

ICLARM and Coastal Resources Management

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ICLARM is an international, non-profit, non-governmental research institution which focuses on problems related to the utilization and management of living aquatic resources. ICLARM was incorporated in the Philippines in 1977; its research has been primarily oriented to improving the condition of the rural poor in tropical developing countries through the promotion of sustainable utilization of their living aquatic resources. The institution's principal program areas are Resource Assessment and Management, Aquaculture, Education and Training and Information.

The Resource Assessment and Management Program (RAMP) resulted from the merging into one program, in mid-1985, of the Traditional Fisheries and the Resource Development and Management Programs. These two had, since their inception in 1977, separate but complementary missions.

The tasks of the Traditional Fisheries Program were:

1. To document, on a country-by-country basis, the actual situation in the small-scale (or artisanal) fisheries sector, with reference to increased competition resulting from the commercial or industrial fishery sector.
2. To develop, implement and disseminate new concepts and methodologies relevant to research on small-scale fisheries in developing countries.
3. To formulate viable management options for the small-scale fishery sector with emphasis on multisectoral solutions (e.g., promoting appropriate mixes of a capture fishery, aquaculture and/or

part-time agriculture) and on increasing the incomes of the small-scale fisherman.

This program was implemented in cooperation with a number of interested national, regional and international organizations in various countries. A wide range of publications and completed projects attest to the level of activity that was achieved. These activities all continue as part of the RAMP.

The tasks of the Resource Development and Management Program, defined in the first (1977) session of ICLARM's Program Advisory Committee were:

1. To provide information and advisory services on: (a) the management of aquatic resources to concerned governments at the national level; (b) the exploitation of resources through shared access, and effective management of shared stocks at the regional level; and (c) the provision of information needed at the international level of the management of migratory stocks that cut across several national boundaries.
2. To collate and disseminate information on the ecological impact of selective fisheries and on the management of tropical multispecies stocks and, to add to these, through the results of the Program's own studies.
3. To bring the problems of pollution, in a broad sense, including improper land use, especially in the coastal zone, to the attention of planners and developers, and assess the impact of pollution on fisheries.

4. To study the future course of Law of the Sea and its wide-ranging effects on fisheries, with special reference to the Southeast Asia and the Southwest Pacific.

Thus, the Resource Development and Management Program included from its inception elements explicitly related to coastal zone management.

In the years which followed, due to limited staffing, only the first two of these four research areas were given emphasis. This resulted, half a decade later, in ICLARM assuming a leadership role in the general area of tropical fish stock assessment and population dynamics, as documented by a wide range of books and other publications and a variety of cooperative projects which greatly increased the stock assessment capabilities of the partner institutions.

With the consolidation of two programs, and the change from "resource development" to "resource assessment," emphasis has now returned to fishery research in its widest multidisciplinary sense and to broader questions of coastal zone management. The program, thus, now deals with most factors which affect the lives of small-scale fishermen and their families, ranging from the quality of their environments to the state of the fishery resources upon which their livelihood depends.

The nomination by USAID of ICLARM as executing agency for a major cooperative project with ASEAN, the Coastal Resources Management Project, will help us strengthen our activities to benefit the ASEAN countries and the others to which the experience to be gained will also apply. □

Managing ASEAN Coastal Resources

Introduction

The warm, humid, tropical climate of Southeast Asia, where the six ASEAN nations are located, favors the proliferation of life both on land and in the sea (Fig. 1). The region is endowed with some of the world's richest ecosystems in terms of biological productivity and species diversity as well as such economically significant non-renewable resources as oil, tin and other mineral resources. Half of the world's recoverable hydrocarbons is said to be buried below their extended continental shelf.

The coastal zones of most ASEAN nations are heavily populated. Approximately 60% of the 296.4 million people (1985) live in rural areas, many along the rural coastal settlements. Historically, the coastal areas are more accessible by sea and provide opportunities for livelihood. Some 75% of the people live near the coast and are engaged in diversified occupations, many of which are closely linked to the exploitation and utilization of coastal resources. Some 2.2 million fishermen depend directly on these resources while another estimated 50 million depend indirectly on the sea as their primary

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source of livelihood. The coastal zone is also the prime site for urban development, recreation and tourism, port and harbor installation and other industrial and agricultural activities. The coastal waters, perhaps, are the most heavily utilized for local communication, transport, fishing and recreation.

Perhaps, the ASEAN nations constitute one of the world's regions best characterized by high-level coastal resources exploitation, a situation most apparent between the 1960s and 1970s when socio-economic pressures were greatest. Large-scale destruction of many of the region's valuable resources is the result of indiscriminate exploitation, a price that has to be paid for poor and inadequate resource management.

Lessons Learned

ASEAN nations have learned numerous hard lessons on coastal resources use. Major examples still vivid in memory are the social conflicts on the use of fishpens in Laguna de Bay, Philippines; the industrial pollution in Kuala Juru, Malaysia; the tantalum incident

in Phuket, Thailand; and the trawling ban in Indonesia. These conflicts require both political and economic solutions and the involvement of various sectors in the communities.

Laguna de Bay case. The major issue was and continues to be the multiple usage of the lake for fishing, fishpen culture and duck raising, in addition to boat communication among various settlements along the lakefront. The lake sustains the direct livelihood of about 10,000 fishermen/fish farmers and their households. The introduction of pen culture without efficient control; the continued deterioration of water quality from sewage discharge; and, most of all, the construction of a dam to prevent saltwater intrusion into the bay have upset the lake's ecology which culminated in some serious social conflicts among various users of the lake. The uncontrolled mushrooming of fishpens in the lake competes with available space for fishing and communication. Unlimited stocking of *bangus* (milkfish) and tilapia fry results in slower growth of the former. Economic and political interests have added to the issue's complexity. Eventually, the case has become a political issue, greatly overshadowing the

