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## Introduction

Denmark has provided assistance to several coastal zone management (CZM) projects in Southern Africa and Southeast Asia over the past decade, most notably under the funds made available by the Danish government after the Rio Conference in 1992 to address global environmental problems.

The Danish Cooperation for Environment and Development (DANCED), between 1996 and 2000, provided assistance to Malaysia through the Integrated Coastal Zone Management (ICZM) Project in Malaysia, which used pilot projects in the states of Penang, Sarawak and Sabah, to provide guidance in the development of federal strategies for coastal zone management.

Another country to receive assistance is Cambodia where the Danish Development Assistance (DANIDA) has since 1997 provided assistance to the Cambodian Ministry of Environment through the Environmental Management in the Coastal Zone Project (EMCZ).

# ICM Interventions: Case Studies in Malaysia and Cambodia

Both projects are comprehensive in scope with sustainable management of the coastal zone as the overall development objective. They have in their capacity building efforts addressed the institutional, legal, environmental and socio-economic dimensions of management while targeting coordination between and integration among the multiple government and nongovernment stakeholders in coastal zone development.

## Coastal Zone Management in Sabah, Malaysia

Sabah is the state in Malaysia with the longest coastline of approximately 1,600 km extending from the border of Sarawak in the southwest to Indonesia in the southeast. In terms of its coasts, Sabah borders the South China Sea on the west, the Sulu Sea on the northeast and the Celebes Sea on the southeast (figure 1).

The key issue for unsustainable development in the coastal areas in Sabah was found to be a lack of

management capacity among public and private development stakeholders. Various management constraints were likewise identified and an analysis of these problems became the basis for the cooperation between the Malaysian and the Danish governments.

Emphasizing broad capacity building as the overall implementation strategy, the project was to establish task-oriented coordination platforms and facilitate these in addressing the identified key management constraints.

The Sabah Economic Planning Unit with its strong coordinating mandates chaired the Project Steering Committee composed of 11 representatives from State Ministries. The Sabah Department of Irrigation and Drainage chaired a broad Technical Committee composed of 30 representatives from government and nongovernment institutions. The Sabah Town and Regional Planning Department was the implementing agency responsible for directing and coordinating the work of task forces with government and nongovernment participation, while also serving as secretariat to the Steering and Technical Committees. A special ICZM Unit, established in the department,

was in charge of the day-to-day operations.

## Outputs and Outcome

Coastal zone stakeholders in Sabah, in a learning-by-doing process, have produced all achievements in the Sabah ICZM Project, with international and local advisors as facilitators.

Comprehensive networks have been established and were active in the different phases of the ICZM process ensuring extensive coordination between public and private stakeholders and enabling substantial integration of resources, expertise and information.

ICZM strategic recommendations for Sabah have also been developed and submitted for state policy level by the coastal zone development stakeholders themselves, including both the public and private sectors.

The outreach of the 3.5-year project in Sabah has been comprehensive and actively involved more than 60 government offices at the federal, state and local levels; more than 30 business, professional, charity or environmental NGOs; and a large number of concerned individuals.

The ICZM Project is particularly recognized for the integration and coordination of all stakeholders—government as well as private—from the early phases of information gathering and planning to the production of coastal profiles and the delivery of strategic recommendations for the future management of the coastal zone. The informal networks generated through the project among and between government and private stakeholders are strongly appreciated and are available for tasks relying on interagency and public-private coordination. By involving both public and private stakeholders and by including federal, state and local levels

in the activities, the project has narrowed the gap between the different levels of management and between government and private sectors.

The management system approach in general, and the ICZM information system along with the creation of a Sabah ICZM website, have contributed to greater transparency on the situation in the coastal areas and on its management. It also contributed to the identification of areas of concern related to redundancy in data production and lack of data integrity. This information will benefit agencies with management and information responsibilities.

The public participation and awareness initiatives have demonstrated the capability within coastal communities of addressing environmental problems by themselves and in the process clarifying the requirements for public sector support.

