development be carefully planned to best manage these resources.

Despite this pressure, and a long-standing national recognition of the need for a coastal strategy, the National government of Tanzania made little progress in moving from rhetorical support for coastal management to initiation of a meaningful planning process. Over the last five years, however, pilot programs began testing the viability and tangible benefits of using coastal management as a means for addressing coastal issues and opportunities along the coast. Existing programs primarily focus on district and village levels of government and village economies, and are producing promising results. They work independently of one another and are not tied into a central coordinating body at the national level.

The situation of no national framework for coastal management has resulted in lost opportunities and increased costs at a national level, and frustration at the local level. With management authority for coastal resources under the auspices of multiple institutions and departments, (e.g., fisheries, forestry, tourism and wildlife) mandates and programs frequently conflict with each other, wasting extremely limited financial resources. Second, there is no coherent national effort to promote or guide coastal development, nor is there a mechanism for local communities to acquire support from the national government to implement integrated management plans. From a different perspective, lack of coordination at the national level makes it difficult for pilot level activities to inform national policy with the lessons that are being learned through the pilot efforts. This limits the replication of successful models being created by programs.

Mangrove cutting in Tanzania

Creating a national coastal management strategy within a context of strong sectoral agencies and local programs presents the national government with a series of challenges. Local programs are concerned that a national program will be a hindrance not a help; and sectoral agencies are concerned they will lose power. This is a delicate but common situation for coastal programs.

Sea weed farming

In 1997, the Tanzania Coastal Management Partnership (TCMP) was formed under the auspices of the National Environment Management Council (NEMC). The TCMP works with national and local government agencies and the existing network ICM programs and practitioners, to facilitate a participatory, transparent process to unite government and the community, science and management, sectoral and public interests to establish the foundation for effective coastal governance at the national level.

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From its inception the TCMP has been consciously trying to define the national program's role as the group that promotes integration and that fills gaps not covered by existing agencies or programs. This viewpoint of what the national program should do is captured in four of TCMP's ten operating principles

1. Build on and from existing experience, programs and capacity with integration across all sectors and scale of management. Do not seek to replace sectoral responsibilities, but, instead, enhance the abilities of the sectors to

work toward common goals. Use conflict management and participation as the primary tools for improving sectoral coordination. Ensure that a national program contributes to the success of local and regional programs.

2. Understand that coastal management will always be constrained by the lack of financial resources. Work in partnership to select priority areas of focus where limited resources should be applied. Ensure ownership and sharing of costs of the program at both local and national levels.

3. Ensure participation by all key state and parastatal groups, resources users and private sector stakeholders throughout the program planning and implementation. Decisions about program direction should be made with transparency, in partnership between national and local governments.

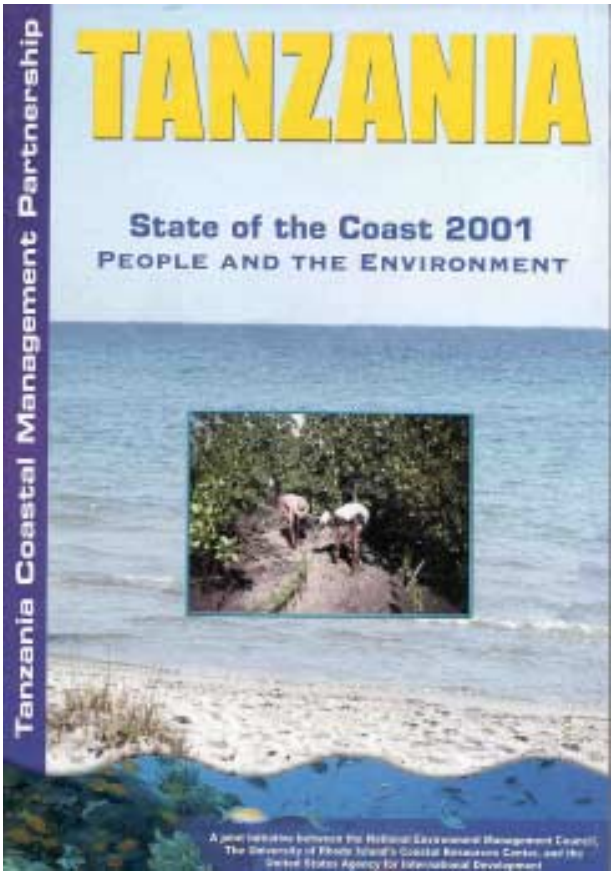
4. Build human capacity at all levels. Provide people with the right information, build their skills and create attitudes that model appropriate behavior for coastal management.

The early and explicit definition of the national program's role and approach is helping TCMP win support. Similarly, as TCMP looks at what the national coastal program should do it seeks to use a facilitative, non-regulatory model.

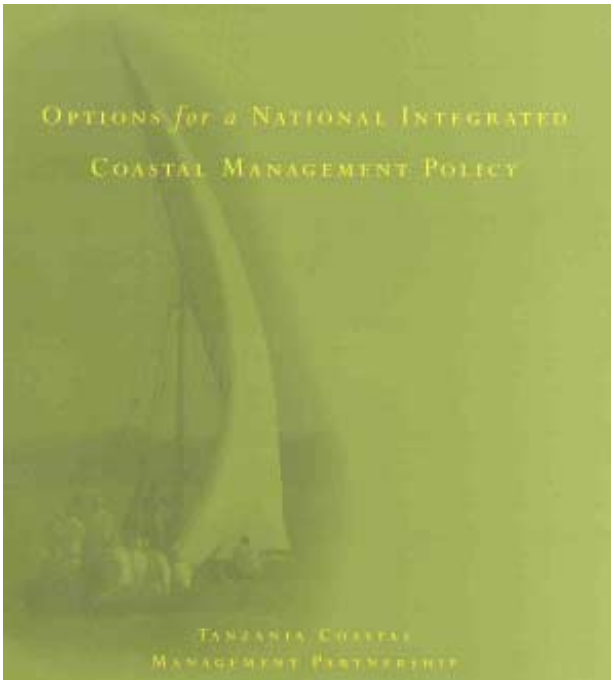
The National Coastal Strategy will:

Support planning and integrated management of coastal resources and activities at the local level and provide mechanisms to balance national and local interests.

