

**GEF/UNDP/IMO Regional Programme  
for the Prevention and Management  
of Marine Pollution in the East Asian Seas**



**TERMINAL REPORT  
1999**



**October 1999**

**GEF/UNDP/IMO Regional Programme for the  
Prevention and Management of Marine Pollution  
in the East Asian Seas**

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# **Sharing Lessons and Experiences in Marine Pollution Management**



## Mission Statement

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The Primary objective of the Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas is to support the efforts of the eleven (11) participating governments in the East Asian region to prevent and manage marine pollution at the national and subregional levels on a long-term and self-reliant basis. The 11 participating countries are: Brunei Darussalam, Cambodia, Democratic People's Republic of Korea, Indonesia, Malaysia, People's Republic of China, Republic of the Philippines, Republic of Korea, Singapore, Thailand and Vietnam. It is the Programme's vision that, through the concerted efforts of stakeholders to collectively address marine pollution arising from both land- and sea-based sources, adverse impacts of marine pollution can be prevented or minimized without compromising desired economic development.

The Programme framework is built upon innovative and effective schemes for marine pollution management, technical assistance in strategic maritime sectors of the region, and the identification and promotion of capability-building and investment opportunities for public agencies and the private sector. Specific Programme strategies are:

- Develop and demonstrate workable models on marine pollution reduction/prevention and risk management;
- Assist countries in developing the necessary legislation and technical capability to implement international conventions related to marine pollution;
- Strengthen institutional capacity to manage marine and coastal areas;
- Develop a regional network of stations for marine pollution monitoring;
- Promote public awareness on and participation in the prevention and abatement of marine pollution;
- Facilitate standardization and intercalibration of sampling and analytical techniques and environment impact assessment procedures; and
- Promote sustainable financing mechanisms for activities requiring long-term commitments.

The implementation of these strategies and activities will result in appropriate and effective policy, management and technological intervention at local, national and regional levels, contributing to the ultimate goal of reducing marine pollution in both coastal and international waters, over the longer term.

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Finally, the consolidation and summing up of inputs, products, problems and lessons of a five-year Programme with the complexity of the GEF/UNDP/IMO Regional Programme requires the skill, knowledge and experience of a good number of people, working in a variety of capacities. *Sharing Lessons and Experience in Marine Pollution Management* is the product of a dedicated team of officers and staff of the Regional Programme Office.

It is with pride and gratitude that the authors identify the following individuals for their contribution to this summary report:

Finance/Administration: Cory Guerrero, Mary Ann dela Peña, Antonio Hernandez, Caroline Velasquez, Eden Mandac and Marlene Mariano

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# Introduction

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The seas of East Asia provide food, livelihood and various forms of goods and services to the coastal population of the region, as well as contributing a significant share of the Gross Domestic Product (GDP) of bordering nations. During the last few decades, rapid industrial development, coupled with the expansion of maritime trade, have placed the East Asian Seas under severe environmental stress. Overexploitation of resources, habitat destruction and reduction in marine environmental quality are among the evidence of impacts that economic growth is having on the region's coastal and marine ecosystems.

In 1993, the East Asian Seas nations collectively launched a regional initiative aimed at addressing the social, environmental and economic consequences of a continuing trend of degradation of their regional sea. The Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas was designed to demonstrate how marine pollution can be prevented and managed in developing countries through the application of appropriate policy, institutional and technological interventions. The vision of the project was that adverse impacts



of localised and transboundary marine pollution can be prevented or minimised through the collective efforts of the stakeholders, without compromising desired economic development.

Eleven nations participated in the regional initiative, including: Brunei Darussalam; Cambodia; PR China; DPR Korea; Indonesia; Malaysia; Philippines; R.O. Korea; Singapore; Thailand; and Vietnam. The Global Environment Facility (GEF) provided US\$8 million in support of the Programme. The Programme was implemented by the United Nations Development Programme (UNDP) and executed by the International Maritime Organization (IMO). IMO established a Programme Development and Management Office (PDMO) in Manila, Philippines, which was

responsible for the operation of the Regional Programme.

The Regional Programme began operation in January 1994, and completed all major activities by December 1998. Significant progress was made in achieving the Programme objective, and several important benchmarks were established. The progress of the past five years provide the countries of the region, as well as intergovernmental organisations, international bodies and donor agencies, with sound practical experience and knowledge. From this foundation, sustainable marine pollution management programmes may be developed, expanded and replicated throughout the East Asian Seas region, and beyond.

### **Chinese Government White Paper on Xiamen Demonstration Project**

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“Since 1994, the Chinese Government, in collaboration with the United Nations Development Programme and other institutions, has established an integrated coastal management demonstration site in the Xiamen Municipality, achieving significant results, receiving good feedback from concerned international organisations, and providing an opportunity to transfer our experience in integrated coastal management for replication elsewhere in China and in other countries. As a result, in 1997, China, again in collaboration with the United Nations Development Programme, initiated integrated coastal management projects in Fangcheng City of Guangxi Province, Yangjiang City of Guangdong Province and Wenchang City of Hainan Province.”

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*From “The Development of China’s Marine Affairs”, Information Office,  
State Council, the People’s Republic of China, Beijing, May 1998*

The following summary report includes five elements of review.

**Meeting Objectives** considers the overall impact of the project and the benefits derived by the region. Features of the project design, implementation strategies and management approaches that contributed to the achievement of objectives are examined, as are some of the constraints experienced during the Regional Programme.

**Strengthening the Foundation** is a look at the basic tools and materials that were developed and applied during the course of the project to enhance national capacities, sustain programme initiatives and build public awareness. The mechanisms that are highlighted in this section cut across a number of projects and activities of the Regional Programme, and are the building blocks for the transfer of working models to other sites and other environmental issues in the region.

**Consolidating Outputs and Lessons Learned** is a review of the principal activities of the project, the progress that has been made, and some practical examples of the aftereffect of the work. The section attempts to provide a sampling of how the project contributed to some significant changes in awareness and actions on the part of public and private sector stakeholders, and the advantages of such changes.

**Sharing Experiences** is a summary of concepts and approaches, which have evolved over the course of this project. In some instances, the ideas have been developed and applied during the project, in others they have emerged but will only be tested in follow-on activities.

**The Pilot Phase Extension.** To allow time for the completion of all technical reports and publications of the pilot phase, implementation of special workshops/training courses and a smooth transition of the Regional Programme to its follow-on phase, the Programme Steering Committee recommended an extension of the Programme's pilot phase to 1999. This was agreed to by the UNDP and GEF.

**Programme Expenditure.** Total Programme expenditure was US\$ 8 million, representing 100% of the project budget.

**The Next Step** describes the follow-on activity, Building Partnerships for Environmental Protection and Management of the East Asian Seas. The section briefly discusses the new initiative that has been developed through stakeholder consultations, endorsed by the participating countries and approved by the GEF Council. The second phase is scheduled to commence in October 1999.

The summary report concludes with a detailed listing of achievements between 1994 and 1999.

Many lessons and experiences can be culled from a close examination of the successes and failures of different projects. A review of the Regional Programme's strategies, design, management and implementation processes, in relation to outputs, not only takes stock of achievements, but also identifies the problems and constraints. Overall, the experiences should prove to be a source of knowledge and lessons to other regional programmes of similar complexity and magnitude.

# Meeting Objectives

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## Regional Programme Objective

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*To support the efforts of the participating governments to prevent and manage marine pollution at the national and subregional levels on a long-term and self-reliant basis*

### Programme Achievements

The uniqueness of the Regional Programme, and its achievements, was that it successfully operationalised the environmental adage, “think globally and act locally”. It developed and groundtruthed an integrated management framework for addressing localised and transboundary marine pollution arising from land- and sea-based activities and interactions. In practical terms, working models of integrated coastal management (ICM) were put into operation and tested to confirm their effectiveness, and their sustainability. The outcome of the demonstration projects showed that:

1. **by applying an integrated management mechanism at the local level, transboundary pollution issues and other global environmental concerns can be effectively addressed;**
2. **local programmes contribute to the fulfilment of international conventions and agreements related to marine pollution, such as the Law of the Sea, Basel and IMO Conventions and the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities;**
3. **it is the development of institutional arrangements that ensure sustained efforts to protect the coastal and marine environment.**



A significant milestone of the Regional Programme was the paradigm shift in pollution management, particularly at the local government level. The new concept highlighted the shared responsibility of the public and private sectors in environmental management, including identification of priority concerns and opportunities for co-investment in problem-solving. The public-private partnership approach called for a change in perception by both sectors. For example, waste was viewed as a resource, rather than an unwanted byproduct of human activity. Waste management was developed as an opportunity not only to protect the coastal area, but to improve the social well-being of the general populace, create jobs, enhance quality of life, develop new commercial activities and markets, reduce operating costs, and so on.

## Overall Achievement

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In parallel with the identification of partnership opportunities, a systematic process for identifying priority environmental concerns and associated management interventions was developed and demonstrated. The environmental risk assessment and management process, as applied in the Malacca Straits Demonstration Project, presented some obvious advantages over *ad hoc* and “crisis-oriented” management approaches to preventing and managing transboundary marine pollution. The importance of the process, when applied within the integrated management framework, was the capability to describe and quantify potential harm to human health and the ecosystem as a consequence of both land- and sea-based human activities, and to evaluate options for reducing risk with due consideration of other societal issues within a subregional setting.

The Regional Programme, within a relatively short timeframe, has made good progress in carrying through a comprehensive and complex environmental initiative in the East Asian Seas. The working models that were developed and demonstrated have proven to be cost-effective and worthy of replication throughout the region. They provide the countries with innovative approaches, effective management strategies, the appropriate tools and sustainable financing mechanisms for managing marine pollution risks under varying and diverse socio-economic, political, cultural and demographic conditions. The next step is to build stronger partnerships between governments, donors, international agencies, NGOs, the scientific community and all interested groups, by pooling resources and efforts to collectively apply the models to environmental problems at the local level, and the region at large. Participating countries support this next step, and have already endorsed a follow-on project aimed at building partnerships in the application of the working models to address various environmental concerns across the region.

*The Regional Programme successfully operationalised the environmental adage, “think globally, act locally”... by groundtruthing an integrated management framework for preventing and mitigating localised and transboundary marine pollution arising from land- and sea-based activities and interactions....*

## Participation and Benefits

All the eleven member countries participated in some or all activities organised by the Regional Programme. China and the Philippines hosted the two ICM demonstration sites, while Indonesia, Malaysia and Singapore jointly implemented the Malacca Straits Demonstration Project. Brunei Darussalam, China, Indonesia, Malaysia, Philippines, R.O. Korea, Singapore, Thailand and Vietnam also contributed by hosting or organising some of the Regional Programme’s activities, such as training, workshops and other meetings. All countries participated in the training courses, workshops or study tours. *Active participation of member countries is key to the success of programme implementation.*

## Country Participation in Programme Activities

	Brunei Darussalam	Cambodia	PR China	DPR Korea	Indonesia	Malaysia	Philippines	R. O. Korea	Singapore	Thailand	Vietnam
<b>1. Training</b>											
Oil spill response	✓	✓	✓	✓		✓	✓	✓		✓	✓
ICM		✓	✓	✓	✓	✓	✓	✓		✓	✓
IEIA	✓	✓	✓		✓	✓	✓		✓	✓	✓
Marine pollution monitoring techniques			✓		✓		✓				✓
International Conventions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk assessment/management	✓	✓	✓		✓	✓	✓		✓	✓	✓
Natural res. damage assessment	✓	✓	✓		✓	✓	✓		✓	✓	✓
Internship/staff exchange		✓	✓	✓	✓		✓				✓
Study tour		✓	✓	✓	✓	✓	✓			✓	✓
<b>2. Workshop and conferences</b>											
Marine electronic highway					✓	✓			✓		
Marine pollution monitoring		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine legislation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ICM technical conference		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk assessment/management					✓	✓	✓		✓		
International conventions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sustainable financing		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Resource valuation			✓		✓	✓	✓		✓		
Oil spill modelling			✓		✓	✓	✓	✓	✓		
Recovery of oil spill clean-up cost		✓	✓		✓	✓	✓	✓	✓	✓	✓
Malacca Straits workshop					✓	✓			✓		
Public awareness and education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>3. Equipment</b>		✓	✓	✓			✓				✓
<b>4. Publications</b>											
Newsletters/Updates	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Technical reports/conferences	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>5. Host of Programme events</b>	✓		✓		✓	✓	✓	✓	✓	✓	✓
<b>6. Demonstration sites</b>			✓		✓	✓		✓			
<b>7. Public-private sector partnerships</b>			✓				✓				

Much of the Regional Programme's outputs directly or indirectly benefited participating countries. While China and the Philippines realised direct benefit from the ICM demonstration projects, national staff from other countries were trained in the application of ICM through study tours and training courses at the two sites. The compilation of the environmental profile, the development of integrated databases, and the evaluation of management options provided the three littoral States of the Malacca Straits (Indonesia, Malaysia and Singapore) with a better understanding of the values of the natural resources and the types and level of risks associated with transboundary marine pollution. The risk assessment and the natural resource and damage assessment methodologies, which were developed and refined for the Straits of Malacca project, were packaged into training manuals and used for training national staff from other countries.

A number of other outputs also had region-wide impact. The regional network on the legal aspects of marine pollution developed a database on national legislation, which was widely used by marine legal experts. The network was active in organising workshops and training courses, and providing legal advice to participating governments on implementing legislation for international conventions. Another example was the successful implementation of the integrated pollution monitoring programme in Xiamen, which was a showcase of cost-effective pollution monitoring for local governments of the region. Finally, the innovative public-private sector partnership process demonstrated in Batangas provided countries with an alternative mechanism for developing, financing and sustaining environmental programmes, facilities and services.

*“... since 1994, the GEF/UNDP/IMO regional initiative has helped develop essential working models and innovative approaches to address the coastal and marine environmental issues in the East Asian Seas. The eleven participating nations... have all benefited from the Programme.”*

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Statement by the delegation of Singapore, and on behalf of Indonesia, Malaysia, Philippines and Thailand, at the 42<sup>nd</sup> Session of the Marine Environmental Protection Committee, International Maritime Organization, London, 2-6 November 1998.

## **Programme Design**

The framers of the Regional Programme understood the complexities and complications inherent in transboundary pollution management, especially in a region with a wide diversity of political, cultural, ecological and socio-economic conditions. A variety of strategies and techniques were needed to assess and manage the different sources and types of pollutants, with due consideration of the level and magnitude of environmental and social impacts. The framers adopted strategies that were demonstrative, catalytic and sustainable. The strategies were the nuclei of project formulation and implementation activities, which in turn emphasised: demonstrating the effectiveness and modalities of ICM application; developing national capacity to plan and manage at the local level; and playing a catalytic role in mobilising external resources.

### **Regional Programme Strategies:**

- Develop and demonstrate working models on marine pollution reduction/prevention and risk management
- Assist countries in developing the necessary legislation and technical capability to implement international conventions relating to marine pollution
- Strengthen institutional capacity to manage marine pollution problems
- Develop a regional network for marine pollution monitoring and information management
- Promote public awareness and participation in the abatement of marine pollution
- Facilitate standardisation and intercalibration of sampling and analytical techniques and environmental impact assessment procedures
- Promote sustainable financing for activities requiring long-term commitments

A positive feature of programme design was the recognition of the need for flexibility. The Programme Document highlighted the need and allowed modifications or adjustments to the Programme, based on feedback from the participating countries. The flexibility enabled relatively rapid response to the concerns of the participating countries. As project outputs were achieved, specific project activities were modified, and in some instances replaced with more appropriate new activities, to meet the objective and strategies of the Regional Programme. This positive feature of the programme design was highlighted by external reviewers during the 1997 mid-term evaluation.

*“Programme flexibility has allowed the refinement and fine-tuning of the Programme, reflecting the evolutionary situation in many aspects, such as the number of participating countries and the differing circumstances they are in. Flexibility has also allowed the Programme Manager to seek additional funding for extra activities, almost doubling the original budget.”*

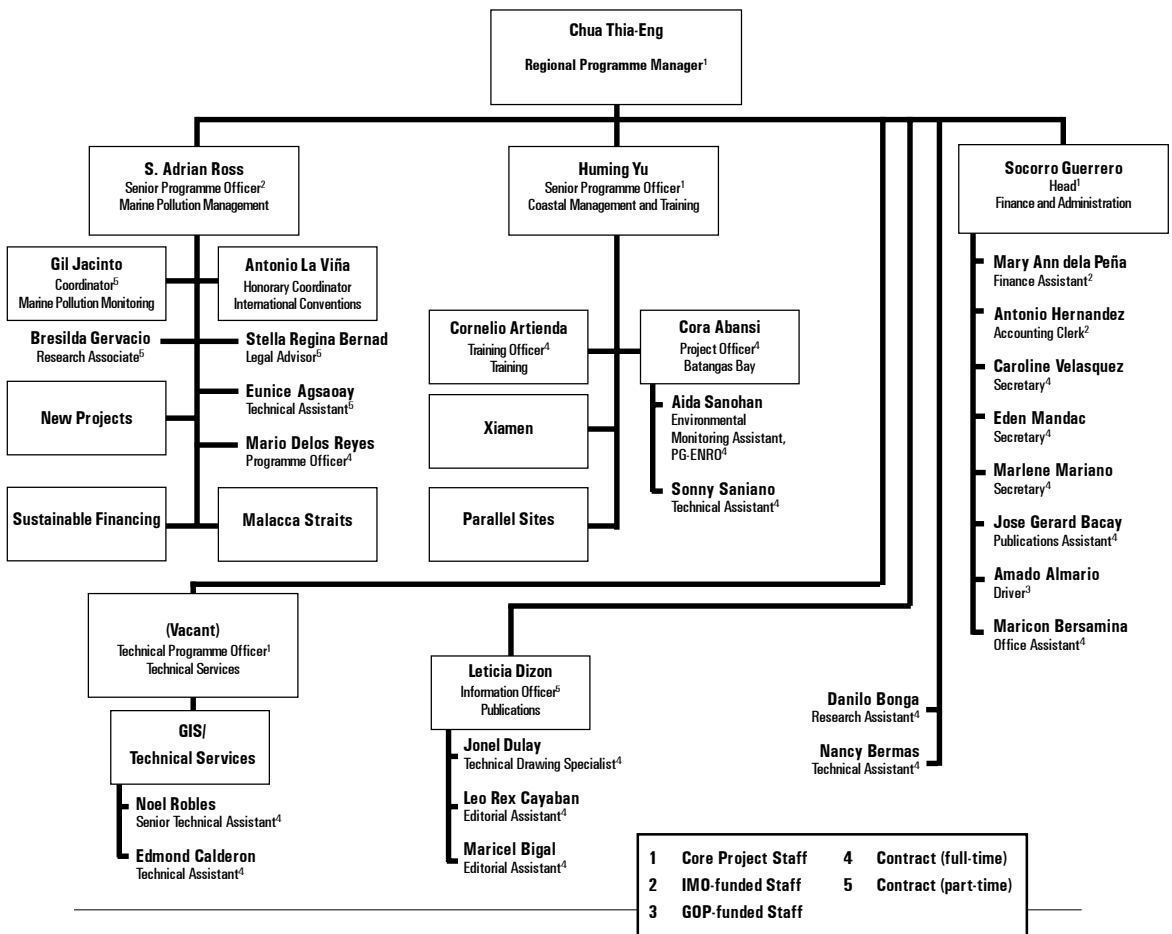
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Mid-term External Evaluation Report, 1997

However, there were also some flaws in the Programme design, and these created some difficulties in meeting targets. A case in point was the success criteria in the international convention component. The Programme Document described the end of Programme situation as, “Each country will have ratified and implemented the most critical international marine pollution conventions” and that “All countries will have improved administrative and legal structures pertaining to marine pollution.” This situation, realistically, could not be achieved over a five-year period.

Although the number of conventions and protocols ratified by participating countries increased by 91% (from 34 to 70), and progress towards improved administrative and legal structures was made in some countries, the dual goals were not accomplished. When formulating capacity building programmes of this nature, it should be recognised that the pace of delivery extensively depends on: a) political will; and b) the availability and accessibility of appropriate human resources, within the participating countries.

## IMO Programme Development and Management Office Organisational Chart





## Implementation Strategies and Processes

The scope of the Regional Programme, and the complex nature of activities, required that the Programme Development and Management Office (PDMO) locate in the region. PDMO was staffed with three internationally recruited professionals and a team of national technical and administrative support staff. The Government of the Philippines hosted PDMO at the Department of Environment and Natural Resources (DENR) in Manila.

### Programme Development and Management Office

PDMO played a central role in the day to day management of the Regional Programme. It had a wide range of responsibilities including planning and co-ordinating Programme activities; recruiting project personnel and short-term consultants; organising workshops and conferences; conducting training courses; and disbursing funds. PDMO regularly monitored progress and assessed outputs of each of the more than one hundred projects, subprojects, tasks and activities. It maintained close working relationships with relevant central and local governments, donors, UN agencies, international organisations, non-government bodies and other interested groups. Most importantly, PDMO provided leadership and technical advice in the execution of Programme activities.

By all accounts, PDMO functioned efficiently and effectively in the execution of the activities. This was possible because of the confidence it enjoyed with GEF, UNDP and IMO headquarters, as well as with the participating governments. The support expressed at the annual Programme Steering Committee meetings reflected such confidence. The Mid-Term External Evaluation Team (1997) concluded that *"PDMO is seen as a strong, effective office, successfully leading and managing the implementation of Programme activities."*

The decentralisation of responsibility for project implementation, from IMO headquarters to the field office, was a key to the effectiveness of PDMO. One year into the Programme, IMO's Secretary-General delegated increased administrative authority and responsibility to the regional office. Although this move did not entirely eliminate stress at headquarters and the field office, which was primarily related to the issue of project management versus project delivery, it was a major accomplishment. The eventual solution lay in improved communication, and a mutual appreciation of the roles and responsibilities of IMO, both as an executing agency and project implementer.

### Programme Steering Committee (PSC)

The Programme Steering Committee (PSC) was composed of representatives from the eleven participating governments, concerned donors, international and regional organisations, UNDP and IMO. The PSC met annually to assess the progress of the work programme, provide policy guidance on programme matters and ensure that the Programme was responding to the needs of the region. The annual PSC meeting was particularly important as it provided a useful forum for participating nations and other partners to understand and to appreciate the operation of activities region-wide. The PSC also approved annual workplans and budgets.

Not all countries joined the Regional Programme in the beginning. There were concerns over duplication of effort with existing regional programmes and confusion concerning the mandate of the executing agency. Criticisms were also levelled at the choice of demonstration sites. At the launching meeting in Xiamen in November 1993, only five countries participated. After further clarification and preparation of a comprehensive work programme, ten countries participated in the 1<sup>st</sup> PSC meeting, held in Manila in June 1994. One

year later all eleven countries became active participants in the Regional Programme, with Japan joining the PSC in an observer status.

Change of perception began to occur with increased understanding and appreciation of the Regional Programme's objectives and mode of operation. Confidence was enhanced with the accomplishment of early outputs. Towards the project's mid-term, the Regional Programme received strong support from participating countries and increased recognition from its early critics. Perception changes were prominent among government officials and scientists involved in work at the two ICM demonstration sites, as a better appreciation of the concept of integration, the value of stakeholder consultation and the need to focus research on solving management problems, began to take hold.

### **National Expertise and Networks**

The use of national experts for the implementation of activities was a critical component of the capacity building strategy. However, it also had its down side. Lack of proficiency in English affected the quality of reports and often delayed outputs. Competing demands for qualified national experts proficient in the English language often limited their availability. Thus, it was essential to allow adequate time and support mechanisms to national experts in order to complete project activities and produce outputs that could be shared among the participating countries.

The use of specialised networks proved to be a cost-effective option. The networks contributed to the upgrading of national capacity and strengthening of working relationships among network members from different nations. Through the legal database and related training courses, members of the legal network were able to strengthen national legislation for ratifying and implementing international conventions.

### **Implementation Processes**

Implementation of the two ICM demonstration sites validated the strategies, processes and sustainable mechanisms for addressing marine pollution at the local level. The local interagency project committees were gradually transformed into permanent interagency, multi-sectoral consultative bodies. The project site offices became part of the government establishment, with an operational budget and permanent staff. Local institutionalisation actions ensured the continuation of the ICM programme beyond the life of the Regional Programme.

In the case of the Malacca Straits demonstration project, the project was planned and implemented in consultation with the governments of the three littoral States. The actual implementation of project activities was undertaken by a multi-disciplinary team of more than 30 scientists, technicians and professionals from institutions in Indonesia, Malaysia and Singapore. The working relationships, confidence and experience gained by the individual team members and institutions in forging an environmental information system for the sub-regional sea area was an important milestone of the project. The "shared" environmental information system was not only the first of its kind in the subregion, but was also the knowledge base upon which an environmental risk and management analysis of the Malacca Straits was completed. The information system thus demonstrated its potential as a valuable instrument for managers and decision-makers in the three countries, for developing and analysing environmental management options for transboundary marine pollution in the Straits of Malacca.

Another lesson from the implementation experience was that pre-training of project staff is essential in order to ensure quality outputs and timely delivery of project activities. Difficulties encountered during the initial phases of operation at the two demonstration sites could have been reduced or avoided if adequate train-

ing had been given to the project staff prior to project start-up. Without adequate preparation, site staff relied heavily on guidance provided by PDMO. This delayed many project deliveries and overtaxed the limited human resources within PDMO.

The same lesson applies to administrative matters, especially with respect to financial management and related approval processes. Although workplans and budgets were approved on an annual basis, delays in the approval of contracts and agreements with other project partners created unnecessary stress and friction between headquarters and the field office. Administrative procedures, including appropriate financial authorities and control mechanisms, need to be laid out with a clear appreciation of project demands, size and pace of operation. Once a project has been initiated, lack of forethought on these matters leads to inefficiency and delay.

Government bureaucracy also needs to be considered in the planning and implementation of regional projects of this nature. A full understanding of government operating procedures helps to reduce duplication of effort and delays in official response. The Regional Programme frequently experienced situations where responses to invitations to meetings, training programmes or workshops were overdue. This caused several problems for PDMO, not the least of which was the last minute panic to secure travel visas for country nominees. Sufficient lead times and reliable lines of communication with government officials are essential components for strengthening interactions with government agencies.

## **Two Steps Forward and One Step Back**

One of the greatest challenges to the Regional Programme was maintaining momentum, in respect of support, interest and enthusiasm

by the participating governments. Changes in government administrations, national focal points and key officials at the local and national levels are a natural occurrence. In one national agency, working relationships were re-established with three Secretaries (Ministers) and numerous Undersecretaries (Deputy Ministers) in the course of 5 years, in order to maintain support for the Programme. In the case of the two demonstration projects in Batangas and Xiamen, changes in local officials affected the work programme. It was always difficult to convince a new administration to take pride in the ongoing programme of the previous administration. The value of institutionalising ICM as part of the local government's regular programme became apparent. Personality conflicts and "turf protection" were also real issues, threatening the stability and continuity of the ICM programme. Such matters, although the responsibility of local government administrators, could not be ignored by the Regional Programme.

Summing up the experience, progress was best described as "two steps forward and one step back". It was the accumulated knowledge, incremental progress and purposeful outputs that make the experience a practical lesson for others.

## **Mobilisation of External Resources**

The Regional Programme did not operate in isolation. Collaborative and co-operative working arrangements were developed with donors, UN and international agencies, the private sector, NGOs and other interested groups. In 1995, 5 co-operative activities were implemented. In 1996, there were 9, and by 1998 the total number had increased to 19. Most of these collaborative activities were facilitated through formal agreements. Since 1994, 24 such agreements have been concluded with national and international partners.

## Collaborating with International Partners 1998-99

P A R T N E R	C O L L A B O R A T I V E   A C T I V I T Y
<b>United Nations Development Programme (UNDP)</b>	<ul style="list-style-type: none"> <li>• ICM parallel sites in the Masinloc-Oyon Bay, Ormoc Bay and Macajalar Bay, Philippines, and Guang Xi, Hainan and Guangdong, China</li> <li>• National ICM demonstration projects in Cambodia, DPR Korea, Malaysia, Indonesia, Thailand and Vietnam</li> </ul>
<b>Swedish International Development Co-operation Agency (Sida)/SAREC/ Coastal Management Center (CMC)</b>	<ul style="list-style-type: none"> <li>• Regional Training Course on the Application of Integrated Coastal Management System for Marine Pollution Prevention and Management</li> <li>• Training Workshop on Integrated Environmental Impact Assessment for Coastal and Marine Areas</li> <li>• Developing Institutional Capacity in Managing Marine Pollution in Vietnam: Marine Scientific Survey and Pollution Monitoring</li> <li>• Publication of <i>Tropical Coasts</i></li> </ul>
<b>Collaborative Environmental Project in Indonesia (CEPI), CIDA</b>	<ul style="list-style-type: none"> <li>• Workshop for Sub-Regional Cooperation in Oil Spill Modeling in the Malacca Straits</li> </ul>
<b>City University of Hong Kong</b>	<ul style="list-style-type: none"> <li>• Training Workshop on Integrated Environmental Impact Assessment for Coastal and Marine Areas</li> <li>• Special Session for Malacca Straits Demonstration Project, the 2<sup>nd</sup> International Conference on Marine Pollution and Ecotoxicology</li> </ul>
<b>Government of the Republic of Singapore, Maritime and Port Authority (MPA) of Singapore, Australian Maritime Safety Authority (AMSA), East Asia Response Limited and Shell Pacific Enterprises Ltd.</b>	<ul style="list-style-type: none"> <li>• OPRC Training Course for the First Responders/On-scene Commanders, Thailand and Brunei Darussalam</li> <li>• OPRC Training Seminar for Senior Managers and Administrators, China</li> <li>• OPRC Training Course on Train-the-Trainers, Singapore</li> </ul>
<b>Japan Association of Marine Safety, Japan Hydrographic Department and Maritime Safety Agency</b>	<ul style="list-style-type: none"> <li>• Regional Workshop on the Marine Electronic Highway, Singapore</li> </ul>
<b>UNDP/Strategic Project Management</b>	<ul style="list-style-type: none"> <li>• Investors' Round Table on Public-Private Partnerships: Investment Opportunities in Coastal and Marine Sectors, Manila, Philippines</li> <li>• Development of Investment Opportunities for Integrated Waste Management in Batangas</li> </ul>
<b>Advisers of the Urban Environment and Development of the Urban Waste Expertise Programme (WASTE/UWEP)</b>	<ul style="list-style-type: none"> <li>• Establishment of a local management co-ordinating body in the Municipality of Bauan</li> <li>• Development of a community-based waste management system under a community-private partnership in Bauan</li> <li>• Enhancement of resource recovery and recycling sector in the Batangas Bay project area</li> <li>• Integrated waste management in Tingloy</li> </ul>
<b>Norwegian Government</b>	<ul style="list-style-type: none"> <li>• Co-operation on ratification and implementation of MARPOL in Cambodia, Indonesia, Vietnam and the Philippines</li> </ul>
<b>Canada-ASEAN Centre, WASTE, Sida/CMC, Coordinating Body on the Seas of South-east Asia (COBSEA) and Department of Environment and Natural Resources (DENR)</b>	<ul style="list-style-type: none"> <li>• International Conference on 'Challenges and Opportunities in Marine Pollution Prevention and Management in the East Asian Seas', March 1999, Philippines</li> </ul>
<b>Universiti Putra Malaysia, Japan International Co-operation Agency (JICA), Islamic Education, Scientific and General Organization (ISESCO) and The British Council</b>	<ul style="list-style-type: none"> <li>• International Conference of "Towards Sustainable Management of the Straits of Malacca: Scientific Basis, Technical and Financial Options," Malaysia, April 1999</li> </ul>

## Mobilisation of In-Country and External Financial Resources

	1994-1996 (US\$)	1996 (US\$)	1997 (US\$)	1998 (US\$)	1999 (US\$)	TOTAL (US\$)
<b>In-Country Resources</b>						
Xiamen Municipality	552,000	276,000	552,000			1,380,000
Env. Science Research Center, Xiamen University					168,500	168,500
Government of the Philippines:						
Contribution to the Regional Programme	380,000	166,740	102,000	105,898		754,638
Contribution to Capacity Building for ICM				230,858		230,858
Batangas Provincial Government						
Contribution to the Regional Programme	8,000	180,077	231,327	175,367	68,025	662,796
Contribution to ICM Training Center					220,062	220,062
SOA, China (International ICM Workshop)		3,840				3,840
OPRC Training:						
Host Country (Brunei & Thailand)			22,700			22,700
BAPEDAL, Indonesia (Oil Spill Modelling Workshop)				6,000		6,000
Philippine Ports Authority			150,000			150,000
KORDI, Republic of Korea	25,000	39,000				64,000
<b>SUB-TOTAL</b>	<b>965,000</b>	<b>665,657</b>	<b>1,058,027</b>	<b>518,123</b>	<b>456,587</b>	<b>3,663,394</b>
<b>External Resources</b>						
Government of Norway (MARPOL Project)		160,000				160,000
UNDP/CHINA (Capacity Building for ICM in Northern South China Sea (1997-2000))			3,427,729			3,427,729
SIDA/SAREC/CMC/IMO Joint Project (1994-1996)	650,000					650,000
SIDA-Supported Training Course/CMC	7,600	39,420	30,381	24,000		101,401
SIDA/CMC (Sustainable Financing Conference)		50,000				50,000
IDRC (Sustainable Financing Conference)		15,000				15,000
SIDA/CMC (International ICM Workshop)		50,000				50,000
SIDA/CMC (International Conference-ICCOMP)					11,200	11,200
DANCED (International ICM Workshop)		15,000				15,000
Philippine Coast Guard-PCG (ICM Workshop)			800			800
OPRC Training:						
Australia Maritime Safety Authority-AMSA			12,500			12,500
East Asia Response, Ltd.-EARL			12,500			12,500
WASTE (1997-1999)			600,000			600,000
PPP/UNDP			150,000			150,000
SIDA/CMC (1997-1999)			1,250,000			1,250,000
IMO (Training Courses, Workshop)			75,000	130,000	37,200	242,200
JAMS, Japan (MEH Workshop)				2,600		2,600
NUS, Singapore (Training Course)				1,235		1,235
UNDP/Philippines-Capacity Building for ICM				2,028,680		2,028,680
Training/Workshop/Consultancy Fee (1995-1996)		76,356				76,356
<b>SUB-TOTAL</b>	<b>657,600</b>	<b>405,776</b>	<b>5,558,910</b>	<b>2,186,515</b>	<b>48,400</b>	<b>8,857,200</b>
<b>GRAND TOTAL</b>	<b>1,622,600</b>	<b>1,071,432</b>	<b>6,616,937</b>	<b>2,704,638</b>	<b>504,987</b>	<b>12,520,595</b>

From 1994 to 1999, a total of US\$12.53 million in extra-budgetary funds was mobilised. The support was unprecedented in previous international water projects in the region and was an indication of the interest that donors, international bodies and governments had in the objectives and work programme of the Regional Programme. The commitments were also a signal that the strategy of sharing resources, as partners in a project of common interest, is attractive and workable among the various sectors. In a time of competing demands and scarce financial resources, the partnership arrangement proved to be a most advantageous path for intergovernmental, interagency and intersectoral collaboration and co-operation.

### **Collaborative and Co-operative Arrangements**

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*“The Programme has catalysed an increasing number of collaborative and co-operative working arrangements with donor and international agencies. The commendable efforts have mobilised in-country and external financial resources for specific project activities, many of which are co-sharing arrangements.”*

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Final Project Evaluation Report, 1998

# Strengthening the Foundation

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## Capacity Building

Capacity building has been implemented with a particular vision in mind; that being to narrow disparities in marine pollution prevention and management capabilities among the eleven participating countries. Although the prominent progeny of the Regional Programme were the working models for ICM and risk assessment/risk management, a number of training programmes, tools and guidelines were also developed that cut across marine pollution issues and concerns of the region. These supporting initiatives are categorised under training, public awareness and sustainability. It is not possible to provide a comprehensive description of each of the tools in a summary report. However, the following examples are provided to illustrate the work that was completed, as well as

the building blocks that are available to assist with the transfer of the working models to other sites and to other environmental issues throughout the region.

### Training Programmes

Over the past five years, 29 training courses and workshops have been organised. These covered various topics, including: integrated coastal management (ICM); oil pollution preparedness, response and co-operation (OPRC); integrated environmental impact assessment (IEIA); marine pollution monitoring; pollution risk assessment/risk management (RA/RM); natural resource damage assessment (NRDA); development and application of geographic information systems (GIS); strategies, tools and techniques for implementing international conventions and recovery of oil pollution cleanup costs and damage claims.

### Major Achievements:

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- Adapting ICM demonstration sites in Batangas and Xiamen as “laboratories” for regional training
- Facilitating institutional arrangements, including government agencies, the private sector, academic institutions and NGOs for sustaining local, national and subregional efforts to protect the coastal and marine environment
- Developing specialised management-oriented training courses/workshops, based on the outputs and experience of the Regional Programme
- Establishing a pool of expertise within the region to implement marine pollution programmes

### Strategies in Capacity Building:

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- *Increase the specialised skills to plan, implement and evaluate marine pollution management programmes*
- *Strengthen capabilities to implement international conventions*
- *Develop capacities and mechanisms for establishing and sustaining facilities and services in marine pollution prevention and management*
- *Enhance management-oriented research capabilities*

The Programme has supported over 1,270 participants, mostly from the 11 participating countries.

Specialised management-oriented training programmes have been developed to address the needs of the region in general and individual countries in particular. The training programmes have not only drawn on the practical experiences of the Regional Programme, but from model training packages of other institutions and international programmes as well.

#### **Demonstration Sites as Training Labs**

The two ICM demonstration sites have been sharing their experience by way of workshops, study tours and annual regional training courses. Participants from across the region have learned about: institutional arrangements; legislation and enforcement; marine pollution monitoring and assessment; scientific and technical services; sustainable financing options; and public awareness from the practical applications in Batangas and Xiamen.

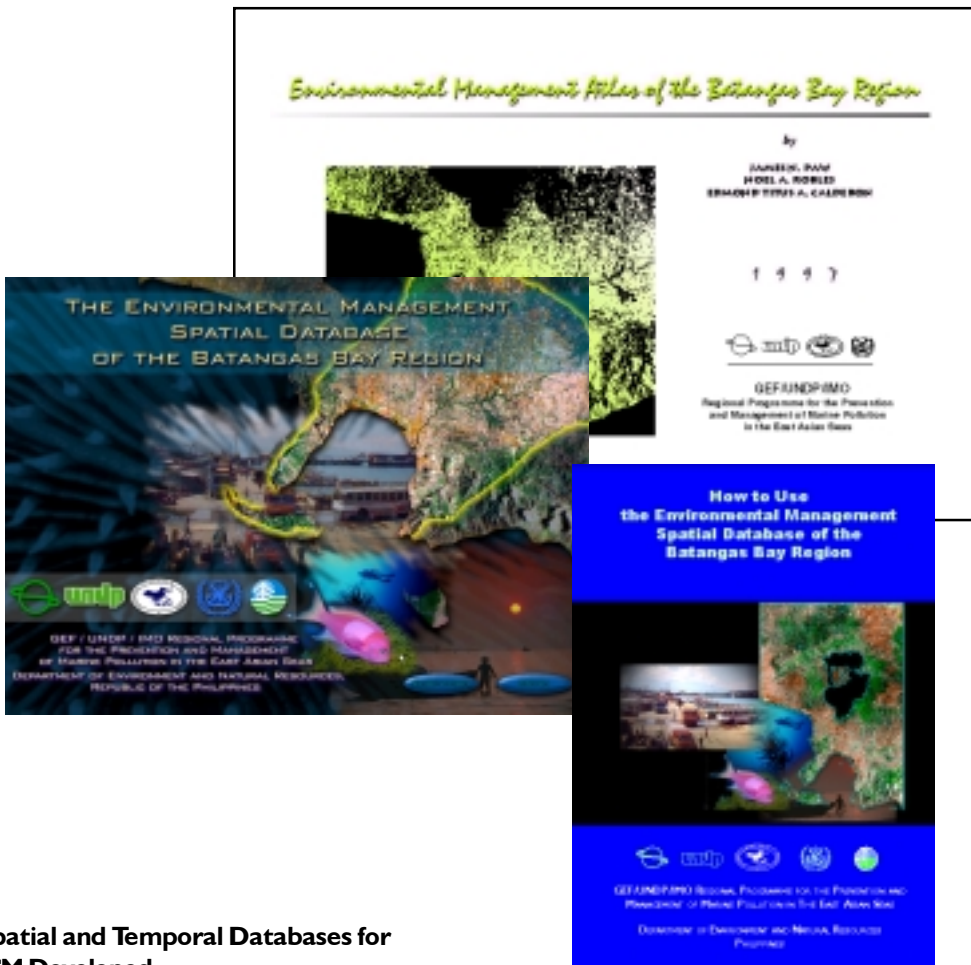
In the two demonstration sites, with assistance from the Programme, local governments and universities jointly developed ICM training centers to facilitate the sharing of experience at the national and regional level. The ICM working models, the experience

and lessons learned in the two sites were customized into training programmes, manuals and case studies. Local professionals were trained to deliver the training programmes. Training facilities were developed. The two demonstration sites are expected to play an active role in the replication of ICM practices in the region.

ICM experts from around the world attended the International Workshop on Integrated Coastal Management in Tropical Developing Countries: Lessons Learned from Successes and Failures, held in Xiamen, in May 1996. Initial results from the two demonstration projects were presented, and used in the development of the workshop's main findings, which are contained in the document, "*Good Practices in the Formulation, Design and Implementation of Integrated Coastal Management Initiatives*". The "*Good Practices*" guide was eventually translated into nine languages, and distributed throughout the region, as well as to Africa and South America.

The Malacca Straits Demonstration Project tested two processes for enhancing environmental management of coastal and marine ecosystems, namely: environmental risk assessment/management (RA/RM); and natural resource damage assessment (NRDA). The experience and outputs of the demonstration project were packaged into two training manuals. The manuals were field-tested at a regional training workshop, held in Singapore in October 1998. As a result of the workshop, modular training programmes were published for application throughout the region.





**Spatial and Temporal Databases for ICM Developed**

Environment planning capacity in Batangas and Xiamen was upgraded through the installation of GIS facilities and the training of local staff. The GIS facilities, including both necessary hardware and software, are now fully functional and being used by the local planning units, environmental agencies, etc. The database framework and service functions are now being updated and customised into a generic integrated information management system (IIMS), which will be applied at ICM sites and subregional seas across the region.

**Oil Pollution Preparedness, Response and Co-operation (OPRC)**

The Regional Programme has accorded high priority to the enhancement of capability in

oil spill preparedness and response, in recognition of the more than one-quarter billion tonnes of oil and petroleum products that are transported by ships within the East Asian Seas each year. The OPRC model courses developed by the International Maritime Organization (IMO) have been modified and applied to meet the training needs of the region, including training for supervisors and on-scene commanders (IMO Model Course Level 2) conducted in Brunei Darussalam and Thailand in 1997, training of administrators/senior managers (IMO Model Course Level 3) completed in Dalian, PR China, in June 1998, and train-the-trainers course conducted in Singapore in October 1999.

The OPRC training has been supported by the IMO, the Government of the Republic of Singapore, Maritime Port Authority (MPA) of

### **Constraints to Regional Training Courses:**

- Identification of appropriate candidates from a cross-section of departments, agencies, institutions and levels of government
- Language used in training courses, and in training materials, is normally English, which limits participation to English speaking candidates

Singapore, the Australian Maritime Safety Authority (AMSA), East Asia Response Limited (EARL, Singapore) and Korea Shell Pacific Enterprises Ltd.

### **Integrated Environmental Impact Assessment (IEIA)**

Activities were undertaken to strengthen environmental impact assessment (EIA) as a more effective tool for decision-makers. The Regional Programme, in collaboration with the Coastal Management Center (CMC) and the Swedish International Development Co-operation Agency (Sida), organised a group of experts in the region to develop a training package that incorporated advancements in determining accumulative ecosystem impacts and economic valuation of environmental consequences. The training package was first tested and applied at a training workshop on Integrated Environment Impact Assessment (IEIA) for Coastal and Marine Areas at the City University of Hong Kong in December 1997. The training workshop was repeated at the National University of Singapore in November 1998.

### **Recovery of Oil Spill Clean-up Costs and Pollution Damage Claims**

Compensation for oil spill clean-up costs and damage is a common concern among countries in the region. The Regional Programme, in collaboration with the Maritime and Port Authority (MPA) of Singapore, organized a workshop in Singapore in September 1999. The Work-

shop identified legal and technical problems, which are impeding countries from obtaining full benefits under the CLC and FUND Conventions, and priority areas and measures of capacity building at the national and regional levels. The approaches and measures recommended by the Workshop will be addressed in the follow-on phase of the Regional Programme.

### **Opportunities Created for Young Scientists and Professionals**

Eight young scientists and professionals from the region were trained at the Regional Programme's Office in Manila through an internship programme. Interns are given an opportunity to develop skills in ICM programme implementation, marine pollution monitoring, environmental and socio-economic impact assessment, implementation of international conventions and so on. First-hand experience in assisting with project development and management activities also fortified an intern's capacity in future marine pollution project initiatives in his/her country. An additional advantage of the programme has been the strengthening of linkages between the Regional Programme and the home institutions of the eight interns.

### **South-South and North-South Co-operation**

The Regional Programme has emphasised collaboration among developing countries within the region, and among regions. This has been

evidenced through training activities, study tours and workshops on the experience and lessons from the project demonstration sites. For example, experts from the Philippines and Thailand have provided technical assistance to Vietnam to strengthen institutional capacities in pollution monitoring and management programmes. Similarly, scientists from Cambodia and DPR Korea were trained in marine pollution monitoring techniques in China (Xiamen and Dalian). All instructors for the ICM Regional Training Course and the Training Workshop on Integrated Environmental Impact Assessment were drawn from the countries of the region.

South-South co-operation has been extended outside the region also. National professionals from East Africa and South America have attended the ICM Regional Training Course to learn from the experiences in the region. Also, experiences on project design and management have been shared with the GEF International Waters project in East Africa, and on waste management with countries of Southern and Eastern Africa in a joint IMO/UNEP/IOC initiative.

There has also been a transfer of knowledge and technology from the North to the South, particularly in areas where expertise is lacking. For example, the methodology for implementation of a region-wide environmental risk assessment was developed and applied in the Malacca Straits through the joint efforts of experts from the North and a team of scientists from the region. The training programme, which was developed as a means of transferring the experience to other scientists in the region, included local instructors with the practical knowledge gained from the demonstration project.

## Major Activities Contributing to Capacity Building, 1994-1998

### Training

- training needs assessment
- training courses and workshops
- staff exchange programme
- in-service training

### Technical Assistance in Marine Pollution Monitoring and Assessment

- Cambodia
- DPR Korea
- Vietnam

### Networking

- Regional Network for Marine Pollution Monitoring
- Regional Network for the Legal Aspects of Marine Pollution

### Technical Co-operation among Developing Countries

- national professionals to undertake capacity building activities
- experts from region to provide technical assistance
- technical staff from the region in programme management (e.g., internship programme)

### South-South Co-operation

- participating countries share expertise in training programmes
- national professionals from East Africa and South America undertake training organised by the Regional Programme
- translation of *ICM Good Practices* into Swahili, French and Portuguese

## Endangered Species: A Priority Concern in Xiamen

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An ICM Contingent Valuation Survey was conducted in Xiamen in July 1998. The survey was designed to assess public awareness with respect to local environmental issues, and to determine the people's "willingness to pay" to improve existing environmental programmes in four main areas:

- Fisheries management
- Protection of endangered species
- Environmental management of beaches and water quality
- Sewage and solid waste management.

A total of 1,860 residents of Xiamen completed survey questionnaires over a five-day period.

Results of the survey showed that the residents of Xiamen have a high awareness of their environment, and various opinions on how to improve existing environmental programmes. In an area of the survey form where respondents were asked to give their views on environmental protection and coastal and marine resource management in Xiamen, more than 80% of the residents took the time to make personal remarks on existing programmes. Comments showed that there is substantial support for environmental programmes.

