

P R O S P E C T U S



COASTAL RESOURCES CENTER

University of Rhode Island



MILLIONS OF PEOPLE MOVE TO THE COAST EVERY YEAR

AND WITH THEM COME MANY CHALLENGES

The Challenge of Coastal Management

Today, nearly two-thirds of the world's population – some 3.7 billion people – live within 100 kilometers of a coastline. By the year 2025, 75 percent, or 6.4 billion, are expected to live in this ribbon of land. Coastal regions also contain a high proportion of the world's most productive and biologically diverse ecosystems. They produce most of the world's fish catch, and support a major portion of the world's agriculture, industry and tourism. Yet, along most of the world's coastlines, water quality is declining, fish stocks are collapsing and critical habitat is being destroyed.

Conflicts among resource users are becoming more intense and, if left unresolved, may very well lead to deepening poverty and increased violence. In the 21st century, the majority of the world's coastal inhabitants will live in sprawling cities, principally in the trop-



What happens on the ribbon of land that defines the world's coastline and its adjoining coastal waters is critically important today, and will be even more important for today's children.

ics. Human-induced climate change may profoundly alter the coastal environment that is human beings' primary habitat. The challenge that lies before us is a formidable one: How can

coastal societies everywhere respond to these massive pressures on their environment and, at the same time, achieve an adequate quality of life?

1971

CRC begins its partnership with the newly formed Rhode Island Coastal Resources Management Council – an association that continues today.

1970's

Strategies developed by CRC for fisheries and barrier beach conservation are formally adopted by the state. CRC drafts Rhode Island's coastal management plan, one of the first in the nation.

1978

CRC leads an interdisciplinary team to advise New England state governors on mitigating the impacts of offshore petroleum production on commercial fisheries.

By the year 2025, 75 percent of the world's population will live within 100 kilometers of the coast.





Encouraging and teaching people to be stewards of their coastal resources are keys to CRC's approach to coastal management.

The Evolution of the Coastal Resources Center

Inventing coastal management for Rhode Island

The Coastal Resources Center (CRC) was created at the University of Rhode Island in 1971 and charged with assisting the state of Rhode Island in “managing coastal resources for the benefit of this and succeeding generations.”

For three decades, CRC has worked with local, state and federal government to create and refine the process by which decisions affecting Rhode Island’s coastal ecosystems are made. It has been a process marked by sustained public debate and controversy, and many hard lessons in how to balance lofty ideals with what can be practically carried out in a site’s unique legal and societal context. Yet, these efforts have resulted in many tangible successes, and the plans formulated by CRC continue to enjoy broad-based public support.

Applying experience to developing nations

The success of CRC’s first decade and a half in Rhode Island became a foundation for similar work in other regions of the United States, and then worldwide.

In 1985, CRC was chosen to join a pioneering partnership with the U.S. Agency for International Development (USAID) to identify the aspects of the U.S. experi-

ence in coastal management that could be applied to developing nations. Early pilot programs conducted with in-country counterparts produced policies and plans that are being successfully implemented today. A second wave of progressive programs in developing nations

began in 1993. True to CRC’s approach, all these programs built local constituencies to foster improved governance of coastal resources. They also strengthened the skills of local coastal management professionals



CRC works toward a better balance between coastal peoples and nature.

and institutions. Since the first pilot programs in Ecuador, Sri Lanka and Thailand, CRC’s field programs have expanded to include sites in Asia, Africa, Latin America and the Caribbean, as well as continuing work in Rhode Island and the U.S.

1984

CRC’s special area management plan for Rhode Island’s coastal lagoons, a first attempt at ecosystem governance, is formally adopted.

Mid 1980’s

CRC compares trends in condition, use and governance of six major U.S. estuaries.

1985

CRC begins its partnership with the U.S. Agency for International Development to implement the international Coastal Resources Management Project, with pilot projects in Ecuador, Sri Lanka and Thailand.

Promoting the People, Preserving the Place

The CRC approach

Dynamic governance is a key to successful coastal

CRC's decades of experience have shown that the major coastal management challenge is not to apply technical "fixes" to technical "problems," but rather to create and sustain a



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6

dynamic process of governance. Through this process, societies can work individually and collectively to define the relationship between people and the ecosystems of which they are but one part. Key players in this process include all those who have a stake in the future of coastal resources – including communities, businesses, relevant national agencies, non-governmental organizations, research and

academic institutions, and resource users of all types. CRC's mission is to apply the principles of participatory democracy, equity and sustainable development to the formulation and refinement of the policies and actions that make

progress toward a better balance between coastal peoples and nature.

Particularly effective in the development of this process is CRC's "two-track" approach, which works simultaneously at both the national and community levels. In many countries where the capacity for effective resource management is small, the greatest tangible progress may be made initially through community-based projects. However, if these



A host of pressures on the ecosystem are created by coastal communities.

projects are not designed to shape the policies of central government, the learnings too often are not accepted, and action on a greater scale does not occur. Both those most directly affected by coastal governance – or its absence – and those with significant power within central government must understand and support a coastal management program. Without well-informed and motivated constituencies, no governance initiative can be sustained.

1988

CRC hosts first national volunteer monitoring conference.

1989

Ecuador's Coastal Resources Management Program formally created by presidential decree.

1989

CRC pioneers training of harbor managers and municipal policy formulation for critical wetlands in Rhode Island.

Ten Successful Strategies for Integrated Coastal Management (ICM)

CRC has identified successful ICM strategies that can be adapted to the unique qualities of different nations and sites.