- Guidelines for preparation of District Action Plans have been prepared, based on the successful experience of a long-running demonstration project. The TCMP has provided technical support to two districts to



The Tanzania State of the Coast Report



Options for coastal management in Tanzania

develop action plans, and mechanisms are being developed to provide small amounts of funding through the regular government budgeting process for implementation.

Promote integrated and sustainable approaches to the development of major economic uses of the coast to optimize benefits and minimize negative impacts.

- Ensure that coastal activities and opportunities are developed according to national and local needs and guidelines
- Establish project review procedures that are consultative, multi-sectoral and inter-disciplinary in order to promote efficiency and transparency in the decision-making process
- Ensure that all forms of pollution in coastal areas are properly controlled and managed. Guidelines for mariculture development have been completed and adopted by the 10 agencies engaged in the review of such activities. Tourism guidelines are now under development.

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

Geographically specific planning will be facilitated through the Coastal Strategy. Special Area Management Plans (SAMPs) will be developed for geographic areas of concern. Special area management planning is a mechanism that allows central government–in partnership with local government–to plan and manage geographic areas of particular concern. Potential SAMPs include:

- Areas with existing important economic/infrastructure facilities
- Areas slated for major new economic developments
- Pollution hot-spots
- Areas of high risk from erosion and flooding

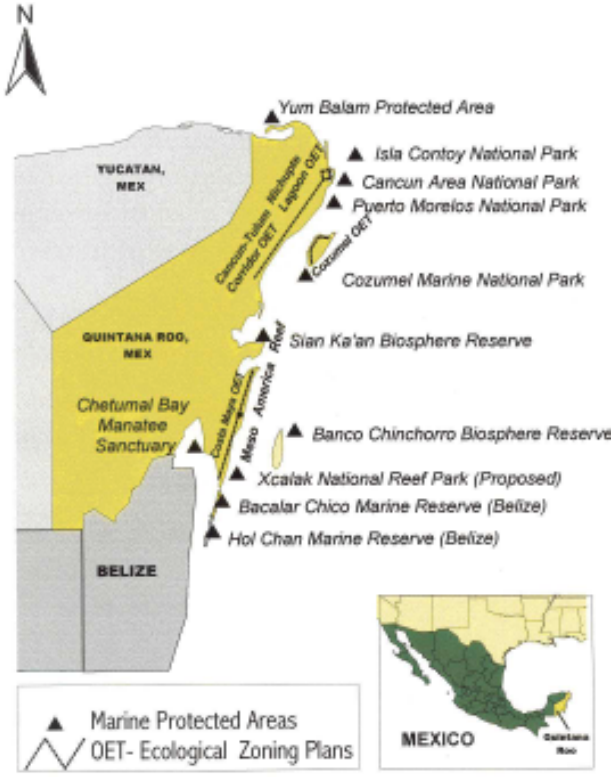
Develop and use an effective coastal ecosystem research, monitoring and assessment system that will allow already available—as well as new—scientific and technical information to inform ICM decisions.

A Scientific and Technical Working group has already developed a State of the Coast publication that combined existing scientific information with resource users perceptions as to the trends and conditions of coastal resources.

7.3 Xcalak Village community strategy (Mexico)

This small effort lead to a self-initiated marine park and a major role in negotiations over future development in the Costa Maya region, through the ecological ordinance. It is occurring within the larger process of decentralizing environmental management in Mexico and a multinational effort to protect the Meso-American Reef.

During the 1990s, important forces of change were underway in Mexico that created a window of opportunity for coastal management. In Quintana Roo, the once sleepy village of Cancun exploded into a premier resort city of 397,000 and a 100-km tourism corridor called the Costa Riviera over a period of only 25 years. The success showed that tourism could be an important engine for economic development in Mexico's youngest state. Cancun's excesses, a changing marketplace, and concern about the potential loss of Mexico's critical marine and coastal areas lead to the concept of low impact tourism for the Costa Maya, a undeveloped shore located along the state's southern Caribbean coast on the border with Belize.



Marine protected areas along Quintana Roo and the Xcalak Proposal

The convergence of this increased interest and capacity for conservation still required a 'little spark' which was provided when the Fishing Cooperative "Andres Quintana Roo" wrote a letter to the Governor of Quintana Roo in 1994 requesting that its nearshore waters and coral reef be designated as a marine protected area. A key purpose for this designation was to enable the community to participate in potential economic development that a marine park might generate.

The Fishing Cooperative's vision for what they called a 'tourist reserve' included:

- Support to form a group of boatmen able to provide services to tourists
- Creation of a reserve which included the area from the entrance channel along the border with Belize to the southern part of the village of Xcalak
- Permanent closure of a portion of tourist reserve to fishing with spears and nets
- Limits on capture of snook, tarpon and bonefish
- Protection for the nests on Bird Island, west of the village in Chetumal Bay
- Protection for the reefs, including banning the use of nets and poles which damage the coral.

Village participation in planning—Xcalakeño-style

The formal procedure for preparing a conservation or protected area proposal consists mainly of technical requirements for characterizing the land and marine environment, developing objectives for management and justifying the significance of the proposal. Extensive public involvement is not required and typically such proposals are initiated at the state or federal level. The technical document is submitted to the National Ecology Institute (INE) for review and approval. State and local government have no legal jurisdiction in tidal or marine waters. However, this formal procedure would not accomplish the other goals of the community or enable it to participate effectively in developing the policies and regulations controlling the impacts from land based development in the Costa Maya corridor.

The project team, comprised of the Amigos de Sian Ka'an, a prominent civic association, and the University of Rhode Island's Coastal Resources Center, worked to include community members in gathering information needed for the marine protected area proposal, which covered the land as well as ocean. The community created a voluntary, informal committee that advised on the marine park proposal and discussed a number of other issues related to community participation in tourism, and in decisions affecting future development.

The project team assigned part time staff based in the village as well as a coordinator in Chetumal in order to support a parallel flow of activities as the technical diagnosis proceeded. For example, additional work was carried out to capture the community's history, social and economic characteristics and begin to identify actions that could be carried while the process of designation of the protected area wound its way through state and federal procedures.