In the willingness to pay portion of the survey, 85% to 95% of the respondents indicated their support for preservation of endangered species in the Xiamen Sea, with preservation of the egret receiving highest ranking, followed by the Chinese white dolphin and the lancelet. Marine conservation areas and supporting legislation have been adopted by the Xiamen Government for the preservation of these endangered species. When asked how much they would be willing to pay to support preservation programmes, the average amount tendered by respondents was RMB 85 (approximately US\$10).



*The egret is the mascot of Xiamen*



*The Chinese white dolphin (*Sousa chinensis*) is a favorite of tourists and residents alike in Xiamen*



*The lancelet (*Branchiostoma belcheri*) is a rare warm water benthic species, considered a living fossil*

## BATANGAS BAY WATCH

To boost the implementation of the integrated waste management programme and marine environment monitoring activities, the Batangas “Bay Watch” movement was organised. Bay Watch is a public awareness programme targeted at the youth, as active partners in the management and protection of the bay. As a Bay Watcher, he or she will work closely with the Environment and Natural Resources Office of the Provincial Government to monitor and report any incidence of pollution in the Bay area, and participate actively in information dissemination. Major outputs of the movement include: awareness enhancement activities by the youth; reduction of waste dumping and littering in the Bay area; and improved handling and management of waste on school premises and other public areas. The Bay Watch was officially launched in March 1998 by the Provincial Governor Hermilando I. Mandanas. Membership identification cards and orientation have been provided to nearly 1,000 students.



### Creating Public Awareness

Creating public awareness is one of the essential elements in ensuring sustainability of the project results. An educated public plays a dual role, that of supporting and assisting programme implementation, and contributing to the monitoring of progress and impact of management interventions.

In Batangas, “Cleanest Village” contests are held regularly, as a reminder of the importance of one’s immediate environment. “Bay Watch” activities and a special weekly radio programme devoted to the Bay environment also help maintain a high degree of environmental concern and conscientiousness among the populace.

In Xiamen, the number of environment-related recommendations tabled in the local consultative and legislative assemblies significantly increased in 1996 and 1997. The recommendations concerned such issues as functional use zoning of coastal and marine areas, waste management and environment improvement projects. The increase in concern and actions by the governing bodies is attributed to a growing public environmental awareness in Xiamen.

### Promoting Connectivity

The Regional Programme promotes connectivity through multi-media information networking, including the Internet, a directory of

institutions, a regional legal network, a regional marine pollution monitoring network, the International Waters LEARN programme, and two newsletters—the biannual *Tropical Coasts* and the quarterly *Marine Pollution Updates*.

- **Websites**

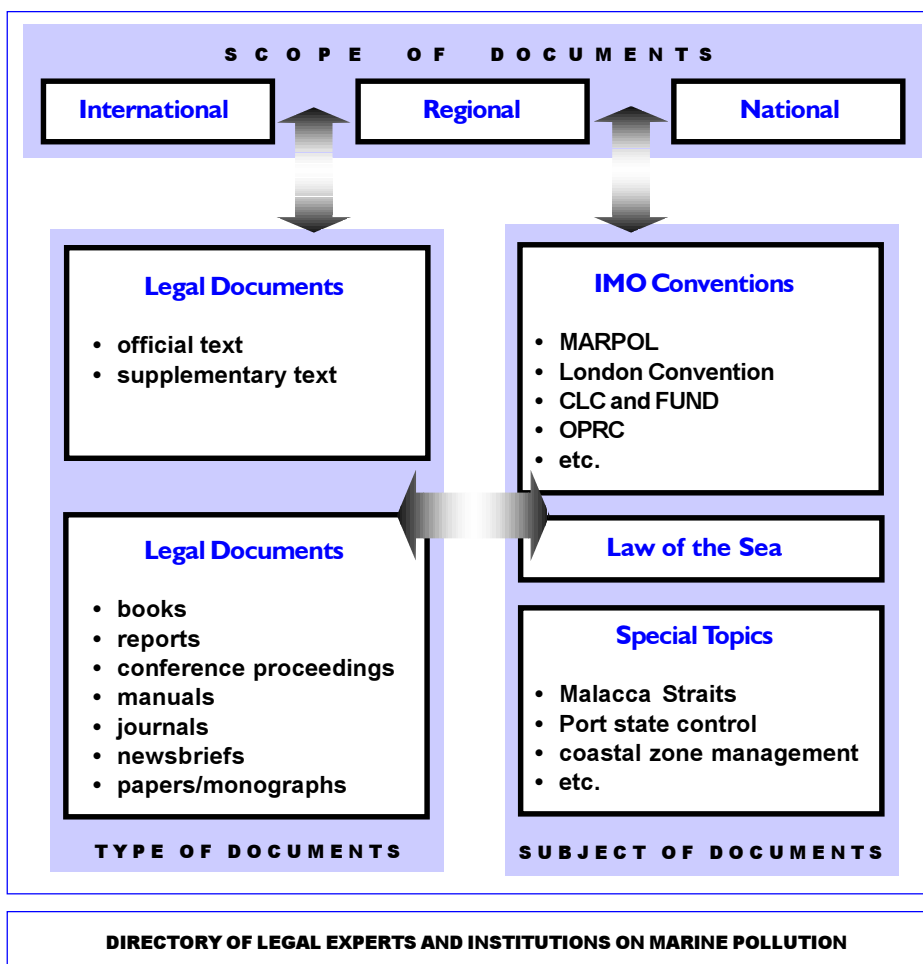
The Regional Programme operates an Internet Home Page (<http://www.imo.org.ph>) for the dissemination of Programme activities and outputs. As of March 1999, more than 700 visitors have accessed the site. The menu

provides a wide range of activities being undertaken as part of the Regional Programme, as well as linkages to other regional and global bodies and programmes.

- **Virtual ICM**

To facilitate the dissemination of practical experience in ICM application, the Regional Programme produced a Virtual ICM, an internet web-based product ([www.imo.org.ph/primordial/ventrance.html](http://www.imo.org.ph/primordial/ventrance.html)). The features of Virtual ICM include an online quiz to enhance user-site learn-

### Schematic Representation of the Contents of the Legal Information Database



ing and a message board to enable user-user interaction and reflection on the subject of ICM.

- **Video Programme**

The Global Village of Beijing, a non-government organization for environmental protection, produced a video on the Regional Programme entitled “Safeguarding the Health of the East Asian Seas.” The video featured ICM practices in tackling marine pollution problems, stakeholder involvement, environmental monitoring efforts, and the implementation of measures to insure the sustainability of ICM initiatives.

- **Regional Directory**

A listing of institutions in the region that deal with research and management of marine resources and the marine environment has been compiled by the Regional Programme. The aim is to promote closer co-operation and collaboration among research and management institutions in the region in the resolution of environmental issues. In 1998, the number of directory entries increased from 218 to 231. A final version is available on the Programme’s web page.

- **Legal Information**

The Network on Legal Aspects of Marine Pollution is proving effective in the exchange of legal concepts, knowledge and experience among regional network members. The Legal Information Database is one of the tools that has been developed to enhance the capacities of network members to work with their governments to ratify and implement conventions. The database contains 600 reference materials pertaining to marine pollution, including the texts of international and regional conventions, national legislation, articles, books and other materials relating to

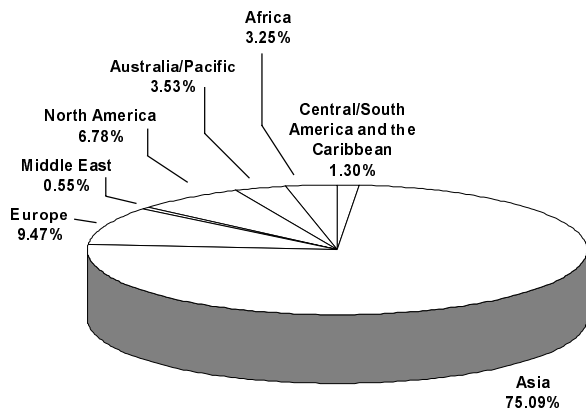
marine pollution. The Legal Information Database Reference Catalogue (LIDRC), which lists all reference materials available along with a brief abstract, is on the Regional Programme’s Web Page.

National legislation contained in the database has been reviewed by the Regional Programme, and the results provide a good background on existing legislative structures among participating countries relative to obligations under international conventions related to marine pollution.

- **Monitoring Network**

The Marine Pollution Monitoring and Information Management (MPMIM) Network was launched to strengthen linkages among scientists in the region, specifically in sites where ICM is practiced. The Network serves as a channel for the exchange of information on the state and trend of marine pollution in East Asia. One of the activities being implemented is the development of site-specific monitoring programmes by member institutions, and link-

### Dissemination of Tropical Coasts Newsletter





ing the member institutions through Internet, for the purpose of sharing monitoring results and related information on ICM implementation.

- **IW:LEARN**

The Regional Programme is one of Global Environment Facility (GEF) projects in the International Waters Learning Exchange and Resource Network (IW:LEARN). IW:LEARN is a UNDP-imple-

mented distance learning project. Its purpose is to create synergy among the growing community of international waters projects financed by the GEF and other donors. Eventually, it will link projects among the three GEF Implementing Agencies (UNDP, World Bank and UNEP), providing up-to-date information on each project. If successful, IW:LEARN will contribute significantly to South-to-South exchange, more equitable sharing of science and technology, and enhanced follow-through of regional agreements and international conventions to protect global waters.



- **Tropical Coasts**

*Tropical Coasts* is a newsletter published to stimulate exchange of information and sharing of experience and ideas with respect to environmental protection and the management of coastal and marine areas. It is published biannually (July and December). The newsletter targets policymakers, environmental managers, scientists and resource users. It is sponsored by the Sida/SAREC Marine Science Programme, GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas and the Coastal Management Center.

The newsletter is distributed to over a thousand individuals and institutions worldwide, including 126 libraries.

- **Marine Pollution Updates**

*Marine Pollution Updates* is a newsletter published quarterly. It provides relevant information on the latest activities of the Regional Programme as well as contributes to efforts on public awareness.

## **Creating Sustainability**

Sustainability was embodied in the overall strategy and activities of the Regional Programme. It was not a separate activity, but rather a vital component of all activities. From the planning and development of the national ICM demonstration sites... to the ratification of international conventions... to the formulation of marine pollution monitoring and evaluation programmes, the manner and means of ensuring the extension and replication of each major initiative beyond the term of the Regional Programme were considered. Such considerations involved institutional arrangements, training, awareness building, public sector-private sector partnership development, identification and testing of innovative management tools, preparation of investment opportunities, formulation of bankable project proposals, etc. In the end, several components of the Regional Programme, those primarily work related to the two ICM demonstration sites, proved the strategy to be valid, while others are now only beginning to emerge as potential mechanisms leading to sustainability (e.g., Natural Resource Damage Assessment).

### **Institutional Arrangements Proven Effective**

The Batangas Bay Environmental Protection Council, composed of concerned government units,

### **Batangas ICM Mechanisms in Action**

The Batangas Bay Environmental Protection Council, together with the Provincial Development Council, screened two proposed reclamation projects in the Bay area in November 1996. In view of the potential for discharge of wastes and other negative impacts on the Bay, the Council requested EIAs of the projects prior to consideration of approval. Eventually, the Council approved a natural gas pipeline to traverse the Bay, subject to the implementation of impact mitigation measures stipulated in the EIA.

private industry and NGOs, and the Environment and Natural Resources Office of the Provincial Government, the implementing arm of the Council, were established in 1996. These mechanisms have proven effective in building up stakeholder consensus and shaping up major coastal projects having potential impact on the Bay region.

There are several practical examples of the value of the institutional relationships. A case in point, in 1998, the Environment and Natural Resources Office of the Provincial Government, in

response to the complaints of local communities over alleged waste discharges from two distilleries into the Palico and Bagbag Rivers, organised site inspections to the two firms. Included on the inspection team were representatives from a local radio station, local branch offices of the Department of Environment and Natural Resources (DENR), Pollution Adjudication Board, mayors of the concerned municipalities and an NGO representative. Based on the inspection, the two distilleries were ordered to evaluate their waste treatment facilities and to verify the ef-

### **Legislation to Strengthen the Role of Local Governments in Coastal Management**

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Sectoral laws on such specific coastal management issues as navigational safety, fisheries, coastal engineering and mineral resources are fairly common in the region. For the first time in PR China, a law (Regulations of Xiamen Municipality on the Use of Sea Areas) has been enacted by a local legislative assembly to focus on multiple coastal use issues using ICM approaches. The regulations mandate “the competent marine management sector”, namely the Interagency Steering Group for Marine Management and Co-ordination and its implementing arm, the Marine Management Office of the Municipal Government, to co-ordinate permit reviews for all projects affecting the coastal waters. The regulations require consideration of the marine functional zonation in the review and approval of development projects, and the institution of fees for exclusive rights to use coastal water areas for commercial purposes.

The Philippine “Local Government Code 1992” facilitates a decentralisation policy and broadened base of mandates for the local governments in environment and natural resource management. However, implementation mechanisms and procedures, in many cases, have not yet been developed. A Memorandum of Understanding between the Provincial Government of Batangas and the Philippine Department of Environment and Natural Resources (DENR) has been formulated, enabling devolution of functions related to the EIA review and approval processes. The MOU was signed in February 1999.

## Development of Legal Instruments for Marine Environment in Xiamen

Year	Major Project Activities	Legal Instruments
1994	<ul style="list-style-type: none"> <li>• <b>Strengthening local government commitments</b></li> <li>• <b>Public awareness campaigns</b></li> </ul>	<ul style="list-style-type: none"> <li>• Regulation for Environmental Protection</li> </ul>
1995	<ul style="list-style-type: none"> <li>• <b>Integrated management committee/office established</b></li> <li>• <b>Profile/environment management plan prepared</b></li> <li>• <b>Marine laws reviewed and new legal instruments proposed</b></li> </ul>	<ul style="list-style-type: none"> <li>• Regulations for Managing the Resources of Sands, Rocks and Soils</li> <li>• Regulations for the Management of Navigation</li> <li>• Municipal Ordinance for Egret Nature Reserve in Dayu Island</li> <li>• Administrative Rules on the Relocation of Aquaculture in the Marine Area for the Siting of Xiamen Shipyard</li> <li>• Administrative Rules for Strengthening the Management of Catching Marine Eel Larvae</li> <li>• Regulations for the Management of Water Resources</li> </ul>
1996	<ul style="list-style-type: none"> <li>• <b>Yuan Dang Lagoon case study</b></li> <li>• <b>Wastes problems and management assessed</b></li> <li>• <b>Aquaculture impact study</b></li> <li>• <b>Integrated monitoring system established</b></li> </ul>	<ul style="list-style-type: none"> <li>• Municipal Ordinance for Managing Yuan Dang Lagoon Area</li> <li>• Municipal Ordinance for Urban Landscaping and Environmental Health</li> <li>• Administrative Rules for Aquaculture in Shallow Seas and Tidal Flats</li> <li>• Regulations for Marine Environment Protection</li> </ul>
1997	<ul style="list-style-type: none"> <li>• <b>Integrated environment impact assessment</b></li> <li>• <b>Functional zoning scheme developed</b></li> <li>• <b>Studies on sustainable financing mechanisms</b></li> </ul>	<ul style="list-style-type: none"> <li>• Regulations for the Uses of Sea Areas</li> <li>• Regulations for the Protection of Chinese White Dolphin</li> <li>• Regulations for the Management of Tourism</li> <li>• Government Notice on Implementation of Xiamen Marine Functional Zoning Scheme</li> </ul>


fectiveness of the systems in reducing harmful impacts of the receiving waters, or face the suspension or closure of operation.

### Putting the Legal Teeth into ICM

Legislation to strengthen the role of the local government in managing major coastal development projects has taken place in Batangas and Xiamen. In Batangas, implementation of EIA related functions is a key area of interest, as a consequence of a national policy which devolves responsibility from central government to local governments. ICM legislative efforts in Xiamen focused on the issues of cross-sector co-ordination in the coastal project review and permit process, scientific

decision-making and the use of market-based instruments. The adoption of administrative rules for relocation of mariculture from the shipping area, and for eel larvae harvesting, helped the marine management office to resolve conflicts between navigation and fisheries. Marine functional zonation, integrated environment impact assessments and studies on sustainable financing mechanisms and options, provided scientific basis for the Regulations of Xiamen Municipality for Uses of the Sea Area.

The experiences at the two sites provided modalities to address legal issues relating to both inter- and intra-governmental dimensions (i.e., agency vs. agency, and national vs. local government).

<p style="text-align: center;"><b>Implementation of London Convention: Xiamen</b></p>  <p>Note: MSG = monosodium glutamate (a food seasoning)</p>	<p><b>London Convention 1972</b></p> <ul style="list-style-type: none"> <li>• Criteria for selection of suitable sea disposal sites (e.g., depth; dilution; distance from coast)</li> <li>• Dumping of industrial wastes prohibited, as of January 1996</li> </ul>
	<p><b>Local Government Actions</b></p> <ul style="list-style-type: none"> <li>• <b>October 1990</b> Dumping of waste water inshore (West Harbour) prohibited</li> <li>• <b>1990 - 1994</b> New dumpsite (Zhenghaijiao) designated in a high energy environment with a water depth of 13-30 m and 16 km offshore of Xiamen</li> </ul>
	<p><b>Results</b></p> <ul style="list-style-type: none"> <li>• <b>1995</b> Dumping MSG waste water terminated</li> </ul>

Another interesting aspect of the local government initiatives was the direct impact on national obligations under international conventions. As an example, the Xiamen Government relocated a designated dumpsite for ocean disposal of monosodium glutamate (MSG), in consideration of the London Convention 1972. Alternate solutions were eventually developed by industry, and ocean disposal of MSG was terminated in 1995. Termination of the dumping practice occurred prior to the global ban on ocean dumping of industrial waste, which came into effect on 1 January 1996. A similar situation is occurring in Batangas. There, waste derived from ships and port areas (i.e., MARPOL 73/78), as well as hazardous waste generated by industrial, commercial and institutional operations (Basel Convention), are being addressed within an integrated waste management action plan that has been adopted and implemented by local government. This confirms that programmes at the local level contribute directly to the implementation of global legal instruments.

## Manual on Economic Instruments for ICM

Most environmental policy instruments used by governments are of the “command-and-control” variety, and seek to achieve mandated environmental standards through fines and legal sanctions. However, integrated coastal management, risk assessment/risk management and environmental impact assessment show that understanding the full costs and benefits of a project or programme, including environmental concerns, is essential in making investments and effective decisions. A proper understanding of the balance between the costs of pollution and resource depletion and the costs of mitigating these problems can and should lead to improved environmental policies.

Experiences in industrialised regions of the world provide helpful insight into the use of economic instruments to achieve environmental objectives. In preparing the Manual on Economic

Instruments for ICM, the Regional Programme considered the experiences from the developed world, in tandem with the capabilities and needs of local governments in the East Asian Seas region. In reviewing and selecting appropriate economic instruments for inclusion in the Manual, criteria for assessing and designing the instruments were considered, including:

- effectiveness in achieving the environmental goal;
- the ability to achieve the environmental objective at a lower cost than other policies;
- the short-term costs that can be expected, and the time required before environmental and economic benefits are realised;
- administrative, monitoring and enforcement costs;
- consistency with other government policies, in particular programmes and activities which are designed as an incentive to economic development;
- the distribution of impact within and among economic sectors and society as a whole;
- legal authority to introduce and implement the economic instrument;
- acceptance and understanding of the instrument by the general public;
- factors concerning international competitiveness.

Among the economic instruments reviewed in the Manual, along with examples of application, are user charges, deposit-refund schemes, transferable development rights, risk-liability schemes and environmental bonds.

## Straits of Malacca Environmental Information System

The vast coastal resources of the Straits of Malacca are under increasing stress as a consequence of land- and sea-based human activities in the subregion. The three littoral States have been working co-operatively for a number of years to protect the resources in the Straits, primarily focused on navigational safety and ma-

## **Environmental Guarantee Funds/Environmental Monitoring Funds**

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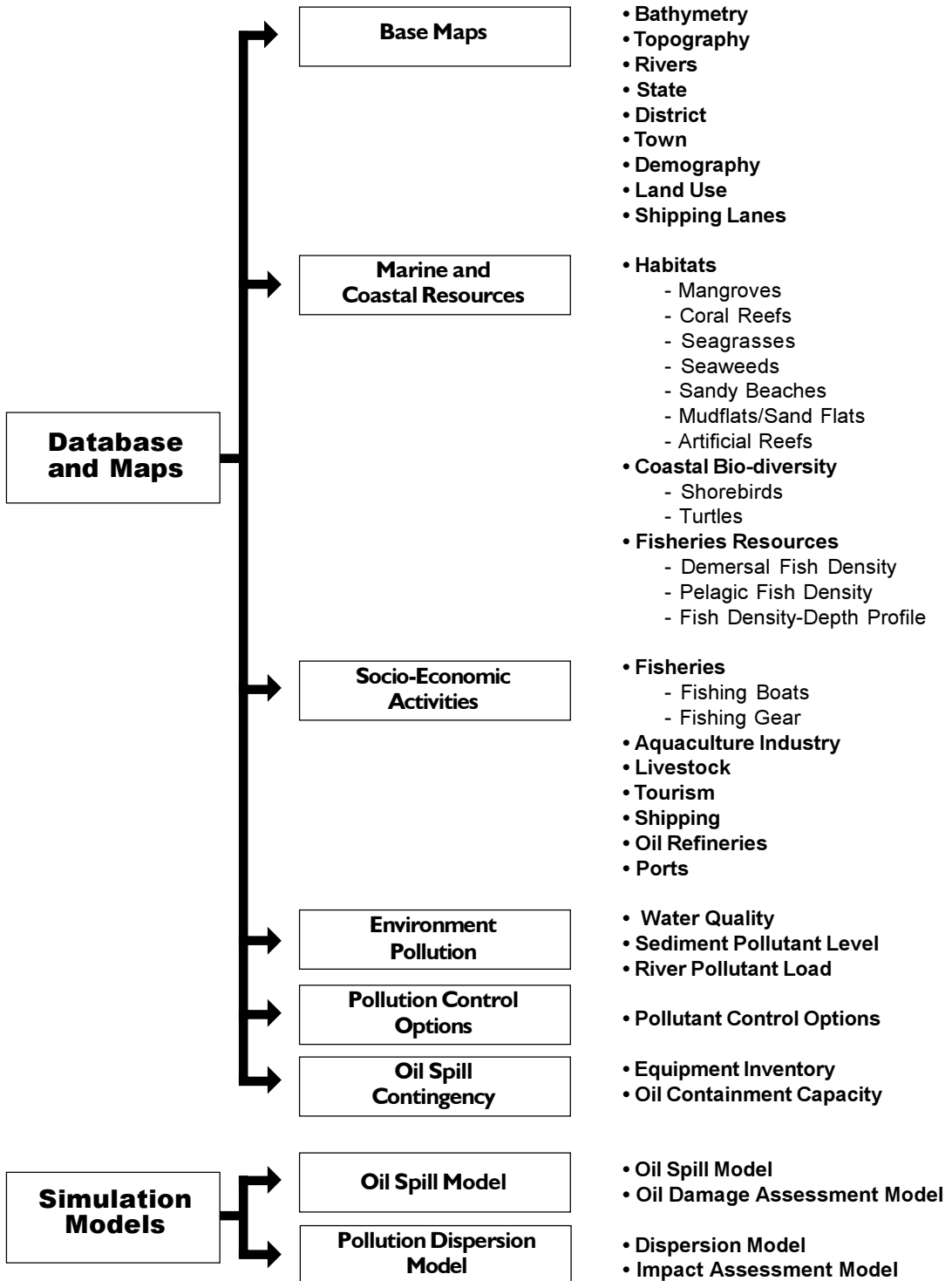
An **environmental guarantee fund (EGF)** is a type of economic instrument that falls under risk-liability schemes, which require firms to post monetary bonds before operations begin. These bonds will be forfeited if the firm's activities result in excessive pollution levels or cause detrimental effect on the environment. Thus, the burden is shifted from society to the firm for the potential damages.

An **environmental monitoring fund (EMF)** is a fund that project implementers are required to establish when an operating permit/environmental compliance certificate is issued by a government authority, to be used to support activities related to monitoring the firm's compliance with the designated permit/certificate. A multi-sectoral team is convened for the purpose of conducting the compliance monitoring, with the composition and responsibilities of the team to be agreed upon by the project implementer, the government authority and major stakeholders.

The EGF and EMF mechanisms are examples of economic instruments that make project proponents, or the market, take greater responsibility in ensuring that their activities do not have deleterious impact on the environment. In consonance with the polluter pays principle, these economic instruments call for the increasing role of the private sector in environmental management.

A crucial question is whether local governments can or should establish EGFs and EMFs on their own, or rely on central government to develop such mechanisms. There are legal issues to be assessed when contemplating these instruments. If local governments are given fund-raising powers by central government, then these two mechanisms represent an opportunity to exact contributions not only from project proponents but also from business establishments in their jurisdiction who benefit from or utilise the coastal resources. However, matters such as local government territorial jurisdiction, uniformity among local governments, procedures for assessing funding levels, fund security and administration, etc. all require careful evaluation. There is regional experience in the Philippines and Malaysia with these instruments.

## Component Modules of the Database and Maps of the Straits of Malacca Environmental Information System (SMEIS)



rine pollution prevention and response associated with shipping in the international strait.

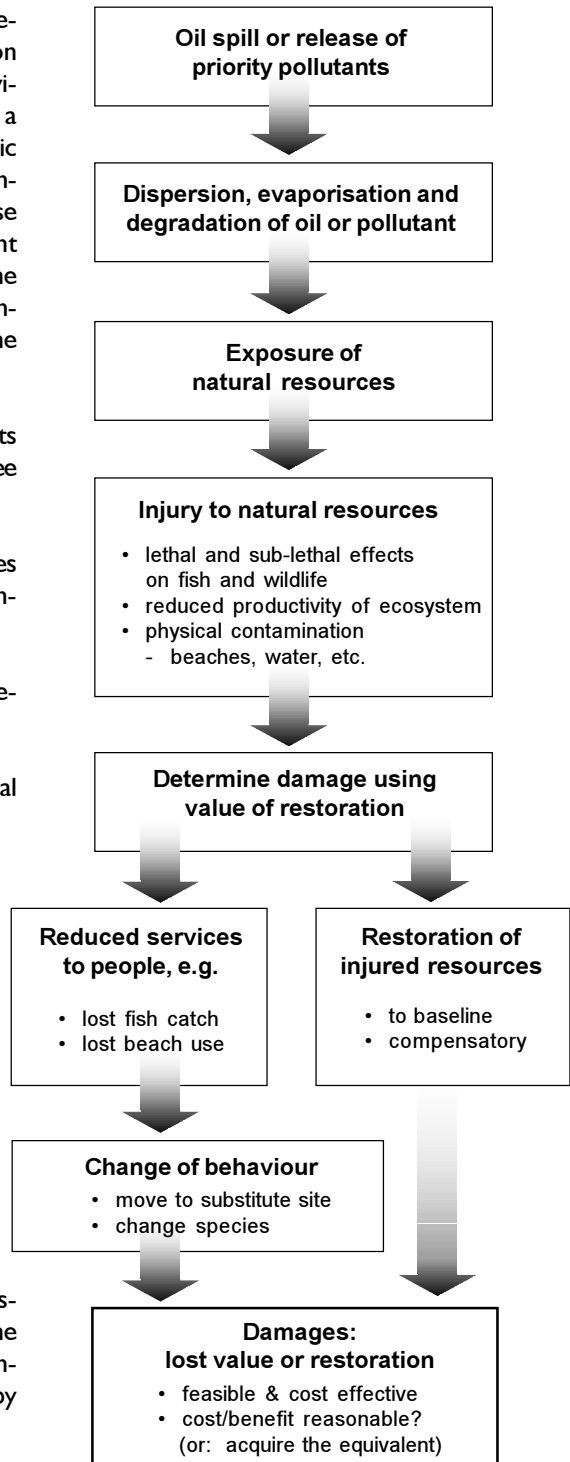
One of the principal outputs of the Malacca Straits Demonstration Project was a comprehensive database and geographic information system (GIS) entitled, Straits of Malacca Environmental Information System. The system is a Windows-based software that provides a basic framework for the operation of an environmental and marine and coastal resource database and computer mapping, as well as different physical models. In designing the system, the objective was to provide an environmental management and decision support system for the Malacca Straits.

In completing the system, 15 subprojects were initiated by scientific institutions in the three littoral States. The institutions were:

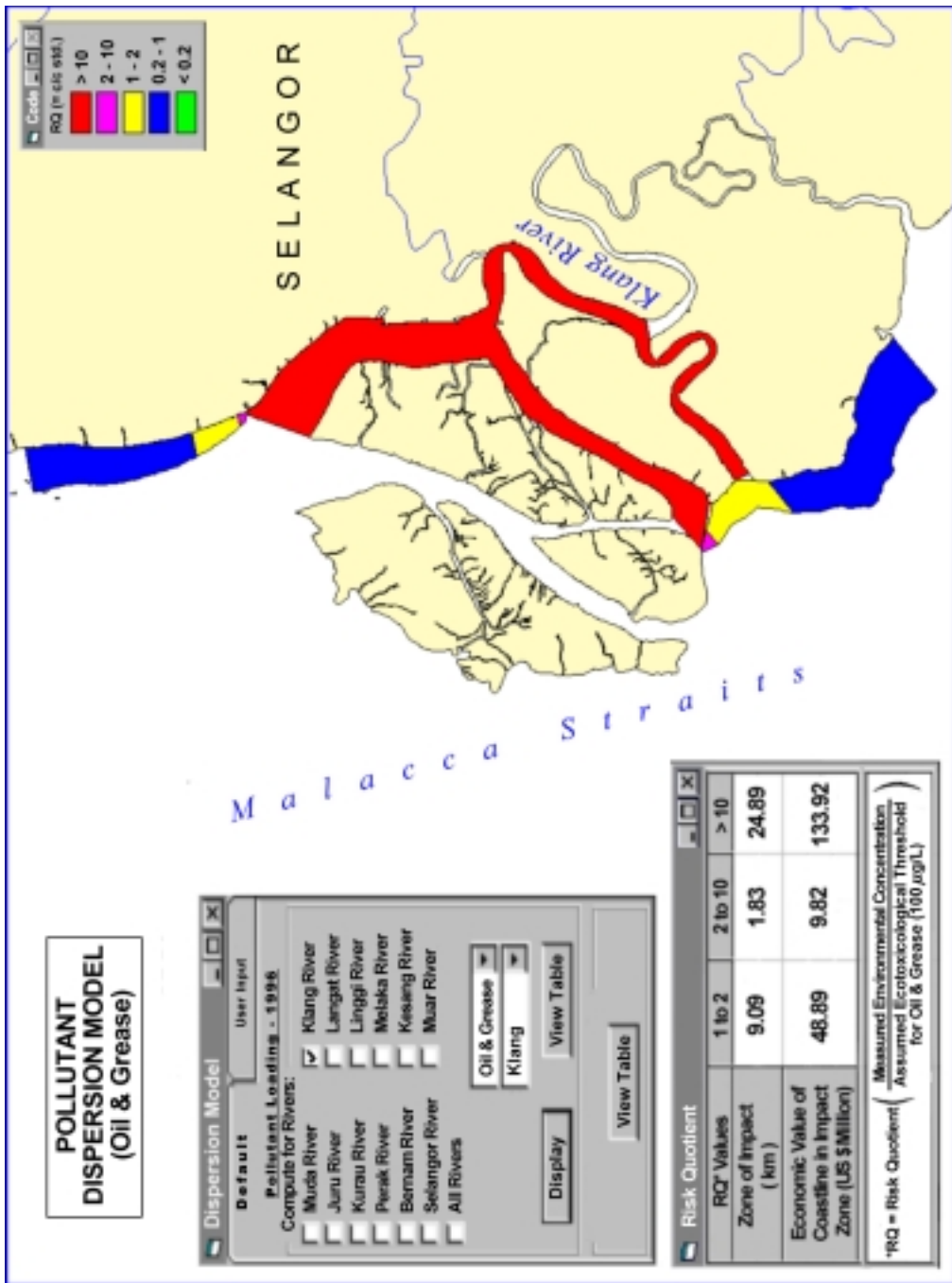
- Center for Coastal and Marine Resources Studies, Bogor Agricultural University, Indonesia
- Institute of Postgraduate Studies and Research, University of Malaya, Malaysia
- Tropical Marine Science Initiative, National University of Singapore, Singapore

The system is menu driven, with seven sub-modules; five for databases and two for modeling. Base maps include bathymetry, topography, rivers, state, district, town, demography, land use and shipping lanes. Database and/or map overlays are available on marine and coastal resources, socio-economic activities, environmental pollution, pollution control options and oil spill contingency. The modeling sub-modules include oil spill trajectory and pollutant dispersion. The two models are linked to the database, to provide a rapid assessment of resources that are at risk in the coastal area, as well as an estimate of the potential economic impact on the area threatened by pollution.

## Simplified Representation of NRDA Process







Source: Straits of Malacca Environmental Information System, 1999.

### **Natural Resource Damage Assessment: A Sustainability Tool**

Natural Resource Damage Assessment (NRDA) is a process that involves the use of legal, scientific and economic principles to assess monetary damages due to pollution. Liability for damages from pollution, as quantified in a NRDA, provides an additional measure for sustainable financing by compensating for injuries and lost services of natural resources due to transboundary pollution.

NRDA consists of a formalised process, within an institutional regime, that supports the quantification of allowable losses from pollution incidents and the collection of resulting damage claims.

The intended outcome of a NRDA is a claim against a responsible party. As a result, NRDA necessarily involves tensions and adversarial debate between government, which is responsible for implementing and enforcing NRDA, and industry, which must respond to and pay legitimate claims, and coastal businesses and users

harmed by marine pollution. Critics of NRDA question the reliability and, in some cases, the appropriateness of NRDA assessments. Supporters of NRDA acknowledge the many difficulties that arise in quantifying loss, but make comparisons with the many empirical challenges and uncertainties addressed as a matter of course when assessing damages in other contexts, such as the value of intellectual property rights, of business anti-trust issues, and losses from personal injury, including the wrongful death of victims, in work-related accidents.

The Regional Programme has developed a NRDA model for the Malacca Straits, as an integral component of the Malacca Straits Environmental Atlas. The NRDA model is linked to the GIS database for the Straits, and runs in combination with the related oil spill trajectory or pollutant fate models. The result is a graphic presentation of the potential effects of an oil spill or pollutant discharge, as well as an estimate of the economic value of coastal and marine resources that are at risk as a consequence of such occurrences.

# Consolidating Outputs and Lessons Learned

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## Integrated Coastal Management (ICM)

The Regional Programme has accomplished more than 100 projects and subprojects. Most activities were interrelated, with the output of one project providing a result to further another, or an experience to feed into the capacity building constituent. This section contains a review of principal categories of activity, namely those associated with ICM and risk assessment/risk management demonstration projects, international conventions, marine pollution monitoring and sustainable financing. In addition to reviewing the progress made, a sampling of changes that occurred in public awareness, and the reactions of government and private sector stakeholders, is given. Finally, an assessment of the benefits of such changes is provided.

*“Improved environmental quality in the River Thames in England, Boston Harbor in the United States, and Xiamen Harbor in China show that determined, coordinated action can produce benefits even in large urban areas, where development and population pressures are concentrated.”*

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IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), 28<sup>th</sup> Session, Geneva, 20-24 April 1998

### Major Achievements:

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- Operationalisation of a generic integrated management framework for marine pollution prevention and management in Batangas Bay and Xiamen
- Packaging the experience and lessons learned from the ICM demonstration sites for extension region-wide

The demonstration sites in Batangas (Philippines) and Xiamen (China) were both successful in implementing comprehensive ICM programmes. Over the life of the project, they were able to establish and operationalise interagency and multi-sectoral co-ordinating mechanisms, which included all relevant government agencies. In addition, each site developed a prioritised agenda, undertook capacity building to strengthen their planning and management capability, developed environmental quality monitoring programmes, established mechanisms to ensure the sustainability of the programmes and promulgated needed local laws to legitimise institutional arrangements and permit systems.

ICM programme sustainability at the two sites has been bolstered by the changes in perception and attitude that has occurred among government officials and other local stakeholders. In Xiamen, senior government officials have seen the socio-economic and ecological benefits of Yuan Dang lagoon cleanup. Improvement of water quality through management interventions is apparent and they have seen how the functional zonation scheme has helped to reduce user conflicts, resulting in more willingness among the officials of various government agencies to work together. Perception changes are also apparent among the scientists in Xiamen, moving from single, disciplinary research to interdisciplinary, management-oriented research. The local government set up an integrated law enforcement arrangement that has increased the overall efficiency of government enforcement programmes.

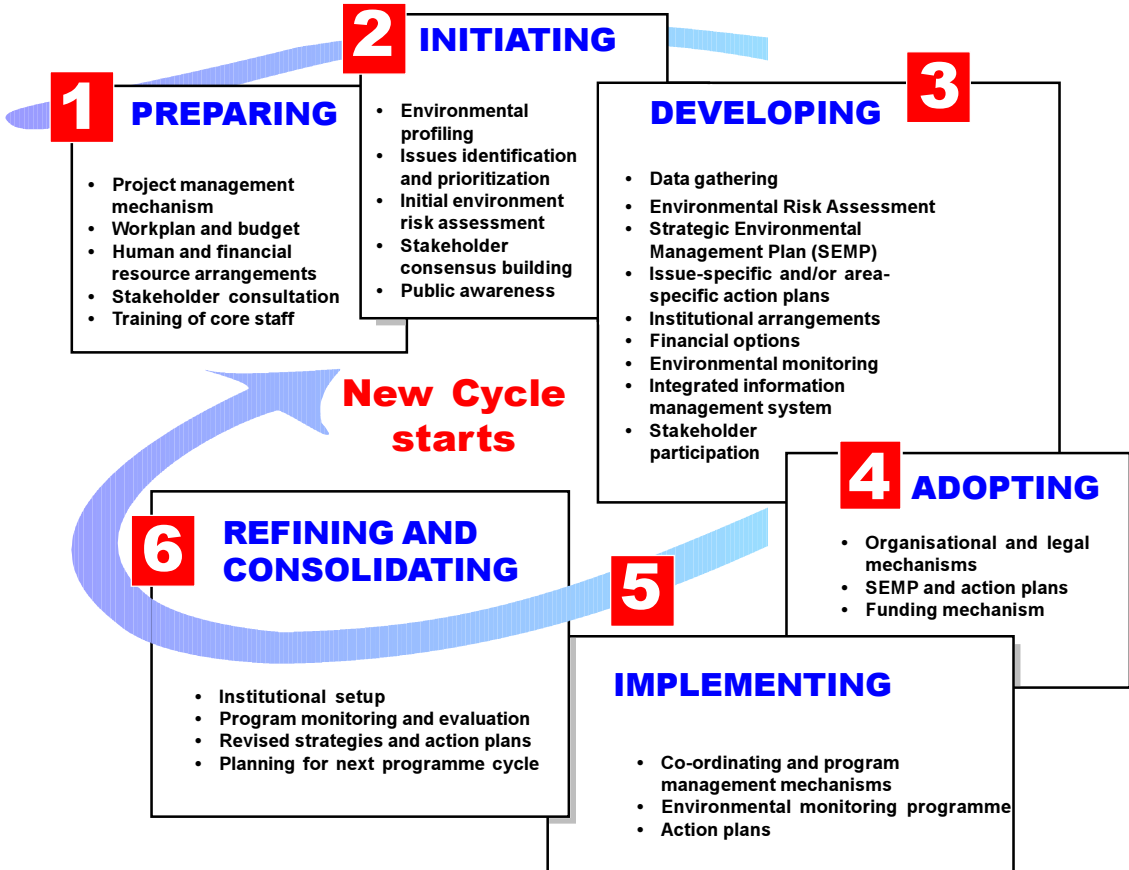
In Batangas, changes in perception and programmes of action have also occurred among politicians and private sector stake-

holders. The Provincial Government Environment and Natural Resources Office was established, including human and budgetary resources, with the ICM programme as a principal activity. The private sector in Batangas established the Batangas Coastal Resources Management Foundation (BCRMF), comprised of 23 large- and medium-sized industries located in the bay area, with a focus on protection and conservation of the bay. Although ecological and socio-economic impacts of ICM initiatives have not yet become evident in Batangas, the water quality monitoring programme shows that environmental quality is being maintained. An oil spill that occurred in the Bay in 1996 was efficiently contained by the oil spill combating facilities of the oil companies, with the support of local communities. There are better dialogues between various users concerning management of the Bay, through the interagency, multi-sectoral Batangas Bay Environmental Protection Council, thus avoiding unnecessary conflict and duplication of effort between public and private sector user groups in the Bay.

### **Project Development and Implementation Cycle**

The implementation of ICM demonstration programmes in Batangas and Xiamen has taken from four to five years, covering project preparation, initiation, development, adoption, implementation, consolidation and refinement processes, which follow a cyclical pattern. The two demonstration projects were implemented in a relatively short period of time, considering the conventional view that a time frame of 8-15 years is required, depending on project size and complexity.

## ICM Project Development and Implementation Cycle



The time reduction was basically due to the political will and commitment of the local governments, optimal use of existing information and intensive efforts to promote stakeholder consultation and participation. As the projects are approaching the end of their cycle, emphasis is being given to the consolidation of the project results and the formulation of ICM programmes for the next cycle, taking into account changed circumstances and the need for management refinements. For example, in Xiamen, em-

phasis will be given to the development of a joint management regime over the Jiulong Estuary, which is shared between Xiamen Municipality and its neighbouring Zhangzhou Prefecture. In Batangas, a draft plan for a new ICM cycle was developed. The draft plan recommended the strengthening of ICM mechanisms at the municipal level thereby enhancing the ability to protect and manage local coastal habitats.

## ICM Practices in Batangas and Xiamen, 1994-1998

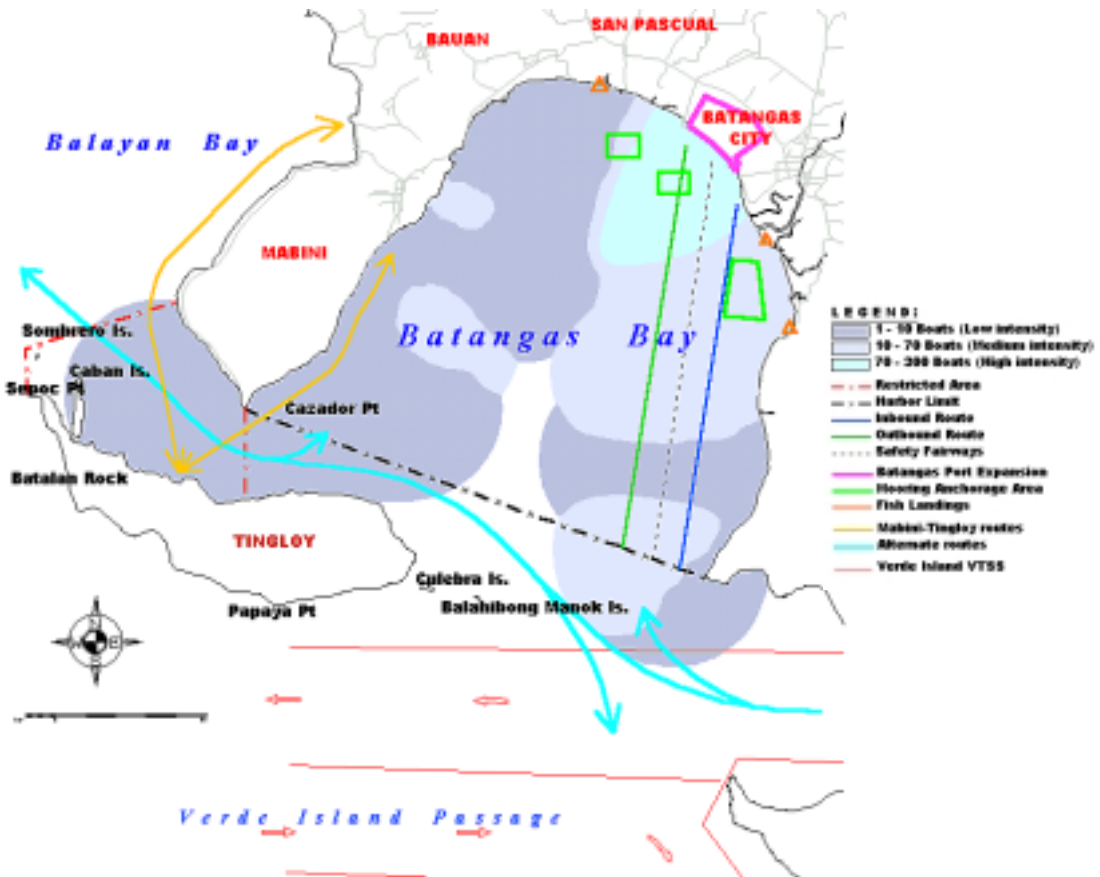
	<b>PROJECT OUT-PUTS</b>	<b>PROJECT ACTIVITIES</b>
<b>1</b>	<b>Institutional arrangements, including organisational and legal</b>	<ul style="list-style-type: none"> <li>• coastal policy co-ordination mechanisms involving all the stakeholders</li> <li>• organisational structure for project co-ordination and implementation</li> <li>• operational arm for project co-ordination and implementation</li> <li>• scientific input to coastal management decision-making</li> <li>• legislation implementing ICM policies and practices and the use of market-based instruments</li> </ul>
<b>2</b>	<b>Information/database development</b>	<ul style="list-style-type: none"> <li>• multidisciplinary information management and dissemination</li> <li>• profiling environmental, socio-economic and management conditions</li> <li>• identification of major environment problems and management issues</li> <li>• packaging information to increase public awareness</li> </ul>
<b>3</b>	<b>Environmental impact/risk assessment</b>	<ul style="list-style-type: none"> <li>• qualitative and quantitative assessments of trade-off between economic development and loss of resources and environmental services</li> <li>• prioritisation of concerns and identification of management options</li> </ul>
<b>4</b>	<b>Strategic Environmental Management Plan (SEMP)</b>	<ul style="list-style-type: none"> <li>• packaging of institutional, technical and economic interventions to tackle identified concerns</li> <li>• stakeholder consensus building</li> <li>• identification of financing needs and investment opportunities</li> <li>• adoption of SEMF by government authority as part of its overall socio-economic development programme</li> </ul>
<b>5</b>	<b>Management Action Plan (MAP)</b>	<ul style="list-style-type: none"> <li>• development of integrated MAP to address priority environment/resource conservation concerns, e.g., pollution, fisheries, biodiversity, habitats, etc.</li> <li>• assessment of appropriate sustainable financing mechanisms, including public-private partnerships</li> <li>• adoption of MAP by appropriate government authorities</li> </ul>
<b>6</b>	<b>Integrated land and water use zoning</b>	<ul style="list-style-type: none"> <li>• definition of zoning objectives and classification criteria and schemes based on the requirements of SEMF and MAP</li> <li>• stakeholder consultation</li> <li>• adoption of integrated zonation scheme by the appropriate government authority for use in permit process</li> </ul>
<b>7</b>	<b>Environmental monitoring programme</b>	<ul style="list-style-type: none"> <li>• monitoring programme to determine the effectiveness of policies, zonation schemes and other management interventions in maintaining/enhancing the life support system of the local ecosystem</li> <li>• networking of monitoring programmes among ICM sites</li> <li>• harmonisation of environment quality criteria and standards</li> <li>• application of monitoring data in environment quality assessment, EIAs and policy-making</li> </ul>
<b>8</b>	<b>Sustainable financing mechanisms</b>	<ul style="list-style-type: none"> <li>• forging of public and private sector partnerships in project planning/review, public awareness drives, waste management</li> <li>• defining investment opportunities through prefeasibility studies</li> </ul>
<b>9</b>	<b>Core staff training</b>	<ul style="list-style-type: none"> <li>• training in ICM concepts and practices using demonstration sites as a "laboratory"</li> <li>• cultivation of interdisciplinary, interagency and intersectoral team work</li> <li>• hands-on experience in project development, implementation and management</li> </ul>
<b>10</b>	<b>Stakeholder consultation and public participation</b>	<ul style="list-style-type: none"> <li>• consultation with industries, private sector, NGOs and local communities</li> <li>• agreements/arrangements for participation in ICM process and project development and implementation activities</li> <li>• formalisation of partnerships to insure project sustainability and effectiveness</li> </ul>

## Water Use Zonation Schemes in Xiamen and Batangas

Zoning schemes have been developed in Xiamen and Batangas to guide use and development of sites and activities in the coastal area. In preparing the zonations, review and analysis of ecosystem functions, socio-economic features and resource valuation were completed. The principal aim was to ensure that the community is provided with optimum advantage as a con-

sequence of development, with due consideration to the environment as a contributing, sustainable resource. In Xiamen, consideration of the functional zoning scheme in siting coastal projects has become a legal requirement (Regulations of Xiamen Municipality on the Uses of Sea Areas). The Batangas Bay Water Use Zonation Scheme has already been applied in the review of a proposed gas pipeline landing project and in the development of a vessel traffic separation scheme (VTSS) for the Bay.