- Recognize that coastal management is essentially an effort in governance. Coastal programs follow a policy process where the challenge lies in developing, implementing and adapting sustainable solutions to resource use problems and conflicts
- Work at both the national and local levels, with strong linkages between levels
- Build programs around issues that have been identified through a participatory process
- Build constituencies that support effective coastal management through public information/awareness programs
- Develop an open, participatory and democratic process, involving all stakeholders in planning and implementation
- Utilize the best available information for planning and decision-making. Good ICM programs understand and address the management implications of scientific knowledge
- Commit to building national capacity through short- and long-term training, learning-by-doing and cultivating host country colleagues who can forge long-term partnerships based on shared values
- Complete the loop between planning and implementation as quickly and frequently as possible, using small projects that demonstrate the effectiveness of innovative policies
- Recognize that programs undergo cycles of development, implementation and refinement, building on prior successes and adapting and expanding to address new or more complex issues
- Set specific targets and monitor and self-evaluate performance

1990

The Sri Lanka Cabinet adopts national coastal zone management plan.

1991

CRC offers first Summer Institute in Coastal Management for professionals from around the world.

1992

The Thailand Cabinet adopts and funds national coral reef management strategy.



Rhode Island's CRC-supported River Rescue project was a model for citizen volunteer monitoring.

Field Programs

Coastal management’s “living laboratories”

Progress toward sustainable use of coastal resources must be made nation by nation, and place by place. Through its field programs, CRC works with partners both at home and abroad to contribute to this progress. From work in field sites, CRC learns how to develop and apply the concepts and tools of coastal governance. Partnerships, service and commitment underlie CRC’s approach to field programs. All field programs are formulated and implemented through a participatory, incremental learning approach.

Over the next decade, CRC will continue to work with partners to implement a wide range of field programs that:

- Meet the needs of national and local partners – both governmental and non-governmental
- Contribute to progress on critical coastal management issues

- Educate the public and build indigenous capacity for effective action
- Develop, test and refine effective and innovative concepts and tools for coastal management

Geographic areas of emphasis will continue to be Rhode Island and the United States, Latin America and the Caribbean, Asia and the Western Pacific, and Eastern and Southern Africa.

Rhode Island and the United States. Since 1972, CRC has focused on developing innovative partnerships and building the capacity to effectively act together to solve problems. Within Rhode Island, CRC, in conjunction with Rhode Island Sea Grant, works with multiple communities who share single watersheds, bays and islands to foster planning and policy that balances economic vitality with social well-being with the preservation of coastal assets.

Rhode Island’s Sustainable Coastal Communities project is part of a national movement to promote an awareness of the economic, environmental



and social benefits of sustainable development practices, and encourage government, businesses and community groups to get involved. This will further the objective to foster well-planned and revitalized coastal communities that enhance coastal economies, are compatible with the natural environment, minimize the risks from nature’s hazards and provide access to coastal resources for the public’s use and enjoyment.

The Aquidneck Island Partnership, representing interests from public and private organizations and local municipalities, is working to achieve coordinated resource management that promotes a balance between economic development and environmental well-being, while maintaining the island’s unique character and quality of life.

CRC’s Aquidneck Island Partnership addresses issues including transportation, public access and recreation along the coast, and works for a shared future vision among local residents, busi-

PROSPECTUS

1993

The Inter-American Development Bank approves its first loan in support of coastal management to implement the Ecuador program.

1994

The Sri Lanka Cabinet endorses Sri Lanka 2000, a far-reaching strategy for a comprehensive coastal governance program.

1994

CRC assists the U.S. Department of State in launching the International Coral Reef Initiative.

experiencing rapid rates of landscape transformation. A pilot project is underway to promote regional planning that will foster growth while maintaining community character and protecting sole source aquifer resources. Both the Washington County initiative and the Aquidneck Island Partnership will serve as models for Rhode Island's statewide watershed-based approach to managing ecosystems.

Latin America and the Caribbean (LAC). CRC began its pioneering Ecuador field program in 1985 and continues to have a major impact on how integrated coastal management (ICM) evolves in this region. Strategic assistance is still provided to Ecuador's national coastal programs and CRC has an expanding role in supporting ICM initiatives in Mexico and Central America. CRC's LAC programs feature site-based work in areas with critically important habitats such as along the Meso-American



Balancing conflicting uses of coastal resources is a challenge to all field projects.

Reef and within the Gulf of California, as well as work on issues of importance throughout the region such as mariculture and tourism development. CRC also provides assistance through training programs, fostering exchange among practitioners in the region, and evaluating ICM projects and programs.

Eastern and Southern Africa (ESA). CRC began working in East Africa in 1994 to turn ICM principles into practice in Kenya and Zanzibar. Today CRC continues to work with a wide variety of partners to promote ICM in the region. In Tanzania, CRC is working to establish an effective national approach to coastal management that builds from and is supportive of the ongoing local-level initiatives. In Kenya, site-based work in the Mombasa area is laying the groundwork for a larger coast-wide initiative. At a regional level, CRC is seeking to expand its linkages with other

ESA coastal programs such as Madagascar, Mozambique and South Africa; and is working in partnership with the Western Indian Ocean Marine Science Association to build professional capacity and promote region-wide learning and exchange.

Asia and the Western Pacific. Over the past 15 years, CRC has worked on ICM in a variety of Asian countries. Sustained coastal management field projects were carried out in Sri Lanka and Thailand, the latter including a major institutional development initiative with Prince of Songkla University. CRC is currently working with Indonesia to develop on-the-ground examples of coastal management in action that can be used as national models. These range from community ICM plans to a bay management plan, to a strategic-level provincial coastal action plan, to a university network to support local ICM initiatives. CRC's work in Indonesia is augmented by regional activities focused on coral reef conservation, the definition and application of best practices, and capacity building.

1995

CRC's "Educating Coastal Managers" workshop produces an international "Call to Action."

1995

CRC participates in the national assessment of the U.S. Coastal Zone Management Act.

1995

CRC renews its partnership with the U.S. Agency for International Development through a cooperative agreement for the Coastal Resources Management Project II, which will run through 2003.

