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GUIDELINES FOR INTEGRATED COASTAL ZONE MANAGEMENT

Jan C. Post and Carl G. Lundin, *Editors*

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Cover photo by Jan C. Post. Sustainable use of the coastal waters in the Republic of Korea is to a considerable extent in the hands of cooperatives of women, who dive for seafood and may restock the waters with hatchery-raised juveniles, such as abalone.

Jan C. Post is the senior ecologist in the Environment Department of the World Bank. Carl G. Lundin is a marine resources specialist in the same department.

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Foreword

In both developed and developing countries the coastal zone is likely to undergo the most profound change in the near future. Already more than 60 percent of the world's population lives within 60 km of the coast. By the turn of the century two-thirds of the population (3.7 billion) in developing countries is expected to occupy the coast. Consequently, unless careful environmental management and planning are instituted, severe conflicts over coastal space and resource utilization are likely, and the degradation of natural resources will close development options.

Recognizing these threats, the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro recommended that Guidelines on Integrated Coastal Zone Management (ICZM) be drafted to minimize conflicts and to provide for optimal sustainable resource use. In response to this request the "Noordwijk Guidelines" on ICZM were presented at the 1993 World Coast Conference in Noordwijk, The Netherlands, of which the present guidelines are an expansion and update.

A published paper, "Africa: A Framework for Integrated Coastal Zone Management," identified ICZM as one of the main tools for the implementation of investment projects. Increasingly, the governments of borrowing countries include coastal zone planning needs in Bank loans such as the Sustainable Coastal Resource Development Project in China (under preparation), and the Thailand Coastal Resources Management Project.

These guidelines are a conceptual presentation of how Integrated Coastal Zone Management may be applied to contribute to the evolving practice of environmentally sustainable development.

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Vice President
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Acknowledgments

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Introduction

Coastal zones throughout the world have historically been among the most heavily exploited areas because of their rich resources. In coastal countries today an estimated half of the total populations live in coastal zones, and migration from inland areas to the coast is increasing. Not surprisingly, there is also a sharp conflict between the need for immediate consumption or use of coastal resources and the need to ensure the long-term supply of those resources. In many countries this conflict has already reached a critical stage, with large parts of the coastal zone polluted from local or upland sources, fisheries severely degraded or destroyed, wetlands drained, coral reefs dynamited and beaches long since ruined for human enjoyment. If these coastal resources are to be maintained and restored, effective action is urgently needed. To answer this need, a management system has been designed: Integrated Coastal Zone Management (ICZM).

ICZM is a process of governance and consists of the legal and institutional framework necessary to ensure that development and management plans for coastal zones are integrated with environmental (including social) goals and are made with the participation of those affected. The purpose of ICZM is to maximize the benefits provided by the coastal zone and to minimize the conflicts and harmful effects of activities upon each other, on resources and on the environment. It starts with an analytical process to set objectives for the development and management of the coastal zone. ICZM should ensure that the process of setting objectives, planning and implementation involves as broad a spectrum of interest groups as possible, that the best possible compromise between the different interests is found, and that a balance is achieved in the overall use of the country's coastal zones.

Coastal zone management as a formal governmental activity was first undertaken in the United States in 1972 with the enactment by the U.S. Congress of the Coastal Zone Management Act. Results of the U.S. effort are generally thought to be positive.

A number of other nations initiated coastal management efforts of one type or another in the late 1970s and early 1980s. In fact, terms such as coastal zone management, coastal resource management, and coastal area management have been used virtually interchangeably to describe such efforts. Many of these programs, however, dealt with a single sector—say, coastal erosion or shoreland use. Most did not attempt to deal comprehensively with the entire coastal zone and its full range of resources.

Beginning in the mid-1980s, as the difficulties inherent in using a single sector approach in attempting to manage something as complex as the coastal zone became more apparent, the concept of Integrated Coastal Zone Management came into being. ICZM differs from the earlier form of CZM in that it attempts a more comprehensive

approach—taking account of all of the sectoral activities that affect the coastal zone and its resources and dealing with economic and social issues as well as environmental/ecological concerns. The goal, of course, is to harmonize these activities in such a way that all of them are consistent with and support a broader set of overarching national goals for the coastal zone.

Encouragement for coastal nations to develop their own integrated coastal zone management infrastructures emerged during the preparation for the United Nations Conference on Environment and Development (UNCED) that culminated in the Earth Summit held in Rio de Janeiro, Brazil in June 1992. The Agenda 21 Action Plan adopted at Rio by all nations assigns a prominent role to ICZM in the oceans part of the document (chapter 17). The Intergovernmental Panel on Climate Change (a scientific body) and the Intergovernmental Negotiating Committee on Global Climate Change (a negotiating and policy body) have also recently endorsed ICZM and urged that it be begun as early as possible to increase preparedness to deal with the potentially far-reaching impact of climate change upon the coastal zone.

At the onset several caveats are necessary with regard to these guidelines. First, a single set of guidelines cannot fit all situations. Although an effort has been made to reflect varying governmental, economic, and environmental contexts, obviously all of the countless possibilities cannot be included. Second, given the governmental nature of ICZM, these guidelines have been prepared from a governmental/public policy perspective. This means that they emphasize institutional, policy, legal, and regulatory aspects and, to a lesser extent, economic and ecological factors.