## Vessel Traffic Separation Scheme in the Batangas Bay



## Marine Functional Zoning in Xiamen: Balancing Navigational Safety and Marine Mammal Protection

According to the zonation scheme, shipping and port development are the dominant functions in the West Sea of Xiamen. Tourism (Gulangyu Tourist Islet) is identified as a compatible function and mariculture is a restricted activity, to control the shellfish culturing rafts and fish cages from encroaching on the designated navigational channels.

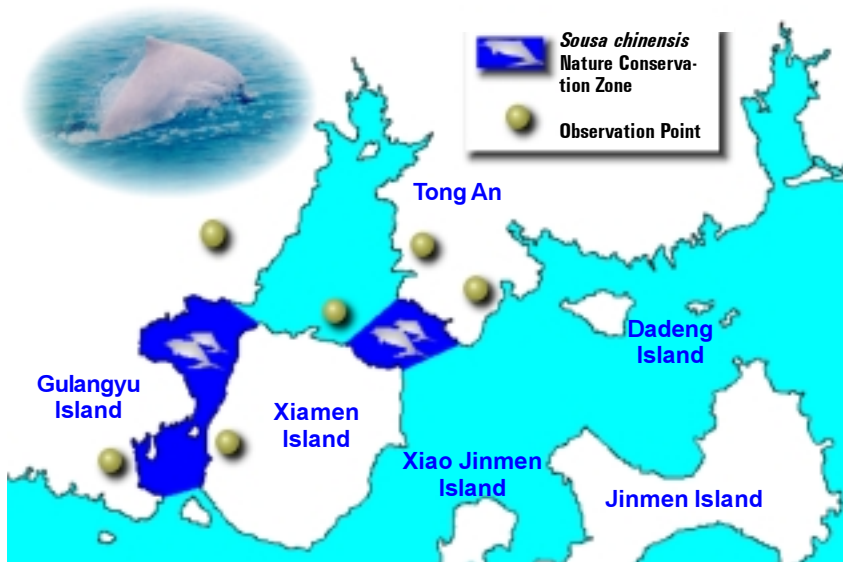
The West Sea is also an important habitat for the Chinese white dolphin (*Sousa chinensis*), a species listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and is classified as a nature reserve for the dolphin. This presents a potential conflict, as a nature reserve law would preclude navigation. The Xiamen Municipal Government issued a special ordinance on the nature reserve, to protect the dolphin and also to allow navigation in the area. The ordinance contains the following legal requirements:

- ship cruising speed to be kept under 8 knots except in emergencies

- no bottom trawling or gill nets
- no high speed recreational boating and surfing
- no effluent discharges, unless under permit and in keeping with relevant standards
- special permits required for reclamation
- no underwater explosions and other activities that would disturb the habitat or increase suspended sediment loads in the water column

A White Dolphin Nature Reserve Management Division was established under the fisheries agency to enforce the ordinance. A Special Fund for White Dolphin Protection of about 1.1 million yuan has been set up to provide food for the dolphin, to promote related research and education and to implement protection measures. Some 19 public institutions and 900 individuals contributed to the fund in 1997. No dolphin catching or killing has been reported since the implementation of the ordinance.

### Nature Conservation Zones for Chinese White Dolphin (*Sousa chinensis*) in Xiamen, China





## Risk Assessment/Risk Management

*“Risk assessment is the first step in the process of moving from a state of environmental inventory to a more detailed analysis of pollution risks and possible needs for management action.”*

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Professor Peter Calow and Dr. Valery Forbes  
Malacca Straits: Refined Risk Assessment  
GEF/UNDP/IMO Regional Programme  
December 1998

## Malacca Straits Demonstration Project

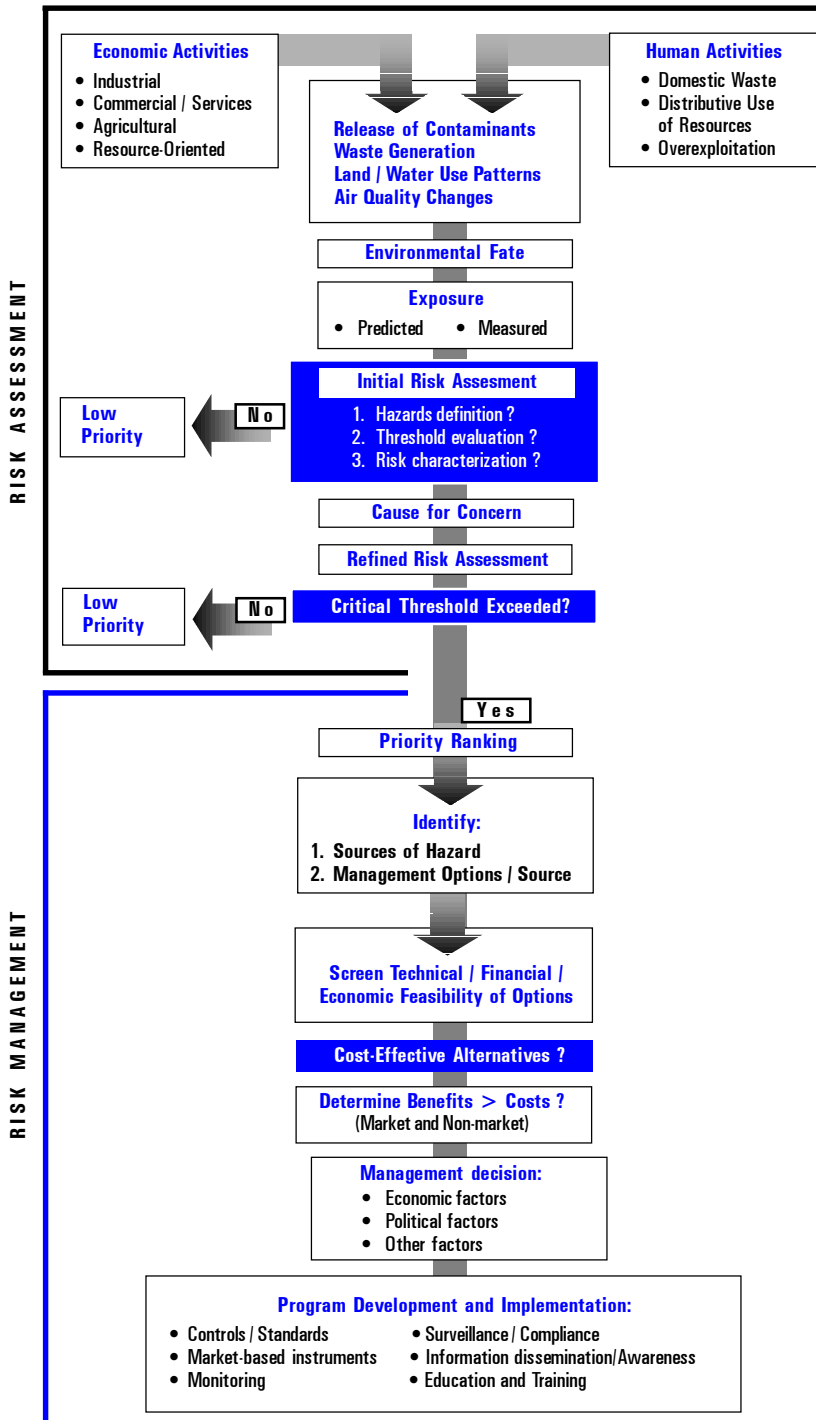
Describing and assessing the states of the environment are central parts of environmental protection. Yet what to measure, and how to relate observed changes either to the consequences of some contaminating processes, or to the implementation of some environmental protection measure, is far from straight forward. Largely, this is because in a complex world, it is often hard to identify specific causes and effects. Nevertheless, state of environment reports and environmental impact assessments are repeatedly being compiled at various scales, from global to regional, national and local. All these reports tend to consider aspects of the environment that are conveniently measured, and to judge “state” either in terms of the presence of hazardous substances or in terms of change in selected variables over time.

### Major Achievements:

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- Development and verification of a systematic process for assessing and managing transboundary marine pollution in the Straits of Malacca
- Creation of an environmental database containing temporally and spatially referenced data on coastal and marine resources and the land- and sea-based activities within and along the Straits
- Calculation of the total economic value (TEV) of coastal and marine resources in the subregion, including services rendered directly and indirectly to various users and beneficiaries
- Formulation of a project proposal on behalf of the three littoral States, related to the development of a self-sustaining information management and distribution system, known as the “marine electronic highway”

# Risk Assessment / Risk Management Framework



A problem with this approach is that it is often hard to pick up relevant and significant effects and changes in a naturally dynamic world. Noise often overwhelms the observations.

The risk assessment approach presumes that it is possible to specify the likely consequences of human activities on ecological systems and on human health. This is frequently accomplished with regard to chemical quality of the environment. It is further often presumed that there will be states of the environment, arising out of human influences in terms of processes and emissions that are associated with a low probability of harm to human health and ecosystems. This suggests that human activities can be managed to achieve these levels, without the need to impose zero emission requirements.

The four goals of environmental risk assessment/risk management of the Malacca Straits were:

1. to demonstrate the application of the risk assessment/risk management approach in a tropical subregional sea area;
2. to identify circumstances of risk in the Straits that invite management attention;
3. to establish areas of scientific and technical need, in terms of information, measurement and possibly research; and
4. to build awareness and confidence among scientists, professionals and managers within the subregion, regarding the use of risk assessment/risk management as a tool for improved environmental management.

## Risk Quotient

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A simple but quantitative approach to risk assessment, which has the potential for more sophisticated development, is risk quotient (RQ), where:

$$\text{RQ} = \frac{\text{Estimated Exposure Concentration (distribution)}}{\text{Threshold No-Effect Concentration (distribution)}}$$

Although one can precisely estimate the probability that RQ exceeds one, a precise probability of adverse effect cannot be calculated. However, when RQ is greater than or equal to one (environmental concentration is greater than the no-effect level), it is presumed that there is likelihood of effect that increases with the size of the ratio. On the other hand, when RQ is less than one (environmental concentration is less than the no-effect level), the likelihood of effect is low and not of concern.

In reality, there will be much uncertainty in the estimates of exposure and critical thresholds, and the RQ assessment should always be associated with an uncertainty analysis, involving qualitative (descriptive) or quantitative (statistical) assessments.

## Environmental Risks in the Malacca Straits

In 1998, a refined risk analysis of land- and sea-based sources of pollution and their effects on living and non-living resources in the Straits was completed. The result was a comprehensive document on environmental risk assessment of the Malacca Straits.

The refined risk assessment focused on two priority activities and contaminants in the Malacca Straits, as identified in the initial risk assessment (1997), namely:

- I. Human health effects, by exploring:
  - fish/seafood consumption; and
  - contamination of fish/seafood by metals, pesticides and hydrocarbons.

2. Ecological effects, by exploring measured environmental concentrations for hydrocarbons and hydrocarbon composition, and their impact on the ecosystem.

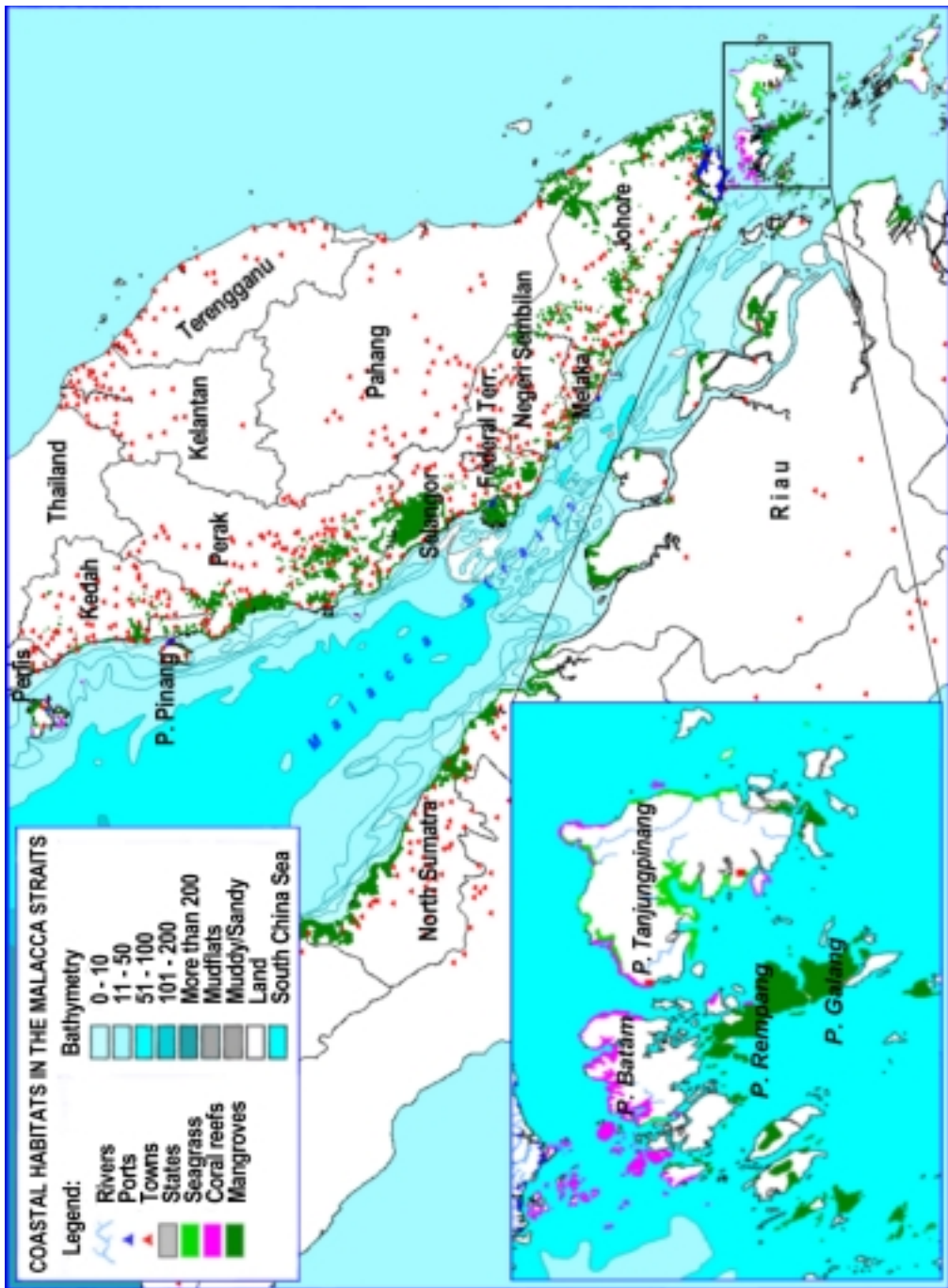
## Retrospective Risk Assessment

Within the Malacca Straits, retrospective risk assessment of coastal and marine resources primarily relies on anecdotal information and land use maps. The overall greatest risks to the mangrove forests appear to be associated with intentional clearance of the mangrove areas for other purposes. The area of the Straits at greatest risk lies on the Indonesian side, along which mangroves constitute a relatively large area of coastline, which appears to be experiencing the greatest rates of decline, and for which management programmes to date appear to be relatively ineffective.

### Retrospective Analysis of Declines in Key Habitats for the Straits

Habitat Type	Areal Extent	Decrease in Quantity	Decrease in Quality	Ecological Consequences	Economic Consequences
Mangroves	Large	Large	Moderate <sup>S</sup>	***	**
Peat Swamps	Large	Large	NI	***	**
Coral reefs	Small	NI	Moderate to Large	**	*
Seagrass Beds	Moderate	NI	Moderate <sup>S</sup>	**	*
Soft Bottoms	Large	No Decrease	Moderate	**	**

Areal extent is an estimation of the relative abundance of each habitat type as large, moderate or small; evidence indicates decrease in habitat quantity (i.e., areal extent) and quality indicates a large decrease, moderate decrease and minimal decrease, or no decrease. Judgements on the relative seriousness of consequences for the ecology of the Straits, and the economies of the littoral States, are indicated by the number of asterisks, (i.e., more asterisks, more serious), NI indicates that no information was provided. A superscript "S" indicates information for Singapore only.



Source: Straits of Malacca Environmental Information System, 1999.

## Prospective Risk Assessment

The risk pathways in the Malacca Straits make it clear that deterioration in environmental conditions can have important impacts on human health and wealth generation through, for example, impacts on fisheries, exploitation of other ecological resources, such as mangroves, and tourism. The subsequent risk analyses, both retrospective and prospective, have demonstrated impairment of fisheries and mangroves and the possibility of serious risks to habitats and biodiversity in general from various contaminants, with likely implications for productivity and yield of ecological resources, and negative effects on tourism.

To gauge the seriousness of each contaminant and their relative importance in societal terms, it is necessary to translate them into units that reflect societal impacts. These are generally monetary units. Thus

$$\text{Society risk} = f(\text{likely loss or impairment of an entity})(\text{economic value})$$

where value is not intended as an absolute, but as a measure of societal needs and preferences in a situation where resources are limited. It is usually judged by willingness to pay for the entity at risk, in real or imaginary market places.

### Comparative Risk and Uncertainty Assessments for Ecological Entities within the Straits of Malacca Exposed to Waterborne Contaminants

RQs Contaminant	< 1	1 - 10	10 - 100	100 - 1000	1000	Uncertainty (major sources)
Metals			—		Cu	Standards
Pesticides	—	—		•		Variability in MECs
TBT		—	•			Variability in MECs
BOD	—	—	—			Lack of MECs
TSS	—	—	—			Lack of MECs
Oils and hydrocarbons			—		••	Lack of standards and MECs for Specific HCs

Line shows the range of RQs determined in the prospective analysis and based on **measured environmental concentrations (MECs)** given in the Malacca Straits Environmental Profile. Selected compounds or sites having particularly high RQs are indicated with filled circles. Metals are based on national standards and Danish water quality standards. Pesticides are based on the Aquatic Life Standard. TBT is based on UK Standard. The largest source of uncertainty in the RQs (variability in MECs, lack of MECs, or standards) is indicated in the right hand column.

Source: Malacca Straits: Refined Risk Assessment, December 1998

## Natural Resource Damage Assessment

Managing pollution from land- and sea-based activities in the Malacca Straits raises two inter-related issues. One is the appropriate scale of measures to prevent and control pollution. A second issue has to do with the institutional framework, methods and standards that might be used to assess the monetary value of natural resource damages when a pollution event occurs or is established.

For example, despite many preventive and control actions, the risk of oil spills in the Malacca Straits will persist. When spills happen, it is necessary to decide whether to assess damages, which losses can be compensated for, the best method(s) to be used to assess damages, and the institutional framework within which such assessments take place. This is where natural resource damage assessment becomes important.

Interest in NRDA by public bodies stems from its promise in helping to achieve two important environment policy goals. First, it provides a framework for pursuing compensation for the many costs that can result when natural resources, coastal activities, and property are adversely affected by oil and other marine pollution. Many types of pollution damages currently are not compensated for, and as a result, these costs are borne by coastal states.

The NRDA approach using economic value is a human-based view of pollution effects. Under this approach, resources have value only insofar as they provide services that are directly or indirectly valued by *people*. This is an important (and for some, controversial) view in that it does not allow that resources may have a value in and of themselves. Compensation for pollution damages under international conventions now also allows for restoration costs in some cases.

### Difficulties in Implementing the Malacca Straits Demonstration Project:

- Lack of consensus among the three littoral States on the objectives, strategy and processes for completing an assessment of transboundary marine pollution issues and management programmes in the Straits in early phase
- Different perspectives on the primary service and relative values of natural resources within the Straits
- Inaccessibility of reliable scientific and technical information and mapping on natural resources and human activities
- Blending multidisciplinary groups of scientists, technicians and professionals from the three littoral States into an international team of resource persons focused on the production of tools and mechanisms for strengthening pollution prevention and management in the Malacca Straits



Source: Straits of Malacca Environmental Information System, 1999.

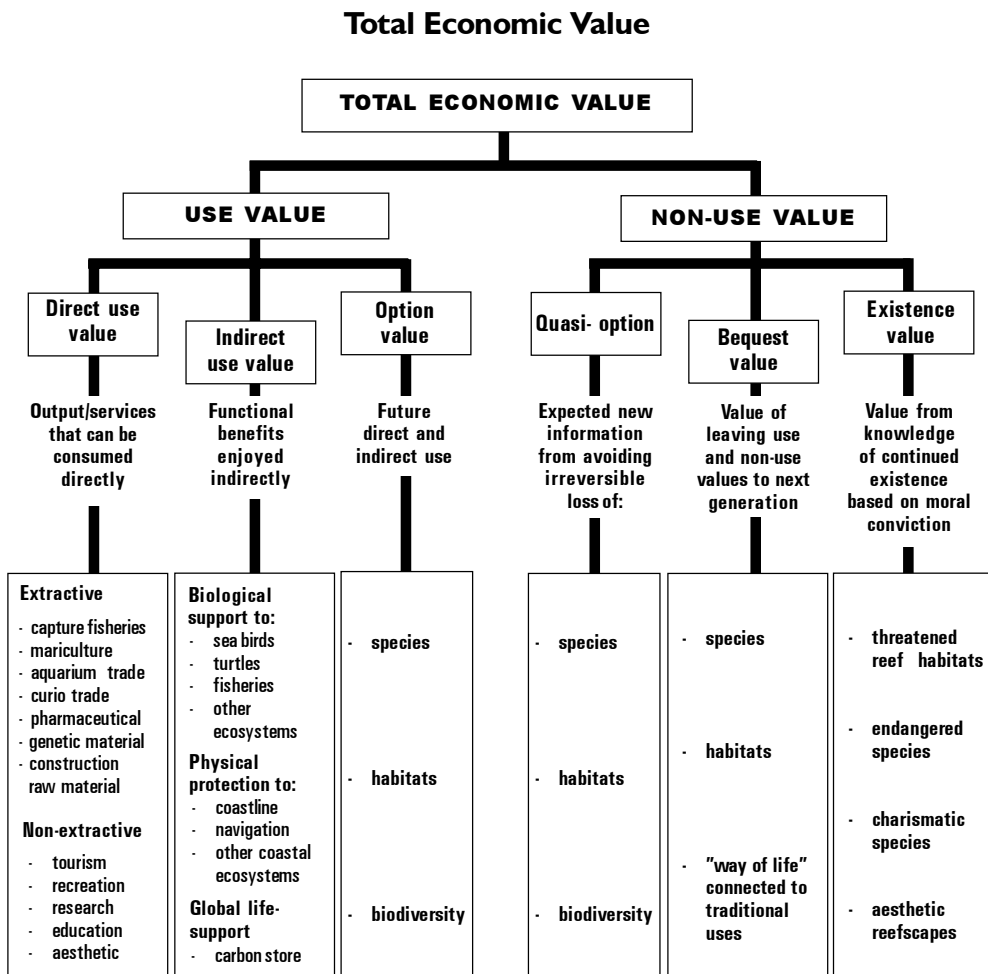


## Overview of Valuation Methods

Economic valuation methods involve the use of empirical models to estimate the monetary value individuals have for changes in the quantity and/or quality of resources and the services that they provide. Valuation approaches can be used to assess the economic value of goods available in markets (e.g., fish or wood from mangroves sold commercially) as well as those not

bought and sold on markets (e.g., outdoor recreation).

Even when injuries are known, estimating damages can be difficult, since not all of the resources and activities affected by oil spills and other marine pollution incidents are valued in markets. Special studies often are needed to assess these non-market values. Several approaches can be used to estimate monetary damages from pollution.



Source: From Spurgeon (1992), as presented in the Benefit-Cost Analysis of Tourism Development and Sustainability in the Malacca Straits, June 1998.

## Assessing Damage from Oil Spills in the Malacca Straits

Simulations that mimic the physical fate of a spill, injury, lost services and monetary damages have been developed and used extensively in other regions. An integrated, interdisciplinary model was developed and applied for use as a method for assessing damages to coastal resources from oil spills in the Malacca Straits.

To employ the model, a user provides certain basic information concerning the amount and substance spilled and the location and date of the incident. The user also indicates when cleanup occurred and how much was removed. The model then simulates the dispersion and degradation of the spilled material (within a mass-balance framework). To do this, the model contains a physical fate component to track the mass balance of the spill over space and time, to the point(s) of contact with the coastline. Dose-response relationships from the toxicological literature are used within the model to estimate damage to coastal resources. The model is linked directly to the Straits of Malacca Environmental Information System, which contains spatial data on coastal resources and their value.

## Developing Straits-wide Environmental Management Mechanisms

Environmental risk assessment/risk management provides a rationale framework for assessing threats to the ecosystem and to human health, and would serve as an appropriate instrument for more effective management of the Malacca Straits. The International Conference

on the Straits of Malacca: Towards Sustainable Management of the Straits of Malacca - Policy, Technical Options, held in Malaysia, April 1999, recognized the need to upgrade collaborative management arrangements among the three coastal countries. The conference, which was co-organized and co-sponsored by the Regional Programme, University of Putra Malaysia and Japan International Cooperation Agency, concluded that existing management mechanisms, such as the Tripartite Technical Experts Group and the Inter-Ministerial Council, was a useful foundation upon which to develop a more holistic approach to managing the Straits.

## International Conventions

The main objective of the international conventions component of the Regional Programme was to assist participating countries in developing the necessary legislative and technical capability to ratify and implement international conventions relating to prevention and management of marine pollution.

*“The Programme has developed an approach focused on the practical aspects of [international] convention(s) implementation in addition to providing information on the requirements for replication. The project has been successful in increasing the awareness...of the importance of the marine related international conventions.”*

Final Evaluation Report  
August 1998

### Major Achievements:

- Enhanced public awareness and political will to ratify and implement international conventions related to prevention and management of pollution of the marine and coastal environment
- Implementation of a regional network of individuals and institutions, collaborating and co-operating on the legal aspects of pollution prevention and management of the East Asian Seas

Some innovative concepts and approaches were introduced during the Programme, in order to enhance awareness, political will and technical capacity among the participating countries. First, the focus of the work was not just the legal obligations of global agreements, but also the prospective benefits to be derived by the States Parties. The creation of economic opportunities, the potential role of the private sector and the environmental and social implications of international conventions were examined in vari-

ous workshops and conferences held in Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. As a result of these undertakings, national action plans were developed in Indonesia, Philippines and Vietnam to strengthen implementation capabilities in various conventions.

A second innovative aspect of the programme was the establishment of the Legal Information Database on marine pollution, containing more than 600 reference materials per-

## Review of National Legislation in the East Asian Region

TYPES OF LEGISLATION										
	<i>Cambodia</i>	<i>China</i>	<i>DPK Korea*</i>	<i>Indonesia</i>	<i>Malaysia</i>	<i>Philippines</i>	<i>R.O. Korea</i>	<i>Singapore</i>	<i>Thailand</i>	<i>Vietnam</i>
<b>Framework Environmental Law</b>	✓	✓	✓	✓	✓	✓	✓		✓	✓
<b>Biodiversity</b>		✓		✓		✓	✓			
<b>Other Environmental Legislation</b>	✓	✓		✓		✓				
<b>Environmental Impact Assessment (EIA)</b>		✓		✓	✓	✓	✓		✓	✓
<b>General Law on Pollution</b>				✓		✓				
<b>General Law on Marine Pollution</b>		✓	✓	✓		✓	✓	✓	✓	
<b>Specific Laws on Marine Pollution</b>										
• <b>Sea-Based Sources</b>				✓		✓				
Navigation/Maritime/Shipping	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Exclusive Economic Zone				✓	✓					
Continental shelf				✓	✓					
Fisheries		✓		✓						
• <b>Land-Based Sources</b>		✓			✓				✓	
Water Pollution		✓		✓		✓	✓	✓	✓	
Toxic and Hazardous wastes		✓		✓	✓	✓	✓	✓	✓	
Agricultural wastes		✓		✓	✓	✓	✓			
Mineral wastes		✓		✓					✓	✓
Sewage/Industrial wastes	✓	✓		✓	✓			✓	✓	
Domestic waste		✓				✓	✓	✓		
Others		✓								

\*based on a country report to the Legal Training Workshop, 21-23 September, 1998, Bangkok.

## Guidelines for National Legislation

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The ***Guidelines on National Legislation on Marine Pollution Prevention and Management for East Asian Countries*** are designed to provide countries in the East Asian region with a readily-available and common source of reference for the preparation of an orderly and up-to-date body of legislation concerning marine environmental law. The guidance is based upon internationally-accepted legally binding instruments as well as non-legally binding instruments.

To promote a systematic approach to legislation development, each international convention is broken down into common and special elements. Conventions covered in the guidance include MARPOL 73/78, the London Convention 1972, OPRC 1990, CLC 69, FUND 71, UNCLOS and Basel Convention. Elements include:

1. Objective
2. Scope of Application
  - .1 Geographical Coverage/Jurisdiction
  - .2 Vessel Types
  - .3 Polluting Substance
3. Prohibited Acts
4. Elements of Implementation

The last item provides the aspects of implementation which are special to each convention.

The Guidelines are supplemented by the *Model Framework of National Marine Pollution Legislation for East Asian Countries*, which was developed to apprise countries of the technical and legal implications that will be encountered by governments in the formulation of an orderly and up-to-date body of legislation for marine pollution management. The Framework outlines the different forms and levels of policy instruments within the broad range of “legislation” or “laws”, and the different approaches to addressing the legal stipulations found in the marine pollution conventions.

taining to marine pollution, including national and international resource documents.

Third, a review of national legislation in the region was completed, from the perspective of legal obligations and administrative and reporting responsibilities as assigned under pertinent international conventions. The review provided guidance on the strengths and weaknesses of current implementing legislation, which facilitated the development of practical materials to guide countries in updating existing legislation, or developing new laws.

Finally, the establishment of a Regional Network on the Legal Aspects of Pollution Prevention and Management was accomplished. The Network was a source of information and technical support in the assessment of national capacities, and in the development of materials and instruments for strengthening capabilities to

ratify and implement international conventions. The Network continues to serve the region as a core of expertise on the legal aspects of marine pollution prevention and management.

Since the onset of the Programme in 1994, the number of ratifications and accessions to marine pollution related conventions by the Programme participating countries has more than doubled from 34 to 70.

### Philippine Government Moves toward Ratification of MARPOL

With support from the Regional Programme, the Philippine government, in collaboration with the shipping and oil industries, began taking steps toward the ratification and implementation of MARPOL 73/78. The Philip-

## Participating Country Ratification of International Conventions

COUNTRY	C O N V E N T I O N S																			
	U N C L O S 82	MARPOL					London Convention		Intervention		CLC			Fund			S A L V A G E 89	O P R C 90	B A S E L 89	H N S 96
		73/78 Annex I/II	Annex				CONV 72	PROT 96	CONV 69	PROT 73	CONV 69	PROT 76	PROT 92	CONV 71	PROT 76	PROT 92				
Brunei Darussalam	96	86										92	92		92					
Cambodia		94	94	94	94					94										
China	96	83	94		88	85		90	90	D	86	99				94	98	92		
DPR Korea		85	85	85	85															
Indonesia	86	86									78		99	D					93	
Malaysia	96	97			97						95			95			97	93		
Philippines	84					73							97			97			93	
Republic of Korea	96	84	96		96	93				D	92	97	D		97				94	
Singapore	94	90	94		99					D	81	97			97		99	96		
Thailand																			97	
Vietnam	94	91																	95	

Numbers in boxes refer to year of ratification/accession

■ Ratified in 1994 and after

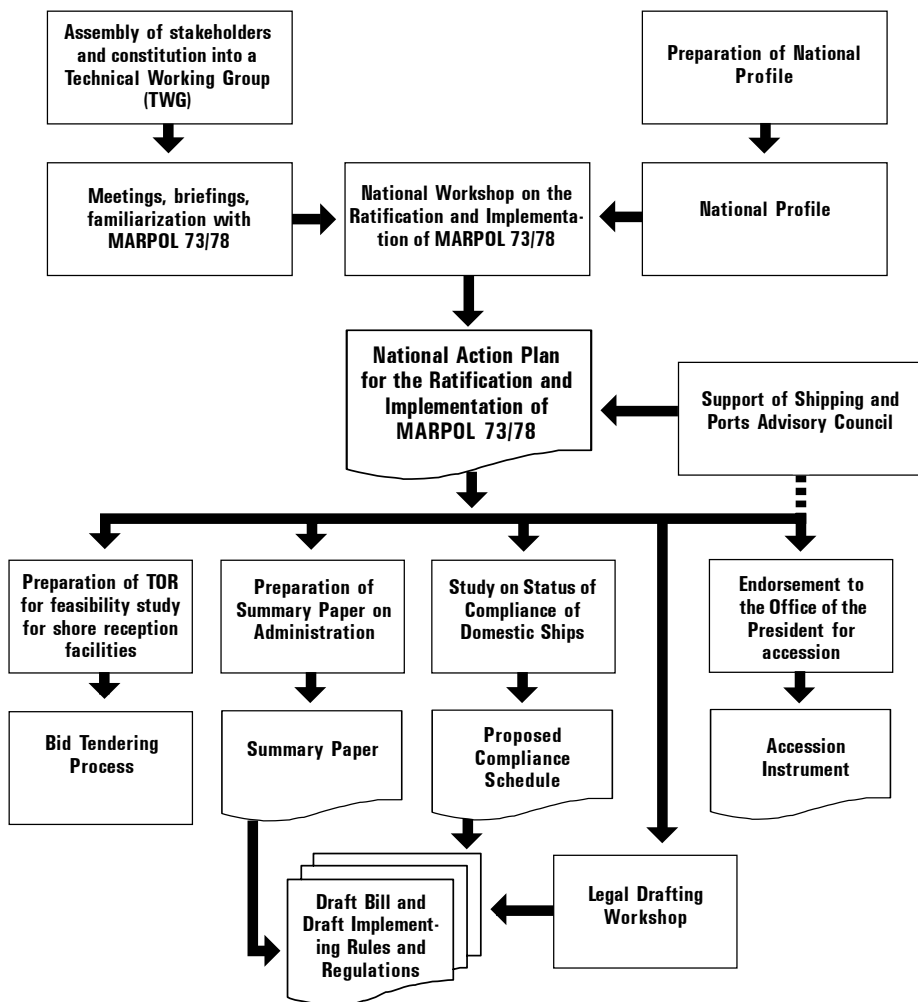
D Denounced, in accordance with the 1992 Protocol

piners' National Action Plan for the ratification and implementation of MARPOL 73/78 was developed in June 1997. A Technical Working Group, comprised of representatives from the public and private sectors, was given the task of executing the action plan.

- preparation of the National Profile on the status of the implementation of MARPOL 73/78 in the Philippines
- summary paper outlining the various administrative, legislative and regulatory obligations under MARPOL 73/78 and the current capacities and constraints regarding the fulfillment of such obligations

The following milestones were achieved over the next 18 months:

### Process for the Ratification and Implementation of MARPOL 73/78 in the Philippines



- draft bill for the implementation of MARPOL 73/78
- draft implementing rules and regulations of MARPOL 73/78
- agreement for Department of Transportation and Communication to be the designated national authority for MARPOL and the Multisectoral Task Force on Maritime Development (MTFMD), under the DOTC, to be the secretariat
- agreement for Philippine Ports Authority to be lead agency for the provision of shore reception facilities
- agreement with the shipping industry for a proposed compliance schedule for MARPOL implementation
- instrument of accession to MARPOL 73/78, signed by the President of the Philippines

In March 1998, the instrument of accession to MARPOL 73/78, signed by President Fidel V. Ramos, was transmitted to the Philippine Senate for the latter's concurrence. Because of the May national elections and consequent change of administration, the process was interrupted. Transmittal to the Senate is expected in early 1999.

### Marine Pollution Monitoring

The Regional Programme has attempted to instill the notion that marine pollution monitoring works when it is targeted on selected critical issues and parameters, and within a manageable area. The purpose of marine pollution monitoring is to provide direct inputs to the formulation of cost-effective management strategies. The advantages of this approach are that the programmes are more likely to be cost-effective, practical and relevant. The results are quickly perceived by managers and decision-makers as providing an "added value".

#### **Difficulties in Implementing the International Conventions Component of the Regional Programme:**

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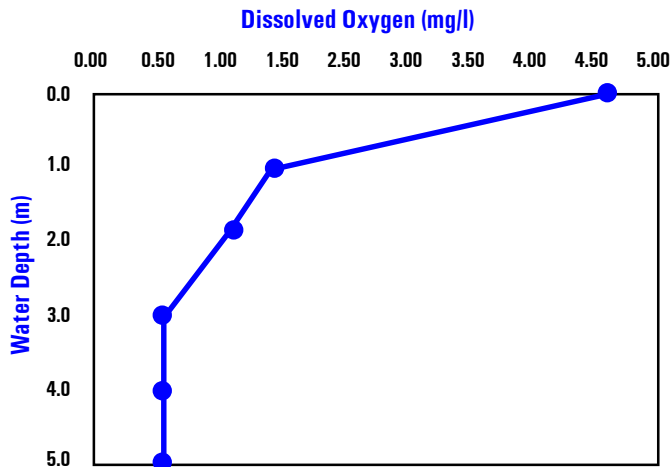
- Lack of legal professionals in the region, who are experienced in the ratification and implementation of international conventions on marine pollution
- Inaccessibility of legal information and reference materials, which can be employed by and for countries to develop and strengthen national and local laws on marine pollution prevention and management
- Differences in legal systems, languages, demographic and social characteristics and economic development among participating countries

## Monitoring Traces Fish Mortality

Massive mortality of about 1,000 tonnes of cage cultured fish occurred in Maluanwan Bay, Xiamen, in August 1998. The sea-farmers attributed the mortality to waste discharges from nearby industries, and brought forward an adjudication case against the industries, seeking compensation for damages. The Xiamen integrated marine pollution monitoring team concluded that the mortality was caused by oxygen depletion in the water column, a result of intensive cage culture activity, an enclosed water system, high evaporation, and an abrupt change of salinity. The conclusion was based on monitoring surveys and data analysis. The event demonstrated the value of environmental monitoring for decision-making and management interventions.

As a consequence, the local government has taken steps to improve monitoring of Maluanwan Bay, to regulate “free entry” of cage culture into the Bay, and to study the development of early warning capabilities of eutrophication and red tide.

### Dissolved Oxygen in the South Harbour of Maluanwan Bay, Xiamen, China



Note: As shown in the figure, the DO level in the South Harbour where significant fish kills occurred ranged from approximately 0.5 to 1.5 mg/l, at water depths from 1 and 5 m. Caged fish cannot survive at these oxygen levels. The national DO standard is set at >5 mg/l.

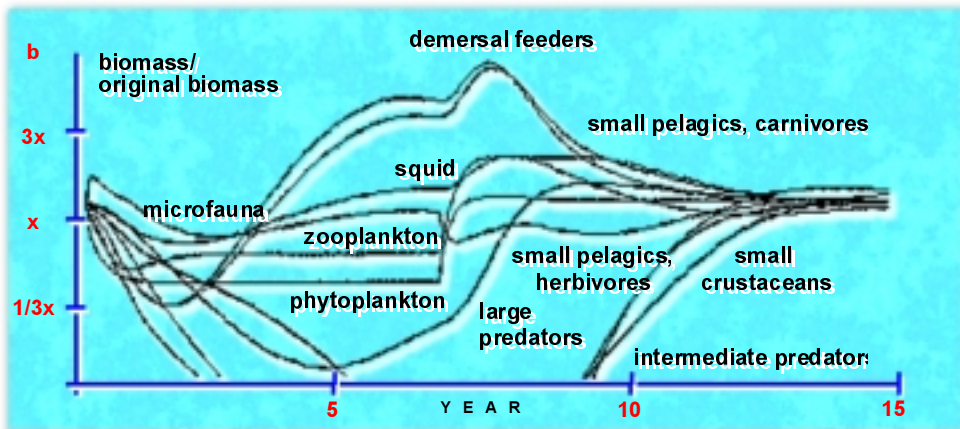


## Scientists Assess Fisheries Management

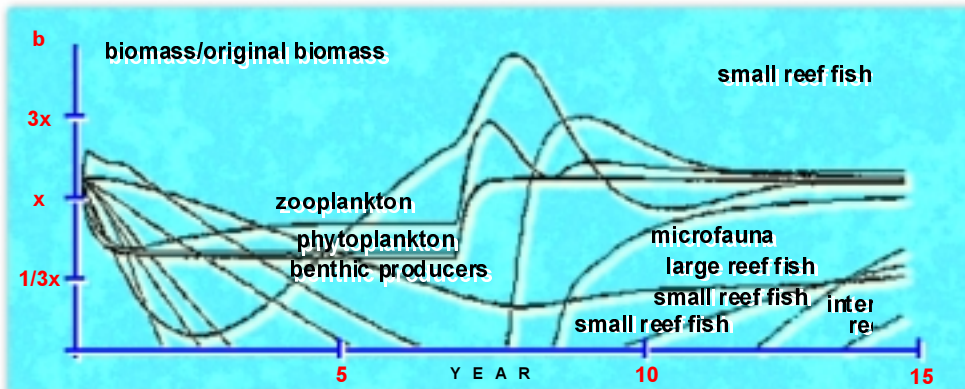
Scientists from the University of Philippines in collaboration with professionals from local fisheries sector undertook a study of fisheries resources in the Batangas Bay through field survey and Ecopath modeling. The study showed that the pelagic fish resources had a potential annual sustainable yield of 3 metric tons per square kilometer. This capacity has been exceeded in Batangas Bay. Measures to insure sustainable fish resource uses within the integrated coastal management framework were developed, including restructuring fisheries management, reduction of fishing efforts and creation of an alternative livelihood programme for the surplus labor in pelagic fishing. Reef fish resources with a potential yield of 5 metric tons per square kilometer per year were considered underutilised. However, in view of the fragility of the reef ecosystem as confirmed by the Ecopath modeling, designation of the reef area as a marine protected area was recommended.

### Ecopath Modeling in the Batangas Bay

#### A. Pelagic System

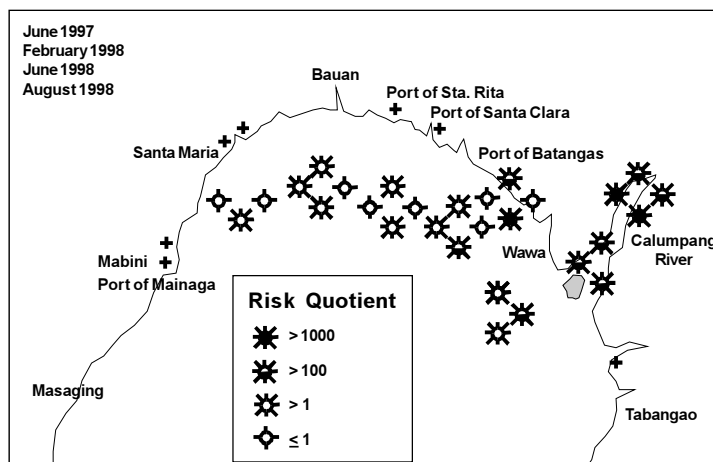


#### B. Coral System



Note: Ecopath modeling using Ecosim (vers.4.A) estimates the rate of recovery for the stressed pelagic and coral reef ecosystems. Assuming 30% reduction in phytoplankton and microfaunal biomass, the pelagic system may not fully recover to its original status within a 10 year period, whereas the reef system is not able to recover within 15 years.

## Risk Quotient for Fecal Coliform in Batangas Bay Using Class B Criteria



The Regional Programme has developed monitoring sites in China and the Philippines. Monitoring sites in Cambodia, DPR Korea and Vietnam are also being developed. A major effort is devoted to the building of technical capacities through the provision of equipment, “on-site” training in the use of equipment and training in specialised laboratories on marine pollution field and laboratory techniques. Monitoring standards and guidelines are being promoted. A manual for marine pollution monitoring and analysis has been published to serve as a reference for site-specific pollution monitoring programmes in the region.

### Marine Pollution Monitoring in Batangas Bay

Based on the preliminary results of four intensive water sampling activities undertaken in Batangas Bay, the parameters of concern were found to be coliform and oil and grease inside and near Calumpang River, the largest tributary entering the bay. The criteria value for total coliform for Class C and SC waters (water intended for the propagation and growth of fish and other aquatic resources) is 5,000 MPN/100 ml.

On three out of four occasions, water samples exceeded the criteria, with a risk quotient (RQ = measured environmental concentration/environmental criteria value) ranging from 1.4 to 3. The source of contamination is believed to be domestic sewage discharges into the river, either directly or indirectly through municipal drainage systems, and agricultural runoff. Of concern is the continued exposure of people (including children) to pathogenic bacteria when swimming in the river or during sand-mining activities. Total coliform and fecal coliform criteria for water intended for contact recreation are 1000 and 200 MPN/100 ml, respectively, a level exceeded in all the river samples. Using this criteria value, the RQ ranges between 5 and 20 for total coliform and 1 to 100 for fecal coliform.

These baseline results, although not conclusive, suggest that there is a potential health risk. Further investigation of pollutant sources and their control is warranted. A related management issue that emerged from the baseline studies is that while the Bay is classified primarily for the propagation and growth of fish and other aquatic life and not for contact recreation, there are swimming beaches on the western side of the Bay. Continued use of this area for swimming will need to be complemented with regular monitoring of coliform counts and health advisories.

## Sustainable Financing

The concept of public-private partnership is founded on an understanding that private sector participation in environmental management is not just an advantage, but an essential element to achieving sustainability. Governments in the East Asian region, and in particular local governments, do not have the expertise or financing to develop, construct and operate efficient and effective environmental facilities and services, such as municipal solid waste management systems, even though they are mandated to do so. Public-private partnerships offer the advantages of private sector dynamism access to finance, knowledge of technologies, managerial efficiency, entrepreneurial spirit—combined with the social responsibility, environmental awareness, local knowledge and job creation concerns of the public sector.