The village of Xcalak, looking south to Belize

The essence of community aspirations and actions was eloquently captured and published in 1997 in the form of the *Community strategy for the Xcalak* Area, which addressed many topics outside the bounds of the marine park related to community development.

Planning and action go hand in hand

Villagers took a number of small steps to carry forward some practical actions while larger scale decisions about infrastructure, land use planning and development density were being made. The Fishing Cooperative prepared and began to implement a set of rules to govern its members' activities in the sections of the proposed marine protected area of most concern. Some fishers were trained as ecotourist guides, which included English language training, through a collaboration with RARE, an international organization that specializes in small tourism enterprise development. Buoys were installed along La Poza, the coral reef trench at the center of the Xcalak Reef National Park proposal, to help protect it, and several fishers participated in English classes offered in the community. A class of architecture students from Syracuse University worked with the village to prepare design and development guidelines for future construction that preserve its unique style.

A seat at the negotiating table

Perhaps most important action to emerge was the

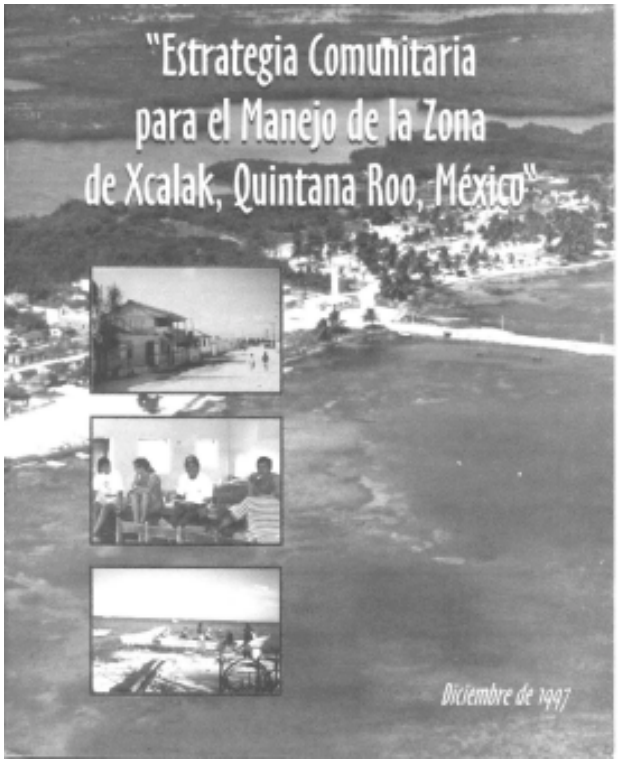
fact that community and NGO leaders became involved in the process of preparing the environmental master plan for the coast, the *Ordenamiento Ecologico Territorial for Costa Maya*, or OET,which covered the shore lands up to Punta Herrero on the edge of the Sian Ka'an Biosphere Reserve. Adoption of this master plan turned out to hinge upon reaching an agreement on overall density of develop, and on integrating the Xcalak Reef marine park proposal with the master plan zoning for the Rio Huache lagoon.

The community's proposal was submitted in March of 1997, just as the public review process for the master plan was to begin. The original Costa Maya proposal had been to attempt to develop 10-15,000 hotel rooms along the shore.

The new situation in the Xcalak Peninsula

The detailed management plan for the Xcalak Reef Park was completed in 2002, and the tourism investment promoted by the State will be arriving at an increasing pace along the entire shore of Costa Maya. The agenda for all actors is expanding to making many practical decisions about how ideals and policies will manifest themselves in reality. The relationship between pioneering tourism entrepreneurs, most of whom are from outside the region, and local residents will remain turbulent. Some villagers are working to improve their business skills and participate in tourism, but others have not become involved or lack the capital to make investments. Migration of businesses and workers to the region is inevitable and likely to challenge the ability of the community to absorb new investment, people and activity.

The Xcalak Reef National Park is only one part of a package of new policies and plans that will shape how the pristine coastline is developed over the next decade. In fact, the team preparing the proposal looked ahead to this new stage by including an extensive recommendation on the need to incorporate an "Integrated Coastal



The Xcalak Village Community Strategy

Management Subcommittee" to serve as "a communication forum for the various levels of government agencies in the region, residents, investors, the scientific and academic community, non-governmental organizations and all sectors of society interested in the area. The Technical Committee recently set up to oversee marine park management has begun to hold its meetings in the Xcalak village. The villagers also have a seat on the interagency oversight committee formed in 2001 to supervise implementation of the Costa Maya environmental and land use plan.

7.4 Chwaka Bay-Paje Action Plan (Zanzibar, United Republic of Tanzania)[5]

The Chwaka Bay-Paje demonstration project was launched as a first step towards development of a national coastal management program for Zanzibar. The site was selected because it contained problems and opportunities related to a rapidly developing tourism industry within an area that contains resource-dependent traditional villages. This situation is representative of many parts of Zanzibar's coast.

In order to "practice" ICM prior to development of a national program, the government of Zanzibar, an island with 350 km of shoreline, decided to launch a pilot project in ICM. Facilitated by the national government, the pilot ICM program utilized interagency working teams composed of technical staff of key agencies to work with local residents to accomplish project work; adopted the ICM policy process and essential actions described by the United Nations Joint Group of experts on the Scientific Aspects of Marine Environmental Protection, as a "road map; and integrated capacity-building strategies into every aspect of project implementation. Taken together these strategies allowed Zanzibar to "test" the ICM approach and lay a foundation for a national initiative.

The Chwaka Bay-Paje area, on the southeast side of Unguja Island, approximately 20 km from Zanzibar town was chosen as the pilot site. This 25,000-ha site contains seven rural fishing communities with a total resident population of about 10,300. Environmental quality and the condition of coral reefs, fisheries, and mangroves are generally good. The economy is expanding from near-total reliance on fishing, man- grove, and coastal thicket harvests and marginal agriculture to new economic activities including tourism, seaweed farming, and small-scale business. The site is confronted by the nation's most urgent coastal issue: incorporating a rapidly expanding international tourism industry within an area comprising traditional villages in a manner that maintains the environment and benefits the local people.