Future generations in developing countries face the challenge of increasing development pressures on their coastal resources.



Research and Learning

Putting coastal management to the test

As an integral part of its work, CRC develops and refines concepts, methods and tools of coastal management. CRC creates a learning process to nourish field projects and the work of international partners, and enhance the education of professional coastal managers worldwide. The documentation and critical examination of the progress being made, and obstacles encountered, are central to the learning process and the advancement of the profession.

The principal aims of research and learning are to enhance effectiveness of local and national coastal management initiatives, and document



Sharing experiences in coastal planning worldwide helps pave the way for future successes.

progress in coastal management and trends in the health of coastal ecosystems. CRC achieves this through “action” research – the development, testing and refining of concepts and tools grounded in real-world applications. For decades, CRC has followed a learning and adaptive approach – testing approaches and building on experience. Field sites provide the “living laboratories” in which to test effective coastal management strategies and improve understanding of how sustained progress is achieved.

CRC also actively participates in the expanding global dialogue on coastal management, and contributes to regional and international initiatives and partnerships. This is an effective means of increasing global commitment to coastal management and the impact of resources and ideas.

CRC’s efforts are divided into four major areas:

- Coastal management monitoring, assessment and evaluation initiatives that promote learning, transfer of knowledge and replication of good practices
- Development initiatives that promote environmentally, economically and socially sustainable mariculture and tourism development practices
- Coastal management strategies and practices that promote principles of effective coastal management and governance
- Contributions of natural science to management that enable CRC to develop and test approaches and tools that build and strengthen links between science and management

Results of this work include a growing “Common Methodology for Learning” suite of reports; a manual for self-assessment of projects; a survey for international donors who support coastal initiatives to judge their progress; a handbook for planning coastal management programs; and an assessment of mariculture best practices in Latin America.

1996

CRC’s approach and experience are reflected in the report, “The Contributions of Science to Integrated Coastal Management,” produced by the U.N. Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP).

1996

Pioneering action strategies for integrated coastal management in East Africa are developed for Kenya and Zanzibar.

1996

Proyek Pesisir, a coastal management pilot project in Indonesia, is launched in partnership with the national government.

CRC continues to develop methods for assessing the progress of coastal management efforts in a variety of settings.



Learning-by-doing is an essential element of all CRC training programs.



Training and Education

Educating the modern coastal manager

CRC believes that coastal managers should be educated for a profession, rather than an academic discipline. Coastal management practitioners must possess the skills, knowledge and attitudes required to create programs that draw from and integrate a range of fields. The focus must be a balance between the governance of ecosystems, and the goals and skills necessary to design and implement plans to manage them effectively. This requires an understanding of the processes that drive living systems – including human economies. A successful coastal management education must also teach practitioners an appreciation for the culture and traditions of the people they attempt to serve.

CRC has offered scores of short-term training programs around the world that have attracted over 750 professionals from more than 75 countries. CRC's four-week biannual Summer

Institute in Coastal Management, and its two-week, more specialized courses employ adult training methodologies that draw upon the experience of the participants, are highly interactive and feature problem-solving in small groups. All CRC field programs work to build

in-country capacity for effective coastal governance through a combination of training, sponsored degree education and "learning-by-doing." Regional courses are conducted in partnership with local universities, and all international courses and workshops use experts from CRC, as well as associates from field programs around the world.

Over the next decade, CRC education and training activities will emphasize continuing education of today's coastal management



professionals, university partnerships that strengthen degree programs in coastal management, and collaborative research. Training and education activities will also begin the use of distance-learning technology to speed the dissemination, transfer and exchange of information, and to reach a growing audience of professionals worldwide.

Educating for a profession, rather than an academic discipline.

1996

CRC's U.S. Program and Rhode Island Sea Grant create the Aquidneck Island Partnership, a private/public collaboration to promote ecosystem management on the largest island in Rhode Island's Narragansett Bay.

1997

CRC's Hazard Mitigation Project forms partnerships with the private sector to create disaster resistance plans for local communities and the State of Rhode Island.

1997

The Tanzania Coastal Management Partnership is launched to shape a national integrated coastal management policy for the nation.