It is likely that other, specialized sectoral and issue-specific guidelines will be developed later by other agencies such as for fisheries, agriculture, forestry, port construction, pollution, and tourism.

Chapter 1

Issues in Coastal Zone Management: What Is the Coastal Zone?

The coastal zone is the interface where the land meets the ocean, encompassing shoreline environments as well as adjacent coastal waters. Its components can include river deltas, coastal plains, wetlands, beaches and dunes, reefs, mangrove forests, lagoons, and other coastal features. The limits of the coastal zone are often arbitrarily defined, differing widely among nations, and are often based on jurisdictional limits or demarcated by reasons of administrative ease. It has often been argued that the coastal zone should include the land area from the watershed to the sea, which theoretically would make sense as this is the zone where biophysical interactions are strongest. For planning purposes this definition is often quite impractical, however, as huge areas containing whole countries would fall under this definition.

For practical planning purposes, the coastal zone is a *special area,* endowed with special characteristics, whose boundaries are often determined by the specific problems to be tackled. Its characteristics are:

- It is a dynamic area with frequently changing biological, chemical, and geological attributes.
- It includes highly productive and biologically diverse ecosystems that offer crucial nursery habitats for many marine species.
- Coastal zone features such as coral reefs, mangrove forests, and beach and dune systems serve as critical natural defenses against storms, flooding, and erosion.
- Coastal ecosystems may act to moderate the impacts of pollution originating from land (for example, wetlands absorbing excess nutrients, sediments, human waste).
- The coast attracts vast human settlements due to its proximity to ocean's living and nonliving resources, as well as marine transportation and recreation.

The Value of Coastal Resources

Coastal resource systems are valuable natural endowments that need to be managed for present and future generations. Coastal zones offer physical and biological opportunities for human use, and ICZM tries to find the optimum balance between these uses based on a given set of objectives. Concern is growing in particular about the destruction of natural coastal ecosystems by the demands placed upon them by population and economic growth. These natural ecosystems have considerable value for sustainable extractive and nonextractive use which is often undervalued in comparison with other often non-sustainable uses. These guidelines therefore emphasize natural coastal ecosystems and sustainable use of the coastal zone with maximum preservation of environmental quality.

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In nature the coastal system maintains an ecological balance that accounts for shoreline stability, beach replenishment, and nutrient generation and recycling, all of which are of great ecological

and socioeconomic importance. These natural systems are under increasing threat from unmanaged human activities such as pollution, habitat destruction, and overexploitation of resources.

In coastal rural areas fishing of nearshore waters and farming of coastal lowlands are the major economic activities supplying fish and agricultural products for subsistence of the inhabitants and urban centers. Activities that add further value to coastal resources include recreation and tourism, which have become major sources of domestic and foreign exchange earnings in many coastal nations.

The intrinsic economic value of coastal resources represents a "capital" investment for humankind by nature. The goods and services derived from them are the "interest" generated by the investment. Hence, the destruction of the resource base means depletion of the "capital" and therefore less interest and the ultimate exhaustion of what nature has freely provided.

Growth in Coastal Populations

Population growth in the coastal zone is a major concern. The world population is expected to grow at an exponential rate from 5.8 billion in 1995 to 8.5 billion by the year 2025. It is projected to reach 11 billion in a century's time, with 95 percent of the growth occurring in developing countries. More than 50 percent of the world population is already concentrated within 60 km of the coast while there is considerable migration of population to the coast from inland areas. In developing countries, by the turn of this century two-thirds of the population (3.7 billion) is expected to live along the coast.

This growth will exacerbate already severe coastal-use conflicts in terms of land and water space and resource utilization. The negative impacts of increased human settlement and industrial development are also more acutely felt in the coastal zone since it is at the receiving end of land- and water-based pollution. Compounding the problem, the coastal zone is often subject to overlapping governance of local, provincial and central governments resulting in interagency conflicts and unclear policy concerning resource development and management and environmental protection. In many countries, large parts of the coastal zone area are privately owned. Stabilizing population through family planning programs as an integral part of ICZM, therefore, is of crucial importance for the maintenance of the quality and productivity of the coastal zone, as indeed of the rest of the planet.

Increased coastal resource use conflicts will inevitably intensify social and economic development problems. Problems of multiple jurisdiction and competition between users of resources without the benefit of a conflict resolution mechanism, inadequate regulations for protecting resources, and the lack of nationally or locally adapted coastal policies for informed decisionmaking, will translate into a loss of capability for future sustainable development. As the resource base is depleted, conflicts may reach alarming dimensions to the point of threatening human life and public order.

A New Challenge

Storm surges caused by typhoons, cyclones, hurricanes, and coastal storms are familiar natural phenomena that periodically inundate some coastal regions. Recently, the international scientific community has recognized as real the concern over human-induced global warming of the atmosphere, leading to climate changes and sea level rise. The latter will in particular affect low-lying coastal regions. Further, an increase in mean sea surface temperatures may increase the frequency of hurricanes as well as expand the area of their influence.