*“The project has made progress in developing concepts and approaches for sustainable financing mechanisms involving private sector-public sector partnerships focusing on solid waste management, agricultural waste, industrial waste and shipborne waste.”*

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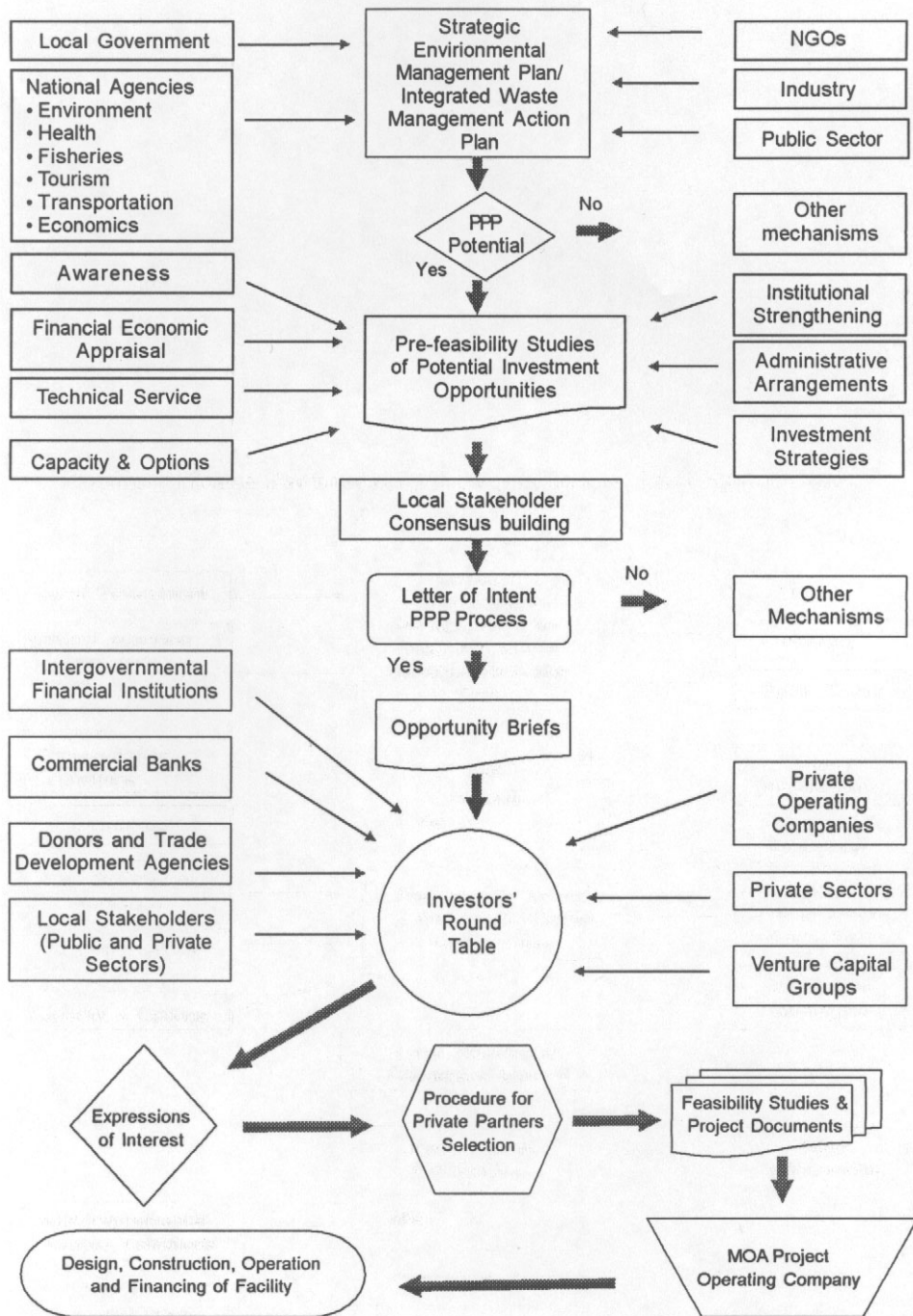
Final Evaluation Report  
August 1998

### Major Achievements:

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- Establishment and verification of institutional mechanisms for sustaining ICM programmes
- Adoption and implementation of a public-private partnership (PPP) process, to provide pollution prevention and management facilities and services at the local level, while realising sustainable economic rates of return on the investment
- Substantiation of a paradigm shift in marine pollution management programmes, attitudes and priorities as recognised and practised at the local government level

## Public-Private Partnership Process in the East Asian Seas



In 1998, the Regional Programme accelerated its activities in this area, teaming up with Sustainable Project Management, the Executing Agency of the UNDP programme entitled, “*Public Private Partnerships for the Urban Environment*”. Batangas Bay Demonstration Project was identified under the UNDP programme for collaboration in forming public-private partnerships.

The focus of PPP development in Batangas Bay was enhancement of waste management services. Four potential projects were identified in accordance with the Integrated Waste Management Action Plan, which had been adopted by the Batangas Bay Environmental Protection Council. The four projects included municipal solid waste, agricultural waste, ship and port waste and industrial hazardous waste.

Investment opportunity briefs were prepared for the four projects, in conjunction with local stakeholders from the public and private sectors, and presented at the Investors’ Round Table on Public-Private Partnerships, which was

held in Manila on 9-10 November 1998. Representatives from investment groups, private operating companies, intergovernmental financial institutions, venture capital groups and commercial banks attended the two-day briefing on near-to-market and emerging opportunities, within the context of public-private partnerships.

Expressions of interest for the four Batangas projects were submitted by six companies, and the process of selecting partners was initiated by the local stakeholders, with assistance of the Regional Programme Office and Sustainable Project Management. In January 1999, selection committees composed of local government units, business associations and industries identified a consortium of New Zealand companies from among the six companies. In July 1999, a Memorandum of Understanding was signed among the local stakeholders and the New Zealand consortium to undertake a feasibility study on a proposed integrated waste management facility to serve the entire Province of Batangas.

### **Difficulties in the Sustainable Financing Component of the Regional Programme:**

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- Lack of trust and confidence within and among public and private stakeholders at the local level regarding an environmental programme founded upon, and implemented through, interagency and intersectoral partnerships
- Inability to package local environmental projects, thereby making them attractive to commercial banks, local and international investors and operating companies and other international and intergovernmental agencies and institutions
- Inexperience of the public and private sectors to the institutional, social, political and economic considerations of developing, negotiating, constructing and operating a mixed ownership (public-private sector) environmental facility

**Letter of Intent for the Development  
of a  
Provincial Solid Waste Management Facility**

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**Signatories to the Agreement:**

**Province of Batangas**, Philippines, represented by its Governor

**City of Batangas**, represented by its Mayor

**City of Lipa**, represented by its Mayor

**32 Municipalities of Batangas**, represented by the President of the Batangas  
Municipal Mayors' League

**International Maritime Organization**, represented by the Regional Programme  
Manager of the GEF/UNDP/IMO Regional Programme

**Sustainable Project Management**, represented by its Executive Chairman

**Objectives:**

1. Implementation of an Integrated Waste Management Action Plan, developed as a collaborative endeavour of the Provincial Government of Batangas and the IMO to provide a framework by which waste management and disposal can be effectively carried out in Batangas consistent with national, provincial and LGU policies, and in accordance with the development goals and environmental standards of the Province; and
2. Planning and development of a Provincial municipal solid waste (MSW) facility for the Province of Batangas, in accordance with the Integrated Waste Management Action Plan.

**Commitments of Signatories:**

1. Application of the Public-Private Partnership Model and participation in its associated processes, an outline of which are provided hereunder:
  - i) The establishment of a profile of needs for a prospective Private Sector Partner, and the employment of that profile in the shortlisting of potential Private Sector Partners;
  - ii) The selection of a Private Sector Partner from a shortlist of potential candidates, and in accordance with a selection process, time schedule, procedure and criteria as agreed by all parties;

*continued*

- iii) The development of a Project Document, in conjunction with the selected Private Sector Partner, outlining the legal, technical, financial and environmental aspects of a Provincial MSW facility, including the selection and environmental evaluation of (a) suitable site(s) for a Provincial MSW Facility within the Province of Batangas, and the identification of appropriate and adequate user pay schemes for the operation of such a facility; and
  - iv) The drafting and negotiation of a Memorandum of Agreement between the parties and the selected Private Sector Partner to create a Project Operating Company, which shall in turn design, build, finance, operate and maintain the Provincial MSW facility as identified in the Project Document, while always realising sustainable economic rates of return.
2. The adoption and implementation of appropriate legislation, ordinances, policies and programmes to ensure that all municipal solid waste generated within the Province of Batangas is managed and disposed of in accordance with the terms and conditions of the Memorandum of Agreement between the parties and the selected Private Sector Partner;
3. Co-operation in the selection of (a) site(s) for a Provincial MSW facility, in accordance with pertinent national, provincial and local legislation, ordinances and processes, and the promotion of public acceptance and approval of the selected site(s) through:
- i) implementation of public education/awareness campaigns and programmes aimed at establishing public acceptability of the selected site(s);
  - ii) identification of social, economic and environmental benefits of the facility to the LGU(s) and to the Province;
  - iii) delineation of land requirements, buffer zones, environmental control measures and future uses of the site(s) upon decommissioning of the Provincial MSW facility;
  - iv) negotiation of compensation packages for the LGU(s) and/or for local residents in the vicinity of the site; and
  - v) assessment of the private sector's investment in the Provincial MSW facility and the community, returns on investment to the LGU(s), and the benefits created and/or derived to complementary commercial activities and support services for the LGU(s).

# Sharing Experiences

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**The following is an offering of several concepts, guidelines and approaches, which have been distilled over the course of this project. In some instances, the subjects have been developed and applied as part of the project. Others have only emerged as concepts and approaches to be tested in follow-on activities. Collectively, it is hoped that they will contribute to the knowledge base for improving marine pollution prevention and management practices in the East Asian Seas Region.**

## **ICM Project Performance Indicators**

Bench-marking ICM programme performance has been a subject of debate for some time due to the complexities involved. Based on the ICM practices in Batangas and Xiamen, as well as the experience gained from other ICM projects in the region and elsewhere, a system of indicators for performance evaluation has been identified and verified. These indicators are developed for identifying and assessing the level of project progress in: (a) problem identification, prioritisation and programme formulation; (b) project implementation; (c) programme sustainability; and (d) programme impacts. Both Batangas and Xiamen are considered making significant progress by the indicators for programme formulation, implementation and sustainability. Beneficial ecological and socio-economic impact of the projects is recognised in Xiamen, but yet to become evident in Batangas.

### **The Seven Principles of ICM Good Practice**

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- 1. Adopt a systematic, incremental approach.**
- 2. Involve the public.**
- 3. Integrate environmental, economic and social information.**
- 4. Establish mechanisms for integration and coordination.**
- 5. Institute sustainable financing mechanisms.**
- 6. Develop ICM capacity at all levels.**
- 7. Monitor the effectiveness.**



## Batangas and Xiamen ICM Demonstration Projects: Progress Evaluation by Performance Indicators

<b>I. Programme Formulation</b>		Batangas	Xiamen
1.	Problems identified and prioritised; environmental profile prepared; Management boundary defined	3	3
2.	Programme planning undertaken; stakeholders consulted	3	3
3.	Primary data related to programme formulation gathered	3	3
4.	Public awareness created	3	3
5.	EIA/risk assessment performed	3	3
6.	Strategic management plan formulated and adopted	3	3
7.	Issue or special area plan developed and adopted	3	3
8.	Organisational and legal arrangements proposed	3	3
9.	Financial options developed	3	3
10.	Environmental monitoring protocol developed	3	3
11.	Information management system	<b>0</b>	<b>0</b>
<b>II. Programme Implementation</b>		Batangas	Xiamen
1.	Interagency, intersectoral council/committee/group established	3	3
2.	Co-ordinating agency/office for programme implementation established	3	3
3.	Capacity and information generating arrangements established	3	3
4.	Prioritised agenda for management actions undertaken	3	3
5.	Financial mechanism for programme implementation established	3	3
6.	Environmental monitoring mechanism established and operational	3	3
7.	Concerned ordinance/legislation developed and approved	3	3
8.	Law enforcement established	3	3
9.	Progr. monitoring and evaluation protocols developed and implemented	3	3
<b>III. Programme Sustainability</b>		Batangas	Xiamen
1.	Perception and attitude changes amongst stakeholders detected	3	3
2.	Critical mass of local/national officials knowledgeable about ICM formed	3	3
3.	Major stakeholders participated in programme implementation	3	3
4.	Human and financial resources by stakeholders committed	3	3
5.	Implementation of the action plan committed by local government	3	3
6.	Integration of ICM project into local sustainable development programme	3	3
<b>IV. Programme's Impacts</b>		Batangas	Xiamen
1.	Environmental quality shows sign of improvement	<b>0</b>	3
2.	Some environmental degradation arrested	<b>0</b>	3
3.	Interagency conflicts reduced or resolved	3	3
4.	Use conflicts minimised or resolved	3	3
5.	Evidence of ecological improvement	3	3
6.	Evidence of socio-economic benefits	<b>0</b>	3
7.	Additional financial support from national government/external sources	3	3

Note: "3" - Progress. "0" - slow or no progress.

## Lessons Learned from Practising ICM in Southeast Asia

In the December 1998 issue of *Ambio* (Vol. 27 No. 8, page 599), the Regional Programme Manager reflected on the 13-year history of ICM programmes at 8 sites in Southeast Asia. The key lessons described in that article were summarised in 12 points.

- 1. ICM Concept:** ICM is a learning process and, as such, evolves with time. Its principles and approaches should be understood by all concerned stakeholders in order to avoid unrealistic expectations of immediate results.
- 2. Project Timeframe:** With the experience and formulation of better ICM guidelines, the project timeframe should be reduced to 3 to 5 years, and preferably coincide with the planning cycle of the local government.
- 3. Performance Monitoring:** Performance indicators are essential in order to determine the success or failure of a project. ICM performance indicators can be grouped into 4 categories: i) process indicators; ii) stress removal indicators; iii) sustainability indicators; and (iv) environmental status indicators. These should be installed right at the beginning of the project.
- 4. Project Design:** For an ICM project to generate the required results, it is essential that the planning, development and implementation phases of the project are considered and included in the project design. The early development of performance indicators will help to achieve this goal.
- 5. Selection and Prioritisation of Management Issues:** Project sites can have many relevant issues. While strategic management plans need to address the range of issues present, specific effort should be focused on one or two only, with the development and implementation of a concise action plan.
- 6. Management Boundary:** It is advantageous in early phase of the project to limit the management boundary, where appropriate, within the administrative zone of the local government. With ICM framework in place and experience at hand, the project will be better equipped to extend the scope of management over the entire watershed/catchment area, or exclusive economic zone.
- 7. Research and Study:** To maximise the inputs of natural and social sciences, problem-oriented research needs to be encouraged, with a clear view of information requirements for improving management actions.
- 8. ICM Programme Development and Implementation Cycle:** The cycle has six stages: preparing, initiating, developing, adopting, implementing, and refining and consolidating. The timeframe for each cycle may vary from site to site, depending on the size and complexity of the programme.
- 9. Local Government Commitment:** The commitment and full involvement of local government is critical for the entire ICM cycle.
- 10. Institutional Arrangements:** Legally constituted interagency and multi-sectoral co-ordinating and management bodies are key to the effectiveness and sustainability of ICM programmes.
- 11. Public Awareness:** Creating public awareness is a continuous process in ICM implementation. It helps generate support, raises environmental awareness and promotes civil advocacy for environmental protection and sustainable development.
- 12. Building Local Capacity:** By linking local and national universities to ICM project initiatives, a core of technical expertise is es-

tablished, which is then capable of participating in the training of local officials.

These lessons can contribute to the further improvement of coastal management practices in the region and in other regions of the world that have similar environmental and socio-economic characteristics.

### **Straits-wide NRDA Framework for Transboundary Pollution?**

Transboundary pollution poses a substantial threat to the Malacca Straits. National laws in the three littoral States prohibit pollution, and national laws and the CLC 1969 and Fund 1971 conventions provide for compensation for response and cleanup costs, and for some costs of oil spills, including damages to real property, lost earnings in some cases, and for some environmental damages.

However, national laws seem to establish a broad umbrella, with no clear statement of damage categories to be pursued and methods to be employed. The CLC 1969 and Fund 1971, and the 1992 Fund Protocol, provide substantial guidance for admissibility of claims. The 1992 Fund Protocol expands the costs for which compensation will be allowed and establishes a higher liability limit than the 1971 Fund. An obvious course is that all regional states might become parties to the 1992 Fund and by that, avail themselves of the compensation provided by this Fund. However, even as the most expansive international convention, the 1992 Fund adopts a relatively narrow view of: a) the incidents covered; and b) the damages for which compensation will be paid. As a result, many incidents of potential importance in the Malacca Straits fall outside of the scope of the conventions and will be uncompensated unless national laws can be made to apply.

Countries that rely solely upon the CLC, the 1971 Fund, or the 1992 Fund Protocol, will

not be compensated for many losses due to oil spills. Transboundary pollution incidents may impose several environmental costs upon the three littoral States of Indonesia, Malaysia, and Singapore for which they might not be compensated.

As part of the Malacca Straits Demonstration Project, the potential benefits and concerns of a Straits-wide application of Natural Resource Damage Assessment were evaluated. Introduction of a Straits-wide approach for damage assessment will have many consequences. These include: (1) the impacts that a damage assessment process will have on various parties; and (2) institutional mechanisms and related issues having to do with the development and implementation of a Straits-wide NRDA approach, including:

- the nature of liability
- the scope of incidents covered
- the scope of impacts (injuries) for which damages can be assessed
- allowable damages
- methods for estimating damages
- standards to be applied in weighing the results of such methods
- means for limiting transaction costs.

One very important issue examined concerned the process and institutional structure within which a Straits-wide approach to NRDA is developed, implemented, and refined, as necessary, over time. It seems very desirable to have an administration center, comprised of scientists, economists, lawyers and perhaps others. A single group would allow certain economies to be realised, facilitate the development of a consistent set of methods, and enhance co-operation and co-ordination. Such a group would presumably be funded at least in part out of assessment funds collected from responsible parties after pollution incidents, although use of a small fee per barrel of oil delivered might be a better alternative. Many cooperative mechanisms currently exist among

the littoral States that would provide a suitable institutional home for a central NRDA group. It might be desirable to have a NRDA group work in close collaboration with existing, regional co-operative groups focusing on spill and pollution response, given the overlap in issues facing both groups.

## **MALACCA STRAITS: A Special Area?**

Pollution of the seas from ships, whether it results from routine operations, such as tank cleaning, or from an accident tends to be more serious when it is close to land. Even a minor incident can have serious consequences in a sea area where the environment is more vulnerable. The MARPOL convention recognises that such regions deserve extra protection and so a number of “Special Areas” have been recognised in various regions of the world.

Within a special area, States parties to the Convention are required to observe distinct mandatory methods for the prevention of sea pollution, which are more stringent than those applied elsewhere. The mandatory provisions apply to the control of oily waste, noxious liquid substances carried in bulk and garbage.

The question whether or not it is useful or feasible to designate the Malacca Straits as a Special Area was reviewed by the Regional Programme in 1997. The results of that review indicated that:

- information on ecological characteristics of the Straits of Malacca satisfy the Special Area criteria;
- the Malacca Straits is intensively used by ships, and therefore satisfies the Special Area criteria with respect to vessel traffic;

*“There are two primary dimensions of international co-operation in the management of the Straits of Malacca and Singapore. One dimension involves co-operation among the three Straits States. The other involves co-operation between the Straits States and the extra-regional User States.”*

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February 1998

- information with respect to the seriousness of the pollution caused by operating discharge from ships in the Malacca Straits is limited, whereas evidence of environmental degradation of coastal and marine resources within the Straits is present;
- management measures within the Straits, including measures aimed at sources of pollution other than ships, are being implemented;
- the nature of shipping in the region, and in particular the major shipping routes from the Indian Ocean through the Andaman Sea, Straits of Malacca and South China Sea create the possibility that discharges will be made in sea areas outside the Straits should the Malacca Straits be designated as Special Area.

The Malacca Straits is a good candidate for Special Area designation. Strong cases can be made for Special Area designation with respect to oily waste and garbage discharge from ships. Special Area status would provide added incentive for coastal states to ratify Annex V (garbage) of the MARPOL convention (i.e., Indonesia and Singapore; Malaysia has ratified Annex V) and to ensure the provision of adequate shore reception facilities in ports along the Straits.

### **A Perspective on Dues and User Fees in the Malacca Straits**

The actual cost of services provided by the littoral States of the Malacca Straits, as well as those contemplated in the future, can and should be quantified. However, government departments oftentimes have difficulty in costing their services. The Government of Malaysia has recently attempted to determine some of their service costs in relation to navigational safety and pollution prevention in the Malacca Straits. These include the cost of navigational aids and their maintenance, as well as surveillance, surveys, communications, search and rescue, and oil spill cleanup and response. As an example, the Malaysian Vessel Traffic Service (VTS) system is estimated to cost RM 100 million (about US\$28 million) and to involve annual operating costs of RM 10.5 million (US\$2.8 million). Singapore and Indonesia no doubt also incur substantial costs but, as stated, systematic consolidation of these costs has not been completed or is not available.

As part of a study of sustainable financing mechanisms conducted by the Regional Programme, the potential significance of dues and service fees were put into some quantitative perspective. If one assumes that the *incremental* costs (i.e., expenditures beyond those necessary for purely domestic reasons) of all Malacca Straits' safety/pollution prevention mea-

asures is US\$100 million per year, then to gain some perspective on this, what kinds of dues or fees might be needed to cover this amount each year?

In 1995, some 7 million barrels of oil per day passed through the Straits. Assuming vessels carrying the equivalent of 80% of this amount enter ports within the Straits, then 2.044 billion barrels per year may be subject to a service fee. A hypothetical fee of as little as US\$0.02 per barrel would result in revenue of about US\$40 million per year; a fee of US\$0.04 per barrel would generate revenue of about US\$80 million annually. Alternately, consider a hypothetical fee on containers. A fee of, say, US\$2 per TEU (twenty foot equivalent unit) on the 4.24 million containers estimated to be delivered to ports throughout the Straits would result in annual revenues of almost US\$8.5 million per year. Finally, a due or fee of US\$100 per vessel on the estimated 80,000 vessels calling at a port would garner US\$8 million annually. Obviously, there are an infinite combination of dues and fees that could raise the US\$100 million.

How might such dues or fees be administered? A uniform fee might alleviate any concerns about changes in the relative competitiveness of ports. Administrative costs for collecting dues and fees would likely be small in total. However, administrative costs might fall more than proportionately on the busiest ports, so for fairness administrative costs might be compensated for out of the collected dues and fees. As discussed, many details would have to be resolved concerning covered vessels, and the distribution of the dues and fees among the littoral States would have to be negotiated. These are all-important issues, but not insurmountable considering the financial and economic stake of the coastal States to ensure adequate and effective management of the Malacca Straits.

## **Marine Electronic Highway: Bridging Navigational Safety and Marine Environmental Management**

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The Marine Electronic Highway (MEH) is an information superhighway. It consists of a network of national Electronic Navigational Chart databases (ENCs), integrated with a Differential Global Positioning System (DGPS) technology and vessel-positioning information (transponder positioning information), and linked to the transmission of real time oceanographic data, such as water levels, wind, tide and currents. Shipping companies and maritime authorities within the region are aware of these technologies and the benefits to be derived as a result of "precision navigation".

The Regional Programme has introduced an additional component into the construction of the MEH, based on the information needs and investment opportunities identified during the Malacca Straits Demonstration Project. By integrating environmental datasets into the MEH, such as data on coastal and marine resources, marine water quality, oil spill response capacities, etc., the potential for extending Highway application to a larger group of subscribers is enhanced. These linkages offer direct benefit in improving the management and safety of vessel operations in the Straits, while at the same time serving as a useful instrument to environmental and coastal and marine resource managers in the coastal States.

In collaboration with the three littoral States and IMO, the Regional Programme prepared a project proposal, entitled "*Development and Demonstration of a Marine Electronic Highway in the Straits of Malacca and Singapore*". The proposal was reviewed at a regional workshop, held in Singapore in October 1998. The workshop supported the concept of an "integrated" information superhighway, and agreed to proceed with the development of a GEF grant request, for submission to World Bank. The purpose of the grant is to finance the development of a GEF Project Brief, with the collaboration and co-operation of public and private sector stakeholders, for a marine electronic highway demonstration project in the Straits of Malacca and Singapore. Should the demonstration project verify the expected navigational safety, environmental and economic benefits of the MEH, the viability of extending the system throughout the East Asian Seas region, and throughout other regions of the world, will be established.

IMO has taken up the development of the grant request, in collaboration with the three littoral States. The Regional Programme will continue to provide technical support in the development and implementation of the MEH demonstration project, specifically assisting the littoral States with the integration and use of information on coastal and marine resources in the Straits.

## Marine Pollution Monitoring

Developing a capability with the local government unit where the culture and experience of environmental monitoring is not yet in place requires time and resources. The development of partnerships with industry, academic institutions and government agencies builds up this capability more efficiently and reduces overlap.

## Marine Pollution Monitoring Programmes at ICM Sites

Marine pollution monitoring programmes exist in the region, yet the information is not necessarily:

- in a form readily useful to managers and policy-makers

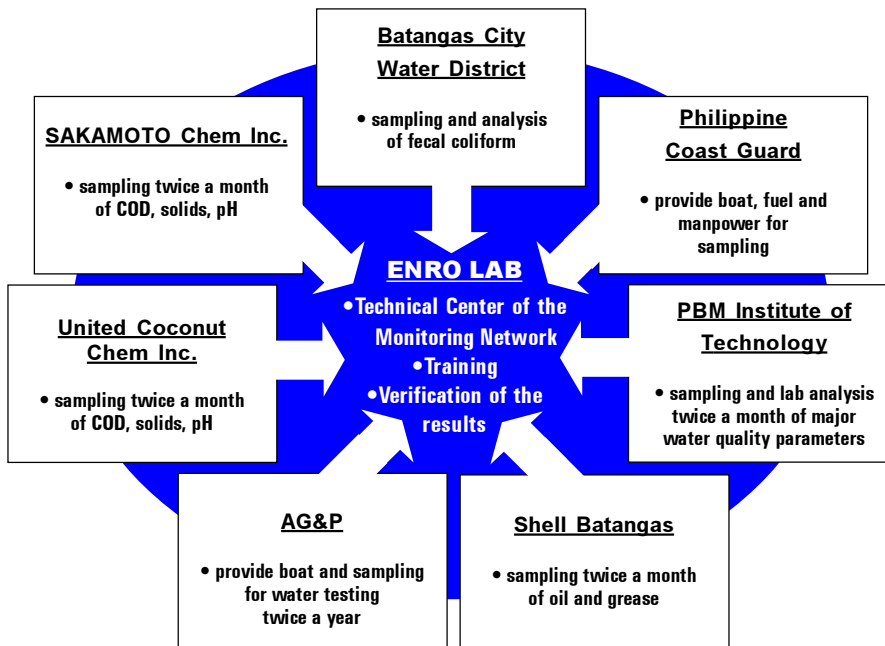
- utilised for and translated to management strategies and interventions
- reliable or relevant because of deficiencies in planning and design of programme.

Oftentimes there is also a lack of assessment of the value of the monitoring activity itself, partly due to the ambiguity of the objectives of the programme.

The shotgun approach is also frequently used in pollution monitoring programmes, resulting in:

- too many parameters measured simply because they are in a standard list and have always been determined without serious consideration of the major contaminants

## Partnerships in Batangas Bay Ambient Water Quality Monitoring



Note: Monitoring efforts and facility indicated are contributions from the participating institutions. ENRO stands for Environment and Natural Resources Office of the Provincial Government.

in the area and their sources, or the appropriateness of the contaminants and matrices being monitored to indicate long-term changes

- information that may not be directly useful in addressing the fundamental pollution problems and concerns.

Among the options to current practice, experience indicates that the following considerations contribute to an effective pollution monitoring programme:

- target selected critical issues, problems and parameters at specific sites
- collect data that serve as useful input to the formulation of cost-effective strategies

- involve the various users and custodians of the marine environment in the monitoring, safeguarding and management intervention processes.

The advantages of this approach include:

- more cost-effective programmes
- practical and relevant information
- sustainability (financially, politically and socially)
- area specific and therefore manageable
- makes use of available resources in the area.

## **Xiamen Case Study: Pollution Monitoring**

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### **Strategy**

1. Integrate, rationalise and improve upon monitoring strategy and activities of various agencies tasked with monitoring Xiamen Bay.
2. Divide tasks, with each agency focusing on parameters that they are most comfortable and competent in determining, and periodically submitting, validating, and aggregating monitoring results.
3. Conduct interlaboratory comparisons and methods validation to increase reliability and comparability of data.
4. Link monitoring to the ICM activities.

### **Achievements/Outputs**

1. Human and financial resources for monitoring used more efficiently.
2. Field and laboratory methods standardised, enhancing data quality and comparability.
3. Data and information shared among participating agencies and with management council.
4. Use of pollution index and feedback provided on the effectiveness of management interventions.



## **Batangas Case Study: Pollution Monitoring**

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### **Strategy**

1. Develop monitoring capacity, including human resources, facilities, equipment and programme.
2. Base monitoring capability within the local government unit.
3. Involve the private sector, other government agencies, and other groups, as appropriate.
4. Implement monitoring that is reliable, cost-effective and useful for management purposes.
5. Conduct public information and education campaigns.

### **Achievements/Outputs**

1. PG-ENRO lab facilities set up.
2. Staff trained in proper field and laboratory monitoring and analytical methods.
3. Relevant environmental parameters identified and sampling design developed.
4. Commitment of private sector and other government agencies—7 MOAs signed.
5. Data packaged and submitted to management council.
6. Information disseminated to public.

## **Marine Pollution Monitoring Networks: Case Study in Development of a Network**

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### **Strategy**

1. Assist countries (Cambodia, DPR Korea, Philippines and Vietnam) to develop and upgrade marine pollution capabilities by providing on-site or off-site training.
2. Acquire appropriate hardware and software for selected sites to facilitate monitoring of basic environmental parameters.
3. Utilise a tiered approach in identifying appropriate parameters to monitor at each site, in accordance with management concerns and scientific and technical capabilities.
4. Develop acceptable information exchange strategies and formats.
5. Provide a compendium of recommended field and laboratory methods.
6. Adopt performance-based field and laboratory methods for environmental monitoring.

### **Achievements/Outputs**

1. Implementation of training workshops for Network members.
2. Interaction among Network members by email service.
3. Acquisition of equipment, supplies, software and reference materials for current and planned monitoring sites.
4. Provision of graphical software, certified reference materials (CRMs) and database (ASFA) to demonstration sites and other planned monitoring sites.
5. Linkage and complementation with other initiatives in the region (ASEAN-Canada CPMS II).

## Coastal and Marine Resources as Natural Assets

The natural resources of the Malacca Straits and other subregional sea areas can usefully be thought of as natural assets that contribute to the well being of residents and visitors. A distinguishing feature of assets, natural or otherwise, is that they can provide a substantial stream of valuable services to people over time, if properly used and maintained. Indeed, the value of subregional seas natural assets can be expanded, perhaps greatly, through improved risk management of sea lanes, mangroves and corals; other actions to control marine pollution; and through improved management of open access resources, e.g., fisheries.

Natural assets provide services to people. The services provided by subregional sea resources can be direct and indirect. Direct services include for example, use of sea lanes, harvests of fish, exploitation of mangroves for wood, viewing of corals and fish and beach use. Indirect services occur, for example, when fish that spend their juvenile stages in a mangrove, are harvested offsite, perhaps many kilometers away.

For those services where benefits and costs are traded in organised mar-

kets, appropriate values can be determined directly. For example, marine transportation, offshore oil, port activity, commercial fishing and tourism are all activities that take place on organised markets. Normally, market data (prices, quantities and costs) are available to estimate the benefits and costs of these activities, although information may be difficult to obtain in some cases.

Non-market methods are needed to estimate the economic value of resource services not traded on organised markets. Non-market methods include a variety of approaches and methods for placing value on non-market services such as biodiversity conservation, traditional use and shoreline protection.

As part of the Malacca Straits Demonstration Project, valuations were completed for coastal and marine resources in each of the three littoral States. Both market and non-market services were considered, using 1996 as the baseline year. The results, although still considered “order of magnitude” estimates, give a good appreciation of the relative benefits derived from the natural assets of the Straits.

**Valuation of Coastal and Marine Resources of  
the Malacca Straits (US\$ Million)**

	<b>Indonesia Coastline</b>	<b>Malaysia Coastline</b>	<b>Singapore Coastline</b>	<b>Straits-wide</b>
	<b>Market<sup>1</sup> and Non-Market</b>	<b>Market<sup>1</sup> and Non-Market</b>	<b>Market<sup>1</sup> and Non-Market</b>	
<b>Coastline (km)</b>	<b>1,641</b>	<b>956</b>	<b>130</b>	<b>2,727</b>
<b>Coral Reefs</b>	<b>79.65</b>	<b>32.62</b> (10.21)		<b>112.27</b>
<b>Seagrass</b>		<b>2.99</b> (10.50)	<b>0.10</b>	<b>3.19</b>
<b>Seaweed</b>		<b>1.02</b>		<b>1.02</b>
<b>Mangroves</b>	<b>3,509.49</b> (165.99)	<b>1,582.15</b> (357.70)	<b>42.54</b>	<b>5,134.18</b>
<b>Mudflats</b>		<b>0.85</b> (49.42)	<b>0.02</b>	<b>0.87</b>
<b>Beach</b>		<b>640.08</b> (0.03)		<b>640.08</b>
<b>Fisheries</b>	<b>329.92</b>	<b>686.44</b>	<b>8.40</b>	<b>1,024.76</b>
<b>Aquaculture</b>	<b>170.94</b>	<b>97.85</b>	<b>18.60</b>	<b>287.39</b>
<b>Sea Lanes<sup>2</sup></b>				<b>340.00</b>
<b>Totals</b>	<b>4,090.00</b>	<b>3,044.00</b>	<b>69.66</b>	<b>7,543.66</b>

<sup>1</sup> Fisheries and aquaculture resources found in coral reefs, seagrass beds, seaweeds, mangroves, mudflats and beaches are enclosed in brackets to avoid double counting.

<sup>2</sup> The estimated annual value of the Straits for shipping petroleum imports to East Asian countries, based on the additional cost of shipping via an alternate route, namely the Lombok Strait [from Morisugi et al. 1992. Economic Value of the Malacca Straits, p. 307. In James Barney Marsh (ed.) Resources and Environment in Asia's Marine Sector. Taylor and Francis, New York].

# The Next Step

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**This section describes the follow-on phase of the Regional Programme. The follow-on programme is scheduled to commence in October 1999.**

## **Building Partnerships for Environmental Protection and Management of the East Asian Seas**

### **Priority Activities**

The Regional Programme has advanced an integrated management working model for managing marine pollution and other environmental problems in the coastal and marine areas across the region. The next step is to build upon this base of experience and knowledge, and replicate and extend the practice beyond the three sites that were involved in the project. The adoption and application of the experience will enable the concerned governments to effectively protect and ensure sustained use of the seas of East Asia. While some “sensitivity” tuning will be required at each new location, the generic framework is transferable and replicable throughout the coastal areas of the region.

The implementation of international conventions related to environmental management is also seen as an effective means for governments to progress toward preventing or mitigating transboundary environmental concerns. It is essential that countries in the region not only ratify international conventions, but also develop the necessary capacity and resources to implement them. The Regional Programme has de-

veloped the groundwork in this area with the provision of legislative guidelines, training, networking of marine legal experts and encouraging good practices at the local level. Follow-on activities can build upon these initiatives.

### **Barriers to Progress**

It is recognised that there are some substantial barriers to overcome in the extension and replication of the Regional Programme’s products and experience, including policy, financial, human resource capacity and information dissemination encumbrances. While all participating countries have made enormous progress and commitments in addressing environmental problems, available financial and human resources are simply insufficient to arrest large-scale environmental degradation. Environmental management is still low on the national and political agenda of many countries. The basic challenge is to change the mind-set and perception among planning agencies and political leaders, in order for environmental management to be included in national economic development programmes. The Regional Programme demonstrated paradigm shifts in concept, approaches and methodologies pertaining to environmental management of coastal and marine areas. Such shifts need to occur at the national and regional levels. Political and financial barriers will be reduced when environmental management is seen as an investment, which contributes to the GDP, economic revival, employment and social well being of a country, and not just as another file in the social envelope of government

responsibilities. As a recent example, the governments of China and Japan have now included environmental infrastructure improvement as one of the investments to prime national economic growth, in response to the current Asian financial crisis.

Most countries of the Region have yet to develop a national policy on the integration of sea-use and land-use planning. Also, while some countries have devolved authority to the local government for environmental management, many others have yet to make that decision, or to render appropriate policy changes to give greater environmental management responsibilities to local government. Further, it is evident that increased harmonisation among local and national, and even international, legislation is needed in order to achieve cost-effective enforcement programmes. These examples are typical of the various policy barriers that need to be overcome in the region.

Environmental management requires an immense amount of financial resources, especially those pertaining to mitigation and remediation of environmental damage. Alternatively, if environmental concerns are included in development plans, these considerable costs can be avoided or at least reduced. However, it is well recognised that the environmental impact assessment process is not employed consistently or effectively in development projects across the region. Mitigation measures are seen as an additional cost for project proponents, representing a negative return on the investment. Overcoming this barrier requires the adoption of alternative mechanisms and approaches to assessing, financing and sustaining environmental projects and programmes. The Regional Programme has explored some innovative investment approaches involving collaborative efforts of the public and the private sectors, as well as methods for analysing the total economic benefits of development projects, and these have application throughout the region.

Perhaps the most serious barrier in several countries is the lack of capacity to plan and manage the coastal and marine areas. Countries normally address environmental concerns on a sector-by-sector basis. Many existing structures of governance have no institutional arrangement for policy and functional integration and co-ordination at the local or national level. Agencies work independently, and have no experience in the integrated management approach. The Regional Programme has established demonstration sites, which can be used as training laboratories for coastal managers to learn how the integrated management model would operate within their political, cultural and socio-economic setting. To accelerate replication of the working model throughout the region, national demonstration sites need to be established in each country, which will serve as a domestic training ground for coastal managers.

Finally, despite the rapid advance of information technology, a large number of local municipalities and administrative units are poorly connected with the outside world. Many outputs from the Regional Programme have yet to reach users at the local level. The connectivity between national agencies and pertinent sources of information and assistance needs to be strengthened to ensure rapid dissemination of results to those who need help and guidance most urgently.

### **Intergovernmental, Intersectoral and Interagency Partnerships**

In a region of changing and diversified economies, and amidst regional and extra-regional competition for goods and services, it is evident that a “programmatically approach” is required to remove or lower critical barriers that are having a negative effect on environmental management. The key to implementation and sustainability of this approach is the collective

commitment of the stakeholders, and the development of intergovernmental, interagency and intersectoral partnerships. Current intergovernmental mechanisms, specifically those related to transboundary and global environmental concerns, are the basis upon which partnerships can be built. But intergovernmental partnerships at the subregional level are also important. For example, the Tripartite Technical Expert Group (TTEG) for the Straits of Malacca and Singapore is a subregional mechanism which enables experts from the three littoral countries to collectively address navigational safety in a subregional sea area of common interest and concern. The ASEAN mechanism is another example of a forum that has been developed to collectively address the concerns of Southeast Asian nations.

### **Stakeholder Consultations for A New Initiative**

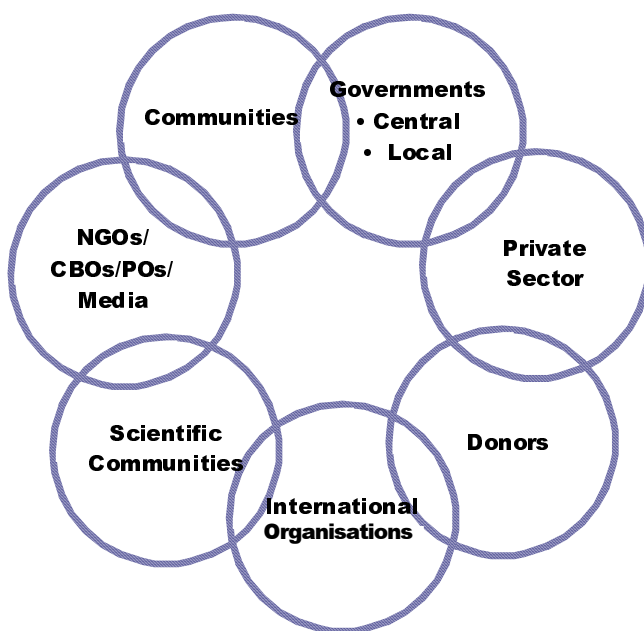
It is with the above considerations that follow-on activities were developed and endorsed

by countries of the East Asian Seas region and approved by the GEF Council. It took about 3 years for the new initiative to evolve from a concept proposal (1996), to Project Brief (1998), and to Project Document (1999). This was a process of extensive stakeholder consultations, involving national and local governments, UNDP, IMO, other concerned international organizations, the GEF Council, donor institutions, NGOs and eminent scientists and experts in the region.

### **The New Initiative and Its Components**

The follow-on programme has been approved by the Global Environmental Facility, with the United Nations Development Programme as implementing agency, and the International Maritime Organization continuing to serve as executing agency. The Programme is comprised of seven main components, as briefly described below:

## **Building Partnerships for Environmental Protection and Management of the East Asian Seas**



## Consultation Processes in the Development of the New Initiative

<b>Date</b>	<b>Consultation Process</b>
May 1996	International Workshop on Integrated Coastal Management in Tropical Developing Countries: Lessons Learned from Successes and Failures, Xiamen, PR China, noted that the next step was to replicate the successful ICM demonstration sites in each of the participating countries.
Nov. 1996	Regional Programme Office prepared Building Partnerships in the East Asian Seas: A Concept Proposal, recommending the adoption of ICM working models across the region.
Dec. 1996	3 <sup>rd</sup> Programme Steering Committee (PSC) Meeting, Kuala Lumpur, Malaysia, reviewed and agreed in principle to the Concept Proposal.
April 1997	The Mid-term Project Evaluation by the Programme sponsoring agencies recommended that the follow-up work would include in-country institutional strengthening, the application of the ICM working models, and the establishment of regional coordinating mechanism.
July 1997	Some 30 experts from government agencies, research and education institutions and NGOs in the region gathered in Subic, Philippines, and jointly developed a Project Proposal on Building Partnerships for the Protection and Management of the Coastal and Marine Environment in the East Asian Seas.
Dec. 1997	The 4 <sup>th</sup> PSC Meeting, Hanoi, Vietnam, unanimously supported the project proposal and its submission for GEF funding.
Jan.-April 1998	Regional Programme Office prepared Project Brief on Building Partnerships for the Protection and Management of the East Asian Seas, taking into account the comments received from the governments, concerned UN agencies, other international organizations, donor institutions and NGOs, for submission to the GEF Council.
May 1998	Strategy and priorities for the proposed project was further discussed at a workshop of experts organized by the Coastal Management Center in Tagaytay, Philippines.
July-Nov. 1998	Regional Programme Office prepared Draft Project Document, detailing the project justification, objectives, strategies, modus operandi, schedule and budget arrangements, and distributed it to the participating countries for comments.
Aug. 1998	Final Project Evaluation Team recommended that GEF and UNDP provide financial support for the implementation of the follow-on project.
Sept. 1998	All participating governments officially endorsed the Project Brief.
Oct. 1998	GEF Council reviewed and approved Project Brief
Dec. 1998	The 5 <sup>th</sup> PSC Meeting, Bali, Indonesia, reviewed the Draft Project Document and requested the participating countries and other stakeholders to provide further comments.
Jan.-Feb. 1999	Regional Programme Office refined the Draft Project Document, based on the comments received from the all the stakeholders, e.g., Programme sponsoring agencies, other international organizations, and GEF Council members.
Mar. 1999	The 6 <sup>th</sup> PSC, Manila, Philippines, reviewed and approved the Draft Project Document.
April-May 1999	Regional Programme Office further refined Draft Project Document, based on the comments received from major stakeholders, and submitted it to UNDP/GEF
July 1999	GEF Council members approved Project Document by consensus
Aug. 1999	Project Document on Building Partnerships for Environmental Protection and Management in the East Asian Seas sent to the participating countries for signature

## Capacity Building

The follow-on programme places considerable emphasis on capacity building. National ICM demonstration sites will be developed and used as a showcase for coastal administration. Each demonstration site will address a different environmental issue. Collectively, the experience will enhance the effective use of the integrated management approach for issues across the re-

gion. Setting up national ICM demonstration sites, and parallel ICM sites, and linking them with local research institutions or universities will facilitate practical training of local officials. The associated universities or research institutions will play a strong role in training national and local staff in the application of new management approaches, methodologies and techniques.

## Summary of Strategies, Approaches and Activities for Achieving Development Objectives and Reducing Barriers

<b>Development Objectives</b>	Protect the life support systems of the East Asian Seas
<b>Operational Strategies</b>	Implement integrated management for coastal areas and subregional seas throughout the country and across the region  Implement marine environment related international conventions
<b>Operational Approach</b>	Integrated, programmatic approach with multi-area, multi-focus
<b>Barriers</b>	Policy, financial, capacity, information barriers
<b>Activities</b>	<ol style="list-style-type: none"> <li>1. Build capacity to effectively plan and manage coastal and marine areas through: <ol style="list-style-type: none"> <li>a) national ICM demonstration and parallel sites;</li> <li>b) risk assessment and management of subregional seas and pollution hot spots;</li> <li>c) technical and environmental management capability building; and</li> <li>d) strengthened networks.</li> </ol> </li> <li>2. Increase environmental investment through mobilisation of private sector resources;</li> <li>3. Use scientific results for policy and management interventions;</li> <li>4. Develop site specific integrated information management systems;</li> <li>5. Collaborate with NGOs, environmental journalists, religious groups and other interested people's organisations;</li> <li>6. Promote national policy to include coastal and marine area management and develop policy guidelines;</li> <li>7. Support or establish a regional mechanism to implement marine environment related international conventions.</li> </ol>
<b>Implementation Strategies</b>	Intergovernmental, intersectoral and interagency partnerships



### **Increase Environmental Investments**

The Programme will promote a regional transformation from a highly public-sector driven environmental management regime, to a public and private sector driven environmental industry. The private sector, which may include large, medium and small enterprises, co-operatives or associations, as well as in-country financial institutions (e.g., rural banks) will be encouraged to invest in a wide range of facilities, services and technologies. To this end, the focus of the Programme will be packaging of environmental management action plans into discernible, bankable projects, and identifying potential opportunities and implementing activities to foster and establish partnerships.

### **Use Scientific Results for Policy and Management Interventions**

The main effort in this component is focused on sourcing scientifically sound information that can be used to strengthen coastal and marine policies and management interventions. The application of scientific methods and approaches to generate reliable socio-economic, ecological and technological information for decision-makers will require interdisciplinary investigations. Uncertainties such as the quantification of ecosystem carrying capacity and tradeoffs between economic development and ecological impact, have long been bottlenecks to decision-makers. The Programme will aim to address these issues and others, and provide managers with information and instruments with which to strengthen policy and management interventions.

### **Establish Integrated Information Management Systems**

The objective is to establish an integrated information management system (IIMS) at each national demonstration site. The IIMS combines baseline information on ecology, socio-economic characteristics, geography, demography and legal and institutional arrangements, with environmental quality information. By incorporating the database into a geographic information system (GIS), and linking the system to basic management software packages, each site will have a facility that enables effective planning, management and evaluation functions. An added value will be the linkage of the sites into an intra- and inter-country network, leading to a systematic exchange of information at the ground level.

### **Collaborate with NGOs, Environmental Journalists, Religious Groups and Other Interested People's Organisations**

The main purpose of this component is to strengthen the knowledge and technical skills of interest groups in marine environmental management. This will enable them to be more effective in championing and advocating the cause for environmental protection, and to serve as a catalyst for government and people to work together. It also serves as an instrument for ensuring transparency and objective assessment of the project during the planning and implementation phases. In addition, the Programme will establish a media resource information centre to facilitate accessibility of credible information by interest groups and journalists.

### **Promote National Policy to Include Coastal and Marine Area Management and Develop Policy Guidelines**

The essential policy elements in coastal and marine environmental management will be evaluated in the context of their importance and effectiveness in relation to the socio-economic, political and cultural characteristics of the countries. The verified elements will be incorporated into guidelines that can be used for developing national policy. National workshops will be organised to increase political and public awareness of the benefits of coastal and marine management, including benefits arising from international conventions related to the marine environment and a better understanding of government obligations and commitments.

### **Support or Establish a Regional Mechanism to Implement Marine Environment Related International Conventions**

The purpose of the regional mechanism is to assist interested governments to achieve the net benefits of global agreements and conventions related to the marine environment. The mechanism will serve as the regional focus for mobilising external resources to support national efforts in implementing international conventions and to undertake collaborative programmes to address transboundary environmental issues. In addition, the mechanism will serve as a regional framework within which national efforts to fulfill obligations of regional and global agreements can be enhanced.