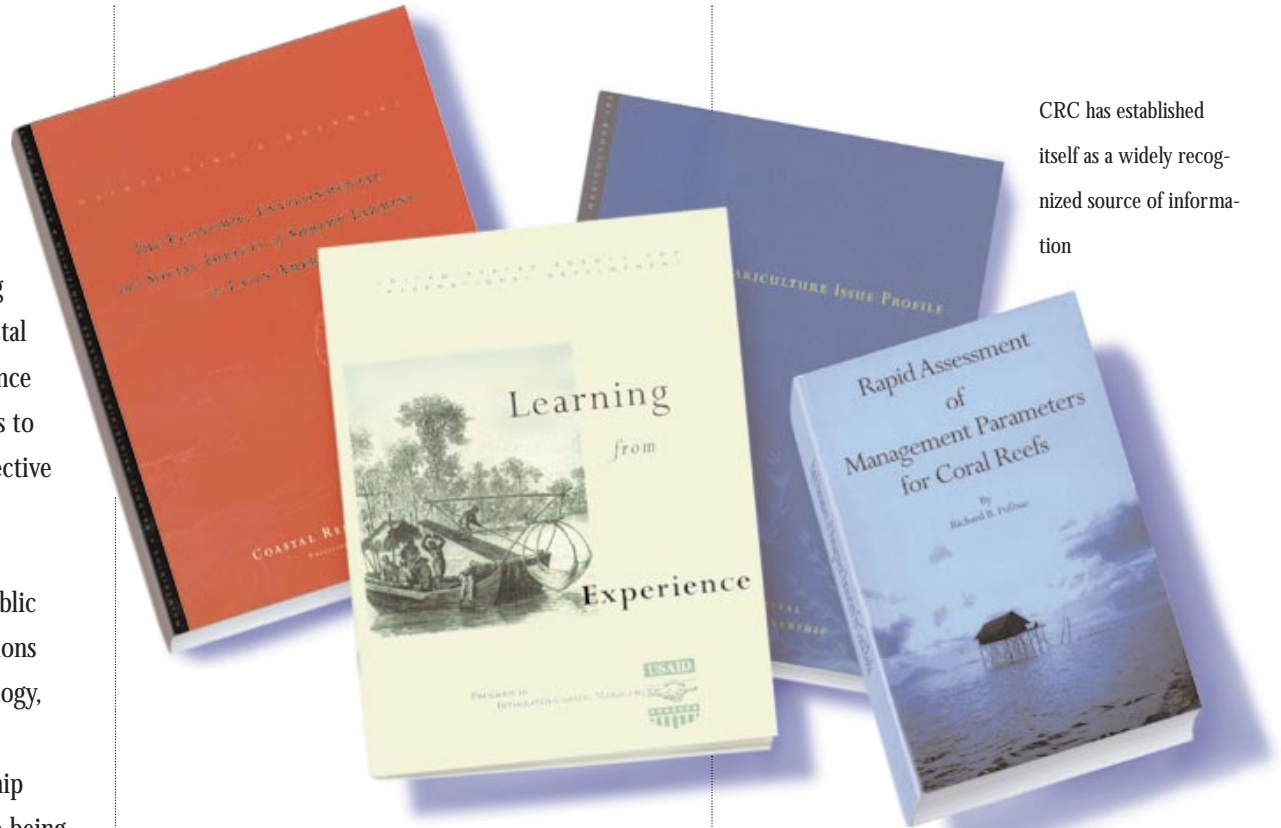
Communications

A clear message to the world

CRC has much to share with the rest of the world. A continuous and far-reaching communications effort is essential if coastal nations are to learn from CRC's experience and from one another, and if the public is to grasp the importance and benefits of effective coastal management.

Through its proactive outreach to the public and media, its publications, communications capacity-building and use of new technology, CRC helps foster better management of coastal ecosystems and greater stewardship of coastal resources. CRC is dedicated to being both an information resource and forum for the exchange of ideas in coastal management through providing a multi-faceted support service to its projects and partners.

CRC sees the next decade as a time in which it is necessary to reach key audiences of coastal



CRC has established itself as a widely recognized source of information

managers, decisionmakers and policy shapers, and the general public to raise awareness of the importance of coastal management and the benefits it provides. Whether it is a "how-to" handbook for frontline practitioners, or a video that brings to life the day-to-day impacts of increasing pressures along the coast spoken

in the voices of local residents, clear understanding by all parties is the key to future success. CRC is committed to sharing knowledge and experience on coastal management worldwide through its communication and outreach vehicles, and harvesting its wealth of national and international experience.

1999

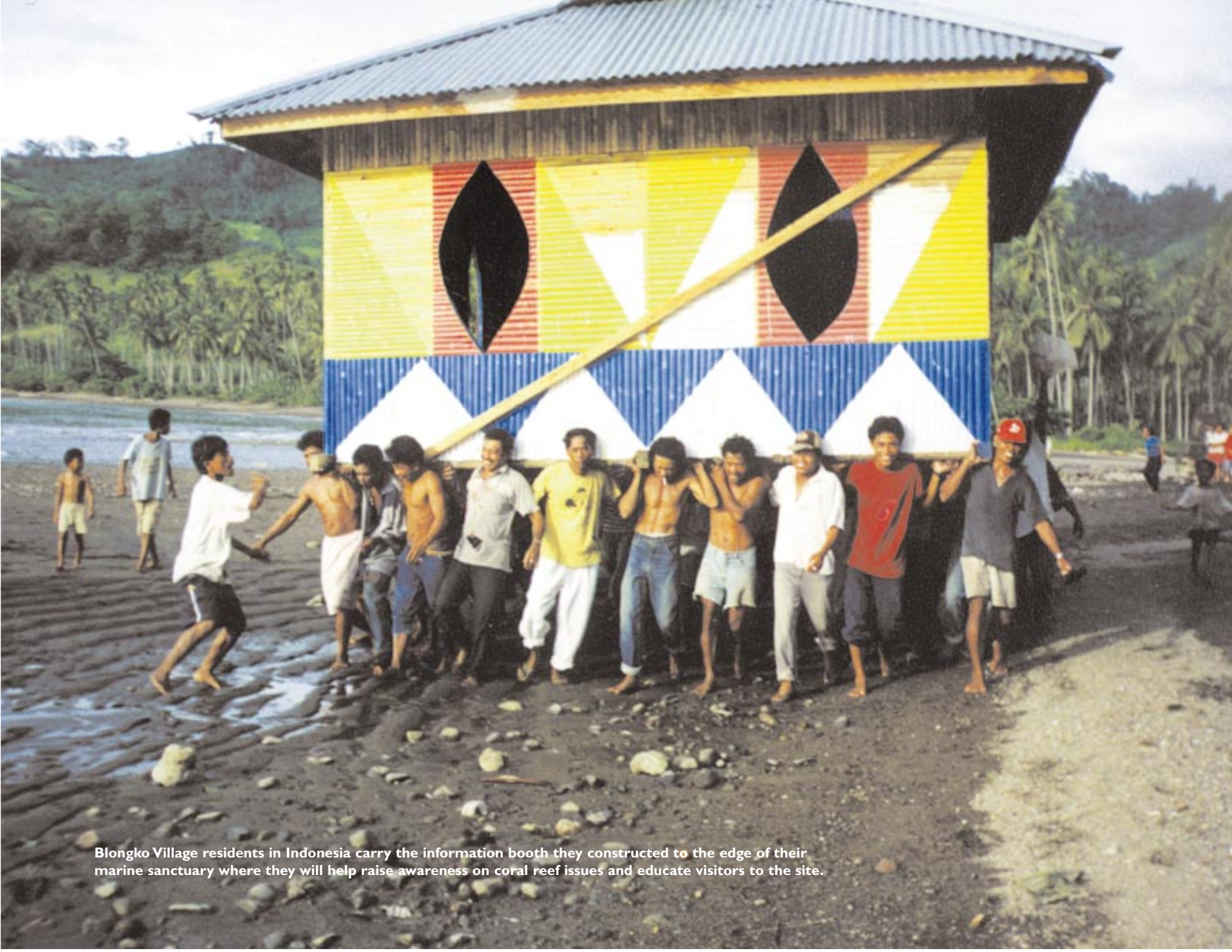
CRC assists Blongko Village establish a community-based marine sanctuary, the first in Indonesia.