Each of the three key strategies used in implementing the pilot project are described below:

Interagency Core ICM Teams. The need for "implementers" to participate in planning is recognized as good practice in ICM. While much attention is given to how to involve resource users in the ICM process, ironically less emphasis has been given to government officials from multiple agencies working together to solve problems and sustain participatory ICM processes. Since government must play a key role in implementing ICM in eastern Africa, this project focused on initiating the participatory ICM process through

multiagency government working groups.

The Zanzibar ICM team was convened and led by the director of the Zanzibar Department of Environment (DOE) in cooperation with the University's Institute of Marine Science, and included representatives from all key sectoral agencies. It was important that the teams were lead by high-ranking staff who were respected both within and outside their institutions. The team leader assumed responsibility for the process, served as the critical link to stakeholders, and was the liaison with the national government. It was helpful to have more than one person from the lead institution on the team to provide assistance to the team leader.

The benefits of nurturing and sustaining the core team were substantial. They provided a critical mass that allowed the project to keep moving ahead, even with inevitable changes in team composition. Team members also became ICM advocates within their home institutions. Since they represented different institutions, they were able to spread information about ICM much further than if the project only worked with one institution.

The ICM Policy Process. Adopting the GESAMP-endorsed policy process and actions provided the project with credibility and stability, and a clear strategy. The steps of the policy process are described below.

Issue Identification and Assessment. The first step was to identify coastal issues, array the best available information, then develop a consensus about which issues the ICM effort should address. To achieve this within the project's time frame, the teams rapidly synthesized existing information and collected field data on both the current condition of resources and perceived trends and issues. For issues that lacked a sufficient body of information, local experts were commissioned to fill critical information gaps. The issue analysis developed by the ICM team was reviewed by stakeholders at a

series of meetings designed to promote two-way communication, with separate sessions for men and women. This was essential for gaining the insights of women in a traditional Muslim community such as exists in Zanzibar. The stakeholders gave the ICM teams critical information about the pilot sites, helped sort issues by priority, and suggested actions for resolving problems. The stakeholder meetings were an important step in raising awareness about resource management and creating trust between stakeholders and the governing institutions.

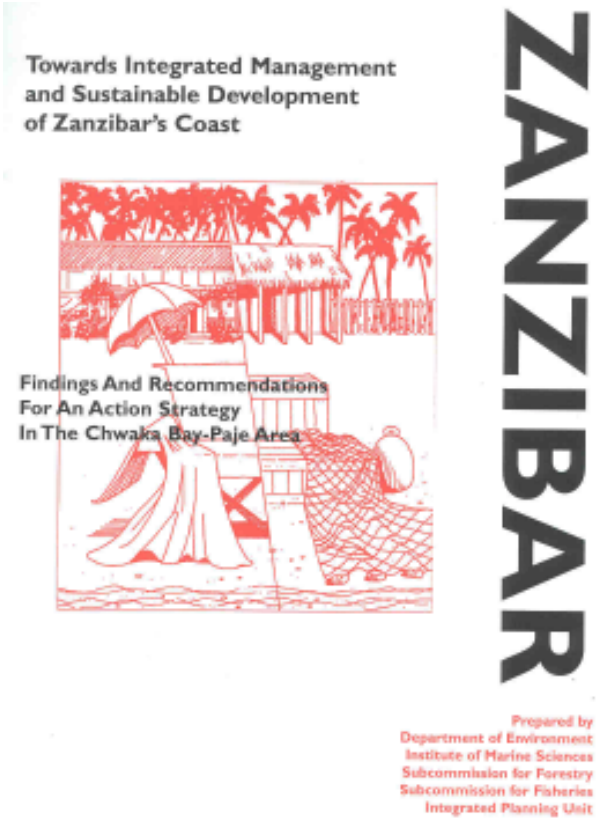
Plan Preparation. Using the issues defined during Step 1 as the foundation, the team worked with stakeholders to set management goals and clear objectives. They then engaged in a sustained dialogue (through meetings and review of draft documents) with stakeholders and relevant government agencies to define strategies to

address the critical issues. The strategies were divided into two categories: action and planning. The action strategies defined activities that could realistically be carried out in the near term with existing or readily obtainable resources. The planning category was used to define longer term, and frequently more expensive, analytical and information-generating activities. The resulting "Action Strategy" document does not include regulatory actions or major infrastructure proposals. Rather, it comprises a consensus view of site ICM issues within the national context, a strategy for progress on the crucial issues, and recommendations on institutional mechanisms for implementation.

Adoption. The integrated site strategy, including proposed implementation structures, was adopted by consensus at a national workshop which included representatives from national and local government, the private sector, resource users, and villagers. This process yielded broad support; however, implementation of the strategy is voluntary, not legally binding. A broadly representative, fifteen member implementation committee was formed called the Coastal Resources Management Committee (CRMC). The core ICM team was formally asked to serve as the committee's secretariat.

Implementation. After the national workshop, the committee described above was established and began implementing the Action Strategy. These actions were designed to begin to solve some problems at the site, quickly gain experience in coastal management, demonstrate the government's commitment to ICM, and provide an opportunity for government institutions, non-governmental organizations, and private sector representatives to experiment with joint action.