## **Conclusion**

In conclusion, it can be stated that the Regional Programme has set in motion actions to reinforce the GEF programmatic approach for resolving transboundary environmental issues. The next phase seeks to consolidate and build on those experiences, to scale up the activities for providing balanced coverage across the region and to support a comprehensive and systematic action programme that will create a sustainable, productive future for the East Asian Seas. This could well serve as a model for other regions of the world.

# List of Major Activities, Achievements and Outputs 1994-1999

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## 1994

- Xiamen Demonstration Project public awareness campaign launched
- Batangas Bay Demonstration Project cleanest coastal village contest introduced
- IMO/IPIECA Seminar on Contingency Planning for Oil Spill Response, Hong Kong
- First issue of *Tropical Coasts*
- First Programme Steering Committee Meeting, Manila, Philippines

## 1995

- First issue of *Marine Pollution Updates*
- Training Course on Marine Water Sampling and Field Measurements, Vietnam
- National Workshop to Identify Environment Management Issues and Information Gaps, Vietnam
- Regional Training Needs Survey
- First Regional Training Course on the Application of ICM System in Marine Pollution Prevention and Management, Philippines, China and Singapore
- Concept Paper on Sustainable Financing
- Second Programme Steering Committee Meeting, Phuket, Thailand

## 1996

- Xiamen Marine Functional Zonation Scheme approved by the local government
- Coastal Environmental Profile of Xiamen
- Strategic Environmental Management Plan for Xiamen
- Environment and Natural Resources Office (ENRO), established by the Batangas Provincial Government
- Batangas Bay Environmental Protection Council established by Provincial Ordinance
- Workshop on Fishery Resource Assessment, Batangas
- Strategic Environmental Management Plan for the Batangas Bay Region
- Coastal Environmental Profile of the Batangas Bay Region
- Integrated Waste Management Action Plan for Batangas Bay Region
- Regional Programme presentation at the IPS/IMO International Conference on Navigational Safety and Control of Pollution in the Straits of Malacca and Singapore
- Consultative Meeting on Malacca Straits Demonstration Project, Manila
- Regional Network on the Legal Aspects of Marine Pollution, Inception Workshop, Manila

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- IMO/APCEL/MPA Workshop on the Ratification and Implementation of MARPOL 73/78 in the East Asian Seas, Singapore
  - Training Course on Marine Water Quality Sampling and Field Measurements, Vietnam
  - International Workshop on the Integrated Coastal Management in Tropical Developing Countries: Successes and Failures, Xiamen
  - In-service Training (GIS/Application Software), Xiamen
  - Regional Workshop on Oil Spill Modeling in the East Asian Region, Pusan, Republic of Korea
  - Second Regional Training Course on the Application of Integrated Coastal Management System in Marine Pollution Prevention and Management, Philippines, China and Singapore
  - Training on Analytical Measurements, China
  - GIS Training for Bauan Municipal Staff, Batangas
  - Follow-on Training (GIS/Application Software), Xiamen, China
  - Staff exchange between Batangas and Xiamen for training in Xiamen chemical laboratory
  - Voluntary Agreements on Integrated Waste Management, Batangas
  - Regional Conference on Sustainable Financing Mechanisms for the Prevention and Management of Marine Pollution: Public Sector-Private Sector Partnerships, Manila
  - Marine Pollution Monitoring/Information Management Network Inception Workshop, Manila
  - IMO Mid-Term Review of the Regional Programme
  - Interns from DPR Korea and Vietnam join the Regional Programme Office
  - Third Programme Steering Committee Meeting, Kuala Lumpur, Malaysia
- 1997**
- Local ICM legislation approved by the People's Congress of Xiamen
  - Three new ICM parallel sites in Southern China established with UNDP country IPF funding
  - Cross-sectoral marine environment monitoring program in Xiamen
  - Sea use zoning by the Municipal Government of Xiamen
  - National Evaluation Workshop for Xiamen Demonstration Project, Xiamen
  - Contingent Valuation Survey in Batangas
  - Workshop on Environmental Risk Assessment of Pesticides, Batangas

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- Batangas Bay Demonstration Project Evaluation Workshop
  - Initial water use zoning scheme for Batangas Bay
  - Environmental Management Atlas for Batangas Bay
  - Agreement between littoral Countries to implement the Malacca Straits Demonstration Project
  - Malacca Straits Environmental Profile
  - Malacca Straits: Initial Risk Assessment
  - Workshop on Resource Valuation/Cost-Benefit Analysis in the Straits of Malacca
  - Workshop on the Development and Application of a Risk Assessment/Risk Management Framework for Subregional Sea Areas: Malacca Straits Demonstration Project
  - Legal Information Database on Marine Pollution
  - National Workshop on IMO Conventions for the Prevention and Management of Marine Pollution, Hanoi and Ho Chi Minh City, Vietnam
  - National Workshop on Ratification of MARPOL 73/78, Philippines
  - Oil Spill Response Training, Brunei and Thailand
  - Brainstorming Workshop on Building Partnerships, Philippines
  - Study Tour: Comparative Study of River Cleanup, Philippines and Singapore
  - In-service Training (GIS/Application Software), Philippines
  - Third Regional Training Course on the Application of the Integrated Coastal Management System for Marine Pollution Prevention and Management, Philippines, China and Singapore
  - Regional Workshop on Partnerships in the Application of Integrated Coastal Management, Chonburi, Thailand
  - Interns from Indonesia, China and Vietnam join Regional Programme Office
  - First Regional Training Workshop on Integrated Environmental Impact Assessment, Hong Kong
  - Regional Programme Website launching
  - Translation of “ICM Good Practices” into nine languages
  - Participation in IW:LEARN, a UNDP-implemented distance learning project
  - Second Technical Workshop of the Regional Network for Marine Pollution Monitoring and Information Management, Chonburi, Thailand
  - Directory of Research and Management Institutions in the Coastal and Marine Environments of the East Asian Seas uploaded to Regional Programme Website

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- Programme Mid-Term Evaluation
  - Workshop on the Protection and Management of the East Asian Seas, Subic Bay, Philippines
  - Comparative Study on River Cleanup in the Philippines, China, Singapore
  - Regional Programme Review presented to the GEF Council, Washington, D.C.
  - Fourth Programme Steering Committee Meeting, Hanoi Vietnam
  - Marine and Coastal Resources and GIS database - Singapore
  - Marine Pollution Sources and GIS Database - Singapore
  - Workshop for Subregional Cooperation in Oil Spill Modeling in the Malacca Straits, Jakarta, Indonesia
  - Effective Marine Pollution Preventive Measures in the Malacca Straits - Indonesia
  - Cost-Benefit Analysis of Habitat Conservation in the Malacca Straits

## 1998

- Contingent Valuation Survey in Xiamen
- Batangas Marine Environmental Laboratory launching
- Workshop on the Establishment of an Optimal Vessel Traffic System for Batangas Bay
- Environmental Management Spatial Database of Batangas Bay (CD ROM)
- Malacca Straits: Refined Risk Assessment
- Marine Pollution Management in the Malacca Straits: Lessons Learned
- Cost-Benefit Analysis of Tourism Development and Sustainability in the Malacca Straits
- Effective Marine Pollution Preventive Measures for the Malacca Straits - Singapore
- Marine and Coastal Resources Mapping for the Malacca Straits - Indonesia
- Marine Pollution Sources Database and GIS mapping for the Malacca Straits - Indonesia
- Regional Workshop on the Marine Electronic Highway: Bridging Navigational Safety and Environmental Management in the Malacca Straits, Singapore
- Draft proposal on Marine Electronic Highway Demonstration Project: Malacca Straits
- Technical Report on National Resources Damage Assessment in the Malacca Straits
- Manual and Workbook on Natural Resource Damage Assessment for Tropical Ecosystems
- Manual and Workbook on Environmental Risk Assessment: A Practical Guide for Tropical Ecosystems

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- Effective Marine Pollution Prevention and Management in the Malacca Straits - Malaysia
  - Marine and Coastal Resources Valuation for the Malacca Straits
  - Marine and Coastal Resources Mapping for the Malacca Straits - Malaysia
  - Development of a Regional Database System and GIS for the Malacca Straits
  - Marine Pollution Sources Database and GIS for the Malacca Straits - Malaysia
  - President Fidel V. Ramos, Philippines, signs an accession instrument on MARPOL 73/78
  - Technical review of national implementing regulations for MARPOL 73/78 in Vietnam
  - Guidelines for Marine Pollution Legislation
  - Action Plan for Strengthening the Implementation of the Local Government Code in relation to ICM, Philippines
  - Cost-Effective Shore Reception Facilities MARPOL Workshop, Jakarta, Indonesia
  - National Workshop on the Implementation of CLC and FUND, Philippines
  - Legal Training Programme on Strategies, Tools and Techniques for Implementing International Conventions on Marine Pollution, Bangkok
  - Legal Information Database Reference system launching
  - In-service training for 3 chemists from DPR Korea in Dalian, China
  - Study tour for local officials from Batangas to Xiamen sanitary landfill
  - ICM Study tour of senior officials from China, Philippines, Thailand and Nigeria
  - Training on Marine Pollution Monitoring Techniques, Dalian, China
  - In-service training for 4 chemists from Cambodia in Xiamen
  - Training Course on Marine Water Sampling and Field Measurements, Cambodia
  - Training Seminar for Senior Managers and Administrators on Oil Pollution Preparedness, Response and Cooperation, Dalian, China
  - Fourth Regional Training Course on the Application of the Integrated Coastal Management System for Marine Pollution Prevention and Management, Philippines, China and Singapore
  - ICM study tour for senior officials from Cambodia, Indonesia, DPRK Korea and Vietnam
  - Training Programme on Environmental Risk Assessment and Natural Resources Damage Appraisal for Tropical Ecosystems, Singapore

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- Xiamen Delegation to the Philippines and Singapore (Sea Use Planning), Philippines and Singapore
  - Second Regional Training Workshop on Integrated Environmental Impact Assessment, Singapore
  - Investment Opportunity Briefs for Facilities and Services in the Batangas and Xiamen
  - Sustainable Financing Mechanisms for the Malacca Straits
  - Investors' Round Table on Public-Private Partnerships on Pollution Prevention and Management, Manila
  - Regional Programme presentation at the STAP Expert Group Workshop on Leading Edge Information Technology in the Marine Environment
  - Regional Programme presentation at the First General Assembly of the Global Environmental Facility, New Delhi
  - Final Project Evaluation
  - Fifth Programme Steering Committee Meeting, Bali, Indonesia
- 1999**
- Preparation and refinement of Programme Document on Building Partnerships for Environmental Protection and Management in the East Asian Seas through consultations with the participating countries and international organizations.
  - Programme video entitled: Safeguarding the Health of the East Asian Seas.
  - International Conference on Challenges and Opportunities in Managing Marine Pollution in the East Asian Seas, Manila, Philippines
  - The Sixth Programme Steering Committee Meeting, Manila, Philippines
  - International Conference on the Straits of Malacca: Towards Sustainable Management of the Straits of Malacca - Policy, Technical and Financial Options, Malacca, Malaysia, and publication of the conference proceedings
  - Development of an Integrated Information Management System (IIMS) for environmental management of the East Asian Seas, Phases II & III
  - Manual on Strategies, Tools & Techniques for Implementing International Conventions on Marine Pollution in the East Asian Seas
  - Establishment of Training Center for Integrated Coastal Management in Batangas, Philippines
  - Establishment of Training Center for Integrated Coastal Management in Xiamen, China
  - Training of staff from Environment and Natural Resources Office in the application of Geographic Information System, Batangas, Philippines
  - ICM study tour to Batangas Bay Demonstration Site by project personnel from Indonesia in coastal resource management



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- Marine Pollution Monitoring Project for the Batangas Bay, Phase III, Philippines
  - Formulation of an action plan for integrated coastal management in Batangas Bay region, and the second ICM cycle
  - Technical assistance in the development and passage of a national implementing law for MARPOL, Philippines
  - Technical assistance in the development of a Memorandum of Understanding between the Provincial Government of Batangas and the Department of Environment and Natural Resources regarding the decentralization and devolution of EIA procedures to the LGUs.
  - Technical assistance in the development of a Memorandum of Understanding between local governments and a New Zealand consortium concerning the conduct of a feasibility study on a proposed integrated waste management facility in Batangas, Philippines
  - The Regional Consultative Workshop on the Recovery of Oil Spill Clean-up Costs and Pollution Damage Claims, Singapore
  - Virtual ICM Internet Web Resource (an illustration of the Programme activities and experience in ICM)
  - Benefit-Cost Analysis of Tourism Development & Sustainability in the Malacca Straits, MPP-EAS Technical Report 17
  - Environmental Risk Assessment Manual: A Practical Guide for Tropical Ecosystems, MPP-EAS Technical Report 21
  - Natural Resource Damage Assessment Manual, MPP-EAS Technical Report 22
  - Natural Resource Damage Assessment and the Malacca Straits, MPP-EAS/Info99/191
  - Sustainable Financing for Ship-based Pollution Prevention and Management of Malacca Straits, MPP-EAS/Info/99/192
  - Marine Pollution Prevention and Management in the East Asian Seas: A Benefit-Cost Framework, MPP-EAS/Info/99/193
  - Malacca Straits: Special area? MPP-EAS/Info/99/194
  - Malacca Straits: Refined Risk Assessment, MPP-EAS Technical Report 23
  - Marine Pollution Management in the Malacca/Singapore Straits: Lessons Learned, MPP-EAS/Info/99/195
  - Total Economic Valuation: Coastal and Marine Resources in the Straits of Malacca, MPP-EAS Technical Report 24
  - Manual of Economic Instruments for Coastal and Marine Resources and Management, MPP-EAS Technical Report 17
  - Water Use Zoning for the Sustainable Development of Batangas Bay, Philippines, MPP-EAS Technical Report 25

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- Manual on Strategies, Tools and Techniques for Implementing International Conventions on Marine Pollution in the East Asian Region, MPP-EAS Technical Report No. 26
  - Assessment of National Marine Pollution Legislation in East Asia. MPP-EAS Info/99/201
  - Framework and Guidelines for National Marine Pollution Legislation in East Asia. MPP-EAS/Info/99/202
  - Sharing Lessons and Experiences in Marine Pollution Management, MPP-EAS Technical Report No. 20
  - Terminal Report, 1999

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## Workshop/Conference Proceedings

- Regional Network on the Legal Aspects of Marine Pollution. Workshop Proceedings 1, 144 p. (1996)
- Marine Pollution Monitoring and Information Management Network. Inception Workshop. Workshop Proceedings 2, 89 p. (1996)
- Proceedings of the IMO/APCEL/MPA Workshop on the Ratification and Implementation of MARPOL 73/78 in the East Asian Seas, Singapore. Workshop Proceedings 3, 106 p. (1996)
- Proceedings of the Consultative Meeting on the Malacca Straits Demonstration Project. Workshop Proceedings 4, 50 p. (1997)
- Oil Spill Modelling in the East Asian Region. Workshop Proceedings 5, 304 p. (1997)
- Sustainable Financing Mechanisms: Public Sector-Private Sector Partnership. Conference Proceedings 6, 352 p. (1997)
- Proceedings of the National Workshop on IMO Conventions for the Prevention and Management of Marine Pollution, Vietnam. Workshop Proceedings 7, 50 p. (1997)
- Proceedings of the National Workshop on the Ratification and Implementation of MARPOL 73/78 in the Philippines. Workshop Proceedings 8, 51 p. (1997)
- Summary of the Batangas Bay Demonstration Project Evaluation Workshop. Workshop Proceedings 9, 22 p. (1997)
- Regional Workshop on Partnerships in the Application of Integrated Coastal Management, 12-14 November 1997, Burapha University, Bangsaen, Chonburi, Thailand. Workshop Proceedings 10, 167 p. (1997)
- Proceedings of the National Workshop on the Implementation of MARPOL 73/78 in Indonesia: Cost-Effective Shore Reception Facilities. Workshop Proceedings 11, 66 p. (1998)
- Challenges and Opportunities in Managing Pollution in the East Asian Seas. Conference Proceedings 12, 567 p. (1999)
- Regional Consultative Workshop on the Recovery of Oil Spill Clean-Up Costs and Pollution Damage Claims.. Workshop Proceedings 13, 29 p. (1999)

## Technical Reports

- Enhancing the Success of Integrated Coastal Management Initiatives. Technical Report 2, 32 p. (1996)  
Also available in:
  - Bahasa Indonesia [Mengembangkan Keberhasilan Pengelolaan Pesisir Secara Terpadu]
  - Chinese
  - French [Accroître de succès de la gestion intégrée des zones côtières]
  - Korean
  - Portuguese [Apurando o Sucesso da Gestaõ Integrada da Zona Costeira]
  - Spanish [Extender el éxito de la Gestión Costera Integrada]
  - Swahili [Uimarishaji wa Mafanikio ya Usimamizi wa Pamoja katika Ukanda wa Pwani]

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- Thai
  - Vietnamese [Phát Huy Thành Quả Quan Ly Tổng Hợp Vùng Bờ]
  - Strategic Environmental Management Plan for the Batangas Bay Region. Technical Report 3, 71 p. (1996)
  - Integrated Coastal Management in Tropical Developing Countries: Lessons Learned from Successes and Failures. Technical Report 4, 66 p. (1996)
  - Coastal Environmental Profile of the Batangas Bay Region. Technical Report 5, 148 p. (1996)
  - Coastal Environmental Profile of Xiamen. Technical Report 6, 110 p. (1997)
  - Strategic Management Plan for Marine Pollution Prevention and Management in Xiamen. Technical Report 7, 46 p. (1997)
  - Marine Pollution Prevention and Management in the East Asian Seas (1996 Annual Report). Technical Report 8, 40 p. (1997)
  - Integrated Waste Management Action Plan for the Batangas Bay Region. Technical Report 9, 66 p. (1997)
  - Malacca Straits Environmental Profile. Technical Report 10, 259 p. (1997)
  - Manual of Practice: Contingent Valuation Survey for Integrated Coastal Management (ICM) Applications. Technical Report 12, 28 p. (1997)
  - Integrated Coastal Management (ICM) Contingent Valuation Survey in Batangas Bay, Philippines. Technical Report 13, 52 p. (1997)
  - Environmental Management Atlas for Batangas Bay. Technical Report 14, 132 p. (1997)
  - Pollution Prevention and Management in the East Asian Seas (1997 Annual Report). Technical Report 15, 45 p. (1998)
  - Initial Environmental Risk Assessment of Pesticides in the Batangas Bay Region, Philippines and the Xiamen Seas, China. Technical Report 16, 49 p. (1998)
  - Benefit-Cost Analysis of Tourism Development and Sustainability in the Malacca Straits. Technical Report 17, 53 p.
  - Manual of Economic Instruments for Coastal and Marine Resource Management. Technical Report 19
  - Natural Resource Damage Assessment Manual for Tropical Ecosystems. Technical Report 22
  - Environmental Risk Assessment Manual: A Practical Guide for Tropical Ecosystems. Technical Report 21
  - Malacca Straits: Refined Risk Assessment Technical Report 23
  - Total Economic Valuation: Coastal and Marine Resources in the Straits of Malacca. Technical Report 24

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- Assessment of National Marine Pollution Legislation in East Asia. MPP-EAS/Info/99/201
  - Framework and Guidelines for National Marine Pollution Legislation in East Asia. MPP-EAS/Info/99/202
  - Manual on Strategies, Tools and Techniques for Implementing International Conventions on Marine Pollution in the East Asian Region. MPP-EAS Technical Report 26
  - Report on the Third Regional Training Course on the Application of Integrated Coastal Management System in Marine Pollution Prevention and Management in the Philippines, PR China and Singapore, 6-26 October 1997. MPP-EAS/Info/97/142
  - Sustainable Financing Mechanisms and Policy Instruments for the Prevention and Management of Marine Pollution in the Philippines by Rina Maria P. Rosales. MPP-EAS/Info/97/147, 238 p.

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- Working Document for the National Workshop on State of Marine Environment in Vietnam, 17-19 August 1995, Go Son Marine Station, Haiphong, Vietnam. MPP-EAS/Info/95/54
- Report on the Regional Training Course on the Application of Integrated Coastal Management System in Marine Prevention Pollution and Management. MPP-EAS/Info/95/64
- Report of the Regional Workshop on Operational Oil Spill Modelling, 31 May to June 1996, Pusan, Republic of Korea. MPP-EAS/Info/96/85
- Report on the Second Regional Training Course on the Application of Integrated Coastal Management System in Marine Pollution Prevention and Management, Philippines, PR China and Singapore, 4-28 October 1996. MPP-EAS/Info/96/99
- Malacca Straits: Initial Risk Assessment. MPP-EAS/Info/97/117, 82 p.
- Comparative Study on River Clean-up of Singapore River, Pasig River and Yuandang Lake, August 1997. MPP-EAS/Info/97/150, 66 p.
- Highlights of the Second Technical Workshop of the Regional Network for Marine Pollution Monitoring and Information Management, Burapha University, Chonburi, Thailand, 9-11 November 1997. MPP-EAS/Info/97/157
- A Study on the Status of Compliance of the Philippine Domestic Merchant Fleet with the MARPOL 73/78 Convention by Diane Factuar. MPP-EAS/Info/98/173, 15 p.
- Report of the Fourth Regional Training Course on the Application of Integrated Coastal Management System in Marine Pollution Prevention and Management, Philippines, PR China and Singapore, 7-25 September 1998. MPP-EAS/Info/98/179.
- Report on the Environmental Risk Assessment and Natural Resources Damage Appraisal for Tropical Ecosystems Training Workshop, 21-29 October 1998, Singapore, MPP-EAS/Info/99/186.

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- NRDA and the Malacca Straits
  - Sustainable Financing for Ship-based Pollution Prevention for the Management of Malacca Straits
  - Socio-economic Assessment Framework and Guidelines for ICM
  - Marine Pollution Prevention and Management in Subregional Sea Areas: A Benefit-Cost Framework
  - Malacca Straits: A Special Area?
  - National Coastal Policy for the East Asian Seas: Status Review and Model Policy Development
  - Development of Model Local Government Laws on Integrated Coastal Management
  - Proceedings of the Fourth Programme Steering Committee Meeting, Hanoi, Vietnam, 15-18 December 1997. MPP-EAS Meeting Report 4
  - Proceedings of the Fifth Programme Steering Committee Meeting, Bali, Indonesia, 2-5 December 1998. MPP-EAS Meeting Report 5

### **Tropical Coasts—(Biannual Newsletter)**

### **Meeting Reports**

- December 1994—Vol. 1, No. 1—The 1994 Colloquium on Tropical Coastal Zones
- July 1995—Vol. 2, No. 1—Environment and Enterprise: The Case of Malacca Strait
- December 1995—Vol. 2, No. 2—International Marine Environment Conventions: Obligations and Opportunities
- July 1996—Vol. 3, No. 1—Conservation to Management—Initiatives for the Coastal Zones in East Africa
- December 1996—Vol. 3, No. 2—Marine Pollution Prevention and Management: Opportunities for Investment
- July 1997—Vol. 4, No. 1—Marine Biodiversity
- December 1997—Vol. 4, No. 2—Marine Environmental Monitoring
- July 1998—Vol. 5, No. 1—Coastal Tourism
- Proceedings of the First Programme Steering Committee Meeting, Quezon City, Philippines, 1-3 June 1994. MPP-EAS Meeting Report 1
- Proceedings of the Second Programme Steering Committee Meeting, Phuket, Thailand, 11-13 December 1995. MPP-EAS Meeting Report 2
- Proceedings of the Third Programme Steering Committee Meeting, Kuala Lumpur, Malaysia, 10-12 December 1996. MPP-EAS Meeting Report 3

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December 1998 - July 1999 — Vol. 5, No. 2 - Vol. 6, No. 1— Public-Private Partnerships in Coastal and Marine Resource Management

**Marine Pollution Updates—  
Quarterly Newsletter**

- January 1995—Vol. 1, No. 1—Organization and Appointments
- April 1995—Vol. 1, No. 2—Appointments
- June 1995—Vol. 1, No. 3—Xiamen Demonstration Project
- September 1995—Vol. 1, No. 4—XDP's Newly Approved Subprojects
- January 1996—Vol. 2, No. 1—GEF Marine Pollution Prevention and Management Programme Draws Strong Regional Support in East Asia
- March 1996—Vol. 2, No. 1—Xiamen Project Shows Significant Achievements
- June 1996—Vol 2, No. 2—The Batangas Bay Demonstration Project
- September 1996—Vol. 2, No. 3—IMO Secretary-General Urges Philippine Government to Ratify Marine Pollution and Maritime Safety Conventions
- December 1996—Vol. 2, No. 4—President Ramos Addresses Participants of the “Public Sector-Private Sector Partnerships” Regional Conference
- March 1997—Vol. 3, No. 1—Initiatives to Strengthen Regional Capacity in Pollution Prevention Management
- June 1997—Vol. 3, No. 2—Implementation of Marine Pollution Related Conventions in East Asia—A Report Card
- September 1997—Vol. 3, No. 3—A Marine Monitoring Program that Serves Management Purposes
- December 1997—Vol. 3, No. 4—Public-Private Partnership Gathers Momentum
- March 1998—Vol. 4, No. 1—New Lab Opens in Batangas
- June 1998—Building Regional Management Capacity for a Better Marine Environment in the 21<sup>st</sup> Century

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## **CD-ROM and Manual**

- Paw, James N., Noel A. Robles and Edmond Titus A. Calderon. 1998. CD-ROM Environmental Management Spatial Database of the Batangas Bay Region. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas and the Department of Environment and Natural Resources, Quezon City, Philippines [includes a Manual on How to Use the Environmental Management Spatial Database of the Batangas Bay Region. 17 p.]





# **Annexes**

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## Annex 1

## List of Memorandum of Agreement / Memorandum of Understanding

YEAR	CONTRACT NO.	NAME	SUBJECT	DURATION
1994	MOU/01-94/GEN	SAREC Bilateral Marine Programme/IMO/Ministry of Science, Technology & Environment, Vietnam	Developing Institutional Capacity to Manage Marine Pollution in Vietnam	3/23/94
	MOU/02-94/Batangas	UNDP/IMO/DENR/Provincial Government of Batangas/BCRMF	Batangas Bay Demonstration Project	4/28/94
	MOA/03-94/GEN	Malaysian Institute of Maritime Affairs	Consultative meeting on pollution risk management in the Strait of Malacca	6/14/94-6/16/94
	MOA/13-94/Xiamen	Municipal Government of Xiamen, China	Xiamen Demonstration Project	10/8/94 (1994-1998)
	MOA/17-94/GEN	IMO/Coastal Management Center (CMC)	Collaboration on building up national/regional capabilities	11/20/94
1996	MOA/11-96/Gen	Coastal Management Center	National Training Course in Sampling and Analytical Technique in Marine Pollution Monitoring	3/10/96-3/16/96
	MOA/37-96/Gen	State Hydrometeorological Administration	Marine Pollution Monitoring Programme for Nampo	6/96-12/98
	MOA/57-96/GEN	Korea Ocean Research and Development Institute (KORDI)	Masan-Chinhae Bay project	10/1/96
1997	MOA/14-97/GEN	Coastal Management Center	Equipment and Accessories for Nha Trang Institute of Oceanology	11/24/96-6/30/97
	MOA/17-97/IC	Maritime Institute of Malaysia	Framework of National Legislation	01/31/97-06/30/97
	MOA/21-97/SF	University of Rhode Island (Grigalunas)	Socio-economic impact and cost-benefit appraisal	2/14/97-4/21/97
	MOA/23-97/MARPOL	Vietnam National Maritime Bureau (VINAMARINE)	Workshops on MARPOL 73/78 and other international conventions	2/17/97
	MOU/37-97	Provincial Gov't of Batangas/IMO/WASTE	Integrated Waste Management	5/15/97
	MOA/48-97/Malacca	Philippine Ports Authority	Feasibility study for the reception facility for the Batangas port & 2 other Philippine ports	7/11/97-10/31/97

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YEAR	CONTRACT NO.	NAME	SUBJECT	DURATION
	MOA/52A-97/Malacca	Bogor Agricultural University	Capacity building in the region	7/01/97-6/30/98
	MOA/55A-97/Malacca	University of Malaysia	1- Development of database system and GIS 2- Oil spill contingency plan 3- Resource mapping 4- Resource valuation 5- Pollution sources database and GIS mapping 6. Pollution prevention and management 7. Benefit-cost analysis 6- Benefit-cost analysis model	7/30/97-6/30/98
	MOA/82-97/MS	East West Center	Lessons Learned	09/30/97-2/28/98
	MOA/87-97/MARPOL	Directorate of Water and Marine Pollution	National Profile on Indonesia	10/01/97-10/31/97
1998	MOA/01-98/DENR	Department of Environment & Natural Resources	Environmental Management Atlas	1/1/98-5/31/98
	MOA/02-98/DENR	Department of Environment & Natural Resources	Monitoring Program for ICM Sites	1/1/98-12/31/98
	MOA/03-98/DENR	Department of Environment & Natural Resources	Sustainable Financing Mechanisms	1/1/98-11/30/98
	MOA/04-98/MARPOL	Directorate General of Sea Communication	Cost-effective shore reception facilities	1/14/98-1/15/98
	MOA/24-98/DENR	Department of Environment and Natural Resources	National ICM Training Program	3/31/98-7/31/98
	MOA/53-98/NIO	Nhatrang Institute of Oceanology	Monitoring networking site in Van Phong Bay	8/98
	MOA/54-98/HIO	Haiphong Institue of Oceanology	Monitoring networking site in Ha Long Bay	8/98
	MOU/58-98/	Universiti Putra Malaysia	Conference on the Straits of Malacca	12/8/98-04/99
1999	MOU/23/99	Provincial Government of Batangas	Development of an Integrated Coastal Management Training Center in Batangas	07/15/99
	MOA/32/99/MARPOL	Department of Transportation and Communcation	Workshop on the Claims Process under CLC and FUND	09/29/99

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List of Contracts for the Year 1994

CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
CC/04-94/Batangas	Danilo Israel	7/15/94-9/30/94
CC/05-94/Batangas	Candido Cabrido, Jr.	7/16/94-3/31/95
CC/06-94/Batangas	Rogelio Juliano	7/16/94-3/31/95
CC/07-94/Batangas	Gil Jacinto	7/16/94-3/31/95
SC/08-94/Publication	Rachel Atanacio	8/13/94-8/13/95
CC/09-94/MS	Capt. Kuttan Chitaranjan	8/29/94-9/3/94
CC/10-94/MS	Dr. G. Naidu	8/29/94-9/3/94
CC/11-94/MS	Aprilani Soegiarjo	8/29/94-9/3/94
CC/12-94/Batangas	Danilo Israel	10/1/94-10/31/94
CC/14-94/HQ	Huming Yu	10/15/94-12/15/94
SC/15-94/MPMIM	Dolores Diamante	10/17/94-10/16/95
CC/16-94/Batangas	Danilo Israel	11/1/94-12/31/94

List of Contracts for the Year 1995

CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
	Municipal Government of Xiamen Project No.1: Establishment of a Planning Coordination Framework and Mechanism for Marine Pollution Mitigation in Xiamen	1/8/95
Sub/01-95/Xiamen	Subproject 1: Establishment and Operation of Executive Committee for the Xiamen Demonstration Project	1/8/95-1/5/95
Sub/02-95/Xiamen	Subproject 2: Strengthening the Marine Management Division	1/8/95-10/5/95
Sub/03-95/Xiamen	Subproject 3: Establishment and Operation of a Coastal Research Coordinating Mechanism	1/8/95-1/5/96
Sub/04-95/Xiamen	Project No.2: Compilation of the Coastal Environmental Profile and Development of Strategic Management Plan for Xiamen	1/8/95-7/5/95
SC/05-95/PDMO	Amadeo Almario	2/1/95-12/31/95
SC/06-95/PDMO	Ma. Concepcion Bersamina	2/1/95-12/31/95
CC/07-95/MPMIM	Gil Jacinto	2/15/95-2/14/96
SC/08-95/Batangas	Corazon Abansi	4/3/95-4/2/96
SC/09-95/Batangas	Alexis Fabunan	4/17/95-4/17/96
SC/10-95/MPMIM	Voravit Cheevaporn	4/19/95-9/30/95
SC/11-95/SF	Catalina Tejam	4/24/95-4/23/96
SC/12-95/Publication	Jonel Dulay	5/2/95-8/3/95
SC/13-95/GIS	Noel Robles	5/2/95-5/1/95
CC/14-95/IC	Antonio La Vina	6/1/95-6/30/96
SC/15-95/PDMO	Vilma Rosales	6/13/95-9/12/95
CC/16/95	Gil Jacinto	6/16/95-11/30/95
SC/17-95/PDMO	Ferdinand Pascual	7/3/95-8/15/95
IC/18-95/Internship	Long Rithirak	7/15/95-12/15/95
SC/19-95/Publication	Jonel Dulay	8/4/95-8/3/95

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CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
CC/20-95/IC	Antonio La Vina	8/1/95-12/1/95
CC/21/95/MS	Teng Seng Keh	8/1/95-12/15/95
CC/22-95/IC	Stella Regina Bernad	9/1/95-6/30/96
SC/15-95 (b)/PDMO	Vilma Rosales	9/13/95-6/12/96
SC/23-95/PDMO	Eden Mandac	9/14/95-8/31/96
	Municipal Government of Xiamen Project No. 3	
Sub/24-95/Xiamen	Subproject 1: A Public Awareness Programme on the Coastal Environment for the Xiamen Demonstration Site	9/24/95-1/5/97
Sub/25-95/Xiamen	Subproject 2: Strengthening Regulations on the Management of Xiamen's Coastal Zone	9/24/95-1/5/96
Sub/26-95/Xiamen	Subproject 3: Waste Management and Prevention in Xiamen Coastal Zone	9/24/95-4/5/96
Sub/27-95/Xiamen	Subproject 4: Abatement and Management of Pollution on and from Coastal Aquaculture in Xiamen, China	9/24/95-7/5/96
Sub/28-95/Xiamen	Subproject 5: The Development of a Coastal Water Quality Standard for the Xiamen Demonstration Site	9/24/95-7/5/96
Sub/29-95/Xiamen	Subproject 6: Ecological and Socioeconomic Impacts of Economic Development in Xiamen Demonstration Site with Emphasis on Marine Pollution	9/24/95-4/5/96
CC/30-95/Batangas	Luis Eleazar (CANCELLED)	10/1/95-12/15/95
SC/31-95/MPMIM	Michael Reyes	10/16/95-11/15/95
CC/32-95/IC	Stella Regina Bernad	12/1/95-11/30/95
Sub/33-95/Xiamen	Municipal Government of Xiamen Contract 4: Study Tour of Mayors	11/10/95-11/12/95
Sub/34-95/MS	East Asia Response Pte. Ltd.	12/4/95-12/8/95



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## List of Contracts for the Year 1996

CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SC/01-96/PDMO	Amadeo Almario	1/3/96-6/30/96
SC/02-96/PDMO	Ma. Concepcion Bersamina	1/3/96-6/30/96
CC/03-96/Batangas	Luis Eleazar	1/4/96-3/4/96
SC/04-96/MS	Ramanathan Natarajan	1/4/96-6/3/96
SC/05-96/Publication	Jaime Ronquillo	1/8/96-6/30/96
SC/06-96/Publication	Edgardo Celso Bontoc	2/1/96/5/31/96
CC/07-96/IC	Stella Regina Bernad	2/1/96-9/30/96
CC/08-96/SF	Hans Jurgen Roos	2/9/96-11/18/96
Sub/09-96/Batangas	Marine Environment Resources Foundation	2/15/96-11/15/96
CC/10-96/MPMIM	Gil Jacinto	2/15/96-2/14/97
IC/12-96/Intern	Nguyen Minh Son	3/11/96-9/11/96
CC/13-96/MS	Aprilani Soegiarto	3/18/96-5/18/96
IC/14-96/Intern	O Ryang Pyong	3/11/96-9/11/96
IC/15-96/Intern	Ryang Chol	3/11/96-9/11/96
SC/16-96/SF	Rina Rosales	3/18/96-9/15/96
SC/17-96/MPMIM	Michael Reyes	4/1/96-6/30/96
SC/18-96/Batangas	Corazon Abansi	4/2/96-5/3/96
SC/19-96/GIS	Alexis Fabunan	4/18/96-10/17/96
SC/20-96/SF	Catalina Tejam	4/25/96-10/24/96
	Municipal Government of Xiamen Project No.5	
Sub/21-96/Xiamen	Subproject 1: Feasibility Study and Establishment of Xiamen Marine Environmental Management Foundation and Fund	4/25/96-1/5/97
Sub/22-96/Xiamen	Subproject 2: Development of a Functional Zonation Scheme for the Xiamen Demonstration Site	4/25/96-1/5/97
Sub/23-96/Xiamen	Subproject 3: Integrated Treatment of Yuan Dang Lake and Improvement of Ecological Environment	4/25/96-1/5/97
Sub/24-96/Xiamen	Subproject 4: Application of GIS for the Integrated Management of Wastes from Various Sources	4/25/96-1/5/97
Sub/25-96/Xiamen	Subproject 5: Development of an Action Plan for Integrated Management of Wastes from Various Sources	4/25/96-1/5/97
Sub/26-96/Xiamen	Subproject: Pollution Mitigation and Management in the Xinglin Sea Area	4/25/96-1/5/97
Sub/27-96/Xiamen	Subproject 7: Monitoring of Marine Environment and Assessing the Effectiveness of Pollution Management for Xiamen Demonstration Site	4/25/96-1/5/97
SC/28-96/PDMO	Angelita Poblete	4/29/96-7/31/96
SC/29-96/Batangas	Maribel Aloria	5/1/96-10/31/96

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CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SC/30-96/Publication	Deborah Villa	5/2/96-7/31/96
SC/31-96/GIS	Noel Robles	5/3/96-10/31/96
SC/32-96/Batangas	Roberto Cada	5/7/96-5/14/96
SC/33-96/Batangas	Josefina Matanguihan	5/7/96-11/7/96
SC/34-96/Batangas	Victoria Grace Aseron	5/14/96-8/20/96
Sub/35-96/MS	Korea Ocean Research and Development Institute (KORDI): Regional Workshop on Operational Oil Spill Modelling	5/30/96-6/3/96
SC/36-96/MS	Ramanathan Nataranjan	6/4/96-9/3/96
CC/38-96/IC	Brenda Jay Angeles	6/16/96-9/30/96
CC/39-96/IC	Carolyn Mercado	6/16/96-9/30/96
CC/40-96/IC	Therese Desiree Perez	6/16/96-9/30/96
SC/41-96/Publication	Jaime Ronquillo	7/1/96-9/30/96
SC/42-96/Batangas	Corazon Abansi	7/1/96-12/31/96
SC/43-96/PDMO	Amadeo Almario	7/2/96-12/31/96
SC/44-96/PDMO	Ma. Concepcion Bersamina	7/2/96-12/31/96
SC/45-96/MPMIM	Michael Reyes	7/2/96-12/31/96
SC/46-96/PDMO	Jane Morales	7/3/96-10/3/96
SC/47-96/IC	Rommel Reyes	7/25/96-10/15/96
SC/48-96/PDMO	Raul Diaz	8/2/96-9/6/96
SC/49-96/Batangas	Elizabeth Soriano	8/7/96-8/23/96
Sub/50-96/Batangas	Marine Environment & Resources Foundation, Inc.	8/11/96-6/30/97
SC/51-96/MPMIM	Vir Angelo Castillo Lontoc	9/2/96-10/2/96
SC/52-96/PDMO	Cornelio Artienda	9/4/96-10/14/96
SC/53-96/MS	Ramanathan Natarajan	9/5/96-1/31/96
SC/54-96/SF	Ma. Victoria Aseron	9/13/96-9/16/96
IC/56-96/Intern	Rina Maria Rosales	9/17/96-3/15/97
Sub/58-96/Xiamen	Nguyen Minh Son	9/24/96-3/21/97
	Office of the Executive Committee of Xiamen Demonsration Project	10/13/96-10/31/96
CC/59-96/	Low Kum Sang	10/14/96-11/10/96
SC/60-96/PDMO	Olivia Fornoles	10/22/96-1/22/97
SC/61-96/Publication	Lilian A. Jimenez-Marfil	10/24/96-1/24/97
SC/62-96/Batangas	Marinel Aloria	11/1/96-4/30/97
SC/63-96/GIS	Noel Robles	11/4/96-4/30/97
SC/64-96/Publication	Erdito Naeg	11/6/96-1/31/97
SC/65-96/Batangas	Josefina Matanguihan	11/8/96-5/8/97
SC/66-96/Publication	Allyn Valino Baldemor	11/11/96-12/31/96
CC/67/MS	Peter Calow	12/1/96-3/15/97

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## LIST OF CONTRACTS FOR THE YEAR 1997

CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SC/01-97/Batangas	Ronald R. Castillo	1/1/97-3/31/97
SC/02-97/Batangas	Corazon L. Abansi	1/197-6/30/97
SC/03-97/IC	Emmanuel A. Miraflores	1/1/97-2/15/97
SC/04-97/PDMO	Cornelio A. Artienda	1/2/97-3/31/97
SC/05-97/PDMO	Nancy Bermas	1/2/97-3/31/97
SC/06-97/Publication	Jonel Dulay	1/2/97-3/31/97
SC/07-97/PDMO	Eden O. Mandac	1/2/97-3/31/97
SC/08-97/PDMO	Catalino de la Paz	1/2/97-3/31/97
SC/09-97/SF	Catalina Tejam	1/2/97-3/31/97
SC/10-97/Publication	Deborah M. Villa	1/2/97-3/31/97
SC/11-97/MP/SF	Leticia B. Dizon	1/3/97-3/30/97
SC/12-97/PDMO	Ma. Concepcion Bersamina	1/6/97-6/30/97
SC/13-97/PDMO	Amadeo Almario	1/8/97-6/30/97
SC/15-97/PDMO	Olivia F. Fornoles	1/23/97-6/30/97
SC/16-97/Publication	Lilian Jimenez-Marfil	1/25/97-6/30/97
SC/18-97/Batangas	Rommel C. Amuan	2/10/97-4/30/97
CC/19-97/MPMIM	Gil S. Jacinto	2/16/97-2/15/98
SC/20-97/Intern	Fan Zhijie	2/17/97-8/15/97
CC/22-97/Batangas	Ernesto M. Serote	3/3/97-8/29/97
SC/24/97/SF	Rina Maria P. Rosales	3/16/97-4/14/97
Sub/25-97/Batangas	Marine Environment and Resources Foundation, Inc.	4/1/97-1/8/97
SC/26-97/PDMO	Eden O. Mandac	4/1/97-6/30/97
SC/27-97/Publication	Jonel P. Dulay	4/1/97-6/30/97
SC/28-97/Publication	Cornelio Artienda	4/1/97-6/30/97
SC/29-97/Publication	Deborah M. Villa	4/1/97-6/30/97
SC/30-97/SF	Catalina S. Tejam	4/1/97-7/31/97
CC/30B-97/IC	Stella Regina P. Rosales	4/1/97-12/31/97
SC/30C-97/SF	Rina Maria P. Rosales	4/15/97-9/30/97
CC/31-97/Consultant	Leticia B. Dizon	4/21/97-10/21/97
SC/32-97/	William Araza, Jr.	5/1/97-7/31/97
SC/33-97/Batangas	Noel R. Robles	5/2/97-4/30/98
SC/34-97/Batangas	Maribel Aguila Aloria	5/2/97-10/31/97
SC/35-97/Tech. Asst.	Danilo A. Bonga	5/8/97-7/31/97
SC/36-97/PDMO	Francis A. Almira	5/15/97-8/15/97
SC/38-97/Batangas	Edmund Titus Alista Calderon	5/27/97-7/31/97
SC/39-97/IC	Gina S. Basilio	6/1/97-8/31/97
SC/40-97/MARPOL	Alberto T. Muyot	6/1/97-6/30/97
CC/41-97/Batangas	Peter Calow	6/1/97-12/19/97
SC/42-97/	Maria Theresa Eboral Kalaw	6/16/97-7/24/97
SC/42B-97/Xiamen	Zhang Luoping	6/16/97-11/30/97
Sub/43-97/MARPOL	Coastal Management Center	6/18/97-11/30/97
CC/44-97/Batangas	Mario Delos Reyes	6/23/97-9/30/97
SC/45-97/Publication	Lilian A. Jimenez-Marfil	7/1/97-7/31/97
SC/46-97/PDMO	Amadeo Almario	7/1/97-12/31/97

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CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SUB/46B-97/PDMO	Coastal Management Center	7/1/97
SC/46C-97/PDMO	Cornelio Artienda	7/1/97-12/31/97
SC/46D-97/Publication	Jonel P. Dulay	7/1/97-12/31/97
SC/47-97/PDMO	Ma. Concepcion Bersamina	7/9/97-12/31/97
CC/49-97/IC	Therese Desiree K. Perez	7/16/97-10/31/97
CC/50-97/Batangas	Chitharanjan Kuttan	7/21-25/97 11/17-25/97
SC/51-97/Publication	Victoria Grace B. Aseron	7/28/97-9/28/97
SUB/52-97/Malacca	Centre for Coastal and Marine Resources Studies, Bogor Agricultural University	7/30/97-2/6/98
SUB/53-97/Malacca	Department of Fishing Technology Bogor Agricultural University	7/30/97-2/6/98
SUB/54-97/Malacca	Department of Oceanology, Bogor Agricultural University	7/30/97-12/31/97
SUB/55-97/Malacca	Institute of Post Graduate Studies and Research, University of Malaya	7/30/97-11/29/97
SUB/56-97/Malacca	Department of Mechanical Engineering, University of Malaya	7/30/97-1/31/98
SUB/57-97/Malacca	Department of Chemistry, University of Malaya	7/30/97-2/6/98
SUB/58-97/Malacca	Faculty of Economics, University of Malaya	7/30/97-2/6/98
SUB/59-97/Malacca	Institute of Postgraduate Studies and Research, University of Malaya	7/30/97-2/28/98
SUB/60-97/Malacca	Institute of Postgraduate Studies and Research, University of Malaya	7/30/97-2/6/98
SUB/61-97/Malacca	Department of Chemistry University of Malaya	7/30/97-12/31/97
SC/62-97/Malacca	Delilah Padilla	8/4/97-10/30/97
SUB/63-97/Batangas	Mandala Agricultural Corporation Environmental Management Systems, Inc.	8/14/97-10/30/97
SC/64-97/PDMO	Maricel Bigal	8/18/97-11/18/97
SC/65-97/PDMO	Leo Rex C. Cayaban	8/18/97-11/18/97
SUB/66-97/Publication	Office for the Executive Committee of Xiamen Demonstration Project	8/28/97-9/30/97
SUB/67-97/SF	PRC Environmental Management, Inc.	8/28/97-11/14/97
SUB/68-97/Batangas	PRC Environmental Management, Inc.	9/2/97-4/30/98
SUB/69-97/Xiamen	Office for the Executive Committee of Xiamen Demonstration Project	14-20/10/97
SSC/70-97/MARPOL	Fan Zhijie	8/28/97-10/31/97
SSA/71-97/PDMO	Marlene Mariano	9/3/97-10/31/97
SUB/72-97/MS	Tropical Marine Science Initiative: National University of Singapore (Effective Measures)	9/97-12/31/97
SUB/73-97/MS	Tropical Marine Science Initiative: National University of Singapore (Marine & Coastal Resources Mapping)	0-2/6/98
SUB/74-97/MS	Tropical Marine Science Initiative: National University of Singapore (Marine Pollution Sources)	0-2/6/98
SC/75-97/Publication	Ma. Victoria Grace B. Aseron	10/1/97-3/31/98