1999

CRC's U.S. Program is judged as "excellent" by the national Sea Grant program.

1999

CRC publishes "A Manual for Assessing Progress in Coastal Management," the first self-assessment tool of its kind.



Blongko Village residents in Indonesia carry the information booth they constructed to the edge of their marine sanctuary where they will help raise awareness on coral reef issues and educate visitors to the site.

Field projects provide coastal managers with living laboratories to develop their practice.



An Agenda for the 21st Century

Since 1985, CRC's work in advancing coastal management has been devoted primarily to taking an approach shaped by the U.S. experience and adapting it to meet the challenges found in developing nations. It has been a period of experimentation, discovery, and intense collaboration and debate with partners in many countries – in wealthy and poor nations, across a diversity of cultures and in contexts ranging from civil war to booming economic growth.

CRC, like the programs it has helped launch, must direct its priorities, resources and expertise to meet the needs of the future. By focusing on key issues of concern and implementing approaches designed to soften potentially harmful impacts, integrated coastal management can attempt to forestall problems before they happen, rather than try to “clean up the mess” after it happens – a near-impossible task. The ultimate goal is to replace the values and behavior that produce coastal ecosystem degradation with more sustainable behavior that can anticipate

and solve potential problems – locally, regionally and globally.

During the decade to come, CRC's scope of work will focus on key issues and threats to coastal ecosystems through four areas of work:

Field programs in Rhode Island and throughout the world will focus on the need to link community-level coastal management efforts with high-level government policy-making to address long-term issues of sustainable development, while serving people and the place. CRC's field work will provide practitioners with “living laboratories” to further develop and test coastal management concepts and tools.

Research, evaluation and learning will be utilized in regard to the primary forces driving the transformation of coastal ecosystems, and explore the ways in which new approaches can inform other projects. Coastal management projects worldwide are facing a greater demand for accountability, and a need to know how and why they are making positive strides – or failing to achieve their goals. Verifiable outcomes and results shared through a “Common Methodology for Learning” will be of utmost importance to CRC's work in the next 10 years.

Building capacity for coastal management at all levels will be further interwoven into all

of CRC's projects and goals to ensure ongoing growth in the knowledge and abilities of coastal management professionals. CRC's international training programs will span a wider range of topics and promote university curricula designed to educate the next generation of coastal managers to

ensure a higher-quality and ever-broadening field of practitioners.

Clear, consistent and compelling communications will be a priority to further promote the sharing of experience, best practices, tools and techniques among coastal management practitioners. Communications and information sharing must be used to more effectively explain the consequences of what will happen if effective coastal management does not occur in the increasingly densely populated and pressured coastal regions of the world.

Getting this message across to decisionmakers and the public will help gain support for coastal management efforts at all levels.



The ultimate goal is to replace the values and behavior that produce coastal ecosystem degradation with more sustainable behavior – locally, regionally and globally.

PROSPECTUS

PROSPECTUS UPDATE 1999

The Coastal Resources Center (CRC) works with many partners in government, communities, the business sector and from non-governmental organizations (NGOs) locally, nationally and internationally.

The majority of CRC's international programs are carried out through two cooperative agreements with the U.S. Agency for International Development (USAID) called the Coastal Resources Management Project (CRMs I and II). The first partnering effort, CRM I, ran from 1985 through 1995, and the other, CRM II, extends to 2003. CRC's role in the partnership is to serve as America's flagship in advancing integrated coastal management (ICM) worldwide, especially in developing countries.

Nationally and in Rhode Island, CRC's work is supported predominantly by Sea Grant. CRC works with both Rhode Island Sea Grant and its national office to carry out coastal ecosystem management projects which in turn inform CRC's global work, and learn from the international experience gained through CRC's worldwide initiatives.

IN 1999, CRC INITIATIVES...

Shaped National and State Policy

The Tanzania Coastal Management Partnership made rapid progress towards the formulation and adoption of a national policy. The initial issues, goals and strategies for the country's coastal policy were approved by the directors of all key government departments.

CRC U.S. program staff participated in the national U.S. Coastal Zone Management Effectiveness Assessment, a report that examined the country's first 25 years of formal coastal management experience. The results were published in the spring 1999 edition of *Coastal Management*. CRC staff focused on assessing the provision of public access to the coast. The final report summarizes two years of study of all the programs in the nation's coastal states, Great Lakes states and U.S. territories.

In Indonesia, *reformasi* (the populist term for government reform since the Soeharto era) is changing the political landscape at an

unprecedented pace. Decentralization, participation and transparency are *reformasi* pillars, and projects launched at CRC-supported sites are making these values tangible. In Blongko, North Sulawesi, a community-based marine sanctuary has become a good practice model for replication nationwide. Likewise, the *Lampung Coastal Resources Atlas*, which was produced with unprecedented participation, is being hailed by the Minister of Home Affairs as a model that all provinces should follow. Complementing these on-the-ground activities, CRC policy advisors and partners are playing a key role in formulating the implementation regulations for a new national law that grants power to the provinces to manage coastal resources out to a 12-nautical mile limit.