Evaluation/Learning/Adaptation. The ICM team self- assessed its progress, focus, and tactics. This was essential, as project resources (human and financial) were modest and the



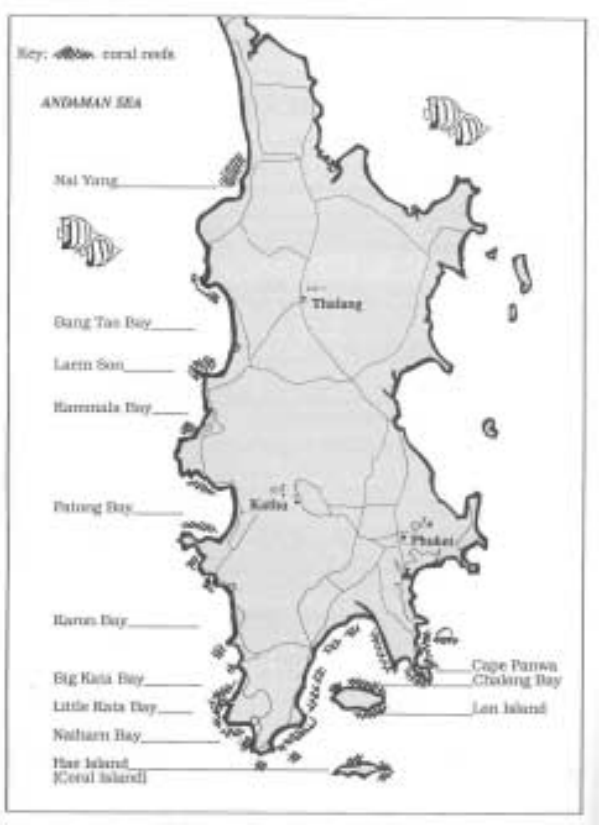
demands on and expectations for the project large. By continually thinking strategically about the scope and structure of the process, the team was able to make progress on ICM issues without being overwhelmed or stretched beyond their limited capacity. Most importantly, this process created a culture of learning and adaptation within the local team.

7.5 Coral Reef Protection in Phuket, Thailand: A Step Toward Integrated Coastal Management [6]

Coral reef conservation served as an entry point into an integrated effort to attempt to influence the trajectory of tourism and its impacts along the rapidly developing west coast of Phuket Island. The context proved difficult as national and provincial development interests were at stake, and the process raised questions about the flow and distribution of the benefits of growth as well as the burden of paying the costs.

Thailand, one of Asia's economic tigers of the 80s, has experienced rapid, unmanaged, and unsustainable exploitation of the kingdom's rich natural resource base. In coastal areas, the need for effective integrated resource management was especially urgent in the mid-1980s. Tourism was booming. Pristine coastal areas were rapidly being developed without regard for the environment- the same qualities that drew tourists in the first place. Although Thailand had a number of environmental laws, and technically sound management plans had been drafted to cover some issues and some geographic areas, implementation was either ineffective or lacking.

This implementation gap was caused by a lack of political will to allocate needed resources, which in turn was largely the result of the absence of a broad, strong coastal management constituency at both the national and local levels; and an absence of good in-country examples of effective management.



Phuket Province, Thailand

Tourism is Thailand's largest single source of foreign exchange, and Phuket is Thailand's premier coastal destination. Until the mid-1980s, access to Phuket's west coast was limited, and most pocket beaches were either undeveloped or had the potential for only small-scale development. Beginning in about 1985, tourism started to grow, and, with the construction of a "ring road" on the west coast in 1988, west coast development exploded.

Coral reef conservation initiative in Phuket

The Thailand Coastal Resources Management Program, TCRMP, was sponsored by USAID and carried out by URI in collaboration with Thailand's National Environmental Board. When the project began, awareness of the existence, beauty, and significance of Phuket's coral reefs was limited primarily to scientists. There was no media or public attention paid to coral reefs. Neither the private sector, which was enjoying "free" and very profitable benefits from reefs, nor the government, which was making decisions that affected their condition, considered the impacts of their activities on the condition of the coral reefs.

There were two distinct goals for the Phuket Coral Protection Strategy. The first was to protect and provide for the sustainable use of the reefs. The second was to use the relatively simple and uncontroversial issues associated with coral reef protection to build local, then national, support and political will for addressing other coastal management issues in Phuket. In other words, the project team hoped that the constituency built around coral protection would later want to address the more complicated and contentious coastal management issues that Phuket faced-water-quality degradation and unregulated and inappropriate land and water use.

The project team followed a basic policy process in carrying out its work, completing the planning and implementation cycle in about three years. (See discussion of Chwaka Bay, 6.4) Team members were keenly aware of the need to build consensus and support for initiatives throughout the process; hence, much attention was paid not only to *what* was done but also to *how* it was done.

Issue Definition and Assessment. The project team started with the premise that existing or readily available information provided a sufficient basis for understanding reef conditions, the local reliance on reef resources, and the relative significance of management issues. Throughout the year and a half of the issue identification and analysis stage, considerable effort was made to heighten public awareness of coral reefs and to build support for subsequent management initiatives. Early activities, which included media campaigns, community events, and the publication of brochures, were designed to enhance both the general public's and the private sector's appreciation for the area's reefs and to explain why a protection strategy was necessary. Support for coral protection was also built through the extensive discussions carried out with reef-dependent businesses and reef users during the process of issue identification.

Plan Preparation. In March 1988, a workshop brought together local and national government officials and key interest groups to review and verify the outcomes of the issue definition process. The participants concurred with the following objectives for coral reef management in Phuket: (1) to maintain and promote multiple and sustainable uses of Phuket's reefs; (2) to promote the recovery and enhancement of coral reef habitat; and (3) to enhance local commitment to, and participation in, coral reef management. Management strategies to maintain water quality, sustain fisheries, and reduce tourism-related damage were all set forth in the Phuket Coral Protection Strategy document.

Implementation. The first implementation efforts were non-regulatory initiatives to reduce avoidable physical damage to reefs associated with tourism activities. Educational activities were designed to motivate reef users to voluntarily change damaging behaviors and to support policy reform. An important initial implementation effort was the installation of mooring buoys. This project was designed to show tangible action, gain support of the private sector, and build linkages among government agencies and between the public and private sectors. This project not only solved a problem, but also built essential interagency and

public sector-private sector linkages. By 1989, maintenance of the buoys was completely taken over by local groups- both public and private.