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CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SUB/76-97/MS	Institute of Postgraduate Studies & Research: University of Malaya (Benefit-Cost Analysis)	0-1/30/98
SUB/77-97/MS	Center for Coastal & Marine Studies Bogor Agricultural University	0-1/30/98
SUB/78-97	Bangsaen Marine Science Association	10/3/97
SC/79-97/IC	Gina Basilio	9/26//97-12/31/98
SC/80-97/MPMIMN	Bresilda Gervasio	10/1/97-12/31/97
CC/81-97/Batangas	Mario Delos Reyes	10/1/97-12/31/97
SC/83-97/Batangas	Corazon L. Abansi	10/3/97-3/31/98
CC/84-97/MARPOL	Diana C. Factuar	10/13/97-11/30/97
CC/85-97/MS	Maria Corazon M. Ebarvia	10/20/97-3/3/98
CC/86-97/Consultant	Leticia B. Dizon	10/22/97-4/30/98
SC/87B-97/MS	Delilah C. Padilla	11/1/97-12/31/98
SC/87C-97/MS	Maribel Aguila Aloria	11/1/97-12/31/98
SC/88-97/Internship	Ir. Aceng Hidayat	11/3/97-4/27/98
SC/88B-97/PDMO	Marlene L. Mariano	11/3/97-4/30/98
SC/89-97/Internship	Dr. Zhang Haiwen	11/16/97-5/31/98
SC/90-97/Internship	Tran Dinh Lan	11/16/97-4/30/98
CC/91-97/MS	Thomas Grigalunas	10/27/97-4/28/98
SC/92-97/PDMO	Maricel F. Bigal	11/19/97-5/31/98
SC/93-97/PDMO	Leo Rex C. Cayaban	11/19/97-5/31/98
SC/94-97/PDMO	Aida Sanohan	12/1/97-5/31/98
SUB/95-97/Publication	Francis Almira	12/15/97-12/31/97
SUB/96-97/PSC	Nguyen Minh Son	12/13/97-12/19/97
SUB/97-97/PSC	Center for Marine Environment Survey Research and Consultation	12/17/97

## Annex 2

## LIST OF CONTRACTS FOR THE YEAR 1998

CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SSA/05-98/DENR	Jonel Dulay	1/1/98-6/30/98
SSA/06-98/DENR	Ma. Concepcion B. Nepomuceno	1/1/98-6/30/98
SC/07-98/PDMO	Amadeo Almario	1/1/98-6/30/98
SSA/08-98/DENR	Cornelio A. Artienda	1/1/98-6/30/98
SSA/09-98/DENR	Eden Mandac	1/1/98-6/30/98
SSA/10-98/DENR	Edmund Titus A. Calderon	1/1/98-6/30/98
SC/11-98/DENR	Danilo A. Bonga	1/2/98-12/31/98
SC/12-98/IC-MARPOL	Stella Regina Bernad	1/2/98-12/31/98
SC/13-98/DENR	Mario R. Delos Reyes	1/2/98-12/31/98
SSA/14-98/DENR	Jose Gerald Bacay	1/12/98-12/31/98
SSA/14b-98/Batangas	Victor Arellano	2/2/98-5/31/98
SC/15-98/MP	Gil Jacinto	2/14/98-12/31/98
SSA/16-98/Batangas	Augusto U. Escolano	2/16/98-4/15/98
Sub/17-98/In-service	Xiamen Demonstration Project Office	3/15/98-4/15/98
SC/18-98/Malacca	James L. Kho	3/15/98-5/31/98
CC/19-98/SF	Brenda Jay Angeles	3/15/98-7/31/98
CC/20-98/IC	Therese Desiree K. Perez	3/15/98-11/15/98
SC/21-98/	Vidhisha Samarasekara	3/22/98-9/30/98
CC/21B-98/	Kevin McGrath	3/25/98-6/25/98
Sub/22-98/GT	Institute of Marine Environmental Protection, State Oceanic Administration	3/30/98-5/4/98
Sub/23-98/IC	Coastal Management Center	3/31/98-9/30/98
SC/25-98/Batangas	Corazon L. Abansi	3/31/98-7/31/98
CC/26-98/Malacca	Peter Calow	4/1/98-12/31/98
SC/27-98/MPMIM	Bresilda Gervasio	4/8/98-6/17/98
SUB/28-98/Xiamen	Executive Committee Office Xiamen Demonstration Project Office	4/15/98-5/30/98
SSC/29-98/PDMO	Marlene L. Mariano	4/27/98-8/28/98
SC/30-98/	Leticia B. Dizon	5/1/98-12/31/98
SC/30B-98./Batangas	Noel Robles	5/2/98-12/31/98
SUB/31-98/BAT	Marine Environment & Resources Foundation, Inc.- Batangas Bay Demonstration Project on ICZM	5/8/98-12/31/98
SC/32-98/BAT	Aida Sanohan	6/1/98-12/31/98
C/33-98/TCD-RAS/97	Institute of Marine Environmental Protection, State Oceanic Administration	6/1/98-7/3/98
SSA/33B-98/PDMO	Eden Mandac	6/1/98-12/31/98
SUB/34-98/Consults	Tetra Tech Inc.	7/8/98-9/30/98
SC/35-98/PDMO	Bresilda Gervacio	6/1/98-12/31/98
SC/36-98/Consults	Arun Samuel Abraham	7/01/98-10/30/98
SC/36B-98/Admin	Amadeo Almario	7/01/98-12/31/98
SC/36C-98/PDMO	Cornelio A. Artienda	7/01/98-12/31/98
SSA/37-98/PDMO	Caroline A. Velasquez	7/02/98-7/31/98
CC/38-98/Consults	Ma. Corazon M. Ebarvia	7/15/98-9/30/98
SC/39-98/	Feng Meow Chan	7/15/98-7/30/98

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CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SC/39B-98/MPMIM	Nancy A. Bermas	7/16/98-12/31/98
SSC/40-98/IC	Eunice B.S.J. Agsaoay	7/20/98-8/31/98
SC/41-98/BBDP	Agnes Cargamento	7/28/98-8/14/98
SSA/42-98/PDMO	Caroline A. Velasquez	8/01/98-7/30/99
SC/43-98/PDMO	Maricel F. Bigal	8/01/98-7/30/99
SC/44-98/PDMO	Leo Rex C. Cayaban	8/01/98-7/30/99
CC/45-98/MSDP	Thomas Grigalunas	8/01/98-11/15/98
CC/46-98/MSDP	Robert Johnston	8/01/98-11/15/98
SSA/47-98/PDMO	Antonio Gonzales	8/07/98-8/14/98
CC/48-98/MSDP	Peter Calow	8/15/98-11/15/98
Sub/49/98/MSDP	Directorate for Water Marine Pollution Control	8/25/98-8/27/98
IC/50-98/PDMO	Alam Syah Mapparessa	9/4/98-3/4/99
Sub/51-98/PDMO	Office for the Executive Committee of Xiamen Demonstration Project	9/15/98-9/21/98
Sub/52-98/XDP	Chou Loke Ming	9/21/98-9/26/98
SC/55-98/XDP	Teng Seng Keh	10/01/98-12/31/98
Sub/56-98/BBDP	Global Village of Beijing	11/01/98-1/21/99
Sub/57-98/Bat	Seaconsult Marine Research Ltd.	10/8/98-12/31/98

Annex 2

LIST OF CONTRACTS FOR THE YEAR 1999

CONTRACT NO.	NAME	DATE OF ISSUE/CONTRACT DURATION
SC/01-99/SF	Bresilda Gervacio	01/02/99-06/30/99
SC/02-99/	Mario R. Delos Reyes	01/02/99-03/31/99
SC/03-99/Bat	Corazon Abansi	01/02/99-06/30/99
SSA/04-99/Publication	Floris Norina L. Carada	01/04/99-03/04/99
SC/05-99/IC	Maria Socorro Z. Manguiat	02/01/99-03/31/99
SC/06-99/MS	Maricor Ebarvia	02/15/99-06/30/99
SSA/07-99/Publication	Floris Norina L. Carada	03/05/99-06/30/99
SC/08-99/IC	Ingrid Rosalie L. Gorre	03/15/99-06/30/99
SUB/09-99/MS	Low Kum Sang	01/02/99-03/31/99
SC/10-99/Batangas	Mario R. delos Reyes	04/01/99-06/30/99
SUB/11-99/Batangas	Marine Environment and Resources Foundation , Inc.	04/15/99-06/30/99
SC/12-99/Batangas	Luis Eleazar	04/28/99-06/30/99
SC/13-99/	Muriel S. Ordoñez	05/04/99-06/30/99
SUB/13A-99/TCD	Maritime Port Authority of Singapore	05/31/99-09/30/99
CC/14-99/PDMO	Chou Loke Ming	05/19/99-08/15/99
SSA/15-99/Nat'l Prof.	Diana C. Factuar	07/01/99-09/30/99
SC/16-99/MS	Maria Corazon M. Ebarvia	07/05/99-09/30/99
CC/17-99/	Hans-Jürgen Roos	07/15/99-07/01/200
SSA/18-99/Publication	Floris Norina L. Carada	07/01/99-09/30/99
SSA/19-99/	Carmencita Abella	07/01/99-08/15/99
SC/20-99/IC	Ingrid Rosalie L. Gorre	07/01/99-09/30/99
SC/20A-99/IC	Stella Regina Bernad	07/01/99-09/30/99
SC/21-99/IC	Maria Socorro Z. Manguiat	07/15/99-09/30/99
SUB/22-99/Xiamen	Xiamen Demonstration Project Office	07/15/99-09/15/99
SSA/24-99/PDMO	Efren Madriaga	08/11/99-09/30/99
SSA/25-99/PDMO	Eugene de Guzman	08/13/99-09/30/99
SUB/26-99/SF	Dr. Corazon Abansi (Management Technology Development Center)	08/23/99-09/24/99
CC/27-99/Xiamen	Dr. Gil Jacinto	09/15/99-09/29/99
SUB/28-99/PDMO	Coastal Management Center	06/01/99-03/15/00
SUB/29-99/MSDP	Seaconsult Marine Research Ltd.	09/20/99-03/15/00
SUB/30-99/Batangas	Global Village of Beijing	09/20/99-12/30/99
SUB/31-99/MSDP	Marine Environment and Resource Foundation, Inc.	10/22/99-02/28/00



**Annex 3**

**LIST OF EQUIPMENT**

(Purchased for Programme activities January 1994 - September 1999)

DESCRIPTION	QTY	DESCRIPTION	QTY
<b>OFFICE EQUIPMENT</b>			
Aircon, Carrier, 1.5HP Spit Type	1	Karaoke, HK W34, Sharp	1
Aircon, Carrier, 1HP Window Type	1	Magellan Hand-held GPS NAV DLX-10	1
Aircon, Carrier, 2HP Window Type	6	Microwave Oven, Whirpool	1
Aircon, Carrier, 3HP Package Type	3	Modem, US Robotic 28.8	1
Aircon, National, Spit Type 2.0 HP	2	Monitor, IBM SVGA 14"	2
Binding Machine, Bindomatic 5000	1	Monitor, MAG D410, 14"	2
Binding Machine, Ring Binder, Ibimaster	1	Monitor, MAG Innovision Monitor, 15"	1
Bookshelf, Sauder	1	Monitor, NTC 14" SVGA	6
Cabinet, Filing, Steel, 4 drawers	19	Monitor, Optiquess Q41, 14"	4
Cabinet, Safe file, Steel, legal size	1	Monitor, Philips, 14"	1
Cabinet, Storage, Steel	4	Monitor, Regent, 14"	1
Calculator, Desktop, EL-2626H, Sharp	1	Monitor, Sunstar, 14"	1
Calculator, Desktop, EL-354L, Sharp	1	Multimedia Digital Video Creator	1
Calculator, EL-2630L, Sharp	1	Network Server, Acer Altos 1100	2
Camera, Olympus IS-200	1	Network Server, Acer Altos 500	1
CD ROM Drive, External 24X Mobile	1	Notebook, Acer Travel Mate 313T	1
Cellular Phone, Motorola	1	Notebook, Compaq Armada 1550T	2
Cellular Phone, Nokia Model 909	2	Notebook, Compaq Contura 410C M250	1
Cellular Phone, Nokia 2110I	1	PA System, Model Jcc-420, Evertop	1
Chair, Clerical	5	Paper Shredder, Triumph/Adler	1
Chair, Computer, with gas lift	3	PC IBM Compatible, 486 DX4-100 (upgraded)	6
Chair, Conference, CH810	10	PC IBM Compatible, Intel Pentium III 450	3
Chair, Executive, Hb-403	5	PC IBM Compatible, Intel Pentium III 500	10
Chair, Posture, CO2A	4	PC IBM Compatible, Pentium 166 MMX	9
Credenza, Sauder	1	PC IBM Compatible, Pentium 200 MMX	5
Digitizer Lift Base, Calcomp	1	PC IBM Compatible, Pentium 233 MMX	3
Digitizer Table, Calcomp, 36" X 24"	1	PC IBM Compatible, Pentium II 233 CPU	1
Digitizer, Microgrid, Summagraphic	2	PC IBM Compatible, Pentium II 266 CPU	3
D-Link Ethernet Switch	1	PC IBM Compatible, Pentium II 333 CPU	1
Electronic Time Recorder, Kitano	1	PC IBM Compatible, Pentium III 500	3
Ensign XL GPS, Trimble Navigation	3	Personal Computer, Acer Aspire 6180	1
Executive Desk, Sauder	1	Personal Computer, Compaq Contura 430C M720	1
Facsimile Machine, Model TC-120, MITA	1	Personal Computer, Compaq Pentium 100	1
Facsimile Machine, Model: FT-101, Sampo	1	Personal Computer, HP Vectra VL5 200	1
Facsimile Machine, Panasonic KX-F1010BX	1	Personal Computer, IBM PC330 486DX2/66	1
Floor Polisher, Wilson	1	Personal Computer, Pentium 133, ACER	2
Global Positioning System	4	Philipps Palmtop	1
Handycam, Sony Model DCR-TRV900	1	Photo Copier, Model DC-1258, MITA	1
Intercom Set	1	Postage Machine, Hasler	1

**Annex 3**

DESCRIPTION	QTY	DESCRIPTION	QTY
Printer, Color, Lexmark Inkjet	1	UPS, ADMATE, 800w	1
Printer, EPSON LQ 2170	1	UPS, APC 600va	1
Printer, HP 693C Inkjet	5	UPS, APC Back UPS-400va	4
Printer, HP Deskjet 400	5	UPS, APC Back-UPS 500va	4
Printer, HP Deskjet 660C	1	UPS, APC back-UPS 650 VA	6
Printer, HP Deskjet 670C	2	UPS, APC Back-UPS 650va	6
Printer, HP Laserjet 2100M	1	UPS, APC Net Smart	1
Printer, HP Laserjet 4ML	1	UPS, BEST Patriot 400VA	1
Printer, HP Laserjet 5L	3	UPS, Everpower, 500w	1
Printer, HP Laserjet 6L	1	UPS, HI-POWER 650va	1
Printer, Photo, Epson Stylus 1200	1	UPS, Power Grid 1200va	3
Projector Screen, Front , OS	2	UPS, Power Grid 750va	2
Projector Screen, Wall Type, 70" x 70"	1	UPS, Sunstar 500w	2
Projector, LCD, ELMO	1	UPS, Sunstar 650va	1
Projector, Overhead, Model 285/S, Edutec	1	Vacuum Cleaner Model 6601-S	1
Projector, Overhead, Model 4400, EIKIA	1	Vacuum Cleaner, Shop Vac	1
Projector, Slide, Ektalite	1	Vehicle, KIA Pregio GS MT	1
Projector, Slides, Model 2000AF, Hannimex	1	Vehicle, Mitsubishi L300 Van	1
Refrigerator, 2 Door, National	1	Vehicle, Toyota Hi-Lux	1
Refrigerator, 8 cubic ft., GE	1	Video Cassette Recorder, JVC	1
Refrigerator, Kelvinator, 6 cu.ft.	1	Wireless Mike, Shure MIC ETPD	1
Safe, Fire/Electronic Lock Safe, SENTRY	1	YAMAHA CD Rewritable Drive	1
Scanner, HP Scan Jet licx	1		
Shelve, Steel, Open Type (Special Made)	3	LABORATORY EQUIPMENT	
Shelve, Steel, Open Type, Standard	14		
Software, ArcView version 3.0 for WindowsXX/NT	1	Analytical Balance	5
Software, Harvard Graphics	1	Box Corer, Wildco	1
Software, IBM OS/2 Warp v3.0	1	Colony Counter	1
Software, MS Office Professional V7.0 for Win '95	1	Color Video Sounder, FURUNO	1
Software, MS Windows '95	1	Conductivity/Temperature Depth Recorder	1
Software, Quattro Pro for DOS v5.5	1	Current Meter	1
Software, Quattro Pro V6 for Windows 95	1	Dissolved Oxygen Meter	2
Software, SPANS GIS Package	1	Distilling System	2
Software, Virus Scan V2.22	1	Drying Oven	2
Stool, Jade	10	Echo Sounder System	2
Telephone, Model KX7-2810, Panasonic	1	Filtration Unit	1
Television Set, JVC Model 29MX3	1	Hotbox Oven, Gallenkamp	1
Typewriter, Electronic, Triumph/Adler	1	L/S Priority Pollutant Sampling Pump	1
UPS, ACER Power Pro 150	1	Laboratory Freezer	2
UPS, ADMATE, 500w	3	Laboratory Microscope	2

### Annex 3

DESCRIPTION	QTY
Magnetic Stirrer with Spinbars	1
Manifold Filtration System	1
Messenger, Go Devil 320Z Model 1000MG	2
Petersen Grab Dredge	1
PH Meter	4
Priority Pollutant Sampling System	2
Refractomer, Salinity, S/Mill, Atago	1
Refractometer	3
Secchi Disk	1
Sediment Samplers	1
Spectrophometer, Milton Roy Spectronic 21 DUV	1
Spectrophometer, Shimadzu Atomic Absorption	1
SPO 61 Scaltec Balance	1
Top Loading Balance	3
Turbidimeter, Model DRT-100B	1
Ultrasonic-Cleaner, Cole Parmer	1
UV-VIS Spectrophometer	2
Vacuum Filtration Unit	1
Water Purification System	3
Water Quality Checker	4
Water Sampler	2
Water Sampler, 1.7L	2
Water Sampler, 2.2L	1
Water Sampler, 5L	2

## Annex 4

## Programme Development and Management Office

## Brief Staff Profile

Name	Designation	Educational Background	Entry on Duty	Departure
Dr. Chua Thia-Eng	Regional Programme Manager	Ph.D. in Zoology	01/17/94	06/30/99
Ms. Socorro C. Guerrero	Head, Finance and Administration	Bachelor of Arts in Secretarial Science	01/17/94	06/30/99
Ms. Bresilda Gervacio	Programme Dev't. Training Officer Research Associate	Masters of Environmental Mgmt. & Development Master of Public Administration (Candidate)	01/17/94 10/01/97 4/17/98	12/01/95 12/31/97 12/31/98
Mr. James N. Paw	Technical Programme Officer	Master in Aquaculture	04/18/94	10/9/98
Ms. Liligrace Cuanang	Secretary	Bachelor of Arts	05/03/94	6/13/95
Dr. Gil Jacinto	Coordinator for the Regional Network on Environmental Quality Monitoring and Information Mgmt.	Ph.D. in Marine Chemistry	07/16/94	12/31/98
Dr. Candido Cabrido, Jr.	Batangas: Environmental Profile and Management Plan	Ph.D. in Urban Planning	07/16/94	03/31/95
Dr. Rogelio O. Juliano	Batangas: Environmental Profile and Management Plan	Doctor of Agriculture major in Fisheries	07/16/94	03/31/95
Ms. Rachel C. Atanacio	Artist		08/13/94	04/30/95
Capt. Chitharanjan Kuttan	Malacca Strait: Pollution Risk Management	Commissioned Naval Officer	08/29/94	09/03/94
Dr. Aprilani Soegiarto	Malacca Strait: Pollution Risk Management	Ph.D.	08/29/94	09/03/94
Prof. G. Naidu	Malacca Strait: Pollution Risk Management	B.A. Hons. (Analytical Economics)	08/29/94	09/03/94
Ms. Dolores Ariadne D. Diamante	Research Associate	M.S. in Marine Science	10/17/94	10/16/95
Mr. Antonio D. Hernandez, Jr.	Accounting Clerk	Bachelor of Science in Commerce	12/16/94	06/30/99
Dr. Danilo Israel	Site Manager, Batangas	Ph.D. in Applied Economics	11/01/94	01/02/97

**Annex 4**

<b>1995</b>				
Ms. Ma. Concepcion B. Nepomuceno	Office Attendant	Secretarial Course (undergraduate)	02/01/95	12/31/98
Mr. Amadeo Almario	Utility Person / Messenger	Gen. Radio Communications Operator (2 year course)	02/01/95	12/31/98
Dr. Corazon Abansi	Officer for the Batangas Bay Demonstration Project	Ph.D. in Agro-Economics	04/03/95	12/31/98
Mr. Alexis Fabunan	Technical Assistant/GIS Assistant	B.S. in Aircraft Technology	04/17/95	09/17/98
Dr. Voravit Cheevaporn	Research Associate	Ph.D. in Marine Pollution Chemistry	04/19/95	09/30/95
Ms. Catalina Tejam	Resource Economist	MA in Economics	04/24/95	08/01/97
Mr. Noel Robles	Senior Technical Assistant (GIS)	Bachelor of Science in Commerce	05/02/95	12/31/98
Mr. Jonel P. Dulay	Technical Drawing Specialist	Architecture	05/02/95	12/31/98
Dr. Antonio G.M. La Viña	Coordinator: Legal Network	Doctorate in the Science of Law	06/01/95	06/30/96
Ms. Pythias Espino	Technical Assistant on Environmental Chemistry	MS in Chemistry Ph.D. in Chemistry (candidate)	07/16/95	12/31/95
Dr. Teng Seng Keh	Consultant – Malacca Straits Environment Profile	Ph.D. in Aquaculture	08/11/95	12/15/95
Ms. Eden O. Mandac	Secretary	Bachelor of Science in Commerce	08/14/95	12/31/98
Ms. Stella Regina Q. Bernad	Assistant Coordinator: International Conventions	Bachelor of Laws	09/01/95	12/31/98
Vilma Rosales	Secretary	BS Commerce	09/13/95	07/12/96
Mr. Michael Reyes	Research Associate	B.S. Chemistry	10/15/95	4/1/97
<b>1996</b>				
Mr. Jaime P. Ronquillo	Publications Coordinator	AB in English	01/08/96	09/30/96
Mr. Luis P. Eleazar	Consultant-Batangas Bay Strategic Management Plan	BSc in Forestry MS in Forestry Economics	01/04/96	03/01/96
Mr. Catalino dela Paz	Computer Programmer	BS in Business Administration	01/01/96	04/30/97
Mr. Edgardo Celso S. Bonto	Project Assistant	BA in Political Science (College of Law)	2/01/96	5/31/96
Capt. Hans Jurgen Roos	Consultant		02/09/96	11/18/96
Ms. Rina Rosales	Research Associate	Master's Degree in International and Development Economics	03/18/96	9/30/97

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Dr. Aprilani Soegiarto	Consultant	Ph.D.	03/18/96	05/18/96
Ms. Angelita T. Poblete	Programme Management Assistant	Diploma in Secretarial Arts (undergraduate – BSBA)	04/29/96	06/01/96
Ms. Maribel Aguilera Aloria	Environment Monitoring Specialist, ENRO	Bach. of Science in Chemistry	05/01/96	12/31/98
Ms. Deborah Macias Villa	Technical Editorial Assistant	M.S. in Environmental Science	05/02/96	12/10/97
Mr. Roberto Cada	Artist		05/07/96	05/14/96
Ms. Josefina Matanguihan	Environment Management Specialist		11/08/96	05/08/97
Ms. Victoria Grace B. Aseron	Artist	Bachelor of Fine Arts	05/14/96	03/31/98
Ms. Mary Ann R. dela Peña	Finance Assistant	BSBA – Accounting	06/03/96	06/30/99
Mr. Ramanathan Natarajan	Research Assistant	Master of Science	06/03/96	01/31/97
Ms. Carolyn Mercado	Research Associate	Bachelor of Laws	06/16/96	05/23/97
Ms. Therese Desiree Perez	Research Associate	Bachelor of Laws	06/16/96	11/15/98
Ms. Brenda Jay Angeles	Research Associate	Bachelor of Laws	06/16/96	07/31/98
Ms. Nancy A. Bermas	Technical Programme Assistant	MS Biology	07/01/96	12/31/98
Ms. Jane S. Morales	Secretary	Bachelor of Arts in Library Science	07/03/96	10/03/96
Mr. Rommel M. Reyes	Project Assistant	B.A. Economics	07/15/96	10/15/96
Mr. Raul M. Diaz	Lay-out Artist		08/02/96	09/06/96
Ms. Elizabeth Soriano	Copy Editor	BA in Asian Studies	08/07/96	08/23/96
Mr. Vir Angelo Lontoc	Data Encoder	BS Computer Engineering (Undergraduate)	09/02/96	10/02/96
Mr. Cornelio A. Artienda	Training Officer	B.S. Industrial Education	09/04/96	12/31/98
Mr. J.G. M. Peet	Consultant		10/01/96	11/14/96
Ms. Olivia Fornoles	Secretary	A.B. in English	10/22/96	06/30/97
Ms. Lilian Marfil	Publications Coordinator	MA in Communications	10/24/96 07/01/97	01/24/97 07/31/97
Mr. Erdito Naeg	Copy Editor	AB in Political Science	11/06/96	01/31/97
Prof. Peter Calow	Consultant	Ph.D. (Leeds 1972)	12/09/96 06/01/97	03/15/97 12/19/97
Dr. Valery Forbes		Ph.D. in Coastal Oceanography	04/08/98 08/15/98	06/17/98 11/15/98
Mr. Augusto U. Escolano	Training Officer	Master of Science in Maritime Education and Training – Engineering	05/15/96 02/16/98	08/31/96 04/15/98

**Annex 4**

<b>1997</b>				
Mr. Ronald R. Castillo	Environment Monitoring Assistant		01/01/97	03/31/97
Mr. Emmanuel A. Miraflores	Programme	BS Business Administration	01/01/97	02/15/97
Mr. Catalino R. dela Paz	Computer Programmer	BS in Business Administration	01/02/97	03/31/97
Dr. Leticia B. Dizon	Information Officer	Ph.D. in Communication	01/03/97	12/31/98
Mr. Rommel C. Amuan	Technical Assistant (GIS)	B. Sc. in Nursing	02/10/97	04/30/97
Mr. Ernesto M. Serote	Consultant	MA in Urban & Regional Studies	03/03/97	08/29/97
Mr. Danilo A. Bonga	Research Assistant	MS in Marine Science (candidate)	05/08/97	12/31/98
Mr. Francis Almira	Computer Programmer	B.S. in Applied Mathematics	05/15/97	12/15/97
Mr. Edmond Titus Alisla Calderon	Technical Assistant (GIS)	B.Sc. in Commerce	05/27/97	12/31/98
Ms. Gina Basilio	Technical Assistant	BS in Business Administration	06/01/97	12/31/98
Mr. Alberto T. Muyot	Consultant	Bachelor of Laws MA in Laws	06/01/97	06/30/97
Zhang Luoping	Research Assistant		6/16/97	07/24/97
Ms. Ma. Theresa Ebor Kalaw	Research Assistant	BS in Agricultural Chemistry	06/16/97	07/24/97
Chitharanjan Kuttan	Consultant		07/21/97 11/17/97	07/25/97 11/25/97
Mr. William A. Araza	Clerk	Bachelor in Office Administration	02/01/97	07/31/97
Ms. Delilah Padilla	Research Assistant	BSc in Biology	08/04/97	12/31/98
Mr. Leo Rex Cayaban	Editorial Assistant	B.S. in Forestry	08/18/97	06/30/99
Ms. Maricel Bigal	Editorial Assistant	B.S. in Development Communication	08/18/97	06/30/99
Ms. Marlene Mariano	Secretary	B.S. in Management	09/03/97	12/31/98
Dr. Mario delos Reyes	Programme Officer	Doctor in Natural Science	07/23/97	12/31/98
Ms. Diana C. Factuar	Consultant	MSc in General Maritime Administration & Environment Protection	10/13/97	11/30/97
Ms. Ma. Corazon M. Ebarvia	Consultant	MA in Economics PH.D. in Economics (candidate)	10/20/97	09/30/98
Ms. Aida Sanohan	Environmental Monitoring Assistant	B.S. Chemistry	12/01/97	12/31/98

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1998				
Mr. Jose Gerard Bacay	Publications Assistant	Associate in Marine Engineering (2 year course)	01/12/98	12/31/98
Mr. Victor A. Arellano	Consultant	MA in Management major in Public Management	02/02/98	05/31/98
Mr. Anastacio Saniano	Supervising Environment Management Specialist/Council Coordinator	MA in Economics	02/15/98	12/31/98
Atty. James L. Kho	Research Associate/Writer		03/15/98	05/31/98
Dr. Vidhisha Samarasekara	Asst. Technical Programme Officer	Ph.D. in Ecology	03/22/98	09/30/98
Mr. Kevin McGrath	Consultant	International Studies/Relations, School of Foreign Service (Georgetown)	03/25/98	07/12/98
Mr. Arun Samuel Abraham	Consultant	MA in Political Economy (Ph.D. candidate – Engineering Science & Technical Management)	07/01/98	10/30/98
Ms. Caroline Velasquez	Secretary	Bachelor of Arts in International Studies	07/02/98	06/30/99
Ferdinand Pascual	Office Assistant		07/03/98	08/15/98
Dr. Feng Meow Chan	Consultant	Ph.D. in Organic Chemistry	07/15/98	09/30/98
Ms. Eunice Agsaoay	Technical Assistant	Bachelor of Laws	07/20/98	08/31/98
Ms. Agnes Cargamento	Technical Reviewer		07/28/98	08/14/98
Prof. Thomas Grigalunas	Consultant	Ph.D.	08/01/98	11/15/98
Mr. Antonio Gonzales	Layout Artist	Bachelor of Fine Arts	08/07/98	08/14/98
Dr. Chou Loke Ming	Contractor	Ph.D.	09/07/98	09/26/98
Dr. Teng Seng Keh	Consultant	Ph.D. in Aquaculture	10/01/98	12/31/98



Annex 4

1999				
Ms. Bresilda Gervacio	Research Associate	Masters of Environmental Mgmt. & Development Master of Public Administration (Candidate)	01/02/99	06/30/99
Dr. Mario delos Reyes	Programme Officer	Doctor in Natural Science	01/02/99 04/01/99	03/31/99 06/30/99
Dr. Corazon Abansi	Officer for the Batangas Bay Demonstration Project	Ph.D. in Agro-Economics	01/02/99	06/30/99
Ms. Florisa Norina L. Carada	Editorial Assistant	BS Development Communication	01/04/99 03/05/99 07/01/99	04/04/99 06/30/99 09/30/99
Atty. Maria Socorro Z. Manguiat	Legal Research Assistant	Master of Laws Bachelor of Laws	02/0/99 07/15/99	03/31/99 09/30/99
Ms. Maria Corazon M. Ebarvia	Consultant Resource Economics	MA in Economics PH.D. in Economics (candidate)	02/15/99 07/05/99	06/30/99 09/30/99
Atty. Ingrid Rosalie L. Gorre	Research Associate	Bachelor of Laws	03/15/99 07/01/99	06/30/99 09/30/99
Dr. Luis P. Eleazar	Consultant	Doctor of Public Administration	04/28/99	06/30/99
Ms. Muriel S. Ordoñez	Chief Editor	MA in Political Science	05/04/99	06/30/99
Dr. Chou Loke Ming	Consultant	Ph..D.	05/19/99	08/15/99
Ms. Diana C. Factuar	Training Co-ordinator	MSc in General Maritime Administration & Environmental Protection	07/01/99	09/30/99
Capt. Hans – Jurgen Roos	Consultant		07/15/99	07/01/99
Ms. Carmencita Abella	Consultant	MA Psychology	07/01/99	08/15/99
Atty. Stella Regina Bernad	Legal Advisor	Bachelor of Laws	07/01/99	09/30/99
Mr. Efren D. Madriaga	Office Assistant	Undergraduate Aeronautics	08/11/99	09/30/99
Mr. Eugene C. de Guzman	Computer Technician	MS Computer Engineer	08/13/99	09/30/99

## Annex 5

**REGIONAL PROGRAMME ON MARINE POLLUTION PREVENTION  
AND MANAGEMENT IN THE EAST ASIAN SEAS  
(RAS/92/G34)**

**TOTAL PROJECT EXPENDITURE  
AS OF 30 SEPTEMBER 1999**

	<b>Actual To date</b>	<b>Obligated</b>	<b>Total</b>
Xiamen Demonstration Project	956,331.01	12,564.00	968,895.01
Batangas Bay Demonstration Project	653,558.93	19,004.50	672,563.43
Malacca Straits Demonstration Project	754,288.55	40,020.37	794,308.92
Marine Pollution and Information Management	591,855.31	4,947.68	596,802.99
International Conventions	211,179.30	4,930.11	216,109.41
Sustainable Financing	285,168.10	1,143.58	286,311.68
<b>SUB-TOTAL</b>	<b>3,452,381.20</b>	<b>82,610.24</b>	<b>3,534,991.44</b>
Programme Steering Committee	150,975.39		150,975.39
Technical Advisory Group	6,015.00		6,015.00
Evaluation Mission	116,184.77		116,184.77
Other Mission	13,585.00		13,585.00
Programme Operation (PDMO)	610,501.91	109,090.52	719,592.43
Programme Professional Staff	1,441,139.21	41,500.96	1,482,640.17
Intern Fellowship	76,954.64		76,954.64
Consultants	100,585.82	12,500.00	113,085.82
Duty Travel	271,808.21	1,073.92	272,882.13
Other Meetings	9,755.99		9,755.99
National Professionals	110,286.42	1,502.30	111,788.72
Reporting Cost/Other Publications	127,700.55	55,575.42	183,275.97
<b>SUB-TOTAL</b>	<b>3,035,492.91</b>	<b>221,243.12</b>	<b>3,256,736.03</b>
Overhead (IMO)	843,423.63	44,287.37	887,711.00
PA Phase (OPS)	283,741.00		283,741.00
<b>SUB-TOTAL</b>	<b>7,615,038.74</b>	<b>348,140.73</b>	<b>7,963,179.47</b>
Balance			36,820.53
<b>GRAND TOTAL</b>	<b>7,615,038.74</b>	<b>348,140.73</b>	<b>8,000,000.00</b>

## Annex 6

### Programme Steering Committee (PSC) Meetings

#### A. Terms of Reference

1. Providing programme direction/strategies and guidance.
2. Facilitating programme coordination and ensuring that programme activities meet national environmental concerns and priorities.
3. Establishing Government commitment to general programme.
4. Sharing and dissemination of programme-funded results and experience.
5. Reviewing and approving programme and annual workplan.
6. Providing means for promoting regional/national interproject coordination.
7. Monitoring, reviewing and evaluating programme progress to meet objectives.
8. Mobilizing national and donor support to develop additional demonstration projects within the programme framework.

#### B. Meetings Held

First Programme Steering Committee Meeting  
Quezon City, Philippines

1-2 June 1994	-	Technical Session
3 June 1994	-	Tripartite Review

Second Programme Steering Committee Meeting  
Phuket, Thailand

11-12 December 1995	-	Technical Session
13 December 1995	-	Tripartite Review

Third Programme Steering Committee Meeting  
Kuala Lumpur, Malaysia

10-11 December 1996	-	Technical Session
12 December 1996	-	Tripartite Review

Fourth Programme Steering Committee Meeting  
Hanoi, Vietnam

15-16 December 1997	-	Technical Session
18 December 1997	-	Tripartite Review

Fifth Programme Steering Committee Meeting  
Bali, Indonesia

2-4 December 1998	-	Technical Session
5 December 1998	-	Tripartite Review

**Annex 6**

Sixth Programme Steering Committee Meeting  
Manila, Philippines

25 March 1999 - Technical Session/Tripartite Review

C. Participants

FIRST PROGRAMME STEERING COMMITTEE MEETING, QUEZON CITY, PHILIPPINES, 1-3 JUNE 1994		
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Legends:

\*P - Participant

\*\*O - Observer

\*\*\*RP – Resource Person

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	Mr. S. Adrian Ross [P] Senior Technical Officer Marine Environment Division	<b>International Maritime Organization</b> 4 Albert Embankment London SE1 75R Fax: [44][171] 587-3210
UNDP	Mr. Sebastian K. Zacharia [P] Chief, Regional Programme Division Regional Bureau for Asia and the Pacific	<b>United Nations Development Programme</b> 1 United Nations Plaza New York, N.Y. 10017 USA Fax: [1][212] 906-5898 Tel: [1][212] 906-6024
	Ms. Joyce Un-Yueh Yu [P] Regional Programme Officer Regional Bureau for Asia and the Pacific	<b>United Nations Development Programme</b> 1 United Nations Plaza New York, N.Y. 10017 USA Fax: [1][212] 908-5898 Tel: [1][212] 908-6024
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<b>SECOND PROGRAMME STEERING COMMITTEE MEETING, PHUKET, THAILAND, 11-13 DECEMBER 1995</b>		
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<b>THAILAND</b>	Mr. Choi Dae Song [P] DPRK Permanent Representative to ESCAP	<b>Embassy of DPR Korea in Bangkok</b> Fax: 318-6333 Tel: 319-1442
<b>INDONESIA</b>	Mrs. Hermien Roosita [P] Project Manager for Pollution Control Project	Environmental Impact Management Agency (BAPEDAL) Arthaloka Building 12th Floor 2 Jenderal Sudirman, Jakarta 10220, Fax: [62][21] 251-1384 Tel: [62][21] 251-1531
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<b>SIXTH PROGRAMME STEERING COMMITTEE MEETING, MANILA, PHILIPPINES, 25 MARCH 1999</b>		
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## List of Publications

### Workshop/Conference Proceedings

- WP-1—Regional Network on the Legal Aspects of Marine Pollution. Workshop Proceedings 1, 144 p. (1996)
- WP-2—Marine Pollution Monitoring and Information Management Network. Inception Workshop. Workshop Proceedings 2, 89 p. (1996)
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-Chinese

-French [Accroître de succès de la gestion intégrée des zones côtières]

-Korean

-Portuguese [Apurando o Sucesso da Gestaõ Integrada da Zona Costeira]

-Spanish [Extender el éxito de la Gestión Costera Integrada]

-Swahili [Uimarishaji wa Mafanikio ya Usimamizi wa Pamoja katika Ukanda wa Pwami]

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- TR-14—Environmental Management Atlas for Batangas Bay. Technical Report 14, 132 p. (1997)
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- Natural Resource Damage Assessment and the Malacca Straits. MPP-EAS/Info/99/191, 45 p.
- Marine Pollution Prevention and Management in the East Asian Seas: A Benefit-Cost Framework. MPP-EAS/Info/99/192, 33 p.
- Sustainable Financing for Ship-based Pollution Prevention and Management in the Malacca Straits. MPP-EAS/Info/99/193, 42 p.
- Malacca Straits: Special Area? The Need and Feasibility of Designing the Malacca Straits as a Special Area Under MARPOL 73/78. MPP-EAS/Info/99/194, 60 p.
- Marine Pollution Management in the Malacca/Singapore Straits: Lessons Learned. MPP-EAS/Info/99/195
- Socio-economic Assessment Framework and Guidelines for ICM. Marine Pollution Management In the Malacca/Singapore Straits: Lessons Learned. MPP-EAS/Info/99/199
- Assessment of National Marine Pollution Legislation in East Asia. MPP-EAS/Info/99/201
- Guidelines and Model Framework for National Marine Pollution Legislation in east Asia. MPP-EAS/Info/99/202
- MARPOL Project Philippines: Final Report. MPP-EAS/Info/99/203
- NRDA and the Malacca Straits. MPP-EAS/Info/99/191
- Sustainable Financing for Ship-based Pollution Prevention for the Management of Malacca Straits. MPP-EAS/Info/99/192
- Development of Model Local Government Laws on Integrated Coastal Management
- Strategy Package for the Facilitation of National Legislation on Marine Pollution: Project Report
- Project Report on Ratification and Implementation of MARPOL in the Philippines
- Environmental Guarantee Fund and Environmental Monitoring Fund as Economic Instruments

## **Annex 7**

### **Meeting Reports**

- Proceedings of the First Programme Steering Committee Meeting, Quezon City, Philippines, 1-3 June 1994. MPP-EAS Meeting Report 1
- Proceedings of the Second Programme Steering Committee Meeting, Phuket, Thailand, 11-13 December 1995. MPP-EAS Meeting Report 2
- Proceedings of the Third Programme Steering Committee Meeting, Kuala Lumpur, Malaysia, 10-12 December 1996. MPP-EAS Meeting Report 3
- Proceedings of the Fourth Programme Steering Committee Meeting, Hanoi, Vietnam, 15-18 December 1997. MPP-EAS Meeting Report 4
- Proceedings of the Fifth Programme Steering Committee Meeting, Bali, Indonesia, 2-5 December 1998. MPP-EAS Meeting Report 5
- Proceedings of the Sixth Programme Steering Committee Meeting, Manila, Philippines, 25 March 1999. MPP-EAS Meeting Report 6

### **Tropical Coasts—(Biannual Newsletter)**

- December 1994—Vol. 1, No. 1—The 1994 Colloquium on Tropical Coastal Zones
- July 1995—Vol. 2, No. 1—Environment and Enterprise: The Case of Malacca Strait
- December 1995—Vol. 2, No. 2—International Marine Environment Conventions: Obligations and Opportunities
- July 1996—Vol. 3, No. 1—Conservation to Management—Initiatives for the Coastal Zones in East Africa
- December 1996—Vol. 3, No. 2—Marine Pollution Prevention and Management: Opportunities for Investment
- July 1997—Vol. 4, No. 1—Marine Biodiversity
- December 1997—Vol. 4, No. 2—Marine Environmental Monitoring
- July 1998—Vol. 5, No. 1—Coastal Tourism
- December 1998/July 1999—Vol. 5, No. 2/Vol. 6, No. 1—Public-Private Partnerships in Coastal and Marine Resource Management

## Annex 7

### Marine Pollution Updates— Quarterly Newsletter

- January 1995—Vol. 1, No. 1—Organization and Appointments
- April 1995—Vol. 1, No. 2—Appointments
- June 1995—Vol. 1, No. 3—Xiamen Demonstration Project
- September 1995—Vol. 1, No. 4—XDP’s Newly Approved Subprojects
- January 1996—Vol. 2, No. 1—GEF Marine Pollution Prevention and Management Programme Draws Strong Regional Support in East Asia
- March 1996—Vol. 2, No. 1—Xiamen Project Shows Significant Achievements
- June 1996—Vol. 2, No. 2—The Batangas Bay Demonstration Project
- September 1996—Vol. 2, No. 3—IMO Secretary-General Urges Philippine Government to Ratify Marine Pollution and Maritime Safety Conventions
- December 1996—Vol. 2, No. 4—President Ramos Addresses Participants of the “Public Sector-Private Sector Partnerships” Regional Conference
- March 1997—Vol. 3, No. 1—Initiatives to Strengthen Regional Capacity in Pollution Prevention Management
- June 1997—Vol. 3, No. 2—Implementation of Marine Pollution Related Conventions in East Asia—A Report Card
- September 1997—Vol. 3, No. 3—A Marine Monitoring Program that Serves Management Purposes
- December 1997—Vol. 3, No. 4—Public-Private Partnership Gathers Momentum
- March 1998—Vol. 4, No. 1—New Lab Opens in Batangas
- June 1998—Building Regional Management Capacity for a Better Marine Environment in the 21<sup>st</sup> Century

## Annex 7

### CD-ROM and Manual

- Paw, James N., Noel A. Robles and Edmond Titus A. Calderon. 1998. CD-ROM Environmental Management Spatial Database of the Batangas Bay Region. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas and the Department of Environment and Natural Resources, Quezon City, Philippines [includes a Manual on How to Use the Environmental Management Spatial Database of the Batangas Bay Region. 17 p.]