In collaboration with leaders throughout Rhode Island, CRC helped form Grow Smart Rhode Island, the first statewide, business-led, smart growth consortium. Using CRC-supported projects as models, Grow Smart will attempt to achieve growth while reducing use conflicts and maintaining coastal environmental quality for future generations.

CRC prepared an *ICM Capacity Assessment* for the Ecuador Coastal Resources Management Program (PMRC) which examined the advances in ICM over the past decade including the contribution of the Inter-American Development Bank-funded coastal resources management program. The report includes recommendations jointly developed with the PMRC for a potential next phase of coastal management in the country.

Increased Economic Benefits

Tourism and fisheries are important economic development sectors in many places worldwide, but sometimes return few economic benefits to local residents. In Laguna Guerrero, Mexico, CRC is working with the community to change this. This includes helping villagers form a guides group and local fishermen use their knowledge and skills to guide sport fishermen attracted to the area for recreation.

Because of the excessive costs of recovery from recent natural disasters, the U.S. is changing the way people respond to hazards such as hurricanes, flooding, erosion and wind damage. Working in a public/private partnership with state and federal agencies and the Institute for Business and Home

Safety insurance consortium, CRC staff helped Rhode Island become the first nationally designated “Showcase State” for reducing costly property and personal losses from natural hazards.

The *Tanzania Mariculture Issue Profile*, describing the issues and opportunities related to management and development of a sustainable mariculture industry in Tanzania, was completed and published in 1999. The profile, which sets out a national mariculture agenda including development of mariculture guidelines, was approved by directors from key government departments.

The Indonesian Coastal Resources Management Project, Proyek Pesisir, working with industry, NGOs and government agencies, played a lead role in assisting the Director General for Tourism to formulate a national policy and guidelines for marine ecotourism.

Advanced Integrated Coastal Ecosystem Management Initiatives

In North Sulawesi, Indonesia, preliminary indicators from the community-based monitoring of the Blongko marine sanctuary

suggest increased fish abundance due to habitat restoration. The provincial government and Minahasa Regency are requesting funds to start replication of this initial conservation success in other villages.

CRC’s Tanzania project held two problem-solving workshops that linked national and local-level efforts to protect coral reef habitat. One workshop focused on reducing the damage to coral reefs from dynamite fishing, while the other addressed in-shore trawlers’ destruction of coral reefs and interference with artisanal gear.

CRC’s field work in Central America featured facilitation of the first consultative committee review of the draft marine park and protected area management plan for Bastimento Island National Park on the Caribbean coast of Panama along the border with Costa Rica. This regional program has aimed to introduce participatory ICM techniques in border areas of bi-national importance for conservation.

Served the Local Community

CRC, along with Rhode Island Sea Grant, initiated a “Sustainable Coastal Communities” project to foster ICM on Rhode Island’s Aquidneck Island, the largest in

Narragansett Bay, and the coastal watersheds of the state's south shore. The project will use the landmark land use legislation that Rhode Island has pioneered for municipal comprehensive community plans. The Aquidneck Island Partnership, a public/private partnership for sustainable development that is staffed by CRC, was awarded a Certificate of Environmental Achievement by the National Awards Council for Environmental Sustainability and Renew America.

CRC helped Kenya's Coastal Management Steering Committee protect Kenyatta Beach as a public use area. Kenyatta Beach is the only remaining public access site on the North Coast, an intensely developed tourism area north of Mombasa. It is where fishermen store their gear and land their catch, where local boat operators meet clients to take them into the adjacent marine park and where local residents go to relax. Yet, in spite of extensive public use of the beach, there was danger that rights to it would be allocated to a private developer.

The participatory, community-based strategies and practices piloted in Xcalak, Mexico are being noticed and replicated in neighboring communities with the support of CRC and leveraged funds. The University of

Quintana Roo, a key CRC Mexico partner, has initiated the ICM process in two communities—Laguna Guerrero and Raudales—within the Chetumal Bay Manatee Sanctuary. The University of Quintana Roo and CRC are helping each community create a vision of the future they want for their community.

Built ICM Capacity and Networks

To enable universities to play a more effective role in coastal management planning, policy and education, 11 state and private universities in Indonesia, including Bogor Agricultural Institute and its Centre for Coastal and Marine Resources Studies—a major CRC Proyek Pesisir partner—have established the Indonesian Coastal University Network (INCUNE). INCUNE, with leveraged support, is preparing a strategic plan and prospectus.

CRC, in conjunction with Rhode Island Sea Grant, formed partnerships with the National Oceanic and Atmospheric Administration, the Coastal Services Center and the Institute for Business and Home Safety to promote hazard mitigation, conducting workshops for coastal program managers and emergency management staff

in the Gulf Coast and the Great Lakes. In addition, working with the Federal Emergency Management Agency, CRC staff created a day-long flood mitigation and recovery exercise for municipal officials that will be used in states across the nation.

In Mexico, University of Quintana Roo faculty and leaders are developing an ICM strategy to integrate research, academics, extension and outreach. CRC has also supported a regional NGO network to promote community-based resource management around Chetumal.

CRC, in partnership with the Western Indian Ocean Marine Science Association, delivered a two-week ICM course in Mombasa, Kenya. It was attended by 28 professionals from South Africa, Madagascar, Mozambique, Kenya and Tanzania, and featured Africa's leading coastal management practitioners as trainers. Participants "learned by doing" and came to understand the elements of a strategically designed integrated coastal management program, and the strategies, tools and techniques that promote program effectiveness and sustainability.