The global scientific community is predicting an acceleration in sea level rise associated with atmospheric warming. The coastal zones and their human settlements may not only be affected by changes in sea level, temperature, rainfall, humidity, winds and, perhaps, storm frequency, but also by changes in groundwater level, salinity, ocean circulation, sediment flux, and storm and erosion patterns. An ICZM system in place could prepare for such an eventuality and minimize resource and human losses. It can also be designed to safeguard the natural systems that provide protection from high seas by managing indiscriminate development activities that put greater numbers of people and property at risk.

Environmentally sound responses to reduce the vulnerability of coastal communities and coastal resources to global climate and sea level changes require long lead times for planning purposes. Thus, even though the effects of some of these changes may be decades away, now is the time to consider appropriate action.

Chapter 2

Principles of Integrated Coastal Zone Management

Coastal nations should be in a position to develop an ICZM structure that is uniquely suited to that nation—to the nature of its coastal areas, its institutional and governmental arrangements, and its traditions and cultures and economic conditions. Nonetheless, some currently accepted principles and characteristics associated with the ICZM concept are useful to describe.

ICZM focuses on three operational objectives:

- Strengthening sectoral management, for instance through training, legislation, and staffing
- Preserving and protecting the productivity and biological diversity of coastal ecosystems, mainly through prevention of habitat destruction, pollution, and overexploitation
- Promoting rational development and sustainable utilization of coastal resources.

ICZM's distinguishing characteristics are that it:

- Moves beyond traditional approaches, which tend to be sectorally oriented (each dealing with a single factor) and fragmented in character and seeks to manage the coastal zone as a whole using an ecosystem approach where possible.
- Is an analytical process that advises governments on priorities, trade-offs, problems, and solutions.
- Is a dynamic and continuous process of administering the use, development, and protection of the coastal zone and its resources towards democratically agreed objectives.
- Employs a multidisciplinary, holistic systems perspective, which recognizes the interconnections between coastal systems and uses.
- Maintains a balance between protection of valuable ecosystems and development of coast-dependent economies. It sets priorities for uses, taking account of the need to minimize the impact on the environment, to mitigate and restore if necessary, and to seek the most appropriate siting of facilities. These are the activities contained in Environmental Impact Assessments.
- Operates within established geographic limits, as defined by governing bodies, that usually include all coastal resources.
- Seeks the input of all important stakeholders to establish policies for the equitable allocation of space and resources in the coastal zone. An appropriate governance structure is essential for such decisionmaking and oversight.
- Is an evolutionary process, often requiring iterative solutions to complex economic, social, environmental, legal, and regulatory issues.
- Integrates sectoral and environmental needs. ICZM should be implemented through specific legal and institutional arrangements at appropriate levels of the government and the community.
- Provides a mechanism to reduce or resolve conflicts that may occur, involving resource allocation or use of specific sites as well as the approval of permits and licenses.

- Promotes awareness at all levels of government and community about the concepts of sustainable development and the significance of environmental protection. It is proactive (incorporating a development planning element) rather than reactive (waiting for development proposals before taking action).

ICZM also embraces certain general principles in the course of developing the program by a given nation. Note that most of the principles listed here are among the recommendations contained in UNCED's Agenda 21 action program. These include the following principles:

- Precautionary
- Polluter pays
- Proper resource accounting
- Transboundary responsibility
- Intergenerational equity.

A key part of the formulation of an ICZM program is the development of the specific policies and goals that are to be the central objectives of the ICZM program in question. Clearly, there will be a close relationship between the kinds of coastal problems that trigger the need for an ICZM program and the policies and goals selected for that program.

While all phases of the process of formulating an ICZM program should be "transparent," it is of the utmost importance that the policy and goal setting aspects be fully open and easily accessible to the affected coastal stakeholders and the interested public. Open public meetings that allow for detailed discussion and questions, supported by clear and understandable documentation, should be a part of the deliberations that lead to the selection of policies and goals.

The *means* adopted to achieve the selected goals and policies will include new and strengthened regulatory programs, zonation schemes for partitioning the coastal zone into areas for particular uses and activities, new management programs tailored for particular resources (for example,, coral reefs, mangroves) or particular sites (a given bay or estuary), action programs aimed at correcting and/or restoring degraded coastal resources (damaged wetlands, for example) or solving coastal problems (coastal erosion), and action programs targeted at stimulating new types of economic development in the coastal zone.

Some of the management actions selected will involve strengthening of institutional arrangements and empowerment of local authorities; reiterating customary rights and strengthening community organization; developing sustainable livelihoods as alternative employment; enforcing regulatory measures to control new entrants to coastal zone fisheries; curtailing destructive fishing practices; and promoting awareness of the concepts and practice of sustainable development at all levels of government and in the affected communities.

An important part of the ICZM process is to build understanding and a strong political alliance among the various concerned sectors of the coastal communities. Adoption of strong regulatory measures such as those involving the "polluter pays" and "precautionary" principles, the implementation of user fees, limiting access to and exploitation of (mostly living) resources, the imposition of Environmental Impact Assessment requirements, and other mitigating measures will require convincing justification. Public education and community mobilization will be required to reduce resistance from some of the potentially affected interest groups.