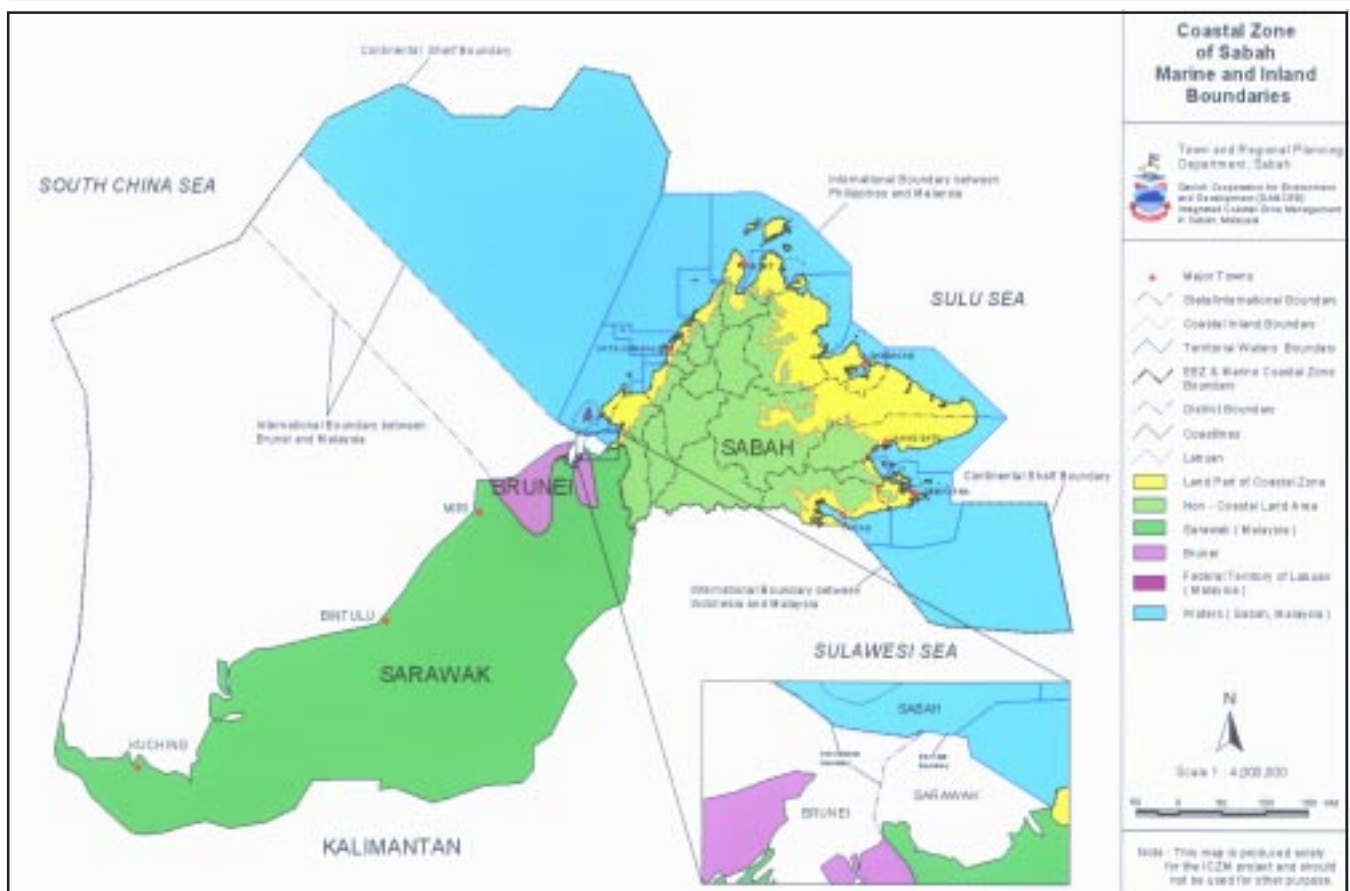
After the project was completed in March 2000, the Town and Regional Planning Department embarked on the preparation of a structure plan for the state of Sabah using the task forces that were set up, thus securing the participation of all relevant public and private interest throughout the planning process.

DANCED is supporting the integration of ICZM recommendations into the local plan preparation process through technical assistance to the Town and Regional Planning Department. The project, which started

### Box 1. Phases of ICZM Malaysia

The implementation of the project was undertaken in three phases:

- An inception phase during which the detailed implementation was discussed and agreed on in a participatory process involving the Technical Committee, in particular, which was also responsible for allocating staff to the various tasks.
- A phase 1 focusing on training, networking and development of tools required for setting up an ICZM system in Sabah and for producing strategic recommendations. Key tools developed included the ICZM data dictionary (meta database on information required for management decisions), the ICZM geographical information system (GIS) platform, and comprehensive coastal profiles for Sabah and Sandakan.
- A phase 2 during which the tools developed and capacity acquired were used in preparing strategic recommendations for CZM in Sabah.