Fostered a Global Dialogue

The CRC-led, international coastal governance initiative gained momentum and is having a positive impact on several developing nations and the donor community at large. The initiative produced English and Spanish versions of *A Manual for Assessing Progress in Coastal Management* that were applied to major evaluations of coastal management initiatives and training in Central America, Ecuador, Mexico, Indonesia and East Africa. A new phase of the initiative was discussed at an international meeting held at the United Nations Food and Agricultural Organization in Rome, Italy. In the next year work will begin to focus on the role of science and scientific information in coastal management with support from the Swedish International Development Cooperation Agency.

CRC continued to play a major role in worldwide coral reef management and con-

servation efforts. CRC staff was involved in planning the International Tropical Marine Ecosystems Management Symposium (ITMEMS) held in Townsville, Australia in November 1998, and its pioneering work in coral reef management and marine protected areas in Mexico and Indonesia was featured at the symposium. News and information from ITMEMS were then disseminated through a special coral reef issue of the *InterCoast* newsletter published in spring of 1999.

CRC's outreach work in Latin America was greatly enhanced by increasing its Spanish language portfolio of communications vehicles. This included the translation into Spanish of *A Manual for Assessing Progress in Coastal Management* and *Maintaining a Balance: The Environmental, Economic and Social Impacts of Shrimp Farming in Latin America*. In addition, CRC produced and distributed a CD-Rom of Spanish/English ICM materials. The CD format makes possible the delivery

of a broad range of materials at extremely low cost, and is especially suited to ICM training course participants and/or those with limited Internet access.

COASTAL RESOURCES CENTER

University of Rhode Island

Prospectus Update 2000

The Coastal Resources Center (CRC) works with many partners in government, communities, the business sector, and from non-governmental organizations locally, nationally and internationally.

IN THE YEAR 2000, CRC INITIATIVES... Shaped National and State Policy

In the U.S., CRC had an impact in many areas. CRC staff participated in the 2000 Institute for Business and Home Safety National Congress to forge a national policy calling upon insurance companies to offer incentives for hazard mitigation insurance protection to customers living in coastal communities. Staff also provided legal and scientific research in support of the national Coastal Zone Management Program tidal wetlands regulations when they were challenged in a U.S. Supreme Court case. The outcome of the case will have a far-reaching impact upon government ability to prevent development of environmentally sensitive tidal salt marshes and tidal wetlands. In collaboration with leaders from universities, the private sector, non-governmental organizations and government

agencies throughout Rhode Island, CRC serves on the advisory board of Grow Smart Rhode Island, a business-led, statewide smart growth consortium promoting sustainable development throughout Rhode Island.

In East Africa, CRC's Tanzanian Coastal Management Partnership (TCMP), working closely with the highest levels of government, continued to move the country closer to adopting a national coastal management policy. By the end of 2000, the policy had been approved by the vice president's office and moved on to await final approval from the Tanzania Cabinet in 2001.

In Indonesia, by advising Indonesia's new Ministry of Marine Affairs and Fisheries, the CRC-led national coastal management program, Poyek Pesisir, contributed to development of a nationwide coastal policy and program. Poyek Pesisir actively supported the ministry and conducted a study tour to the U.S. for Minister Sarwono Kusumaatmadja, and senior national and provincial officials, which involved meetings with key U.S. agencies in Washington DC, Florida, Rhode Island and

Washington State, highlighted by a public lecture by Minister Sarwono on Capitol Hill.

Worldwide, CRC remained an important voice in the global dialogue on the conservation of coral reefs, providing input to the U.S. Coral Reef Task Force, making important contributions to the 9th International Coral Reef Symposium in October 2000, and supporting the Conference of the Parties of the Convention on Biodiversity.

Increased Economic Benefits

CRC's U.S. program team worked with the Rhode Island Emergency Management Agency to create application and information packages as part of its ongoing hazard mitigation efforts. These helped coastal community members impacted by natural hazards or living in areas susceptible to natural disasters to access a variety of federal aid programs and minimize financial loss.

In 2000, the economic benefits of environmentally sound and economically equitable mariculture became a special focus for CRC. The TCMP's Mariculture Working Group

continued to make strides in evaluating mariculture as a high potential economic resource for Tanzania, and to establish guidelines for regulators and investors. In Latin America, preparation of a final report on shrimp mariculture good management practices (GMPs) developed for Honduras began. Working closely with scientists, industry members and environmental managers, the GMPs are based on both technical and detailed field survey results, and are tailored specifically for shrimp mariculture in Honduras. Most will be applicable throughout Latin America, and of interest wherever mariculture is being practiced.

Advanced Integrated Coastal Ecosystem Management Initiatives

CRC's U.S. program worked with Rhode Island Sea Grant, the state Department of Environmental Management, the U.S. Environmental Protection Agency, the Audubon Society and other key stakeholders to help Rhode Island create and formally adopt a statewide watershed management approach. The approach is currently being piloted in communities along the state's south shore, on Aquidneck Island and in the Woonasquatucket River watershed. The U.S. program also provided leadership for the Rhode Island Rivers Council in 2000.

This year, the Rivers Council formally recognized the first two Rhode Island Watershed Councils (the Wood-Pawcatuck Watershed Council and the Saugatucket Watershed Council) and began implementation of the Rivers Policy and Classification plan.

In 2000, CRC's Mexico project expanded its work to Bahía Santa María, an environmentally rich and diverse estuary in the Gulf of California. At the start of the year, Mexican public officials signed a declaration of support to the Bahía Santa María program, and began preparation of a management plan. In partnership with Conservation International, CRC gave crucial support to plan development, substantially enhancing both the technical and participatory processes for the plan.

Served the Local Community

In June 2000, Mexican President Ernesto Zedillo officially dedicated Xcalak's National Marine Park during World Environment Day celebrations in Cozumel. It is one of the first National Marine Parks to be initiated by a community, rather than by the federal government. The national endorsement represented a major step in the region's efforts towards self-management and the promotion of low-impact tourism development along the Costa Maya.