All the policies, goals, and management actions that will come to make up an ICZM program are not necessarily decided upon and put in place during the initial program formulation stage. Indeed, ICZM is meant to be a dynamic process—one that is designed to be as *proactive* as possible within the limits of the data and information available at the time the program is developed. But unanticipated events inevitably occur: new coastal resources are discovered, new uses of the coastal zone are proposed, urgent problems and coastal resource depletion suddenly emerge. ICZM, fundamentally, is a *process* and as such it can deal on a *reactive* basis as well. Hence, new (or revised) policies and new (or revised) goals can be set by the body overseeing the ICZM program to deal with such unexpected developments as they occur.

Finally, it is important that the plan formulation process be completed in a reasonably short time. The energy and momentum generated in the early stages of initiating the plan should not be lost. Stakeholders and government agencies can lose interest if the plan formulation process is overly extended.

Chapter 3

Guidelines for Development of ICZM Programs

Any one of a number of problems can trigger the need for a more effective, better integrated approach to the management of a given coastal area, that is, for ICZM. Typically, some major crisis or event precipitates action by awakening the stakeholders to the urgency of a problem or condition. Governments then become involved and seek ways to remedy the problem. Unfortunately, given human nature, a decision to embark upon a major management strengthening and improvement effort such as the ICZM process is seldom undertaken in advance of the appearance of major problems and/or conflicts, in spite of the fact that the problems are likely to be more tractable and the solutions less costly at an earlier stage. Many coastal problems are not calamities but creeping disasters such as pollution, erosion and disappearance of biodiversity.

Triggering the Need for ICZM

Below are a few different kinds of coastal problems, or opportunities, that can trigger the ICZM program:

- Desire to increase the economic benefits flowing from the use of coastal zone resources
- Serious resource depletion problems
- Increasing pollution of the coastal and ocean environment
- Loss of or damage to productive coastal ecosystems
- Increasing losses of life and property from natural coastal hazards and disasters
- Perceived economic opportunities associated with new forms of development in the coastal zone
- Conflicts of interest among user groups.

These "triggering" conditions do not have to be present throughout a nation's coastal zone. Indeed, more typically coastal resource depletion or environmental problems first occur at a particular location and the first recognition of the seriousness of the problem may be by local stakeholders or local government officials in that area. To the extent that local governments are prepared to address the problems in the coastal zone, this can start the ICZM process before the national government gets involved, through the drafting of an initial concept paper, for instance.

Who Gives the Go-Ahead?

In virtually all governments formal approvals are required to initiate new programs, especially those requiring significant realignments of institutional responsibilities, the establishment of new organizations or the expenditure of important sums of money. Generally speaking, a concept paper or "decision document" is prepared which lays out the need for the new program (the problems to be addressed), spells out what it is intended to accomplish, indicates how the program will be developed and by whom, and shows how much time and money will be required. At this stage, since the document is only requesting approval to *develop* an ICZM plan, it will not be spe-

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cific regarding the final design of the ICZM program itself but rather will specify the approach to be undertaken in the development of such a plan. The detailed structure of the ICZM program will be decided during the course of the development of the plan itself. Ideally, the preparation of the concept paper should be a collaborative effort among the government agencies (local and national) that will be participants in the ICZM plan development process and later, in the ICZM program itself. Coastal stakeholder groups should also be invited to review the proposal at an early stage. It is important that all of the affected groups be identified early and be invited into the process from the very beginning of the work.

The decision to accept the recommendations contained in the concept paper and to proceed with the development of an ICZM program for a given coastal area needs to be taken by the government agency(s) having responsibility for the planning and management of the coastal areas in question. If the coastal areas of an entire nation are involved, this will be either a sectoral agency (fisheries, natural resources, environment) acting on behalf of the national government, the national planning office, or a still higher office depending on the assignment of responsibilities within the national government itself. At this point regional efforts or international assistance can play a catalytic role.

Who Does What? Roles and Responsibilities in the Coastal Zone

Much of the coastal zone and the adjacent ocean and most of their resources are usually under public ownership. Therefore, programs to manage those resources and areas are operated by governments for the benefit of their people. Typically, particular government ministries, departments, and/or agencies are responsible for particular resources or uses. However, in some countries much of the coastal zone is privately owned and attempts by the government to get involved in the management of private lands can be a source of conflict. The military can also be a major player in ICZM issues, given its often extensive control of key coastal areas.

In an ICZM program, important roles will continue to exist for specialized agencies at both the national and local governmental levels, for research institutions, for users and owners of the coastal zone and its resources (stakeholders), and for the general public. The key to success is involvement of all parties and demonstration that the ICZM program is in the long term interest of as large a number of people as possible.

The Interagency Coordinating Mechanism

Several institutional approaches are possible to perform this task, including the:

- National planning agency
- Formal establishment of an interagency or interministerial council
- Creation of a special coordinating commission or committee
- Formal designation (by the chief executive or the legislature) of one of the line agencies or ministries to act as "lead agency" and to oversee an interagency coordination process.