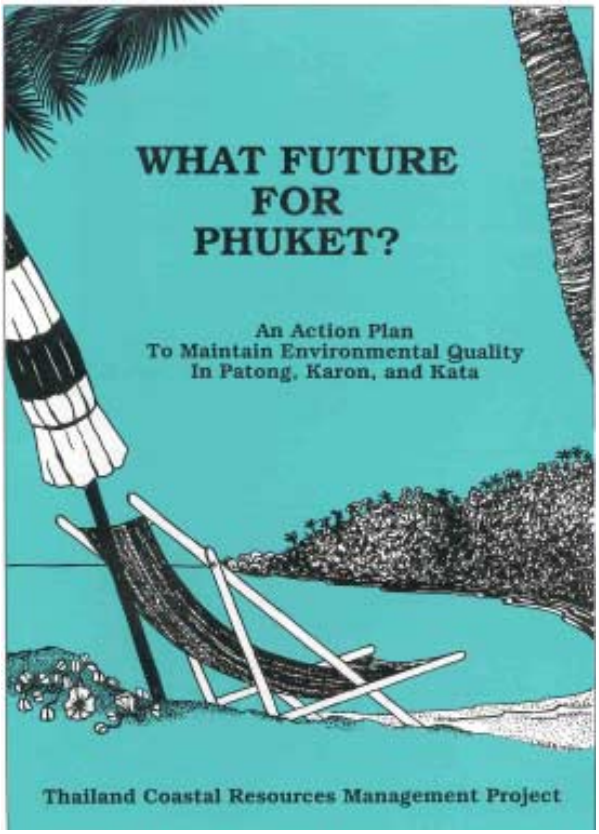
Coral reef issues and project results were well covered in both local and national media. By 1988, awareness and appreciation of the significance and value of coral reefs were widespread not only in Phuket but in government, NGO, and tourism circles in Bangkok. In short, progress was being made in developing a constituency for meaningful coral reef management. In this changed context, the TCRMP began to focus on making progress at the local and national levels in policy reform.

Toward Integrated Coastal Management in Phuket

Building on early successes in controlling physical damage to Phuket's coral reefs, the project expanded the management focus to include water-quality degradation and land-use control. The TCRMP had committed key groups to coral protection, made tangible progress in addressing the physical impacts of tourism and recreational use that were relatively easy to mitigate. It then built on this support to try to address a broader and more difficult set of issues. The result was a multisector action plan for the integrated management of the most rapidly developing sections of the west coast of Phuket

Toward a National Coral Reef Management Strategy

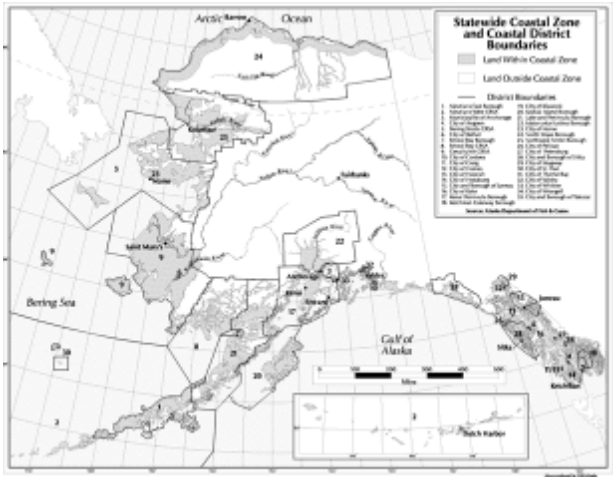
News of the outcome of the Phuket coral reef management project spread quickly. Other provinces began requesting ONEB assistance in undertaking mooring buoy installation and other coral reef management measures. In October 1989, a coral reef management workshop, attended by over seventy people from the central government, provincial agencies, and the private sector, was held in Bangkok to share and disseminate the lessons learned from various local initiatives. The participants expressed widespread support for initiating work on a national strategy for coral protection that would encourage and support local coral reef management efforts as well as address the essential coral reef management issues that required national attention. During the 1990-92 period, a National Coral Reef Strategy for Thailand was formulated. In March 1992, the strategy was adopted by Thailand's cabinet, and 51 million baht ($2 million) was appropriated for its initial implementation.



7.6 Alaska Coastal Management (United States)[7]

The US Coastal Zone Management framework mainly provides incentives and technical assistance to foster the preparation and implementation of state ICM policies and plans, which reflect to a large extent the unique situations and circumstances of each state. The Alaska program demonstrates how a coastal program was the catalyst for rural areas of the state, which are largely, but not exclusively inhabited by Alaskan natives, to organize into governance units that included traditional tribal and non-tribal representation to develop and oversee implementation of local ICM programs.

Alaska is a unique state; it is the largest but most sparsely populated state in the United States. It has a coastline of 54,718 km, which is highly valued by Alaskans as having cultural, economic, recreational and spiritual significance. The majority of the state's total population of 550,000 live on or near the coastline, including many in remote, small villages. The populations of Alaska's coastal villages consist largely of Native Alaskans who have inhabited these areas for tens of thousands of years, and rely on the natural resources of the coastal area for their primary source of food and income. Major changes are occurring to these resources as a result of oil and gas development, development of wetlands and waterfront areas, and increasing recreational uses by non-residents.



The three primary goals of the Alaska Coastal Management Program are to:

- Balance natural resource protection and resource development throughout Alaska's coastal zone
- Involve Alaskans in decisions about the use and protection of their coastal resources
- Simplify the state permitting process for coastal development projects, and reduce the time it takes to obtain state government approval for a project

Local involvement is insured through:

Representation on the Statewide Coastal Council . The Legislature established a 16-member Coastal Policy Council to oversee the state program. Nine of the Council members are locally elected officials. Local representatives ensure that local concerns and issues are expressed, discussed and acted upon by the top policy-making body in the program.

Coastal Plans for Local Areas. Alaska's program is designed to allow local coastal areas to write plans that will guide coastal activities and development. Four of Alaska's coastal districts are called "Coastal Resource Service Areas" (CRSAs). CRSAs are organized in large rural coastal regions of Alaska that are not represented by an organized local government. These areas have no local government authorities that would allow them to regulate coastal development projects. The state Legislature created CRSAs to allow local residents in these areas to influence where and how coastal development projects

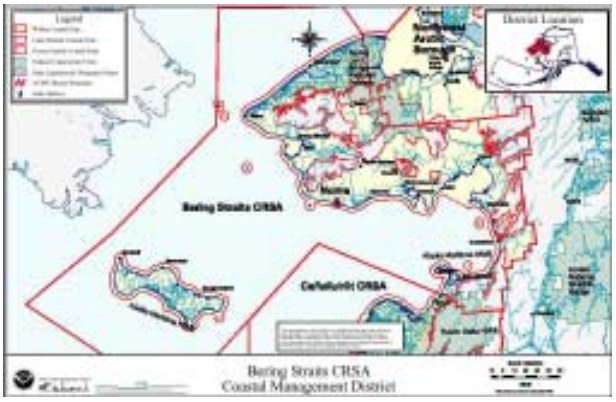
occur, through participation in state and federal government permitting decisions. Local management plans:

- inventory resources in the region
- consider issues of concern to local residents
- define an appropriate coastal zone boundary
- adopt policies to guide coastal development decisions
- describe how the plan will be implemented.