The CRC U.S. program and Rhode Island Sea Grant led a Sustainable Coastal Communities project to foster integrated coastal management pilot programs in two significant Rhode Island coastal areas: Aquidneck Island, the largest island in Narragansett Bay; and Washington County, which includes nine towns along the state's south shore. CRC's project is earning recognition as a statewide model as it helps these coastal communities engage in efforts in to balance environmental, economic and social equity issues, articulate a desirable future, and achieve that shared vision. As a result, U.S. program staff were recipients of a regional tourism award presented to the Aquidneck Island Partnership by Rhode Island Governor Lincoln Almond during National Tourism Week in May 2000.

In Indonesia, the East Kalimantan field program assisted local government authorities with final design of new water supplies to coastal villages bordering Balikpapan Bay. The program is also working to complete a plan to protect the forested Wine River basin that is the primary source of drinking water for the 400,000 residents of Balikpapan and the Regency of Pasir. In North Sulawesi, the community-based marine sanctuary established by villagers in Blongko is beginning to yield tangible benefits. Preliminary research in 2000 indicated

a possible increase in fish supply since the sanctuary was created.

The year 2000 marked the second year of success for the TCMP's Coastal Environmental Awards Scheme. Public participation was the key for the program, which was conducted in Tanzania's coastal provinces, involving hundreds of village organizations, local government agencies, schools and individuals who carried out community projects that heightened awareness of and the need to respond to important coastal issues.

Built Coastal Management Capacity and Networks

CRC's flagship Summer Institute in Coastal Management, the Center's month-long, bi-annual integrated coastal management training program was held during June 2000, with 22 participants from 13 countries. In addition to core topics such as the CRC policy cycle, public participation, coastal issues and practical management tools, the Summer Institute 2000 curriculum included greater emphasis on broader development issues.

The CRC U.S. program was recognized for its efforts to form national networks around key coastal themes of natural hazards

and recreational boating. This work brought together Sea Grant university programs from coastal states with private sector partners, and helped define management-relevant research agendas, efforts and outreach tools to meet private sector needs.

A strategy for the enhancement of the Indonesian Coastal University Network (INCUNE) was completed in 2000. Developed by representatives from 11 network universities from Sumatra to Irian Jaya, the strategy outlines how INCUNE members will work together to build experience and capacity in order to contribute to solving coastal problems.

The TCMP's Science for Management Working Group completed a detailed inventory of all Tanzanian literature addressing coastal topics. The group then went on to catalogue the information to provide a centralized technical resource for better management through the use of scientific research information.

CRC worked with the Western Indian Ocean Marine Science Association (WIOMSA) to further build capacity for coastal management throughout Eastern Africa. An assessment tool was developed to determine areas of strengths and weaknesses for coastal managers across the region.

Mini-workshops were held in Kenya, Mozambique and Tanzania for practicing coastal managers to assess their training needs, and provide a brief introduction to the CRC approach.

Working with the University of Quintana Roo and a non-governmental organization, the Amigos de Sian Ka'an, CRC's Mexico project established the Belize-Mexico Alliance for Management of Coastal Resources, providing the basic framework for collaboration in research, outreach and management of joint waters.

Fostered a Global Dialogue

CRC staff actively participated in and gave presentations at numerous prestigious international forums during 2000. Two CRC staff attended the Dahlem Conference in Berlin, Germany, working with prominent coastal scientists to further integrated coastal management-relevant scientific research. At the Pacific Congress on Marine Science and Technology (PACON 2000) Conference in Hawaii, Poyek Pesisir staff and partners presented seven papers and chaired two sessions on ICM and community-based management. The sessions provided a rare opportunity to galvanize interactions between coastal management researchers and practitioners from 22 Asian and Pacific nations. CRC made a

major contribution to the 9th International Coral Reef Symposium, including the organization of a mini-symposium on the socioeconomic impacts of coral bleaching, chairing multiple sessions, and presenting six papers on aspects of its coral reef work around the world. In addition, CRC U.S. and global field project staff took part in conferences held by The Coastal Society and National Sea Grant Program.

CRC's InterCoast Network newsletter continued to be its most recognizable global information source. The Winter 2000 issue focused on natural disasters with an emphasis on early planning to reduce the impacts of events over which man has no control. The Spring issue focused on land-based sources of pollution, looking at how upland/land-based activities influence river, estuarine and

marine environments. The Fall issue contained a reflective and retrospective look at past InterCoast reports and features over the last 15 years, which was linked to CRC's emerging Learning and Harvest Agenda.

In 2000, publications continued to be central to CRC's global dissemination of information. Over 75 significant documents, ranging from informational materials and newsletters to high-end publications, were published, with many made available on the Worldwide Web. CRC again utilized its Rhode Island office to disseminate field project documents to the global community worldwide, while using the field offices to put new information on coastal issues in the hands of key professionals and decisionmakers at the national, regional and local levels.

The majority of CRC's international programs are carried out through a cooperative agreement with the U.S. Agency for International Development (USAID). CRC's role in the partnership is to advance integrated coastal management worldwide, especially in developing countries. Other funding organizations in 2000 included The David and Lucile Packard Foundation, The Nature Conservancy, and the Inter-American Development Bank.

Nationally and in Rhode Island, CRC's work is supported predominantly by Sea Grant. CRC works with both Rhode Island Sea Grant and its national office to carry out coastal ecosystem management projects. In 2000, CRC's U.S. program also received funds from the Aquidneck Island Land Trust; the municipalities of Newport, Middletown and Portsmouth, R.I.; and the Alletta Morris McBean Charitable Trust, Prince Charitable Trusts, the Prospect Hill Foundation and the van Beuren Charitable Foundation.

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