The main purpose of the coordination mechanism is to:

- Promote and strengthen interagency and inter-sectoral collaboration
- Reduce interagency rivalry and conflicts
- Minimize duplication of functions of line agencies
- Provide a forum for conflict resolution among sectors
- Monitor and evaluate the progress of ICZM projects and programs
- Implement actions resulting from the evaluation exercise.

The interagency coordination entity oversees the implementation and operation of the ICZM program and has general management and support responsibilities, particularly with respect to:

- Coordination of planning
- Establishment of zonation schemes and implementation of other management actions
- Environmental impact assessments
- Human resources development
- Transnational issues
- Budget coordination
- Political accountability.

These are functions that are normally beyond the management responsibilities of individual line agencies.

National (Central) Government

While the initial impetus to adopt an ICZM program can come from various sources, the active support of the national government is crucial to

the eventual success of the effort. Furthermore, the national government usually provides the funding to launch the program but sometimes it will be externally funded. The expertise and databases for coastal resource and environmental information and some or all of the existing management and regulatory authority usually rests with individual departments of the national government.

State Government

In large federally organized countries such as Australia, Brazil and India, the responsibility for the management of a particular coastal zone often rests with the "state" governments and is funded by them. In these cases it may be the state government which initiates and manages the ICZM process.

Line Agencies and Ministries

In most cases, the line agencies or ministries with specialized sectoral missions are at present managing coastal resources. These agencies generally possess the best data and expertise in the nation in their particular fields (for example, fisheries management, control of coastal erosion, management of offshore oil and gas operations, etc.) and will, therefore, be essential participants in the ICZM process.

Local Governments

In nations having several levels of government, the local level is the one which is "closest" to the coastal zone and its problems and opportunities. The local government and community are likely to be most concerned and most affected by the ecological and economic health and productivity of the coastal zone and most impacted by poor development and/or environmental degradation. Many of the "stakeholders" in the coastal zone are constituents of the local government. Clearly then, local/provincial governments must also be fully involved and committed to the ICZM process.

Research Institutions

A sound ICZM program must be based on good data and information. If appropriate capabilities are not present within government agencies, universities or research institutions can often assist in the collection and analysis of data concerning coastal resources, environmental degradation, mitigation strategies, new economic development possibilities and the like.

Coastal Stakeholders

Coastal stakeholders are individuals or groups of individuals involved in activities which take place in the coastal zone. In many cases, the economic survival of such stakeholders depends upon the continued health and productivity of the coastal zone. Coastal stakeholders also include individuals or groups who place a high value on the aesthetic, touristic, and recreational value of the coastal area. It is important, therefore, that coastal stakeholders become intimately involved in the development and implementation of the ICZM process to the point that they feel an "ownership" in the process. Much of the drive and momentum necessary to initiate and sustain an ICZM process must come from this group. The stakeholders must help generate the "political will" to take action among the government policymakers.

General Public

Putting an effective ICZM program in place usually requires some change in the way certain government agencies do business and change in the way certain resources are managed. These changes could be controversial especially among certain stakeholders who may see reduced incomes if the new program is adopted. A well-informed public supporting the changes called for in the ICZM program can be an effective counterbalance to such narrowly-based opposition.

Once the formal approval to develop an ICZM plan is received, a team is formed to undertake the work. Such a team should be multi-disciplinary and include experts in coastal management, regional planning, resource economics, environmental management, and ecology. Other specialists are needed but can generally be borrowed from sectoral government agencies (for example, fisheries experts, specialists in coastal erosion, coastal engineers, lawyers specializing in environmental legislation, etc.). A typical ICZM coordinating body could include:

Lead agency: President's or prime minister's office or powerful line ministry (not necessarily the environment ministry/department) or possibly a separate agency

Participating ministries: Treasury, fisheries, agriculture, transportation/ports, urban development, physical planning, forestry, environment, oil and gas, navy/military/coast guard, tourism, energy

Local governments: Town or city authority, public works company, district, state or department

Stakeholders: Fisherfolk, businesses, hotels, agriculture organizations, park or reserve managers, nongovernmental organizations (NGOs) of various types.

Formulation of the Plan

The overall effort in developing, implementing, and then operating an ICZM program can be accomplished in different ways. An example is given below.

Step 1: Initiating the Effort

- Recognize the need for improved management through consultative meetings with key agencies and stakeholders.
- Prepare a concept paper outlining the need for ICZM.
- Approve development of an ICZM program.
- Create a team to formulate the ICZM plan through review of institutional capabilities.

Step 2: Formulating the ICZM Plan

- Assemble necessary information and data on the physical, economic, and social characteristics of the coastal zone.
- Prepare a plan for public participation in the ICZM process.
- Analyze and assess management problems (causes, effects, solutions).
- Set priorities to tackle problems and take into consideration the technical, financial, and staffpower feasibility.
- Analyze feasibility of new economic development opportunities.
- Consider coastal zone management boundaries and formulate recommendations.
- Consider new management measures, zonation schemes, and strengthened regulatory programs.
- Analyze and assess institutional capacities; develop options for the interagency coordinating mechanism.
- Develop recommendations for policies, goals, and projects to include in the ICZM management program.
- Design appropriate monitoring and evaluation systems.
- Establish timetable, approach, and division of labor.