## Annex 8

### GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas Monitoring and Evaluation

#### Project Reviews

IMO Mid-Term Review  
March 10-21, 1996

Mission members:

Mr. S. Adrian Ross (Head of Mission)  
Senior Technical Officer  
IMO

Mr. Leif P. Gunnestad  
Head, Personnel Section  
IMO

Ms. Patricia Richards  
Internal Auditor  
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Mr. Jianxin Zhu  
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Mid-term Project Evaluation  
March 31, 1997 – May 10, 1997

Mission members:

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## Annex 8

Final Project Evaluation  
August 3 – 16, 1998

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## List of Collaborative Institutions and Individuals

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**Capacity Building: Training  
1994-1999**

ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
<b>OPRC Training Courses:</b>			
<b>Level 2: Subregional Training Course on OPRC for the Gulf of Thailand 15-20 June 1997 Bangkok, Thailand (6 days)</b>	Mr. Long Rithirak	Ministry of Environment	Cambodia
	Mrs. Chou Sokphany	Ministry of Environment	Cambodia
	Mr. Ramli Abdul Rahman	Department of Environment	Malaysia
	Mr. Abdul NasaR Bin Abdul Hadi	Marine Department Peninsular	Malaysia
	Mr. Anuwi b. Hassan	National Security Council	Malaysia
	Lt. Jg. Watin Kongsuwan	Harbour Department	Thailand
	Mr. Somchai Rodthongterm	Harbour Department	Thailand
	Mr. Chanachal Lertsuchatavanich	Harbour Department	Thailand
	Mr. Surachai Burapanontachai	Harbour Department	Thailand
	Capt. Dechwuthi Malison	First Fleet, Royal Thai Fleet	Thailand
	Capt. Chottiwat Sarikavanija	Second Fleet, Royal Thai Fleet	Thailand
	Capt. Kriengkrai Anantasan	Third Fleet, Royal Thai Navy	Thailand
	LCdr. Prasong Sungtong	HTMS Phuket, Patrol Squadron	Thailand
	Mr. Meechai Suwittawas	Bangchak Petroleum Public Co., Ltd.	Thailand
	Mr. Suchart Mahattanawong	Caltex Oil Thailand	Thailand
	Ms. Kesrin Ariyapongse	Caltex Oil Thailand	Thailand
	Mr. Sakarin Nakornthab	Petroleum Authority of Thailand	Thailand
	Mr. Somsak Hannamaphithai	The Shell Co. Of Thailand Ltd.	Thailand
	Mr. Krisda Kladsaard	Star Petroleum Refining Co., Ltd.	Thailand
	Ms. Punchalee Laothumthut	Thai Oil Co., Ltd.	Thailand
Mr. Chalernsak Pintu	Bangchak Petroleum Public Co., Ltd.	Thailand	
Mr. Hoang Viet Cuong	Petrolimex Vietnam	Vietnam	
Mr. Phan Nguyen Hai Ha	Vietnam National Maritime Bureau	Vietnam	
Mr. Cao Xuan Vinh	Vietnam Register of Shipping	Vietnam	
<b>Level 2: Subregional Training Course on OPRC for the Southern South China Sea 22-27 June 1997 Brunei Darussalam (6 days)</b>	Mr. Bolkini Haji Abdul Rahman	Ministry of Communications	Brunei Darussalam
	Mr. Mohaimin Bin Abdul Latif	Brunei Shell Petroleum (BSP)	Brunei Darussalam
	Mr. Mohd Idris Bin Haji Abd Gapar	Brunei Shell Petroleum Co. Ltd.	Brunei Darussalam
	Major HJ Jamaludin Bin Ghafar	Ministry of Defence	Brunei Darussalam
	Mr. Bakar Bin Haji Ibrahim	Ministry of Communications	Brunei Darussalam
	Mr. Mohd Kamal Bin Haji Abdul Raffar	Ministry of Communications	Brunei Darussalam
	Capt. Zainal Bin Haji Dullah	Royal Brunei Navy	Brunei Darussalam
	Mr. Sabri Bin Hj Mohd Taha	Ministry of Industry and Primary Resources	Brunei Darussalam
	Mr. Abd Rahman Bin Karim	Vessel Fisheries Department	Brunei Darussalam
	Mr. Zainuddin Bin Haji Moh Daud	Royal Brunei Police Force	Brunei Darussalam

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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
	Mr. Joseph Durham	Amadeo Development Corporation	Brunei Darussalam
	Mr. Abdul Aziz b. Abdul Rasol	Department of Environment	Malaysia
	Mr. Mohd Idrus Shaari	Marine Department Sarawak	Malaysia
	Mr. Mohamad Sayuti Bin Sepeai	Department of Environment	Malaysia
	Mr. Amadeo V. Bautista, Jr.	Maritime Industry Authority	Philippines
	Mr. Candido M. Florencio	Philippine Coast Guard	Philippines
	Ms. Therese Desiree Perez	DENR	Philippines
	Mr. Pham Tan	Ministry of Defence	Vietnam
	Mr. Hua Chien Thang	National Environment Agency, MOSTE	Vietnam
	Mrs. Le Thi Bich Thuy	National Environment Agency, MOSTE	Vietnam
	Capt. Chew Joo Kim	East Asia Response Pte Ltd	Singapore
	Capt. Patrick Ooi Beng Hong	East Asia Response Pte Ltd	Singapore
	Mr. Greg Beck	Australian Maritime Safety	Australia
	Mr. Joe E. Slater	International Maritime Organization	United Kingdom
	Mr. Cornelio A. Artienda	GEF/UNDP/IMO	Philippines
<b>Level 3: Training Seminar for Senior Managers and Administrators on Oil Pollution Preparedness, Response and Cooperation 23-25 June 1998 Dalian, PR China (3 days)</b>	Mr. Jiang Yuejin	State Oceanic Administration	PR China
	Mr. Yang Qingxiao	State Oceanic Administration	PR China
	Mr. Zhang Yan	China National Offshore Oil Corporation	PR China
	Mr. Cai Dechang	State Oceanic Administration	PR China
	Mr. Li Chol Ji	International Marine Organization, Maritime Administration	DPR Korea
	Mr. Ko Yong Su	Ministry of Land and Environmental Protection	DPR Korea
	Mr. Hyon In Chol	State External Economic Affairs Commission	DPR Korea
	Mr. KimTue Song	Ministry of Land and Environment Protection	DPR Korea
	Mr. Bong-Gil Lee	National Marine Police Agency	RO Korea
	Mr. Jang-Hoon Lee	Ministry of Marine Affairs and Fisheries	RO Korea
	Mr. Sung-Chun Kim	Korea Marine Pollution Response Corporation	RO Korea
	Mr. Dong-Young Lee	Korea Ocean Research and Development Institute	RO Korea
	Mr. Hua Chien Thang	National Environment Agency	Vietnam
	Mrs. Bui Hue Cau	PETROVIETNAM	Vietnam
	Mr. Joe E. Slater	International Maritime Organization	United Kingdom
	Dr. Huming Yu	GEF/UNDP/IMO	Philippines
	Mr. Ray Lipscombe	Australian Maritime Safety Authority (AMSA)	Australia
	Capt. Dave Thomson	Shell Pacific Enterprises Ltd.	RO Korea
	Mr. Bolkini Haji Abdul Rahman	Ministry of Communication	Brunei Darussalam
	Mr. Maaroff Sanif	Marine Department	Malaysia

ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
OPRC "Train-The-Trainer" Course 25-29 October 1999, Singapore	Rosman Haji Untong	Ministry Of Communication	Brunei
	Mr. Li Jijun	Qingdao Harbour Superintendency Administration	PP China
	Mr. Wang_Hongsheng	Ningbo Harbour Superintendency Administration	PR China
	Ms. Eka Sukmawati	Directorate-General Of Sea Communication	Indonesia
	Ir. Alam Syah Mapparessa	BAPEDAL	Indonesia
	Mr. Asmawi Bin Nordin	Marine Department	Malaysia
	Mr. Mohd Hafiz Bin Abdul Majid	Marine Department	Malaysia
	Mr. Hyok Kwon	Maritime Administration Bureau	DPR Korea
	Mr. Bong Sam Kim	Maritime Administration Bureau	DPR Korea
	Mr. Liberato V. Frigillana	Maritime Industry Authority	Philippines
	Cmdr. Ramon C. Liwag	Philippine Coast Guard	Philippines
	Mr. Pakorn Prasertwong	Harbour Department	Thailand
	Cdr. Tharaphol Nontavatid R.T.N.	First Naval Area Command The Royal Thai Navy	Thailand
	Mr. Ngoc Tang VU	Danang Port Authority, Maritime Administration, Ministry Of Transport	Vietnam
	Mr. Nguyen Cong Quang	National Environment Agency	Vietnam
	Mr. Chan Dara	Min. Of Public Works and Transport	Cambodia
	Mr. Chhim Davinn	Min. Of Public Works and Transport	Cambodia
	Mr. Kim Chang-Gyuen	National Maritime Police Agency	RO Korea
	Mr. Jeon Yeong-Woo	Korea Institute Of Maritime and Fisheries Technology	RO Korea
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<b>ICM Training Courses:</b>			
<b>First Regional ICM Training 2-25 October 1995 Philippines, PR China, Singapore</b>	Mr. Mak Sophy	Ministry of Environment	Cambodia
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	Mr. Fernando Gonzales Guyer	IDRC/CIID	Uruguay
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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
	Mr. Kim Chang Kyun	Ministry of Marine Affairs and Fisheries	RO Korea
	Mr. Bang Tae-Jin	Ministry of Marine Affairs and Fisheries	RO Korea
	Mr. Alongkot Phaipool	Department of Local Administration	Thailand
	Mr. Thanachai Khampha	Department of Local Administration	Thailand
	Ms. Le Hoang Lan	National Environment Agency	Vietnam
	Mr. Nguyen Kim Hoa	DOSTE	Vietnam
	Mr. Joseph E. T. Janga	Kenya Marine Fisheries Research Institute	Kenya
	Mr. Saeed M. Mwanguni	ICAM Programme Coastal Development Authority	Kenya
	Mr. Lionel J. Phillips	Coastal Management Unit, Alexkor Ltd.	South Africa
	Mr. George Damian Msumi	Mafia Island Marine Park	Tanzania
	Dr. Huming Yu	GEF/UNDP/IMO	Philippines
	Mr. Cornelio A. Artienda	GEF/UNDP/IMO	Philippines
<b>Legal Training Programme on Strategies, Tools and Techniques for Implementing International Conventions on Marine Pollution in the East Asian Region</b> 21-23 September 1998 Bangkok, Thailand	Mr. Bolkini Abdul Rahman	Ministry of Communications	Brunei Darussalam
	Mr. Mohammad Noor Haji Lawie	Ministry of Communications	Brunei Darussalam
	Ms. Kim Neng	Ministry of Environment	Cambodia
	Mr. Chea Sina	Ministry of Environment	Cambodia
	H.E. Khieu Muth	Ministry of Environment	Cambodia
	Mr. Sam Chamroeun	Ministry of Environment	Cambodia
	Ms. Chen Hui	State Oceanic Administration	PR China
	Ms. Si Hui	State Oceanic Administration	PR China
	Mr. Tang Yanfei	Ministry of Communications	PR China
	Mr. Zhihua Zhang	State Oceanic Administration	PR China
	Mr. Jo Yong Nam	Ministry of Land and Environmental Protection	DPR Korea
	Mr. Kim Myong Ho	Ministry of Land and Environmental Protection	DPR Korea
	Mr. Kwon Hyok	Maritime Administration Bureau	DPR Korea
	Capt. Albert Lapian	BAPEDAL	Indonesia
	Mr. Bambang Iriana Djajaatmadja	National Law Development Agency (BPHN)	Indonesia
	Ms. Inar Ichsana Ishak	State Ministry for the Environment	Indonesia
	Mr. M. Didin Khaerudin	State Ministry for the Environment	Indonesia
	Prof. Siti Sundari Rangkuti	Airlangga University	Indonesia
	Ms. Andri Triana	State Ministry for the Environment	Indonesia
	Ms. Zulhasni	BAPEDAL	Indonesia
	Capt. Albert Lapian	BAPEDAL	Indonesia
	Ms. Pauziah Hanum Bt. Abdul Ghani	Ministry of Science and Technology and the Environment	Malaysia
	Mr. Rossid Bin Musa	Marine Headquarters	Malaysia
	Ms. Juita Ramli	Maritime Institute of Malaysia Centre for Ocean Law and Policy	Malaysia
	Mr. Yang Zaimy Yang Ghazali	Federal Counsel Attorney-General's Chambers	Malaysia
Atty. Manuel Arbon	Coastal Resources Management	Philippines	
Atty. Brenda Pimentel	Maritime Industry Authority	Philippines	

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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
	Cdr. Edmund C. Tan	Philippine Coast Guard	Philippines
	Prof. Koh Kheng Lian	National University of Singapore	Singapore
	Tan Ken Hwee	Attorney-General's Chambers	Singapore
	Ms. Pornsook Chongprasith	Pollution Control Department	Thailand
	Dr. Mallika Piniijian	Ramkhamhaeng University	Thailand
	Mr. Pakorn Prasertwong	Ministry of Transport and Communications	Thailand
	Mr. Nguyen Duc Toan	Dept. of Science and Education Office of the Government	Vietnam
	Dr. Nguyen Hong Thao	Continental Shelf Committee of the Government of Vietnam	Vietnam
	Ms. Nguyen Thi Thu Ha	National Environment Agency	Vietnam
	Mr. Pham Hao	Ministry of Foreign Affairs	Vietnam
	Max Herriman	Australian Marine Science and Technology, Ltd.- Malaysia	Malaysia
	Mr. Akira Ubukata	Ministry of Communication	Indonesia
	Ms. Ankana Sirivivatnanon	Southeast Asian Programme in Ocean Law (SEAPOL)	Thailand
	Mr. Akanid Jintanukul	Harbour Department	Thailand
	Mr. Chanachai Lertsuchatavanich	Harbour Department	Thailand
	Ms. Jirabhorn Lertmongkonnam	Harbour Department	Thailand
	Ms. Nirawan Parkpeeraun	Harbour Department	Thailand
<b>List of Resource Persons</b>			
	Raja Petra Mohamed	Maritime Institute of Malaysia (MIMA)	Malaysia
	Dr. Antonio La Viña	University of the Philippines	Philippines
	Mr. George dela Cuesta	Department of Environment and Natural Resources	Philippines
	Mr. James Kho		Philippines
	Ms. Brenda Jay Angeles		Philippines
	Ms. Therese Desiree Perez		Philippines
	Ms. Eunice Aqsaoay		Philippines
	Mr. Philip Baroja	Office of the City Mayor	Philippines
	Dr. Jihyun Lee	Korea Maritime Institute	RO Korea
	Mr. Jungho Nam	Korea Maritime Institute	RO Korea
	Mr. Robert Beckman	National University of Singapore	Singapore
	Mr. Zafrul Alam	Maritime and Port Authority of Singapore	Singapore
	Dr. John Hambrey	Asian Institute of Technology	Thailand
	Ms. Nguyen Thi Nhu Mai	Vietnam National Maritime Bureau	Vietnam
	Mr. Rene Coenen	International Maritime Organization	United Kingdom
	Dr. Chua Thia- Eng	GEF/UNDP/IMO	Philippines
	Mr. Adrian Ross	GEF/UNDP/IMO	Philippines
	Atty. Stella Regina Bernad	GEF/UNDP/IMO	Philippines

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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
Training Programme on Environmental Risk Assessment and Natural Resources Damage Appraisal for Tropical Ecosystems 21-29 October 1998 SEAMEO-RELC, Singapore	Haji Abdul Rajid bin Haji Metali	Department of Fisheries	Brunei Darussalam
	Haji Omar bin Haji Md. Tahir	Ministry of Development	Brunei Darussalam
	Mr. Kim Nong	Ministry of Environment	Cambodia
	Dr. Indra Jaya	Bogor Agricultural University	Indonesia
	Ir. Ahmad Fahrudin	Bogor Agricultural University	Indonesia
	Mr. Kus Prisetiahadi	BAPEDAL	Indonesia
	Mr. Mohammad Yunus	BAPEDAL	Indonesia
	Ms. Zulina Zakaria	Universiti Putra Malaysia	Malaysia
	Dr. Chu Kim Hoong	University of Malaya	Malaysia
	Ms. Pauziah Hanum bt Abdul Gahani	Department of Environment	Malaysia
	Mr. Arumugam s/o Thirumalai	Department of Environment	Malaysia
	Mr. Saffi Ramli	Department of Irrigation and Drainage, Selangor	Malaysia
	Dr. Yang Jiwu	State Oceanic Administration	PR China
	Mr. Fan Zhijie	State Oceanic Administration	PR China
	Ms. Ma. Corazon M. Ebarvia	University of the Philippines	Philippines
	Dr. Corazon Abansi	Batangas Bay Demonstration Project	Philippines
	Ms. Tay Lee San	Ministry of Environment	Singapore
	Dr. Nigel Goh	The National University of Singapore	Singapore
	Dr. Pongsa Pornchaiwiseskul	Chulalongkorn University	Thailand
	Mr. Chanachai Lertsuchavanich	Harbour Department	Thailand
Ms. Pattarin Tongsima	Office of Environmental Policy and Planning	Thailand	
Ms. Kunlayanee Pornpinatepong	Prince of Songkhla University	Thailand	
Mr. Le Duy Tien	Vietnam Union of Science and Technology Associations	Vietnam	
Mr. Do Thanh Thuy	National Environment Agency	Vietnam	
<b>Resource Speakers And Organizers</b>			
	Prof. Peter Calow	The University of Sheffield	United Kingdom
	Dr. Valery Forbes	Roskilde University	Denmark
	Prof. Thomas Grigalunas	University of Rhode Island	USA
	Dr. Robert Johnston	University of Rhode Island	USA
	Prof. Low Kum Sang	University of Malaya	Malaysia
	Dr. Beverly Goh	The National University of Singapore	Singapore
	Mr. S. Adrian Ross	GEF/UNDP/IMO	Philippines
	Ms. Bresilda M. Gervacio	GEF/UNDP/IMO	Philippines

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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
Regional Training Workshop on Integrated Environmental Impact Assessment for Coastal and Marine Areas, First Regional Training Workshop 2-7 December 1997 City University of Hongkong	Ms. Martinah Haji Tamil	Ministry of Development	Brunei Darussalam
	Ms. Christina Kong Fook Yin	Prime Minister's Office	Brunei Darussalam
	Mr. Sam Nissay	Ministry of Environment	Cambodia
	Mr. Koch Savath	Ministry of Environment	Cambodia
	Ir. Rachmat Benny Almsyah	BAPEDAL	Indonesia
	Ir. Tri Astuti	BAPEDAL	Indonesia
	Mr. Ir. Lee Heng Keng	Department of Environment	Malaysia
	Mr. Mohd. Sayuti Sepeal	Department of Environment	Malaysia
	Mr. Xie Jian	State Oceanic Administration	PR China
	Mr. Chang Zhongnong	Conservation National Protection Agency	PR China
	Atty. Irwin M. Ambal	Department of Environment and Natural Resources	Philippines
	Atty. Ronely D. Bisquera	Department of Environment and Natural Resources	Philippines
	Ms. Noelina Miran	Environment and Programs Development	Philippines
	Mr. James Paw	International Maritime Organization	Philippines
	Mr. Leo Pura	Coastal Management Center	Philippines
	Dr. Beverly Goh	National University of Singapore	Singapore
	Mr. Tan Wee Hock	Ministry of Environment	Singapore
	Ms. Piyarat Pitiwatanakul	Harbour Department	Thailand
	Ms. Chalati Ratasuk	Pollution Control Department	Thailand
	Ms. Le Hoang Lan	National Environment Agency, MOSTE	Vietnam
Mrs. Le Ming Toan	National Environment Agency, MOSTE	Vietnam	
Regional Training Workshop on Integrated Environmental Impact Assessment for Coastal and Marine Areas Second Regional Training Workshop 16-21 November 1998 National University of Singapore	Mr. Chay Samith	Ministry of Environment	Cambodia
	Mr. Vann Monyneath	Ministry of Environment	Cambodia
	Mr. Tung Kun	Ministry of Environment	Cambodia
	Mr. Wang Jianguo	State Oceanic Administration	PR China
	Mrs. Chen Weifen	State Oceanic Administration	PR China
	Mr. Beny Bastiawan	BAPEDAL	Indonesia
	Mr. Agus Rusli	BAPEDAL	Indonesia
	Mr. Frederick Jared Guya	Kenya Marine & Fisheries Research Institute	Kenya
	Mr. Shaaban Ali Mwachireya	Kenya Marine & Fisheries Research Institute	Kenya
	Mr. Rosli Mustafa	Department of Environment	Malaysia
	Mr. Shafe'ee Yasin	Department of Environment	Malaysia
	Ms. Janet Estacion	Silliman University	Philippines
	Atty. Marina Rabe	Department of Environment & Natural Resources	Philippines
	Dr. Lee Yoon	Ministry of Marine Affairs and Fisheries	RO Korea
	Dr. Kang See Hwan	Korean Ocean Research and Development Institute	RO Korea
	Mr. Jarun Saipat	Harbour Department	Thailand
Mr. Paiboon Chaikate	Office of the Environmental Policy & Planning	Thailand	

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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
	Mrs. Chu Thi Sang	National Environment Agency	Vietnam
	Dr. Nguyen Minh Son	Center for Marine Environment Survey, Research & Consultation	Vietnam
	Dr. Rogelio Juliano	Coastal Management Center	Philippines
	Mr. Ronald Bonifacio	Coastal Management Center	Philippines
	Ms. Nancy Bermas	GEF/UNDP/IMO	Philippines
<b>In-Service Training (Marine Pollution Monitoring)</b>			
<b>Training on Marine Pollution Water Quality Monitoring Xiamen, PR China 26 November – 23 December 1996</b>	Ms. Maribel Aloria	Environment and Natural Resources Office Provincial Government of Batangas	Philippines
	Mr. Ronald Castillo	Environment and Natural Resources Office Provincial Government of Batangas	Philippines
<b>Training on Marine Pollution Monitoring Techniques for Chemists from Cambodia 15 March - 15 April 1998 Xiamen, PR China</b>	Mr. Phin Rady	Ministry of Environment	Cambodia
	Mr. Mao Vanchan	Ministry of Environment	Cambodia
	Mr. Chin Vibol	Ministry of Environment	Cambodia
	Mr. Ek Phanet	Ministry of Environment	Cambodia
<b>Training on Marine Pollution Monitoring Techniques for Chemists from DPR Korea 1-31 April 1998, Dalian, PR China</b>	Mr. O Ryang Pyong	State Hydrometeorological Administration	DPR Korea
	Mr. Nam Chol	State Hydrometeorological Administration	DPR Korea
	Mr. Li Mun Hyok	Ministry of Land and Environmental Protection	DPR Korea
<b>In-Service Training (GIS Application Software)</b>			
<b>GIS Training for Xiamen Demonstration Project, 26 May - 01 June 1996 Xiamen, PR China</b>	Ms. Wei Xiaofang	Jimei University	PR China
	Mr. Su Fenzhen	Jimei University	PR China
	Ms. Yang Xiaoqi	Jimei University	PR China
	Mr. Dong Shao Long	Jimei University	PR China
	Mr. Long Rithirak	Ministry of Environment	Cambodia
<b>In-House GIS Training 7 - 8 October 1996</b>	Mr. Renato Gimán	Municipality of Bauan, Batangas	Philippines
	Mr. Louie Gonda	Municipality of Bauan, Batangas	Philippines
	Mr. Raymond Marquez	Municipality of Bauan, Batangas	Philippines
<b>GIS Training for Xiamen Demonstration Project, 17 - 26 December 1996 Xiamen, PR China</b>	Mr. Pan Congjun	Jimei University	PR China
	Ms. Yao Hongxia	Jimei University	PR China
	Mr. Dong Shao Long	Jimei University	PR China

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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
GIS Training for the PG-ENRO Staff 20 February 1997, Batangas City	Mr. Luis Awitan	PG-ENRO/BBDP, Batangas	Philippines
	Mr. Ricardo Mendoza	PG-ENRO/BBDP, Batangas	Philippines
	Mr. Rolly Alcaraz	PG-ENRO/BBDP, Batangas	Philippines
	Ms. Rosana Aguila	PG-ENRO/BBDP, Batangas	Philippines
	Mr. Edgardo Cardasto	PG-ENRO/BBDP, Batangas	Philippines
	Ms. Leda Velasquez	PG-ENRO/BBDP, Batangas	Philippines
	Mr. Carlos Maralit	PG-ENRO/BBDP, Batangas	Philippines
	Mr. Vincent Paolo de Mesa	PG-ENRO/BBDP, Batangas	Philippines
	Ms. Lorena Candava	PG-ENRO/BBDP, Batangas	Philippines
	Mr. Margarito Abacan	PG-ENRO/BBDP, Batangas	Philippines
	Mr. Ronald Castillo	PG-ENRO/BBDP, Batangas	Philippines
	Ms. Menchu Ditas Sapo	PG-ENRO/BBDP, Batangas	Philippines
GIS Training 24 August - 13 September 1997	Mr. Pan Congjun	Member of Subproject Team on GIS Application Xiamen Demonstration Project Jimei University	PR China
GIS Training for Batangas Bay Demonstration Project: Introduction and Demonstration on the Use of the Batangas Bay Management Atlas for the Coastal Municipalities of the Batangas Bay Region 25 - 26 February 1998 Batangas City		San Pascual Municipal Planning Staff, San Pascual, Batangas	Philippines
		Bauan Municipal Planning staff Bauan, Batangas	Philippines
		Tingloy Municipal Planning staff Tingloy, Batangas	Philippines
		Batangas City Planning staff Province of Batangas	Philippines
Internship Programme (1995-1999)	Mr. O Ryang Pyong	State Hydrometeorological Administration	DPR Korea
	Mr. Ryang Chol	State Hydrometeorological Administration	DPR Korea
	Ir. Aceng Hidayat	Bogor Agricultural University	Indonesia
	Mr. Alam Syah Mapparessa	BAPEDAL	Indonesia
	Mr. Fan Zhijie	State Oceanic Administration	PR China
	Dr. Zhang Haiwen	State Oceanic Administration	PR China
	Dr. Nguyen Minh Son	Center for Marine Environment Survey, Research & Consultation	Vietnam
	Mr. Tran Dinh Lan	Haiphong Institute of Oceanology	Vietnam
Ms. Jennifer Aldrich	University of British Columbia	Canada	



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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
<b>Study Tour</b>			
<b>Philippine Delegation to Xiamen, 10-13 November 1995</b>	Mr. Eduardo Dimacuha	Batangas City	Philippines
	Mr. Bienvenido Castillo	Bauan, Batangas	Philippines
	Mr. Mario Magsaysay	San Pascual, Batangas	Philippines
	Mr. Ruben Amurao	Mabini, Batangas	Philippines
	Atty Ronaldo Geron	Committee on Environment Provincial Board, Batangas	Philippines
	Eng. Valeriano Plata	Bauan, Batangas	Philippines
<b>Comparative Study of River Clean-Up in the Philippines and Singapore, 20-27 July 1997</b>	Mr. Shi Qian	Xiamen Demonstration Project	PR China
	Mr. Hao Songqiao	Yundang Lagoon Management Division	PR China
	Peng Bengrong	Xiamen Foreign Investment Executive Committee	PR China
	Mr. Lin Yanqian	Environment Protection Bureau of Xinlin District	PR China
	Mr. Lin Zhiwen	Marine Management Office of Xinlin District	PR China
	Mr. Fan Zhijie	GEF/UNDP/IMO	Philippines
<b>Philippine Delegation to Xiamen (Sanitary Landfill), 4-8 March 1998</b>	Ms. Delia G. Abanes	Municipality of Bauan, Batangas	Philippines
	Ms. Donnabel P. Bigyan	Municipality of Bauan, Batangas	Philippines
	Mr. Francisco G. Magpantay	Municipality of Bauan, Batangas	Philippines
	Mr. Arnel V. Arevalo	Municipality of Bauan, Batangas	Philippines
<b>ICM Demonstration Sites, 27 May – 4 June 1998</b>	Mr. Jalaluddin Ismail	Department of Environment State of Selangor	Malaysia
	Mr. Mohd Simon Mudzakir	State Planning & Development Unit (UPEN)	Malaysia
	Mr. Jonathan Amakiri	Nigeria Delta Environmental Survey	Nigeria
	Mr. Julian Amador	Environmental Management Bureau	Philippines
	Mr. Urbano Pilar	Coastal Environment Programme	Philippines
	Atty. Jose Vener C. Ibarra	Department of Environment & Natural Resources	Philippines
	Mr. Victor Arellano	Philippine Ports Authority	Philippines
	Ms. Chutharat Wuthisomboon	Sriracha Municipality	Thailand
	Mrs. Bung-on Thiraphot	Laemchabang Municipality	Thailand
	Dr. Huming Yu	GEF/UNDP/IMO	Philippines
	Dr. Vidhisha Samarasekara	GEF/UNDP/IMO	Philippines

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ACTIVITY	PARTICIPANTS	INSTITUTION	COUNTRY
<b>ICM Demonstration Sites, 14-22 October 1998</b>	Mr. Khieu Muth	Ministry of Environment	Cambodia
	Mr. Cheap Sivorn	Phnom Penh Environmental Department	Cambodia
	Mr. Choi Rim	General Bureau for Cooperation with International Organizations (GBCIO)	DPR Korea
	Mr. Li Mun Hyok	Ministry of Land and Environmental Protection	DPR Korea
	Mr. Mohd. Gempur Adnan	BAPEDAL	Indonesia
	Mr. Rachmat Rami	BAPEDAL	Indonesia
	Mr. Nurshohib Hudan	BAPEDAL	Indonesia
	Mr. Pham Khoi Nguyen	Ministry of Environment	Vietnam
	Mr. Hua Chien Thang	National Environment Agency	Vietnam
<b>Xiamen Delegation to the Philippines and Singapore (Sea Use Planning), 8-14 November 1998</b>	Mr. Chen Wenqing	Xiamen Engineering Consulting Center, Planning Commission of Xiamen Municipal Government	PR China
	Mr. Zhan Rongan	Xiamen Engineering Consulting Center, Planning Commission of Xiamen Municipal Government	PR China
	Mr. Xu Xiangqing	Xiamen Engineering Consulting Center, Planning Commission of Xiamen Municipal Government	PR China
	Mr. Chen Rushou	Xiamen Engineering Consulting Center, Planning Commission of Xiamen Municipal Government	PR China
<b>CRMP Indonesia Study Tour on Bay Management Planning Philippines, July 11-17, 1999</b>	Ramil Malik	CRMP Indonesia	Indonesia
	Moh. Zulficar Mochtar	CRMP Indonesia	Indonesia
	Ari S. Dharmawan	CRMP Indonesia	Indonesia
	Ari Kristiani	Local NGO	Indonesia
	Qoriah Soleha, Spi.	Local University	Indonesia
	Ir. A. Yani	Regional Development Planning Board, Balikpapan	Indonesia
	Ir. Bahaidin	Regional Development Board, Pasir	Indonesia
	Ir. H. Syaiful Bahri	Regional development Planning Board	Indonesia
	Sarjono	East Kalimantan, City Government	Indonesia
	Budy Wiryawan	CRMP Indonesia (Lampung)	Indonesia
	Ir. Prayitno	Lampung Provincial Deveopment Planning Board	Indonesia
	Azwar Haroen, SH	Lampung Provincial Environment Impact Agency	Indoneisa
	Yulianti	NGO	Indonesia
	Rusdi Maliki	Local Government, Lampung Selatan	Indonesia
	Handoko Adi Susanto	CRMP Indonesia	Indonesia
	Ir. Danaluddin Muchtar	Public Works	Indonesia
	Amreyza Anwar	The Regent, Lampung Selatan	Indonesia
	Amiruddin	Center for Coastal and Marine resource Studies, Bogor Agricultural Institute	Indonesia
	Daniel M. Ocampo		Philippines
	Angelita P. Alvarado		Philippines

**Capacity Building: Workshop  
1994-1999**

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
<b>Regional Network on the Legal Aspects of Marine Pollution Inception Workshop, 18-19 March 1996 Manila Galleria Suites Pasig City, Metro Manila, Philippines</b>	Robert Beckman	National University of Singapore	Singapore
	Maria Teresa Dizon	Department of Foreign Affairs	Philippines
	Ms. Inar Ichsana Ishak	Ministry of Environment	Indonesia
	Mr. Nobuo Kumamoto	Hokkai Gakuen University	Japan
	Dr. Kwon, Moon-Sang	Korea Ocean Research and Development Institute (KORDI)	RO Korea
	Choon Ho Park	Seinan Gakuin University	RO Korea
	Mr. Pham Hao	Ministry of Foreign Affairs	Vietnam
	Atty. Brenda Pimentel	MARINA	Philippines
	Mr. Pakorn Prasertwong	The Harbour Department Ministry of Transport and Communications	Thailand
	Ms. Juita Ramli	Maritime Institute of Malaysia	Malaysia
	Prof. Siti Sundari Rangkuti	Airlangga University	Indonesia
	Prof. Abdul Rasjid	Airlangga University	Indonesia
	Mr. Sam Chamroeun	Ministry of Environment	Cambodia
	Wilfredo Saraos	Department of Environment and Natural Resources	Philippines
	Mr. Alan Tan	National University of Singapore	Singapore
	Dr. Zhang Haiwen	State Oceanic Administration	PR China
<b>Marine Pollution Monitoring and Information Management Inception Workshop 8-10 April 1996 Manila, Philippines</b>	Mr. Long Rithirak	Ministry of Environment	Cambodia
	Mr. Xu Kuncan	State Oceanic Administration	PR China
	Mr. Alam Syah Mapparessa	BAPEDAL	Indonesia
	Ms. Pauziah Hanum Bt. Abdul Ghani	Department of Environment	Malaysia
	Mr. Ryang Chol	State Hydrometeorological Administration	DPR Korea
	Ms. Leza Acorda	EMB-Department of Environment and Natural Resources	Philippines
	Ms. Ng Miu Lan	Ministry of the Environment	Singapore
	Mr. Dong Beom Yang	Korea Ocean Research and Development Institute	RO Korea
	Mr. Soopphaporn Pukasemvarongkool	Harbor Department, Ministry of Transport and Communications	Thailand
	Dr. Voravit Cheevaporn	Burapha University	Thailand
	Dr. Nguyen Chu Hoi	Haiphong Institute of Oceanology	Vietnam
	Dr. Gil S. Jacinto	University of The Philippines	Philippines
	Mr. Michael Roberto S. Reyes Jr.	University of The Philippines	Philippines
	Ms. Nancy A. Bermas	Coastal Management Center	Philippines
	Dr. Chua Thia-Eng	GEF/UNDP/IMO	Philippines
Ms. Eden O. Mandac	GEF/UNDP/IMO	Philippines	

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
International Workshop on Integrated Coastal Management in Tropical Developing Countries: Lessons Learned from Successes and Failures Xiamen, PR China 24-28 May 1996	Dr. Kenneth Brown	University of Technology, Sydney	Australia
	Mr. Richard Kenchington	Great Barrier Reef Marine Park Authority	Australia
	Mr. Chin Samouth	Ministry of Environment	Cambodia
	Mr. Long Rithirak	Ministry of Environment	Cambodia
	Mr. Chen Bingxin	State Oceanic Administration	PR China
	Mr. Chen Guoqiang	Xiamen Marine Management Division	
	Mr. Chen Jian	State Oceanic Administration	PR China
	Mr. Du Qi	Fujian Fisheries Institute	PR China
	Mr. Feng Jinan	Guangdong Marine Management & Fisheries Bureau	PR China
	Mr. Guo Shuihuo	State Oceanic Administration	PR China
	Mr. Guo Yunmou	Fujian Institute of Oceanography	PR China
	Mr. Hao Songqiao	Xiamen Yuan Dang Lake	PR China
	Mr. He Qingcheng	Institute of Environmental Geology of MGMR	PR China
	Dr. Hong Huasheng	Xiamen University	PR China
	Mr. Huang Qingming	Zhejiang Marine Management Bureau	PR China
	Mr. Huang Shuchi	Xiamen Demonstration Project	PR China
	Mr. Huang Zongguo	State Oceanic Administration	PR China
	Mr. Jia Yu	Marine Law Academy of China	PR China
	Mr. Kang Tao	Xiamen Planning Commission	PR China
	Mr. Li Ye	Xiamen Planning Commission	PR China
	Mr. Lin Yuanshao	Xiamen University	PR China
	Mr. Lin Zhiwen	Xinglin Marine Management Office	PR China
	Mr. Lu Zhenbin	Fujian Fisheries Institute	PR China
	Mr. Niu Wensheng	State Oceanic Administration	PR China
	Mr. Pan Jiangang	Maritime Department of Hainan Province	PR China
	Dr. Su Jilan	State Oceanic Administration	PR China
	Ms. Tan Xinjiao	State Oceanic Administration	PR China
	Mr. Tian Hongguo	State Oceanic Administration	PR China
	Mr. Wang Hong	National Marine Information Center	PR China
	Mr. Wang Lu	Hainan Marine Development Planning and Design Institute	PR China
	Mr. Wang Tiemin	Shandong Marine Management & Fisheries Bureau	PR China
	Prof. Wang Ying	Department of Geo & Ocean Sciences Nanjing University	PR China
	Ms. Wei Xiaofang	State Oceanic Administration	PR China
	Ms. Wen Wen	State Oceanic Administration	PR China
	Mr. Xia Donglan	State Oceanic Administration	PR China
	Mr. Xie Haisheng	Xiamen Planning Commission	PR China
	Mr. Xu Kuncan	State Oceanic Administration	PR China
	Ms. Xu Lina	State Oceanic Administration	PR China
	Mr. Xu Mo	Xiamen Planning Commission	PR China
	Prof. Xu Yukun	State Oceanic Administration	PR China
Mr. Xue Xiongzi	Xiamen University	PR China	

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Mr. Yang Pen Shi	Xiamen Municipal Government Office	PR China
	Mr. Yao Lixin	Xiamen University	PR China
	Mr. Ye Huanqiang	Guangdong Marine Management and Fisheries Bureau	PR China
	Ms. Yin Ping	The First Institute of Oceanography State Oceanic Administration	PR China
	Ms. Zhang Weidong	Institute of Environmental Geology of MGMR	PR China
	Mr. Zheng Chuanmao	Xiamen Demonstration Project	PR China
	Mr. Zheng Jialin	Xiamen Demonstration Project	PR China
	Mr. Zhou Xingqing	Nanjing University	PR China
	Mr. Zhou Yongqing	Institute of Marine Geology of MGMR	PR China
	Mr. Zhuang Shijian	Xiamen Environmental Monitoring Station	PR China
	Dr. Kuen-chen Fu	National Taiwan University	Taiwan
	Dr. Chen-yo Choh	Institute of the Law of the Sea, National Taiwan Ocean University	Taiwan
	Dr. Chiau Wen Yan	National Sun Yat-Sen University	Taiwan
	Ms. Naomi Elkington	Ramboll (Ramboll, Hanneman & Hojlund)	Denmark
	Mr. Jesper Duer Pedersen	Roskilde University	Denmark
	Dr. Duncan McInnis	Hong Kong University of Science and Technology	Hong Kong
	Dr. Brian Morton	The University of Hong Kong	Hong Kong
	Dr. Rudolf Wu	City University of Hong Kong	Hong Kong
	Dr. Rokhmin Dahuri	Bogor Agricultural University	Indonesia
	Dr. Kenji Hotta	Nihon University	Japan
	Mr. Tetsuo Suzuki	TERRAX Co. Ltd.	Japan
	Dr. Ezekiel Okemwa	Kenya Marine and Fisheries Research Institute	Kenya
	Mrs. Jihyun Lee	Korean Ocean Research and Development Institute	RO Korea
	Ms. Sunwook Hong	Korean Ocean Research and Development Institute	RO Korea
	Mrs. Datin Fatimah Abdullah	State Economic Planning Unit	Malaysia
	Dr. Chua Soi Lek	Malaysia-Johor State Government	Malaysia
	Ir. Rusli bin Che Husin	Department of Environment, Johor	Malaysia
	Ir. Chan Choong Cheong	Irrigation, Drainage & Agricultural Development	Malaysia
	Mr. Yap Chik Dong	Johor State Legislative Assembly	Malaysia
	Mr. Tan Kok Hong	Johor State Legislative Assembly	Malaysia
	Mr. Wong Foon Meng	Development Committee State Government of Terengganu	Malaysia
	Mohd. Elias Bin Nik	State Economic Planning Unit	Malaysia
	Mr. Abu Bakar Mohd. Yusof	Drainage and Irrigation Department	Malaysia
	Mr. Cesar Abrenilla	Ecosystems Research and Development Bureau	Philippines
	Dr. Angel Alcala	Commission on Higher Education	Philippines

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Mr. Alfredo Isidro	Department of Agriculture Fisheries Sector Program	Philippines
	Dr. Liana T. McManus	Marine Science Institute University of the Philippines	Philippines
	Dr. Chia Lin Sien	Department of Geography National University of Singapore	Singapore
	Dr. Chou Loke Ming	Department of Zoology National University of Singapore	Singapore
	Dr. Wong Poh Poh	Department of Geography National University of Singapore	Singapore
	Dr. D.E. (Niel) Malan	Department of Environmental Affairs and Tourism	South Africa
	Dr. Jayampathy Samarakoon	Wetland Conservation Project Central Environmental Authority	Sri Lanka
	Dr. N.M.P.J. Dayaratne	National Aquatic Resources Research & Development Agency	Sri Lanka
	Mr. Solomon Jusuf Makoloweke	Tanga Coastal Zone Conservation and Development Program	Tanzania
	Mr. George Ngatara Uronu	Tanga Coastal Zone Conservation and Development Program	Tanzania
	Dr. Sanit Aksornkoae	Kasetsart University	Thailand
	Mr. Chanvit Amatamatucharti	National Economic and Social Development Board	Thailand
	Dr. Apisit Eiumnoh	Natural Resource Conservation Asian Institute of Technology	Thailand
	Dr. Pipat Patanaponpaiboon	Chulalongkorn University	Thailand
	Mr. Kriengsak Rabilwongse	National Economic and Social Development Board	Thailand
	Mr. Sirichai Roungrit	Office of Environmental Policy and Planning	Thailand
	Dr. Suraphol Sudara	Department of Marine Science Chulalongkorn University	Thailand
	Dr. Peter Burbridge	Department of Marine Sciences and Coastal Management	England
	Dr. Biliانا Cicin-Sain	Center for the Study of Marine Policy	USA
	Dr. John Clark	University of Miami/RSMAS	USA
	Dr. Stephen Olsen	University of Rhode Island	USA
	Dr. Jens Sorensen	University of Massachusetts - Boston	USA
	Dr. Nguyen Chu Hoi	Haiphong Institute of Oceanology	Vietnam
	Dr. Le Huy Ba	University of Hochiminh City	Vietnam
	Dr. Nguyen Tac An	Institute of Oceanography	Vietnam
	Ms. Nancy Bermas	International Maritime Organization	Philippines
	Dr. Ranjith de Silva	Coastal Management Center	Philippines
	Dr. Edgardo D. Gomez	Coastal Management Center	Philippines
	Dr. Bert Van Der Valk	Coastplan Project	Thailand
	Ms. Kirsten Worm	Ministry of Environment and Energy	Denmark
	Dr. Veravat Hongskul	FAO Regional Office for Asia and the Pacific	Thailand
	Dr. Chua Thia-Eng	GEF/UNDP/IMO	Philippines

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Ms. Socorro Guerrero	GEF/UNDP/IMO	Philippines
	Mr. James Paw	GEF/UNDP/IMO	Philippines
	Dr. Huming Yu	GEF/UNDP/IMO	Philippines
	Dr. Magnus Ngoile	Marine and Coastal Programme IUCN	Switzerland
	Dr. Anders Granlund	Swedish International Development Cooperation Agency	Sweden
	Dr. Sten Sverdrup-Jensen	Institute for Fisheries Management The North Sea Centre	Denmark
	Mr. Arthur Holcombe	UNDP Beijing	PR China
	Ms. Hou Xinan	UNDP Beijing	PR China
	Dr. Philip S. Reynolds	UNDP New York	USA
	Dr. Andrea Yates	(CRM & Agricultural Resources Mgmt.) US Embassy Jakarta	Indonesia
	Ms. Sarah Humphrey	Intern (IUCN)	Tanzania
	Ms. Chen Chunfang	Xiamen Demonstration Project	PR China
	Mr. Chen Mingdian	Xiamen Demonstration Project	PR China
	Mr. Chen Mingbin	Xiamen Demonstration Project	PR China
	Ms. Gao Linchun	Xiamen Demonstration Project	PR China
	Mr. Huang Wenzhan	Xiamen Demonstration Project	PR China
	Mr. Lin Rongsheng	Xiamen Demonstration Project	PR China
	Mr. Ren Jun	Xiamen Demonstration Project	PR China
	Mr. Song Haiou	Xiamen Demonstration Project	PR China
	Mr. Shi Qian	Xiamen Demonstration Project	PR China
Mr. Zhang Donghui	Xiamen Demonstration Project	PR China	
<b>Workshop on Oil Spill Modelling in the East Asian Region, 31 May – 3 June 1996, Pusan, RO Korea</b>	Dr. Iwan Gunawan	Agency for Assessment and Application of Technology (BPPT)	Indonesia
	Dr. Safwan Hadi	Institute of Technology Bandung	Indonesia
	Dr. Muslim Muin	Lab. Mehanilin Fhrida PAU ITB Ganesha VD	Indonesia
	Dr. Heru Satoto	(PERTAMINA)	Indonesia
	Mr. Takashi Kojima	Fuyo Ocean Devlopment & Engineering Co. Ltd.	Japan
	Mr. Hiroaki Ozasa	Port and Harbour Research Institute	Japan
	Mr. Shin-chi Sugioka	Fuyo Ocean Devlopment & Engineering Co. Ltd.	Japan
	Mr. Sugimori Yasuhiro	Tokai University	Japan
	Dr. Kum Sang Low	University of Malaya	Malaysia
	Dr. Norhayati bt. Mohd. Tahir	University of Malaya	Malaysia
	Mr. Sven E. Hansen	OCEANOR	Norway
	Dr. Feng Hua	State Oceanic Administration	PR China
	Zhouwen Yu	State Oceanic Administration	PR China
	Dr. Cesar Villanoy	University of the Philippines	Philippines
	Mr. Sun-Duck Chang	National Fisheries University of Pusan	RO Korea
	Mr. Sang Gu Chang	Ministry of Science and Technology	RO Korea
	Mr. Byung Ho Choi	Sung Kyun Kwan University	RO Korea
Mr. Jim Myung Chung	Hoyu Tanker Co. Ltd.	RO Korea	

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Mr. Sangbok D. Hahn	National Fisheries Research and Development Agency	RO Korea
	Mr. Keyyong Hong	Korea Institute of Machinery and Materials	RO Korea
	Mr. Weon-Mu Jeong	Korea Ocean Research and Development Institute	RO Korea
	Mr. Min Jin	Korea Ocean Research and Development Institute	RO Korea
	Mr. Ki Cheon Jun	Korea Ocean Research and Development Institute	RO Korea
	Mr. Kyung Tae Jung	Korea Ocean Research and Development Institute	RO Korea
	Mr. Sok Kuh Kang	Korea Ocean Research and Development Institute	RO Korea
	Mr. Yong Q. Kang	National Fisheries University of Pusan	RO Korea
	Mr. Hyun Yeong Kim	Korea Ocean Research and Development Institute	RO Korea
	Mr. Taerin Kim	Korea Ocean Research and Development Institute	RO Korea
	Mr. Chung Mook Lee	Pohang University of Science and Technology	RO Korea
	Mr. Dong Kyu Lee	Department of Marine Science, Pusan National University	RO Korea
	Dr. Dong Young Lee	Korean Ocean Research and Development Institute	RO Korea
	Mr. Jong Chan Lee	Korea Ocean Research and Development Institute	RO Korea
	Mr. Byung Chul Oh	Korea Ocean Research and Development Institute	RO Korea
	Mr. Byong-Kwon Park	Korea Ocean Research and Development Institute	RO Korea
	Mr. Woo Sun Park	Korea Ocean Research and Development Institute	RO Korea
	Mr. Young Jae Ro	Department of Oceanography Chungnam National University	RO Korea
	Mr. Do Sik Shin	Meteorological Research Institute, KMA	RO Korea
	Mr. Jae Kwi So	Korea Ocean Research and Development Institute	RO Korea
	Mr. Won Ho Song	Korea Ocean Research and Development Institute	RO Korea
	Mr. Ae-Sook Suh	Meteorological Research Institute, KMA	RO Korea
	Mr. Kyung Duck Suh	Korea Ocean Research and Development Institute	RO Korea
	Mr. B. S. Yoon	University of Ulsan	RO Korea
	Mr. Toh Ah Cheong	Maritime Port Authority of Singapore	Singapore
	Mr. Lee Mui Kaw	Maritime Port Authority of Singapore	Singapore



ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Mr. Pramot Sojisuporn	The Harbour Department	Thailand
	Dr. Pham Van Ninh	Center for Marine Environment Survey, Research and Consultation	Vietnam
	Hyun Joo Kang	Korea Ocean Research and Development Institute	RO Korea
	Ji Young Lee	Korea Ocean Research and Development Institute	RO Korea
	Kwang Soon Park	Korea Ocean Research and Development Institute	RO Korea
	Nguyen Minh Son	GEF/UNDP/IMO	Philippines
	Huming Yu	GEF/UNDP/IMO	Philippines
<b>Workshop on the Ratification and Implementation of MARPOL 73/78 in the East Asian Seas, 30 October - 1 November 1996 Singapore</b>	Mr. Sam Chamrouen	Ministry of Environment	Cambodia
	Mr. Tia Vannareth	Ministry of Transportation and Public Works	Cambodia
	Capt. Henky Lumentah	BAPEDAL	Indonesia
	Capt. Kopong B. Arifin	BAPEDAL	Indonesia
	Atty. George de la Cuesta	Department of Environment and Natural Resources	Philippines
	Mr. Agapito Arrieta	Philippines Ports Authority	Philippines
	Mr. Nguyen Van Thuong	Vietnam National Maritime Bureau	Vietnam
	Mr. Le Tuan Anh	Vietnam National Maritime Bureau	Vietnam
	Mr. Henning Brathaug	International Maritime Organization	United Kingdom
	Mr. Zafrul Alam	Port Authority of Singapore	Singapore
	Prof. Koh Kheng Lian	National University of Singapore	Singapore
	Prof. Robert C. Beckman	National University of Singapore	Singapore
	Mr. Alan Tan	National University of Singapore	Singapore
	Atty. Regina Bernad	GEF/UNDP/IMO	Philippines
Mr. S Adrian Ross	GEF/UNDP/IMO	Philippines	
<b>Regional Conference on Sustainable Financing Mechanisms for the Prevention and Management of Marine Pollution: 14-16 November 1996 Metro Manila, Philippines</b>	Corazon Abansi	PG-ENRO Batangas	Philippines
	Hassan Abdul Hamid	Drainage and Irrigation Department	Malaysia
	Muhd Segar Abdullah	Maritime Port Authority of Singapore	Singapore
	Arun Abraham	International Development Research Centre	Singapore
	Alberto Acenas	Pilipinas Shell Petroleum Corporation	Philippines
	Peter Ahlgren	Embassy of Sweden	Philippines
	Maribel Aloria	PG-ENRO Batangas	Philippines
	Diosdado Amorillo	Philippine Ports Authority	Philippines
	Neil Anderson	Nautical Data International Inc.	Canada
	Constantino Arcellana Jr.	Mid-Ocean Ship Management Corp.	Philippines
	Kopong Bebe Arifin	Directorate General of Sea Communication	Indonesia
	Gilberto Asuque	Department of Foreign Affairs	Philippines
	Cristina Avila	Build-Operate-Transfer Center	Philippines
	Ulla Baagoe	Royal Danish Embassy	Philippines
	Baharuddin	BAPADAL	Indonesia
	Kate Bailey	British Council	Philippines
	Susan Banzon	PNOC	Philippines