**Figure 1. Coastal zone of Sabah marine and inland boundaries.**

in September 2002, will prepare local plans for four coastal districts thus providing the link between strategic expressions to the statutory level. Local plans are one of the most powerful tools available to control development and the process of their preparation therefore is a primary target of efforts to ensure sustainable management.

### Environmental Management in the Coastal Zone of Cambodia

Cambodia has a land area of 181,035 km<sup>2</sup> and a population of around 11 million. The coastline

extends 435 km along the northeastern shore of the shallow Gulf of Thailand between the Vietnamese and Thai borders. Administrative jurisdictions of the coastal zone include the provinces of Koh Kong and Kampot and the municipalities of Sihanoukville and Kep. The claimed exclusive economic zone of Cambodia is considered part of the coastal zone (figure 2).

The coastal provinces and municipalities cover an area of around 17,200 km<sup>2</sup> or almost 10 percent of the country. Many of the coastal population of around 850,000 (1998 national census) are recent migrants in Cambodia seeking better livelihood opportunities. The extensive poverty among coastal communities,

population increase and lack of traditional livelihood experience among migrants exert increasing pressure on the natural resources.

Additional pressure on these resources comes from unsustainable fishing practices such as shallow water trawling and motorized push-netting, destroying seagrass beds, and fish bombing and cyanide fishing, destroying coral reefs. Encroachment into mangrove areas by shrimp farmers and salt producers has significantly reduced these habitats, which have also suffered from charcoal production activities.

Most of the urban sewerage systems along the coast are in a state



**Figure 2. Cambodia's coastal provinces (Kampot and Koh Kong) and Municipalities (Kep and Sihanoukville) where five pilot projects on community-based natural resources and alternative livelihood are being implemented.**

of disrepair and very little wastewater treatment takes place before being discharged into the waterways. This together with a periodic scarcity of freshwater supply are major causes behind the occurrence of waterborne diseases such as cholera, typhoid and enteritis.

The recent history of Cambodia, marred by war and instability, has left the country impoverished with very little capacity to deal with socioeconomic and natural resources management. The DANIDA support to building capacity within CZM was

started in 1997 with the clear understanding that socioeconomic improvements should be targeted through sustainable management of coastal resources thus in line with the policy of the government of Cambodia.

### Current Status

A Prime Ministerial Decision was made in October 2001 to formally establish the National Coastal Steering Committee and the provincial working groups as integral parts of the Cambodian institutional framework in

ensuring coordination of development efforts in the coastal zone. The Coastal Coordination Unit within the Ministry of Environment functions as secretariat for the committee while also in charge of day-to-day coordination.

Through systematic training in spatial planning, the provincial working groups have developed physical framework plans for each administration in the coastal zone. These plans specify that a number of policies, projects and actions, which the working groups consider, are required to enable the province/

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municipality to move towards its preferred strategy for the area.

The working groups have produced state of the provincial/municipal environment reports based on available data from rapid surveying and local knowledge. While these

reports will establish the first comprehensive environmental overview of the coastal zone, the process of their generation also identifies information gaps and prepares for a more structured information system and monitoring framework.

### Box 2. Phases of EMCZ Cambodia

Phase 1 of the project (between 1997 and 2000) served to mobilize appropriate interministerial and interdepartmental institutional arrangements. This aimed to introduce integrated concepts to natural resources and environment management, produce an initial baseline on management issues in the coastal areas and actively involve primarily government staff in generating an initial overview and understanding of management requirements. Early in Phase 1, a National Coastal Steering Committee was established. The committee is chaired by the Minister of Environment and composed of representatives from key ministries. Provincial working groups were likewise formed in Kep, Kampot, Sihanoukville and Koh Kong, chaired by coastal governors.

Phase 2 of the project was started in March 2000 with the main objectives to:

- enhance government capacity to undertake ICZM;
- have provincial working groups become active and significant forums for coordination, negotiation and planning of legal, administrative and technical actions to enforce EMCZ and to promote sustainable livelihood; and
- have one or two communities in each province plan and launch a pilot project to invest in environmentally sustainable and socioeconomically viable activities or improved technologies that can increase the livelihood of the most vulnerable groups.

The working groups have prioritized development activities that require particular environmental considerations. Training has been carried out in environmental impact assessment studies, which will strengthen the ability of the departmental management and technical staff to assess terms of references and to evaluate such studies in the future.