Step 3: Formal Adoption by the Government of the ICZM Program

- Establish the interagency coordinating mechanism.
- Approve staffing and organizational changes that may be required.
- Adopt policies, goals, new management measures, and initial projects.
- Enact, probably by legislation, coastal zone management boundaries and, if possible at this stage, a zoning scheme.
- Approve the funding allocation for the ICZM program.

Step 4: Operational Phase

The ICZM program becomes operational when:

- An interagency coordinating body begins oversight of ICZM process and programs.
- New or revised management programs come into effect.
- Individual sectoral line agencies continue to perform their regulatory and management responsibilities but now as a part of the ICZM program.
- Specific projects are designed and undertaken in connection with new economic opportunities in the coastal zone.
- New management mechanisms are enforced by appropriate authority.
- A monitoring and evaluation program is initiated.

Some of the more important steps listed above are discussed in greater detail below.

Creation of Plan Formulation Team

To the extent possible, the plan formulation team should be composed of in-country staff seconded from key government agencies having important management roles regarding coastal resources and the coastal zone. All of the key agencies, local and national, should be represented. Ideally, the team should be directed by someone repre-

senting a higher policy level in the central government (for example, the national planning office, the national development office, the President's or Prime Minister's office).

Issues such as legal authority, technical competence, enforcement mechanisms, and access to funds should be assessed and addressed.

Assembly of Necessary Data and Information

An effective ICZM program must be based upon adequate information with respect to the physical, economic, social, ecological and governmental aspects of the coastal region in question. Some of this data and information may be available in existing country profiles, national environmental action plans, national development plans, specialized resource inventories, and the like. Sources of such information include government agencies (national, regional, and local), universities and other research institutions, resource-related private sector firms, and, in some cases, relevant international organizations. A new initiative to collect primary data should only be undertaken in those relatively few cases where data of fundamental importance to the ICZM program development process are lacking.

The list below indicates the kind of information that is required in the formulation of an ICZM program. All of this information does not need to be in hand before the analysis and assessment work begins. Indeed, as the ICZM program progresses, some of the information and data gaps can be filled on the following issues:

- Management issues that triggered the decision to formulate the ICZM program
- Potential for new economic development activities in the coastal zone
- Roles, responsibilities, effectiveness, and legal authority of the institutions currently managing coastal resources and uses
- Nature and characteristics of the broader political, economic, and cultural contexts within which coastal zone activities are conducted.

As the plan formulation process proceeds, information and data of the following types are needed:

Coastal Resource Base

- Existing coastal resources (beaches, wetlands, estuaries, mangroves)
- Present use of coastal resources (fishing, recreation, mining)
- Present status of coastal resources (including qualitative assessments of water, soil, air ecosystems)
- Potential for present and future use.

Social Organization in the Coastal Zone

- Existence and character of human settlements (villages, towns)
- Economic basis for human settlements
- Existence of indigenous peoples and their traditional coastal activities
- Social issues.

Existing Environment and Resource-Related Programs

- Environmental regulatory programs
- Fisheries management programs, other resource management programs
- Protected area programs
- Beach/erosion management programs
- Pollution control programs
- Other environmental management programs.

Institutional, Legal, and Financial Capacity

- Relevant national-level institutions
- Relevant regional/provincial-level institutions
- Relevant local institutions
- Survey of legal authorities relative to coastal and ocean activities
- Existing capacity building efforts, including those funded by external sources.

Determination of the Management Area

One of the key decisions in formulating an ICZM program is the size of the area to be managed. Ideally, the management zone should include all of the coastal resources of interest and all of the activities that are capable of affecting the resources and waters of the coastal zone. Such an approach could give rise to a zone that extends inland to the upper reaches of the coastal watersheds and seaward to the limit of national jurisdiction—generally, the limit of the territorial sea (12 nautical miles). With regard to the inland limit of the management zone, many governments have found it more practical to use an existing

administrative or political subdivision boundary rather than the watershed boundary. Such an approach may rely on other activities in the upper parts of coastal watersheds such as watershed management, erosion control or pesticide reduction programs to safeguard the coastal zone against poor quality runoff. Similarly, although important marine resources of economic interest to the coastal nation may exist within its 200-mile Exclusive Economic Zone (EEZ), nations typically find devices to coordinate ocean resource activities with coastal management efforts (for example, fishing and offshore oil and gas activities) other than by broadening the coastal management zone to the outer limits of the EEZ.

Role of the Nongovernmental Sector

In countries where government power is limited, especially in remote coastal areas, the private sector and local communities may have a major role in managing coastal resources. In many cases long term planning and sustainability is not the primary interest of the private sector. Through creating incentives for sustainable management the government can help the private sector and local communities maintain long term development objectives. This will usually require establishment and legal protection for property rights, appropriate fiscal measures and coastal resource tenure systems that ensure long term benefits to the users and owners. The government can then concentrate its scarce resources on the implementation and enforcement of existing rules and newly formulated management regimes.

Assessment of New Economic Development Possibilities in the Coastal Zone

Especially in developing countries, this important part of the analysis will review and assess new economic development possibilities in the coastal zone. Priorities should be set based upon clearly designed studies of markets and potential demand, analyses of costs of production and competitive aspects, and related issues. The impacts and risks of proposed development projects on the coastal and marine environment need to be addressed in terms of both possible mitigating actions and their associated costs.