Coastal districts may also write more specific management plans for areas with unique coastal values, or where there are particular conflicts over the use of the area. Local coastal management plans must be approved by the state Coastal Policy Council and the US federal government. Once approved, the local plans have the force and effect of state and federal law.

Approved coastal district plans are implemented in a variety of ways. However, the "consistency review process" established in the state and federal coastal management law is key. Under the consistency review process, all government - sponsored and private development projects that may impact the coastal zone must be reviewed to make certain they comply with Alaska's coastal program before they receive state and federal permits or approvals to proceed. Projects are approved only if they are consistent with the policies of local coastal man- agreement plans.

Coastal districts have a strong role in this review process. The state agencies coordinating the reviews consider the coastal districts to be experts in applying the policies of their local management plans. If conflicts arise during project reviews, coastal districts, government agencies and the project applicant meet to discuss ways to resolve the concerns. Ultimately, if a coastal district disagrees with the results of a project review, it can appeal the decision to higher levels in state government, the Governor, and the Coastal Policy Council.



Bering Straits Coastal Resource Service Area

explore Alaska's coastal districts

Community of Deering

Coastal property for planned development

Coastal District Funding

Adequate and stable funding is needed for coastal districts to actively participate in coastal management. State and federal funds are provided to Alaska's coastal districts to allow them to pay one or two staff, prepare management plans, participate in the project review process, track important coastal issues, and educate the public about the plans. Over $1 million is distributed in grants to Alaska's coastal districts each year.

Although Alaska's coastal program is structured to favor local involvement, local views cannot solely control decisions on where and how coastal development will occur. The degree to which local concerns are met depends in part on the willingness of the state and federal governments to work in good faith with local people to help them achieve their goals. Achieving the correct "balance of power" between local interests and those of the state and federal governments, and ensuring that private industry and other interest groups are also treated fairly, is a challenge both during the development and implementation of each local coastal management plan.

Since 1979, 30 local coastal management plans have been completed. Alaska has learned that the planning process takes time. The state Legislature originally set a deadline of 30 months for completion of all local coastal management plans. The process has taken over 12 years. Local coastal districts that have written plans recently have completed their plans in less time (now averaging approximately two years), since they have used the earlier plans as examples, have received more training in coastal management planning from the state government, and have benefited from the knowledge of state government staff and private consultants that are now experienced in the coastal management planning process.

Although the planning process has been time-consuming, the policies of the local coastal management plans, written by local people and approved by the Coastal Policy Council and the federal government, are now the basis for coastal resource decisions in most of Alaska.

Each coastal district plan accomplishes something different, depending upon the needs and interests of people in the area. Plans for rural areas often emphasize protection of fish and wildlife and subsistence activities. Coastal plans for Alaska's urban areas focus on streamlining government approvals for waterfront and wetland development projects to encourage community growth and economic opportunity. Coastal districts have also completed special management plans and projects related to specific local concerns, including floodplain management and drainage control, port and harbor development, protection of watersheds for city drinking water supplies, enhancement of coastal public access, and prevention of marine debris.

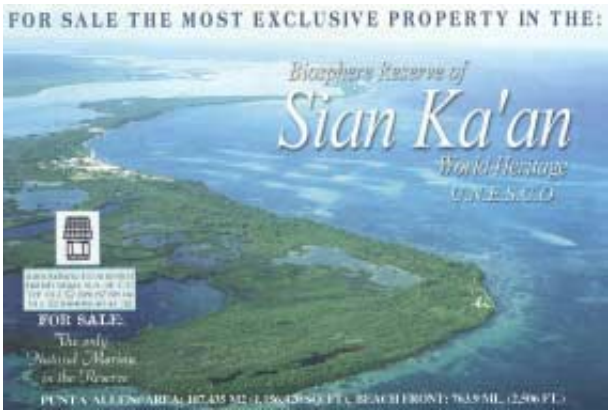
7.7 Tourism Development Guidelines for Quintana Roo, Mexico

Large scale resort tourism investments in areas such as Cancun have propelled Quintana Roo, on Mexico's Caribbean coast, to become one of the fastest growing states in Mexico. One of the first adopted and implemented coastal environmental zoning schemes in the country failed to control the ecological damage from hotel projects or avoid chaotic tourism-oriented urban centers.

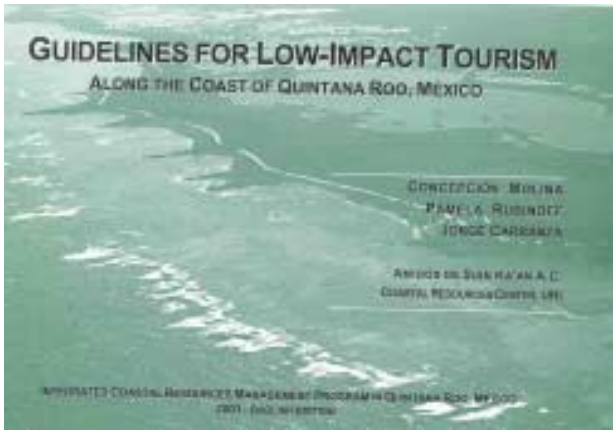
One of the reasons for this failure was a low degree of understanding and consideration of the dynamic nature of coastal features by project designers and constructors. Another key factor was the inability of public officials to specify the types of development which were preferred and to enforce use restrictions on areas which were to be protected under these plans.