Management structures and capacity at national, provincial and district levels are required to guide and control the development in the coastal areas to ensure socioeconomic improvements, environmental quality and sustainable natural resources usage. Whereas other outputs described above have been targeting the capacity building of structures and human resources at these levels, the pilot projects have specifically been focusing on mobilizing the coastal households in the management system. These households are key target groups and beneficiaries for management arrangements and must be considered in management to ensure that the local ground level knowledge is built-in on one hand and that local participation and ownership are incorporated into rules and regulations for the coastal areas and their resources on the other.

The approaches to community-based natural resources and alternative livelihoods during phase 2 have, among others, been to develop partnership between provincial departments and communities. The provincial departments are responsible for

enforcement, which requires close interaction with the coastal villages as well as for technical support. The provincial departments have assumed a facilitating role supporting the communities in formulating and implementing the pilot projects.

The following pilot projects have been implemented during phase 2:

### **Beng Kachharng, Koh Kong**

Beng Kachharng is a small island located within Peam Krasaop Wildlife Sanctuary, seven km from Koh Kong. The island has a population of a little less than 500 people or around 120 families most of which are engaged in fisheries. There is little land available for agriculture and around 60 percent of the population is very poor. The pilot project has demonstrated chicken and duck raising and integrated vegetable culture (permaculture) as an alternative or supplementary livelihood. It also raised awareness about mangrove and fisheries management and environmental legislation.

The Canadian International Development Research Centre has collaborated with the Ministry of Environment since 1997 in the Participatory Management of Mangrove Resources Project in Peam Krasaop Wildlife Sanctuary, Koh Kong. Considerable knowledge about traditional use of mangrove and fisheries resources has been generated through this project which has also increased awareness among villages inside the protected area. Early in phase

2, collaboration was established between the EMCZ and the project in exploring crab fattening as an alternative or enhanced livelihood for fishing households. Later, and benefiting from the experiences from Ream National Park, the project shifted its focus towards organizing communities in sustainable management of mangrove and fisheries resources. Currently, several communities have been organized in managing fisheries activities within delineated areas as well as outside the protected areas, as both depend on the same local natural resources.

### **Ream, Sihanoukville**

Since 1997, support to community-based fisheries and mangrove resources management has been provided within Ream National Park. Eleven fishing villages have been organized in managing the natural resources, and local regulations have been formulated which the local government endorses. Patrolling to enforce regulations is systematically carried out with participation from both communities and provincial departments. Also, the pilot project has been engaged in exploring crab fattening as an alternative or enhanced livelihood.

### **Prek Tnout, Kampot**

The village is located 30 km west of Kampot and has a population of 1,200 people or 220 families mainly engaged in fisheries and farming. The

pilot project has, over the past one and a half years, demonstrated chicken and duck raising and integrated culture of vegetables (permaculture) as alternative or supplementary livelihoods while raising awareness about natural resources management and environmental legislation. Some 15 ha of new mangroves have been planted in front of existing ones along the coastline.

### **Thmei Village, Kep**

The village has a total population of around 2,200 or 400 families, out of which 100 are Khmer-Islamic. Khmer-Islamic families are predominantly fishers or boat builders, whereas Khmer families are farmers or work in salt pans or at the markets. The pilot project aims at improving the productivity of a 24-ha mangrove area through improved control of water management. Dike structures and sluice gates have been established, and existing creeks in the mangrove have been deepened. Villagers enforce regulations for the management of the area.

## **Future Perspective**

At the end of phase 2, a very comprehensive network of coastal stakeholders has been mobilized in development management, and a national and provincial institutional framework has been put in place in Cambodia. Both the government and

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DANIDA however, acknowledge that additional assistance is required for ICZM to continue on its own. A government-to-government agreement has been reached for phase 3 to start in August 2002, with a duration of five years.

In phase 3, the project office will move from Phnom Penh to Sihanoukville and small coastal resources centers will be established in each of the provinces

and municipalities. These centers will offer work space and technical facilities for the provincial working groups while handling information dissemination, awareness raising and education.

Phase 3 will continue capacity building at national, provincial and community levels and establish an environmental and natural resources information system which includes associated monitoring and support to coastal communities.

A CZM Website will be launched in July 2002. It will contain comprehensive information about the CZM system in Cambodia and include downloadable documentation produced by the project. ■



**Inspection of cage for crab fattening at the pilot project in Pream Krasaop Wildlife Sanctuary, Koh Kong.**



**Members of the National Coastal Steering Committee visiting the pilot project in Thmei Village in Kep.**