Program Implementation

Initiating the ICZM Process in Stages

Given the time usually necessary to obtain the required executive and legislative approvals, some parts of the ICZM program may start to function earlier than others. Major legislative initiatives are not always required. In some countries a decree or administrative rule is sufficient. Besides, the data base development and inventory work can be done in advance of legislation. Existing zoning and land use management systems can often be used on an interim basis to direct land use in the coastal zone.

ICZM in Operation

With the necessary formal approvals by governmental policy bodies and the enactment of required legislation, the ICZM program is formally established and the implementation begins. Most nations will not have opted for the creation of a "super" coastal agency into which all coastal and ocean related activities have been placed.

The chances for effective implementation of an ICZM program are enhanced if:

- High visibility improvements can be achieved at an early stage of the program.
- The policies to be followed by the program are clearly and unambiguously spelled out.
- The goals of the overall program and the subgoals of various elements of the program are clearly articulated and expressed in quantitative, measurable terms.
- The institutions involved in the ICZM program are given clear assignments of responsibility and are held accountable.
- Adequate human and financial resources are made available for implementation of the program.
- The public has been made fully aware of the ICZM program and its goals and policies and supports the overall effort.
- Adequate resources and support are given to monitoring, evaluation, and enforcement activities.

Monitoring, Evaluation, and Enforcement

Monitoring and Evaluation

The results of the ICZM program should be subject to regular monitoring and evaluation as a way

of continually improving the process. It is especially important, therefore, that the goals of the overall ICZM effort and the goals and objectives of individual management and/or action projects be specified as clearly and as quantitatively as possible; otherwise assessments as to how well they are being achieved are difficult.

The monitoring procedure should include: identification of expected performance, assessment and/or measurement of the actual performance of the program, establishment of performance variances (for example, shortcomings or excesses), and procedure for communicating variances that exceed preestablished limits to the appropriate management or enforcing and implementing authorities.

Enforcement

Enforcement of existing rules and regulations is one of the most difficult aspects of government in developed and developing countries alike. The goal should be to have rules that are generally accepted by most parts of society and that can be enforced. Chances for this are dependent on the knowledge level of the public and the credibility of government programs. Strong and objective enforcement is often required, however, when parties are clearly benefiting economically from breaking the rules.

ICZM and National Development Plans, Funding Considerations, and International Aspects

ICZM programs have implications for pre-existing national plans and programs as well as international jurisdictions.

Incorporating the ICZM Program in the National Development Plan

From an economic development perspective the ultimate objective of the ICZM program is that it will become an integral part of economic development plans both at the national and local level. Achieving this objective will require the support of policymakers and planning and line agency officials. Most national and local government programs are formulated through their respective planning agencies such as a town and country planning department, an economic development unit, or a national economic development authority, all of which tend to have cross-departmental functions.

Funding Considerations

Large sums of new funding are generally not required to put an ICZM program in place. The development of an ICZM plan can often be accomplished primarily by staff delegated from existing agencies, provided that the appropriate professional disciplines and experience are represented. However, some new funding will usually be required to fill selected new positions and to undertake programs to fill particularly important data or research gaps. The funding for these purposes should be able to be provided by the national government or with assistance from international agencies.

Larger sums of money will be required for certain types of projects in the coastal zone. Outside sources may have to be considered for funding such projects. However, external donor and funding organizations may be more willing to support such requests if they are part of an integrated management effort.

International Considerations

As ICZM programs confront ocean resource issues, they are necessarily drawn into the international arena. Transnational issues related to the coastal and marine environment usually call for the collective efforts of the concerned governments in developing management measures to resolve resource use conflicts, to reduce or mitigate negative impacts of pollution and human activities, and to develop common standards and procedures for monitoring and assessment. Most transnational issues involving shared fisheries stocks and pollution occur in large marine ecosystems, such as large bays, gulfs, and semi-enclosed seas. Near the shore, environmental issues become transnational when a given ecosystem falls within two or more national jurisdictions. Like migratory fish stocks, marine pollution also recognizes no political boundary. Concerned coastal nations must recognize the mutual impacts of development activities. Thus, for instance, the destruction of the nursery function of mangroves under one national jurisdiction may affect recruitment of shrimp or fish in a nearby fishing ground under another jurisdiction. To the

extent possible, the waterbody should be treated as whole in a manner similar to an inland watershed as far as management is concerned. Comanagement among the affected jurisdictions should be a guiding principle, although success will depend upon the political and socioeconomic priorities of the nations concerned.

Global Environmental Agreements

International conventions and agreements are playing an increasingly important role in environmental management. Toward this end, United Nations agencies have been diligent in forging a number of agreements and protocols which promote international, regional, and bilateral cooperation and collaboration among coastal nations. These include agreements such as the Law of the Sea Convention (LOS) (1982), the Montreal Protocol on Land Based Sources of Pollution (1987), the London Dumping Convention (1972), and MARPOL (73/79).