The less than positive results of the first waves of development in the state led to questions about what should be encouraged and avoided. The *Guidelines for Low-Impact Tourism* book provides information on the vulnerability of coastal physical features and ecosystems, and illustrates the practical measures project designers and builders need to take, usually at low or no additional cost, to avoid storm hazards and needless damage to the very environment which visitors are expecting to enjoy when they arrive.

Some of the recommended practices have been incorporated into the Costa Maya Ecological Land Ordinance and the guidelines document has served as the basis for training of national regulators. State level permit writers are seeking to adopt the guidelines as review criteria for evaluating tourism projects throughout the state of Quintana Roo.



Development pressure



Voluntary guidelines for tourism development

Example of shore use guideline

7.8 Mariculture Development Guidelines for Tanzania

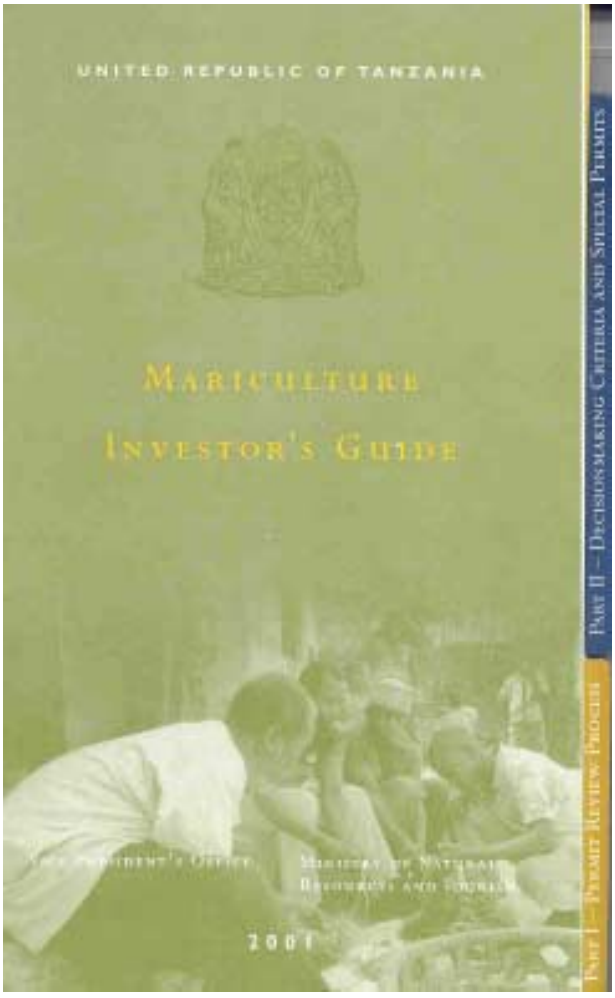
Tanzania is one of the poorest countries in the world in terms of per capita income. The need for alternative sources of protein and livelihoods is great, particularly in coastal areas, which are among the poorest regions in the country. The great diversity of mariculture encompasses very small scale to very large-scale enterprise, implying that the sector can contribute to a wide range of development needs.

Shrimp mariculture development proposals brought to the political forefront the realization that Tanzania lacks the necessary guidelines and institutional mechanisms to effectively manage this activity. This situation threatens both investor confidence as well as fragile coastal ecosystems where development might occur.

The Tanzania Coastal Management Partnership, (TCMP) decided to tackle sustainable mariculture development at the national level to demonstrate how an ICM approach could both promote development and protect the environment. A multi-disciplinary and inter-sectoral Mariculture Working Group (MWG) whose members are drawn from the public and private sectors was formed to develop clear project review and approval procedures that are consultative, multi-sectoral and interdisciplinary, and to design monitoring, reporting, evaluation and response procedures. The Guidelines are intended to increase the likelihood that projects can be reviewed in a manner that safeguards the environment and coastal population, while encouraging wise investment in mariculture.

The guidelines include crucial elements such as:

- Siting, design, technology, and management at the farm level
- Location and spatial distribution of the sector as a whole



Guidebook for investors in mariculture projects

- Water supply
- Project appraisal, permit and EIA procedures and institutional roles and responsibilities
- Monitoring protocols
- Fish health management including disease and stock control
- Communication and information exchange
- Access to markets and trade opportunities
- Research and extension

The mariculture guidelines have been endorsed by the ten agencies involved in promoting and permitting mariculture in Tanzania.

ENDNOTES

[1] Summarized from Bernal, P. and B. Cicin-Sain. 2002. *Ensuring the Sustainable Development of Oceans and Coasts A Call to Action*. Co-Chairs' Report from The Global Conference on Oceans and Coasts at Rio+10. UNESCO. Paris. 38 pp.

[2] Summarized from The Block Island Consensus Statement, 2001; a CRC working paper prepared for the Global Conference on Oceans and Coasts at Rio+10. UNESCO. Paris.

[3] Summarized from Hale, L.Z. 2000. Achieving Integration in Coastal Management: The Challenge of Linking National and Local Levels of Government. Korea Observer. Volume 30 (4). pp. 671-690.

[4] Summarized from Hale, L. Z. 2000. Achieving Integration in Coastal Management: The Challenge of Linking National and Local Levels of Government. *Korea Observer*. Volume 30 (4). pp. 671-690.

[5] Summarized from Hale, L. Z., M. Amaral, A. Issa, and B. Mwandotto. 2000. Catalyzing Coastal Management in Kenya and Zanzibar: Building Capacity and Commitment. *Coastal Management*. Volume 28. pp. 75-85. (permission pending)

[6] Summarized from LeMay, M. and L. Z. Hale. 1994. Coral Reef Protection in Phuket, Thailand: A Step Toward Integrated Coastal Management. In: *Collaborative and Community-Based Management of Coral Reefs: Lessons from Experience*. Kumarian Press, Inc. West Hartford, Connecticut. pp 68-79.

[7] Summarized from Caulfield, J. 1991. The Alaska Coastal Management Program: Involving local people in coastal resource planning and decision making. In: *Case Studies of Coastal Management: Experience from the United States*. CRC Publication 1001. University of Rhode Island, Coastal Resources Center. Narragansett, Rhode Island USA. pp. 9-22.