Role of Scientific and Regulatory Bodies

Scientific bodies can provide scientific advice on matters related to the utilization and management of marine resources in given regions. The International Council for the Exploration of the Seas and the Forum Fisheries Agency provide such advice for the North Atlantic and Pacific region. Regional programs such as the Regional Seas Program of United Nations Environment Programme (UNEP) can perform similar functions in other regions. Coastal nations could contribute to the effectiveness of such efforts by assigning qualified scientific personnel to participate in regional programs and by applying the resulting collective scientific advice in making policy and management decisions affecting the region in question.

References

Chua, T.E. 1993. "Essential Elements of Integrated Coastal Management," *Ocean and Coastal Management* 21 (1-3): 81-108.

Chua, T.E., and L.F. Scura, eds. 1992. *Integrative Framework and Methods for Coastal Area Management.* ICLARM Conference Proceedings 12. Manila: ICLARM.

____ 1991. *Managing ASEAN's Coastal Resources for Sustainable Development: Roles of Policymakers, Scientists, Donors, Media and Communities.* ICLARM Conference Proceedings 6. Manila: ICLARM.

Chua, T.E., and D. Pauly, eds. 1989. *Coastal Area Management in Southeast Asia: Policies, Management Strategies and Case Studies.* ICLARM Conference Proceedings 2. Manila: ICLARM.

Cicin-Sain, B. 1993. "Sustainable Development and Integrated Coastal Management." *Ocean and Coastal Management* 21 (1-3):11-44.

Clark, J.R., ed. 1991. "The Status of Integrated Coastal Zone Management: A Global Assessment." Proceedings of the Global Assessment Workshop, Charleston, South Carolina, July 8–10, 1989. Rosenstiel School of Marine and Atmospheric Science. University of Miami. Miami, Fla.

Clark, J. R. 1992. *Integrated Management of Coastal Zones.* FAO Fisheries Technical Paper no. 327. Rome.

Clark, J.R. 1996. *Coastal Zone Management Handbook.* New York: CRC Lewis Publishers.

Crawford, B.R., J.S. Cobb, and A. Friedman. 1993. "Building Capacity for Integrated Coastal Management in Developing Countries." *Ocean and Coastal Management* 21 (1-3): 311-38.

Gaudian, G., and others. 1993. "Establishment of a Coastal Zone Management Program for Tanzania." Consultancy Report to the Commission of the European Communities, DG VIII. Brussels.

Haq, Bilal U. 1993. "Sea-Level Rise and Coastal Subsidence Rates and Threats: Implications for Maritime Communities." Environment Department, World Bank. Washington, D.C.

Hayden, B.P., G.C. Ray, and R. Dolan. 1984. "Classification of Coastal and Marine Environments." *Environmental Conservation* 11(3):199-207.

Hinrichsen, D. 1994. "Coasts under Pressure." *People & the Planet* 3 (1): 6-9.

Linden, O. 1993. *Integrated Coastal Zone Management in Eastern Africa Including the Island States.* Coastal Management Centre. Australia Proceedings. Manila.

Lundin, C.G., and O. Linden. 1993. "Coastal Ecosystems: Attempts to Manage a Threatened Resource." *AMBIO* XXII (7): 468-73.

Lundin, C.G., and O. Linden. 1995. "Integrated Coastal Zone Management in Tanzania." Swedish International Development Authority and World Bank. Washington, D.C.

Ngoile, M.K., and C.J. Horrill. 1993. "Coastal Ecosystems, Productivity and Ecosystem Protection: Coastal Ecosystem Management." *AMBIO* XXII (7):461-67.

Organisation for Economic Co-operation and Development (OECD). 1993. *Coastal Zone Management: Integrated Policies.* Paris.

OECD. 1993. *Coastal Zone Management: Case Studies.* OECD. Paris.

Olsen, S.B. 1993. "Will Integrated Coastal Management Programs Be Sustainable: The Constituency Problem." *Ocean and Coastal Management* 21:201-26.

Pernetta, J. C., and D.L. Elder. 1993. *Cross-Sectoral, Integrated Coastal Area Planning (CIAP): Guidelines and Principles for Coastal Area Development.* A Marine Conservation and Development Report. IUCN. Gland, Switzerland.

Swedish Agency for Research Cooperation with Developing Countries. 1993. "Arusha Resolution on Integrated Coastal Zone Management in Eastern Africa Including Island States." Issued by the Policy Conference on Integrated Coastal Zone Management in Eastern Africa including Island States. Stockholm.

Sorensen, J. 1993. "The International Proliferation of Integrated Coastal Zone Management Efforts." *Ocean and Coastal Management* 21 (1-3):45-80.

Vallejo, S.M. 1993. "The Integration of Coastal Zone Management into National Development Planning." *Ocean and Coastal Management* 21 (1-3):163-82.

World Bank. 1994. Africa: "A Framework for Integrated Coastal Zone Management." Land, Water, and Natural Habitats Division and Africa Environmentally Sustainable Development Division. Washington, D.C.

World Bank. 1995. "A Global Representative System of Marine Protected Areas." A Report by Great Barrier Reef Marine Park Authority, World Bank, and the World Conservation Union (IUCN). Washington, D.C.

Coastal Zone Management Centre. 1993. "Proceedings." World Coast Conference. The Hague.

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