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Domingo Bassig	Philippine Ports Authority	Philippines
	Jack Baxter	Baxter Technologies	Malaysia
	Ma. Lourdes Baylon	DENR	Philippines
	Ricardo Rodrigo Bella	Transpacific Towage Inc.	Philippines
	Hernando Bernal	Lorenzo Shipping Corporation	Philippines
	Trieu Van Bo	Ministry of Transport and Communication	Vietnam
	Angelita Brabante	DENR	Philippines
	Hans Broberg	SSPA Maritime Consulting A.B.	Sweden
	Arlene Brookes	VSO Volunteer-Tambuyog	Philippines
	Ernesto Calzada	Rope System	Philippines
	Rafael Camat Jr.	DENR	Philippines
	Can Nguyen Duc	Center for Safety and Environment	Vietnam
	Yvonne Carmona	Municipal Mayor, Nasipit, Agusan del Norte	Philippines
	Bienvenido Castillo	Municipal Mayor, Bauan, Batangas	Philippines
	Neil Challis	International Response Corporation	Thailand
	Chen Guoqiang	Xiamen Demonstration Project	China
	Chen Kuo-Quan	China Port Consultants, Inc.	Taiwan
	Chen Lu	Economic Institute of Xiamen	PR China
	Chin Samouth	Ministry of Environment	Cambodia
	Christen Colliander	SPOT Asia Pte. Ltd.	Singapore
	Ralph Colotte	Embassy of France	Philippines
	Sebastian Sujan	Damu	Malaysia
	Marissa David	PRC Environmental Management	Philippines
	Ella Deocadiz	DENR	Philippines
	Zubir Din	Universiti Sains Malaysia	Malaysia
	Robert J. Dobias	Asian Development Bank	Philippines
	Dong Pham Van	Department of Finance and Accounting	Vietnam
	Cecil Dave Duncan	Port Captain - Port of Saldanha Bay	South Africa
	Peggy Ronin Edin	Land & Survey Department	Malaysia
	Per Ekberg	Swedish Maritime Administration	Sweden
	Habib El-Habr	UNEP-EAS/RCU	Thailand
	Winfred Elizalde	Philippine Ports Authority	Philippines
	Evelyn Esitgoy	PG-ENRO	Philippines
	Lorna Fajardo	POEA	Philippines
	Bernard Fleet	Eutech Cybernetics Pte. Ltd.	Singapore
	Nilima Fleet	Eutech Cybernetics Pte. Ltd.	Singapore
	Delfin Ganapin	DENR	Philippines
	Gao Guangsheng	State Commission of Planning	PR China
	Donna Gasgonia	Foundation for the Philippine Environment	Philippines
	Eleanore Gonzales	Land Bank of the Philippines	Philippines
	Pacifico Gonzales	Caltex Philippines	Philippines
	Anders Granlund	Swedish International Agency	Sweden

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Stuart Green	Voluntary Service Overseas	Philippines
	George Greenwood	The Steamship Mutua Underwriting Association	United Kingdom
	Thomas Grigalunas	University of Rhode Island	USA
	Per Hallstrom	EXPORTRADET	Sweden
	B.A. Hamzah	Maritime Institute of Malaysia	Malaysia
	Ir. Djuhair Hasan	PERTAMINA	Indonesia
	Philip I Hashim	Development Bank of the Philippines	Philippines
	Abdul Razak Hassan	Economic Planning Unit State of Johore	Malaysia
	Hem Saroeun	Ministry of Environment	Cambodia
	Alexander Hemelaar	WASTE	The Netherlands
	Hong Khay Chai	Baxter Technologies	Malaysia
	Huy Quang Vo	JV Vietsovetro	Vietnam
	Rosnani Ibarahim	Department of Environment	Malaysia
	Clarissa Ignacio	Philippine Ports Authority	Philippines
	Eugenio Raymundo Inocentes III	NEDA	Philippines
	Lars Jaensson	SAAB Comsitech Far East Sdn. Bhd.	Malaysia
	Robert Jara	DENR	Philippines
	Rogelio Juliano	CMC	Philippines
	Raja Malik Saripulazan bin Raja Kamaruzaman	Marine Department of Peninsular Malaysia	Malaysia
	Sirasa Kanpittaya	Ministry of Finance	Thailand
	Narong Keowsawetabhan	Ministry of Finance	Thailand
	Adam Kerr	International Hydrographic Bureau	Monaco
	Khan Samboeurn	Ministry of Industry, Mines and Energy	Cambodia
	Markku Kohonen	UNIDO	Philippines
	Sadatoshi Koike	Japanese Maritime Safety Agency	Japan
	Kwon Moon Sang	KORDI	Republic of Korea
	Lewis Kwong	RO-Clean Singapore	Philippines
	Lam Wai-Ming	Marine Department, Hong Kong Government	Hong Kong
	Michael Francisco Lansing	Department of Town and Regional Planning	Malaysia
	Danilo Lapid	Center for Advanced Philosophical Studies	Philippines
	Sixten Larson	Swedeplan	Sweden
	Noela Lasmarias	Phil-Canada Cooperation Office	Philippines
	Jihyun Lee	KORDI	Republic of Korea
	John Lemlin	IPIECA	United Kingdom
	Manuel Leycano Jr.	Provincial Treasurer, Province of Laguna	Philippines
	Li Xiaoming	State Oceanic Administration	PR China

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	Teresita Pamela Liao	Environmental Management Bureau	Philippines
	Raphael Lotilla	NEDA	Philippines
	Capt. Henky Lumentah	Directorate of Sea and Coast Guard	Indonesia
	Lum Weng Kee	Sewerage Services Department	Malaysia
	Luo Gaolai	National Environment Protection Agency	PR China
	Alex Macdonald	Strategic Ventures Corporation	Canada
	Alexander Madamba	Philippine Ports Authority	Philippines
	Jorgen Magner	Danish EPA	Denmark
	Azhar Maksum	UWEP	Indonesia
	Hermilando Mandanas	Governor, Provincial Government of Batangas	Philippines
	Reynaldo Marquez	Philippine Institute of Petroleum Inc.	Philippines
	Josefina Matanguihan	PG-ENRO	Philippines
	Cerez Mercado	PG-ENRO	Philippines
	Albert Moreno	PENRO	Philippines
	Ahmat Narawi	Bintulu Port Sdn. Bhd.	Malaysia
	Dr. Mulia Nasution	Directorate General of Budget	Indonesia
	Pham Van Ninh	National Environment Agency	Vietnam
	Vicente de Ocampo Jr.	Herma Shipping and Transport Corporation	Philippines
	Shigeto Oguri	International Marine Consultancy	Singapore
	Yasuhiro Okubo	JICA	Philippines
	Hideo Osuga	International Oil Pollution Compensation Fund	United Kingdom
	Leonardo Ote	PNOC-EDC	Philippines
	Ernesto Paquiz	Philippine Coast Guard	Philippines
	Dionisio Parulan	BBCI/Philpesta	Philippines
	Angel Peñalosa	Malayan Towage & Salvage Corp.	Philippines
	Renato Peralta	Provincial Government of Ilocos Norte	Philippines
	Pradech Phayakvichien	Tourism Authority of Thailand	Thailand
	Do Thi Phu	Ministry of Finance	Vietnam
	Phuoc Nguyen Cao	JV Vietsovpetro	Vietnam
	Phuong Sothy	Ministry of Environment	Cambodia
	Timothy Maurice Pianzin	Department of Town and Regional Planning	Malaysia
	Pich Sam Ang	Ministry of Environment	Cambodia
	Urbano Pilar	DENR	Philippines
	Brenda Pimentel	Maritime Industry Authority	Philippines
	Valeriano Plata	San Miguel Stevedoring	Philippines
	Sidik Poernomo	BAPEDAL	Indonesia
	Felix Pulmano	Solex Express Phils., Inc	Philippines
	Pornthip Pucharoen	Department of Environmental Quality Promotion	Thailand
	John Purvis	VSO-Volunteer-Labrador	Philippines
	Brent Pyburn	East Asia Response Ltd.	Singapore
	Victor Ramos	DENR	Philippines
	Edgardo Ravago	Transpacific Towage Inc.	Philippines
	Ren Jun	Xiamen Demonstration Project	PR China

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
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	Eduardo Rivera	Manila Bay Waste Management Corporation	Philippines
	Francisco Roa	PNOC	Philippines
	Lourdes Roberto	Philippine Ports Authority	Philippines
	Cecilia Romson	IOC	Sweden
	Hans Jurgen Roos	Bremen Port Authority	Germany
	Enrico Rubio	Philippine Business for the Environment	Philippines
	Francisco Saavedra	DENR	Philippines
	Masayasu Sakaba	Japanese Maritime Safety Agency	Japan
	Euprepio Sanchez	Philippine Ports Authority	Philippines
	Jim Sandquist	SSPA Maritime Consulting AB	Sweden
	Mangutara Sangcad	Philippine Ports Authority	Philippines
	Peter Sawal	Natural Resources and Management Board	Malaysia
	Viktor Sebek	Advisory Committee on the Protection of the Sea	United Kingdom
	Nguyen Ngoc Sinh	National Environment Agency	Vietnam
	Chuwit Sirivajjakul	Tourism Authority of Thailand	Thailand
	Telesforo Solda	W G & A Philippines	Philippines
	Piyanan Soponkanabhorn	Office of Environmental Policy and Planning	Thailand
	Drs. Sudariyono	Ministry of State for Environment	Indonesia
	Ignatius Sutarjo	PERTAMINA	Indonesia
	Martinah Haji Tamit	Ministry of Development	Brunei Darussalam
	Enrique Kp. Tan	Petroleum Technology & Research Corp.	Philippines
	Howard Henry Tan	Petroleum Technology & Research Corp.	Philippines
	Conception Tanglao	PNOC	Philippines
	Rafaelito Taruc	Board of Investments	Philippines
	Teh Kong Leong	Maritime and Port Authority of Singapore	Singapore
	Sarah Timpson	UNDP-Manila	Philippines
	Francisco Tolin	Philippine Ports Authority	Philippines
	Gima Uji	Bintulu Port Sdn. Bhd.	Malaysia
	Ung Phy Run	Ministry of Environment	Cambodia
	Carolina Valdez	Municipal Government of Bauan	Philippines
	Ernesto Vinuya	Herma Shipping and Transport Corporation	Philippines
	Krisno Wardoyo	Ministry of Tourism, Post and Telecommunication	Indonesia
	Dhanapala Weerasekera	Marine Pollution Prevention Authority Sri Lanka	Sri Lanka
	Mark Byron Wellington	LADS Corporation Ltd.	Australia
	Reiner Willems	Pilipinas Shell Petroleum Corporation	Philippines
	Benny Y.K.. Wong	Environmental Protection Dept.	Hong Kong

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	Zeng Zijian	Xiamen Environmental Protection Bureau	PR China
	Zhang Zhaofeng	State Oceanic Administration	PR China
	Mohamad Yazi Md. Zin	Economic Planning Unit	Malaysia
<b>National Workshop on IMO Conventions for the Prevention and Management of Marine Pollution</b> 21-22 April 1997 Hanoi, Vietnam 24-25 April 1997 Ho Chi Minh City, Vietnam	Le Doan Hanh	Vietnam Bureau of Maritime	Vietnam
	Trinh Duc Chinh	Vietnam Ship Registration Bureau	Vietnam
	Nguyen Thanh Liem	Ben Nghe Port	Vietnam
	Vo Minh Tien	Can Tho Port Authority	Vietnam
	Trinh Than Liem	Dong Nai Port Authority	Vietnam
	Duc Ngoc Nam	Dong Nai Port Authority	Vietnam
	Nguyen Duc Thang	Dong Nai Port Authority	Vietnam
	Nguyen Van Thang	Dong Nai Port Authority	Vietnam
	Vo Van Tuan	Dong Nai Port Authority	Vietnam
	Nguyen Thanh Hung	My Tho Port Authority	Vietnam
	Nguyen Thanh Cong	My Tho Port Authority	Vietnam
	Vo Minh Quang	My Tho Port Authority	Vietnam
	Nguyen Xuan Thu	Nha Trang Port	Vietnam
	Tran Ngoc Trung	Nha Trang Port	Vietnam
	Cao Van Ly	Qui Nhon Port Authority	Vietnam
	Huynh Hong Vu	Saigon Port	Vietnam
	Ho Kim Lan	Saigon Port	Vietnam
	Nguyen Khanh Hoa	Saigon Port	Vietnam
	Nguyen Manh Ha	Saigon Port	Vietnam
	Nguyen Minh Tam	Saigon Port	Vietnam
	Nguyen Thanh Hung	Saigon Port	Vietnam
	Phan Thang Lo	Saigon Port	Vietnam
	Le Van Tao	Saigon Port	Vietnam
	Nguyen Thi Lieu	Saigon Port	Vietnam
	Van Ngoc Binh	Saigon Port Authority	Vietnam
	Phung Quang Tung	Saigon Port Authority	Vietnam
	Mai Xuan Nghia	Thuan An Port Authority	Vietnam
	Luong Truong Phi	Vung Tau Port Authority	Vietnam
	To Van Duong	Vung Tau Port Authority	Vietnam
	Phan Thanh Nghiep	An Giang Shipping Co.	Vietnam
	Tieu Van Kinh	Citaco Co.	Vietnam
	Joachim B. Schottman	First Logistic Developing Co. (JV)	Vietnam
	Phan Trong Lam	First Logistic Developing Co. (JV)	Vietnam
	Hoang Van Mao	Falcon Shipping Co.	Vietnam
	Ha Duc Bang	Inlaco Co.	Vietnam
	Phan Ngoc Bo	Inlaco Co.	Vietnam
Mguyen Manh Hien	PTSC Supply Base Vung Tau	Vietnam	
Phung Nhu Dung	PTSC Supply Base Vung Tau	Vietnam	
Phan Thanh Ha	Quang Binh Shipping Co	Vietnam	
Le Van Quy	Tien Giang Shipping Co.	Vietnam	

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
<b>National Workshop on the Ratification and Implementation of MARPOL 73/78 in the Philippines, Club Estancia Resort Hotel, Tagaytay City 9-10 June 1997</b>	Mirla M. Arceo	Philsin Marine Services	Philippines
	Leo Tito L. Ausan, Jr.	Department of Foreign Affairs	Philippines
	Domingo P. Bassig	Philippine Ports Authority	Philippines
	Demetrio B. Bidan, Jr.	Philippine Coast Guard	Philippines
	Josephine R. Bondoc	Department of Transportation and Communications	Philippines
	Carlos A. Buenafe, President	Philippine Inter-island Shipping Association	Philippines
	Nicomedes P. Enad	Bureau of Customs	Philippines
	Roberto Luis F. dela Fuente	Department of Foreign Affairs	Philippines
	Ernie T. Guerrero	Caltex (Phils.) Inc	Philippines
	Elson E. Hermogino	Philippine Coast Guard	Philippines
	Clarissa S. Ignacio	Philippine Ports Authority	Philippines
	Pedro Vicente C. Mendoza	Department of Trade and Industry	Philippines
	Seif Miskry	Lloyd's Register of Shipping	Philippines
	Ricardo J. Jamandre	Association of International Shipping Lines	Philippines
	Teresita P. Liao	Department of Environment and Natural Resources	Philippines
	Jessie C. Limquangco	Pilipinas Shell Petroleum Corp.	Philippines
	Ramon Liwag	Philippine Coast Guard	Philippines
	Leo S. Lloren	Shell Chemical Co. (Phils.), Inc.	Philippines
	Arsenio Lucas	Maritime Industry Authority	Philippines
	Rogello M. Navarro	Magsaysay Lines, Inc.	Philippines
	Joseph Joselito M. Oliveros	Hoechst Philippines, Inc. (SPLK)	Philippines
	Dionisio Z. Parulan	Philippine Petroleum Sea Transport Association	Philippines
	Angel A. Peñalosa	Filipino Shipowners' Association Malayan Towage and Salvage Corp.	Philippines
	Dilbert N. Guetulio	House of Representatives NCR	Philippines
	Mex H. Rayos	Department of Energy	Philippines
	Arnie F. Santiago	Maritime Industry Authority	Philippines
	Jesus L. Tomagan	Aboitiz Jepsens Bulk Transport Corporation	Philippines
	Mr. S. Adrian Ross	GEF/UNDP/IMO	Philippines
	Atty. Stella Regina Bernad	GEF/UNDP/IMO	Philippines
	Atty. George Gilbert G. dela Cuesta	Department of Environment and Natural Resources	Philippines
Atty. Ma. Cecile G. Dalupan-San Andres	Department of Environment and Natural Resources	Philippines	
<b>Second Technical Workshop of the Regional Network for Marine Pollution Monitoring and Information Management 9-11 November 1997</b>	Mr. Long Rithirak	Ministry of Environment	Cambodia
	Mr. Zamsari Mohd. Din	Department Of Environment	Malaysia
	Mr. Alam Syah Mapparessa	BAPEDAL	Indonesia
	Ir. Irwandi Idris	BAPEDAL	Indonesia
	Mr. Xu Kuncan	State Oceanic Administration	PR China
	Dr. Hong Huasheng	Xiamen University	PR China
	Dr. Yuan Dongxing	Xiamen University	PR China
	Mr. Fan Zhijie	State Oceanic Administration	PR China
	Ms. Maribel Aloria	Environment And Natural Resources Office – Batangas	Philippines

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	Mr. Leo Pura	Coastal Management Center	Philippines
	Dr. Chae Jang -Won	Korea Ocean Research and Development Institute	RO Korea
	Dr. Cho Hong-Yeon	Korea Ocean Research and Development Institute	RO Korea
	Ms. Soh Suat Hoon	Ministry of the Environment	Singapore
	Dr. Voravit Cheevaporn	Burapha University	Thailand
	Dr. Nguyen Chu Hoi	Haiphong Institute of Oceanology	Vietnam
	Dr. Pham Van Ninh	Center for Marine Environment Survey Research and Consultation	Vietnam
	Dr. Nguyen Tac An	Institute of Oceanography	Vietnam
	Dr. Nguyen Duo Cu	Haiphong Institute of Oceanology	Vietnam
	Mr. Nguyen Quang Tuan	Haiphong Institute of Oceanology	Vietnam
	Dr. Chua Thia-Eng	GEF/UNDP/IMO	Philippines
	Dr. Gil Jacinto	GEF/UNDP/IMO	Philippines
	Mr. Adrian Ross	GEF/UNDP/IMO	Philippines
	Dr. Huming Yu	GEF/UNDP/IMO	Philippines
	Dr. Mario Delos Reyes	GEF/UNDP/IMO	Philippines
	Dr. Leticia B. Dizon	GEF/UNDP/IMO	Philippines
Ms. Socorro C. Guerrero	GEF/UNDP/IMO	Philippines	
Ms. Eden O. Mandac	GEF/UNDP/IMO	Philippines	
<b>Regional Workshop on Partnership in the Application of Integrated Coastal Management 12-15 November 1997 Chonburi, Thailand</b>	Mr. Long Rithirak	Ministry of Environment	Cambodia
	Mr. Pich Sam Ang	Ministry of Environment	Cambodia
	Mr. Zamsari Mohd. Din	Department of Environment	Malaysia
	Dr. Almah Bt. Awaluddin	Maritime Institute of Malaysia	Malaysia
	Dr. Zubir Din	Universiti Sains Malaysia	Malaysia
	Dr. Rokhmin Dahuri	Bogor Agricultural University	Indonesia
	Dr. Tridoyo Kusumastanto	Bogor Agricultural University	Indonesia
	Ir. Alam Syah Mapparessa	BAPEDAL	Indonesia
	Ir. Irwandi Idris	BAPEDAL	Indonesia
	Dr. Kenji Hotta	Nihon University	Japan
	Mr. Xu Kuncan	State Oceanic Administration	PR China
	Mr. Zhuang Shijian	Environmental Monitoring Station of Xiamen Port Authority	PR China
	Ms. Hong Lijuan	Environmental Monitoring Station of Xiamen Port Authority	PR China
	Mr. Chen Gang	Department of Oceanography, Xiamen University	PR China
	Mr. Lu Zhenbin	Fujian Institute of Fishery	PR China
	Mr. Shi Qian	Xiamen Demonstration Project	PR China
	Mr. Ruan Wuqi	Fujian Institute of Oceanography	PR China
	Ms. Dai Songruo	Economics Institute of Xiamen Planning Commission	PR China
	Mr. Zu Yayen	Xiamen Municipal Government	PR China
	Mr. Chen Guoqiang	Xiamen Demonstration Project	PR China
	Mr. Li Fude	Hainan Marine Bureau	PR China
	Mr. Zhang Hanchang	Marine & Aquatic Bureau	PR China
	Mr. Li Shunan	Marine Administrative Office	PR China
	Mr. Zhang Rensong	Xiamen Legal Bureau	PR China
Dr. Hong Huasheng	Xiamen University	PR China	
Dr. Yuan Dongxing	Xiamen University	PR China	



ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Mrs. Du Bilan	State Oceanic Administration	PR China
	Mr. Fan Zhijie	State Oceanic Administration	PR China
	Ms. Eunice Agsaoay	Department of Environment and Natural Resources	Philippines
	Ms. Evelyn Estigoy	Environment and Natural Resources Office, Provincial Government of Batangas	Philippines
	Ms. Maribel Aloria	Environment and Natural Resources Office, Provincial Government of Batangas	Philippines
	Dr. Porfirio Aliño	University of the Philippines	Philippines
	Dr. Cesar Villanoy	Marine Science Institute, University of the Philippines	Philippines
	Mr. Leo Pura	Coastal Management Center	Philippines
	Mr. Ernesto Serote	University of the Philippines	Philippines
	Mr. Bienvenido Castillo	Municipal Government of Bauan	Philippines
	Ms. Ma. Arlene Mendoza	Department of Environment and Natural Resources	Philippines
	Mr. Jose Alfaro	Councilor, Ormoc City Council	Philippines
	Dr. Dioscoro Melana	Department of Environment and Natural Resources	Philippines
	Atty. Ronaldo A. Geron	Provincial Government of Batangas	Philippines
	Mr. Frederick Contreras	Shell Refinery	Philippines
	Dr. Jihyun Lee	Korea Maritime Institute	RO Korea
	Dr. Seoung-Yong Hong	Korea Marine Institute	RO Korea
	Mr. Chae Jang-Won	Korea Ocean Research and Development Institute	RO Korea
	Mr. Cho Hong-Yeon	Korea Ocean Research and Development Institute	RO Korea
	Dr. Chou Loke Ming	National University of Singapore	Singapore
	Ms. Soh Suat Hoon	Ministry of the Environment	Singapore
	Dr. Ampan Pintukanok	Office of Environmental Policy and Planning	Thailand
	Dr. Voravit Cheevaporn	Burapha University	Thailand
	Dr. Kashane Chalermwat	Burapha University	Thailand
	Mr. Nguyen Tac An	Institute of Oceanography	Vietnam
	Dr. Pham Van Ninh	Center for Marine Environment Survey Research and Consultation	Vietnam
	Dr. Nguyen Chu Hoi	Haiphong Institute of Oceanology	Vietnam
	Dr. Nguyen Duo Cu	Haiphong Institute of Oceanology	Vietnam
	Mr. Nguyen Quang Tuan	Haiphong Institute of Oceanology	Vietnam
	Dr. Vidhisha Samarasekara	Wetlands International	Malaysia
	Ms. Annabelle Cruz-Trinidad	Coastal Resources Management Project	Philippines
	Dr. Ian Dutton	Coastal Resource Management Project-Indonesia	Indonesia
	Mr. Sulma Wame	IUCN-Vietnam	Vietnam
	Dr. Maarten Kuijper	IOC/WESTPAC c/o National Research Council (NRCT)	Thailand

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Ms. Donna Nickerson	Food and Agriculture Organization, Regional Office for Asia and the Pacific	Thailand
	Dr. Chua Thia-Eng	GEF/UNDP/IMO	Philippines
	Dr. Huming Yu	GEF/UNDP/IMO	Philippines
	Dr. Gil Jacinto	GEF/UNDP/IMO	Philippines
	Mr. Adrian Ross	GEF/UNDP/IMO	Philippines
	Dr. Mario Delos Reyes	GEF/UNDP/IMO	Philippines
	Ms. Socorro C. Guerrero	GEF/UNDP/IMO	Philippines
	Dr. Leticia Dizon	GEF/UNDP/IMO	Philippines
	Ms. Eden Mandac	GEF/UNDP/IMO	Philippines
<b>Implementation of the Local Government Code in Relation to Integrated Coastal Management in Batangas Bay, 19-20 November 1997</b>	Zenaida H. Atienza	Municipal Mayor of Tingloy	Philippines
	Errol C. Bacamante	United Coconut Chemicals, Inc	Philippines
	Roselyn Berberabe	Provincial Government, Batangas	Philippines
	Sally S. Bisa	Municipality of Tingloy	Philippines
	Benito Bustamante	Philippine Coast Guard Batangas	Philippines
	Manolo A. Castillo	San Pascual, Batangas	Philippines
	Jess de Vera	Purefoods Corp- Mabini, Batangas	Philippines
	Florida Dijan	DILG-Provincial Office	Philippines
	Rolando Dimayuga	CALTEX Refinery	Philippines
	Engr. Evelyn Estigoy	Provincial Government Environment and Natural Resources, Batangas	Philippines
	Capt. Leonardo L. Evangelista	Philippine Coast Guard Batangas City	Philippines
	Mr. Benjamin Francisco	Coastal Resource Management Center	Philippines
	Mr. Romeo Gagui	Maritime Industry Authority	Philippines
	Ronaldo A. Geron	Sangguniang Panglalawigan Batangas	Philippines
	Amira Goki	Tetra Tech-EMI	Philippines
	Prof. Roberto B. Kalao	Pablo Borbon Memorial Institute of Technology	Philippines
	Dionisio M. Lagamon Jr.	Batangas Chamber of Commerce	Philippines
	Mr. Mercado P. Magno	Engineering Equipment Inc.	Philippines
	Robert Mayshile	Universal Aboitiz	Philippines
	Mrs. Vilma Mortel	Agricultural Office Representative	Philippines
	Felix Panopio	Pablo Borbon Memorial Institute of Technology	Philippines
	Francisco Reyes	MPNC	Philippines
	Mylene Rivera	Environmental Management Bureau	Philippines
	Donald Salvador	Engineering Equipment Inc.	Philippines
	Prof. Ernesto Serote	SURP-UP	Philippines
	Carolina R. Valdez	ENRO-Bauan	Philippines

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
Workshop on the Development and Application of a Risk Assessment/ Risk Management Framework for Subregional Sea Areas: The Malacca Straits Demonstration Project, 24-26 November 1997 Hotel Grand Continental Johore Bahru, Malaysia	Capt. Henky Lumentah	BAPEDAL	Indonesia
	Drs. Sudariyono	State Ministry for the Environment	Indonesia
	Ir. Alam Syah Mapparessa	BAPEDAL	Indonesia
	Dr. Indra Jaya	Bogor Agricultural University	Indonesia
	Dr. Erliza Noor	Bogor Agricultural University	Indonesia
	Dr. Tridoyo Kusumastanto	Bogor Agricultural University	Indonesia
	Dr. Tri Prartono	Bogor Agricultural University	Indonesia
	Mr. Sigid Haryadi	Bogor Agricultural University	Indonesia
	Mr. Yus Rustandi	Bogor Agricultural University	Indonesia
	Ms. Hjh. Rosnani Ibarahim	Department of Environment	Malaysia
	Ms. Pauziah Hanum Abdul Ghani	Department of Environment	Malaysia
	Mr. Maarof Sanif	Department of Environment	Malaysia
	Mr. Anurddin Abdul Ghani	University of Malaya	Malaysia
	Mr. Lee Chak Khiam	University of Malaya	Malaysia
	Dr. O.S. Selvaraj	University of Malaya	Malaysia
	Ali Hashim	University of Malaya	Malaysia
	Dr. A. Rani Abdullah	University of Malaya	Malaysia
	Dr. Richard Dorall	University of Malaya	Malaysia
	Dr. A. Sasekumar	University of Malaya	Malaysia
	Dr. Tong Soo Loong	University of Malaya	Malaysia
	Mr. Chris Kwan	University of Malaya	Malaysia
	Mr. S. Peter	University of Malaya	Malaysia
	Dr. Low Kum Sang	University of Malaya	Malaysia
	Dr. Halim Sulaiman	University of Malaya	Malaysia
	Dr. Norhayati Mohd. Tahir	University of Malaya	Malaysia
	Dr. Than Cheok Fah	University of Malaya	Malaysia
	Dr. Chong Ving Ching	University of Malaya	Malaysia
	Dr. Tafazzal	University of Malaya	Malaysia
	Mr. Kok Poon Sing	Ministry of the Environment	Singapore
	Mr. Jeffrey Low Kim Yew	National University of Singapore	Singapore
	Mr. Loo Yong Ying	National University of Singapore	Singapore
	Dr. Tan Koh Siang	National University of Singapore	Singapore
	Dr. Mark Valencia	East-West Center	Hawaii
	Dr. Peter Calow	The University of Sheffield	United Kingdom
	Dr. Thomas Grigalunas	University of Rhode Island	USA
	Dr. Valery Forbes	Roskilde University	Denmark
	Dr. Chua Thia-Eng	GEF/UNDP/IMO	Philippines
	Mr. S. Adrian Ross	GEF/UNDP/IMO	Philippines
	Mr. James Paw	GEF/UNDP/IMO	Philippines
	Ms. Delilah Padilla	GEF/UNDP/IMO	Philippines
	Ms. Maria Corazon Ebarvia	University of the Philippines	Philippines

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
National Workshop on the Implementation of CLC and FUND 29 May 1998, Department of Energy, Fort Bonifacio, Metro Manila	Mr. Arturo T. Valdez	Department of Transportation and Communications	Philippines
	Lt. Joel Garcia	Department of Transportation and Communications	Philippines
		Department of Transportation and Communications	Philippines
	Lt. Maximo Q. Mejia, Jr.	Department of Transportation and Communications	Philippines
	Ms. Josephine R. Bondoc	Department of Transportation and Communications	Philippines
	Ms. Melanita G. Malvar	Department of Transportation and Communications	Philippines
	Atty. Brenda Pimentel	Maritime Industry Authority	Philippines
	Atty. M.A. Hiyasmin de los Santos	Maritime Industry Authority	Philippines
	Cdr. Isidro Banaria	Philippine Coast Guard	Philippines
	LCdr. Rolando R. Ricafrente	Philippine Coast Guard	Philippines
	LCdr. Ernesto C. Sarmiento	Philippine Coast Guard	Philippines
	Mr. Agapito Arrieta	Philippine Ports Authority	Philippines
	Mr. Ibarra S. Garcia	Philippine Ports Authority (PPA)	Philippines
	Dr. Guillermo R. Balce	Department of Energy (DOE)	Philippines
	Asst. Director Clarissa Cabacang	Environmental Protection & Monitoring Division (EPMD)	Philippines
	Ms. Rita Escandor	Environmental Protection & Monitoring Division (EPMD)	Philippines
	Mr. Mex Rayos	Environmental Protection & Monitoring Division (EPMD)	Philippines
	Letty G. Abella	Environmental Protection & Monitoring Division (EPMD)	Philippines
	Mr. Charles F. Cordero	Energy Industry Administration Bureau (EIAB)	Philippines
	Ms. Carmen Calayang	Energy Industry Administration Bureau (EIAB)	Philippines
	Ms. Rainelda D. Pedro	Energy Industry Administration Bureau (EIAB)	Philippines
	Mr. Luisito de los Santos	Department of Foreign Affairs - (UNIO)	Philippines
	Atty. George dela Cuesta	Legal Department of Environment and Natural Resources	Philippines
	Mr. Jessie Limguangco	Pilipinas Shell Petroleum Corp.	Philippines
	Anthony G. Tagacay	Pilipinas Shell Petroleum Corp.	Philippines
	Mr. Reynaldo Marquez	Philippine Institute of Petroleum, Inc.	Philippines
	Mr. Teodoro M. Reyes	Philippine Institute of Petroleum, Inc.	Philippines
	Athena R. Pio de Roda	Seaoil Petroleum Corp.	Philippines
	Carmelita C. Javier	Petron Corporation	Philippines
	Minda G. Rada	Tidewater Associated, Inc.	Philippines
	Capt. Alberto Acenas	Magsaysay Lines, Inc.	Philippines
	Mr. Reynaldo Abella	Aboitiz Jebsens Bulk Transport Corporation	Philippines

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	Dionisio Z. Parulan	Philippine Petroleum Sea Transport Association	Philippines
	Mr. Carlos Buenafe	Philippine Inter-Island Shipping Association	Philippines
	Mr. James Jessup	Jardin-Aboitiz Insurance Brokers, Inc.	Philippines
<b>Workshop for Subregional Cooperation in Oil Spill Modelling the Malacca Straits, Patra Jasa Building, Jakarta, 25-27 August 1998</b>	Dr. Muslim Muin	Bandung Institute of Technology	Indonesia
	Dr. Safwan Hadi	Bandung Institute of Technology	Indonesia
	Mr. Ridwan D. Tamin	BAPEDAL	Indonesia
	Prof. Low Kum Sang	University of Malaya	Malaysia
	Mr. Phua Yeong Nam	University of Malaya	Malaysia
	Mr. Mazelan Abdullah	Department of Environment	Malaysia
	Dr. Song Tiancheng	Maritime and Port Authority	Singapore
	Mr. Rahman Bin Kamin	Maritime and Port Authority	Singapore
	Dr. Chao Xiaobo	National University of Singapore	Singapore
	Dr. Nguyen Minh Son	Center for Marine Environment Survey, Research and Consultation	Vietnam
	Sударsono, SH	State Ministry for the Environment	Indonesia
	Drs. Effendi A. Sumardja, M.Sc	State Ministry for the Environment	Indonesia
	Dr. Nabel Makarim	BAPEDAL	Indonesia
	Ir. Mohd. Gempur Adnan	BAPEDAL	Indonesia
	Drs. Sudariyono	State Ministry of Environment	Indonesia
	Ir. Rachmat Benny Alamsyah	BAPEDAL	Indonesia
	Ms. Zulhasni	BAPEDAL	Indonesia
	Dr. Ning Purnomohadi	BAPEDAL	Indonesia
	Dr. Rokhmin Dahuri	Bogor Agricultural University	Indonesia
	Dr. Iwan Gunawan	Directorate for Natural Resources Inventoryzation Technology	Indonesia
	Dr. Bidawi Hasyim	LAPAN	Indonesia
	Ir. Sri Giarto	Meteorology and Geophysics Agency (BMG)	Indonesia
	Dr. Otto Ongkosongo	The Indonesian Science Institute	Indonesia
	Mayor Dede Yuliadi	Indonesian Navy	Indonesia
	Dr. Dipo Alam	BAPPENAS	Indonesia
	Dr. Dwight Watson	Collaborative Environmental Project in Indonesia – CEPI	Indonesia
	Dr. Noel Boston	Collaborative Environmental Project in Indonesia – CEPI	Indonesia
	Mr. Ravi Rajan	UNDP Jakarta	Indonesia
	Ir. Wahyu Purwanta	Agency for the Assessment and Application of technology (BPPT)	Indonesia
	Agus Rudyanto Ruwadi	Directorate General of Sea Communication	Indonesia
	Capt. Sahid	Directorate General of Sea Communication	Indonesia
	Capt. Albert Lopian	Directorate General of Sea Communication	Indonesia
Laksdya.(AL) Fahmi Djamaris	Directorate General of Sea Communication	Indonesia	

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Eka Sukmawati	Directorate General of Sea Communication	Indonesia
	Dr. Achmad Karno	The Indonesian State Oil Company (PERTAMINA)	Indonesia
	Ir. Gatot K. Wiroyudo	Ka. BPPKA	Indonesia
	Ir. M. Singgih Sunaryo	Ka. LLP-PLPK	Indonesia
	Warnaedy	Ka. LLP-PLPK	Indonesia
	Ir. Rusli Yusuf	Ka.Div. PMK - Dit. PKK	Indonesia
	Juslih Jusuf	Kadin. Pelabuhan-Dit. PKK	Indonesia
	Sulistiono	Kadin. LDL-BPPKA	Indonesia
	A. W. Budisantoso	Urs. LK3. Dit. EP	Indonesia
	Drs. F.A. Gunawan	Dinas KK/LL Dit. P	Indonesia
	Ir. Djuhair Hasan	Kadin. PMK – BPPKA	Indonesia
	Ir. Marwati	The Indonesian State Oil Company (PERTAMINA)	Indonesia
	Elviera T. Putri	The Indonesian State Oil Company (PERTAMINA)	Indonesia
	Imam Basori	The Indonesian State Oil Company (PERTAMINA)	Indonesia
	Bernard Vitry	Kav. C 11-14	Indonesia
	Rocky Sasabone	Maxus South East Sumatera Inc	Indonesia
	Wiesje Rondonuwu	Maxus South East Sumatera Inc	Indonesia
	Curtis W. Murray	Maxus South East Sumatera Inc.	Indonesia
	Didik W.	Total Indonesie	Indonesia
	Imam Soeseno	Total Indonesie	Indonesia
	Baihaki H. Hakim	Caltex Pacific Indonesia	Indonesia
	Arudji Wahyono	Caltex Pacific Indonesia	Indonesia
	M. Diad	Caltex Pacific Indonesia	Indonesia
	Lukman Nata	Caltex Pacific Indonesia	Indonesia
<b>International Conference on Challenges and Opportunities in Managing Pollution in the East Asian Seas, 22-24 March 1999, Manila, Philippines</b>	Mr. Sabri Haji Mohd. Taha	Fisheries Department	Brunei
	Mr. Long Rithirak	Ministry of Environment	Cambodia
	Mr. Mak Sideth	Ministry of Environment	Cambodia
	Mr. Chea Sina	Ministry of Environment	Cambodia
	Mr. Marc Richir	Commission Europeenne	Belgium
	Dr. Donald Hodgins	Seaconsult marine Research Ltd.	Canada
	Mr. Li Hak Gwon	GBCIO	DPR Korea
	Mr. Jo Nam Ho	State Hydrometeorological Administration	DPR Korea
	Mr. Yun Yong Song	Ministry of Foreign Affairs	DPR Korea
	Mr. Martin O'Neil	PB Power	Indonesia
	Dr. Tommy Purwaka	BAPEDAL	Indonesia
	Dr. Aprilani Soegiarto	Indonesian Institute of Sciences	Indonesia
	Ms. Ni Wayan Sudji	Environmental Management Department	Indonesia
	Ms. Zulhasni	BAPEDAL	Indonesia
	Dr. Makoto Omori	Tokyo University of Fisheries	Japan
	Hajah Rosnani Ibarahim	Department of Environment	Malaysia
	Dr. Tong Soong Loong	Alam Sekitar Malaysia Sdn. Bhd.	Malaysia
	Dr. Low Kum Sang	University of Malaya	Malaysia
	Ms. Norzilla Mohamed	UNDP Kuala Lumpur	Malaysia

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	A. Sasekumar	University of Malaya	Malaysia
	Dr. Zulkifli Abdul Rahman	Department of Environment	Malaysia
	Mr. Joost H.M. De Ruij	National Institute for Coastal and Marine Management	Netherlands
	Mr. Mattheus Sturm	DHV Consultants	Netherlands
	Ms. Jian Liu	Erasmus University	Netherlands
	Dr. John Gray	University of Oslo	Norway
	Ms. Dong Lifang	Ministry of Foreign Trade	PR China
	Dr. Gao Zhiguo	State Oceanic Administration	PR China
	Mr. Li Haiqing	State Oceanic Administration	PR China
	Mr. Liu Jinxing	Ocean and Fishery Department	PR China
	Ms. Liu Lifen	State Oceanic Administration	PR China
	Prof. Xu Kuncan	State Oceanic Administration	PR China
	Mr. Xue Xiongzi	Xiamen University	PR China
	Mr. Paul Lam	City University of Hong kong	Hong kong
	Dr. Rudolf Wu	City University of Hong kong	Hong kong
	Ms. Nora Fung-yee Tam	City University of Hong kong	Hong kong
	Dr. Corazon Abansi	Batangas Bay Demonstration Project	Philippines
	Dr. Angel Alcala	Commission on Higher Education	Philippines
	Mr. Joselito Francis Alcaria	DENR Region VII	Philippines
	Mr. Anthony Ambahan	UNEP Advisory Council, DENR Caraga Region	Philippines
	Ms. Agnes Apao	Siliman University	Philippines
	Mr. Constancio Arciaga	DENR Region III	Philippines
	Mr. Carlos Arida	DENR Region III-CEP	Philippines
	Mr. Remilio Atabay	DENR Region I	Philippines
	Ms. Ma. Myrna Ballera	DENR Region VIII	Philippines
	Mr. Florendo Barangan	DENR Region VII	Philippines
	Mr. Romeo Basada	DENR Region XI	Philippines
	Atty. Jay Batongbacal	Philippine Center for Marine Affairs	Philippines
	Dr. Helena Benitez	Philippine Womens University	Philippines
	Mr. Domingo Bravo	DENR Region IV	Philippines
	Mr. Jo-Rex Camba	Western Mindanao State University	Philippines
	Mr. Antonio Cerilles	DENR	Philippines
	Mrs. Beatriz Dar	DENR-CEP	Philippines
	Mr. Frederick Contreras	Pilipinas Shell, Batangas	Philippines
	Ms. Rebecca Deauna	Maritime Industry Authority	Philippines
	Mr. Virgilio dela Cruz	DENR Region IV	Philippines
	Mr. Celso Diaz	ERDB-DENR Forestry Campus	Philippines
	Ms. Maria Corazon Ebarvia	University of the Philippines	Philippines
	Ms. Sheila Marie Encabo	NEDA	Philippines
	Ms. Evelyn Estigoy	PG-ENRO, Batanags	Philippines
	Mr. Elvero Eusebio	DENR Region IV	Philippines
	Dr. Edgardo Gomez	UP-MSI	Philippines
	Ms. Leonora Gonzales	Philippine Women's University	Philippines
	Dr. Rafael Guerrero III	PCAMRD	Philippines
	Dr. Gil Jacinto	UP-MSI	Philippines
	Mr. Laureano Lingan, Jr.	DENR, ERDS Region IX	Philippines

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Dr. Raphael Lotilla	NEDA	Philippines
	Mr. Esmeraldo Luna	DENR-ERDS Region V	Philippines
	Ms. Rachel Mallorca	NEDA	Philippines
	Mr. Conrado Marquez	DENR	Philippines
	Dr. Felipe Medalla	NEDA	Philippines
	Ms. Zenaida Munoz	DENR Region VIII	Philippines
	Ms. Marie Frances Nievaes	UP Visayas	Philippines
	Mr. Cesar Orallo	DENR-ERDS Region I	Philippines
	Mr. Ramon Paje	DENR	Philippines
	Mr. Johnny Pangod	DENR Region VII	Philippines
	Ms. Jasicca Patron	Western Mindanao State University	Philippines
	Ms. Brenda Pimentel	MARINA	Philippines
	Mr. Eduardo Principe	DENR Region X	Philippines
	Mr. Eligio Recto	DENR-NCR	Philippines
	Mr. Manuel Satorre, Jr.	PEJI	Philippines
	Mr. Ernesto Serote	UP-SURP	Philippines
	Ms. Adeluisa Siapno	DENR-ERDS Region VI	Philippines
	Ms. Buenafe Solomon	Federation for Philippine Environment	Philippines
	Mr. Armando Tamse	UP Visayas	Philippines
	Mr. Eustaquí Tandug	DENR Caraga Region	Philippines
	Dr. Cesar Villanoy	UP-MSI	Philippines
	Dr. Alan White	Tetra Tech EM Inc.	Philippines
	Mr. Fenando Yap	NEDA	Philippines
	Dr. Helen Yap	UP-MSI	Philippines
	Dr. Dong Young Lee	KORDI	RO Korea
	Mr. Lee Yong Soo	MOMAF	RO Korea
	Mr. Lim Hyun Churl	MOMAF	RO Korea
	Mr. Zafrul Alam	Maritime and Port Authority	Singapore
	Mr. Simon Ang Wen Pin	Maritime and Port Authority	Singapore
	Dr. Chou Loke Ming	National University of Singapore	Singapore
	Mr. Christer Colliander	SPOT Asia	Singapore
	Mr. Fong Peng Keong	Ministry of Environment	Singapore
	Dr. Olof Linden	University of Stockholm	Sweden
	Mr. Magnus Pettersson	Sycon Energikonsult	Sweden
	Ms. Kannegar Boontanon	Harbour Department	Thailand
	Mr. Chatchai Thimkrajang	Sriracha Municipality	Thailand
	Mr. Mutrika Ukapatsakul	Sriracha Municipality	Thailand
	Ms. Chutarat Wuthisomboon	Sriracha Municipality	Thailand
	Ms. Siripen Wisitpittaya	Laem Chabang Municipality	Thailand
	Dr. Peter Calow	University of Sheffield	United Kingdom
	Mr. Kenneth Sherman	National Oceanic Atmospheric Administration	USA
	Mr. Samuel West Stewart	Silk Roads Ltd.	USA
	Mr. Mark Valencia	East-West Center	Hawaii
	Dr. Nguyen Minh Son	Center for Marine Environment Survey, Research and Consultation	Vietnam
	Mr. Hua Chien Thang	National Environment Agency	Vietnam



ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
	Mr. Nguyen Quang Vinh	Center for Oceans Research and Information	Vietnam
	Mr. Apichai Sunchindah	ASEAN Secretariat	Indonesia
	Dr. Ian Robertson	Canada Asean Center	Singapore
	Mr. Ross Heuchan	Canada Asean Center	Singapore
	Atty. Eunice Agsaoay	Center for Environment and Development Alternatives	Philippines
	Atty. Brenda Jay Angeles	Center for Environment and Development Alternatives	Philippines
	Atty. James Kho	Center for Environment and Development Alternatives	Philippines
	Mr. Michel Girin	Cetre De Documentation De Reserche Et-D'Experimentations Sur Les Pollutions Accidetelles Des Eaux Technopole Brest-Iroise	France
	Dr. Rogelio Juliano	Coastal Management Center	Philippines
	Dr. Teng Seng Keh	Coastal Management Center	Philippines
	Mr. Jung Il Kim	Embassy of Korea	Philippines
	Mr. Tim Mclvor	New Zealand Embassy	Philippines
	Mr. Bo Eriksson	Embassy of Sweden	Philippines
	Ms. Cecilia Romson	Embassy of Sweden	Philippines
	Mr. Phan Van Thang	Embassy of Vietnam	Philippines
	Mr. Gerry Silvestre	ICLARM	Philippines
	Mr. Len Garces	ICLARM	Philippines
	Mr. James Paw	International Maritime Organization	United Kingdom
	Mr. Jean-Claude Sainlos	International Maritime Organization	United Kingdom
	Atty. Stella Regina Bernad	GEF/UNDP/IMO Regional Programme	Philippines
	Ms. Nancy Bermas	GEF/UNDP/IMO Regional Programme	Philippines
	Dr. Chua Thia-Eng	GEF/UNDP/IMO Regional Programme	Philippines
	Dr. Mario delos Reyes	GEF/UNDP/IMO Regional Programme	Philippines
	Ms. Bresilda Gervacio	GEF/UNDP/IMO Regional Programme	Philippines
	Atty. Ingrid Gorre	GEF/UNDP/IMO Regional Programme	Philippines
	Ms. Socorro Guerrero	GEF/UNDP/IMO Regional Programme	Philippines
	Atty. Ma. Socorro Manguiat	GEF/UNDP/IMO Regional Programme	Philippines
	Mr. Stephen Adrian Ross	GEF/UNDP/IMO Regional Programme	Philippines
	Dr. Huming Yu	GEF/UNDP/IMO Regional Programme	Philippines
	Dr. B.A. Hamzah	MIMA	Malaysia
	Ms. Juita Rami	MIMA	Malaysia

ACTIVITY	PARTICIPANT	INSTITUTION	COUNTRY
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	Dr. Frances Lai	SEAPOL	Thailand
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## Annex 11

### List of PDMO Mission Reports and Other Information Documents

#### Information Series

#### 1993

- MPP-EAS/Info/93/01 Marine Pollution Programme for the East Asian Seas - GEF/UNDP Formulation Mission Report. April 1993. 129 p.
- MPP-EAS/Info/93/02 Marine Pollution Programme for East Asian Seas Trip Report of the Consultant to Singapore, Kuala Lumpur, Bangkok, Hanoi and Haiphong. 5-17 December 1993. 17 p.
- MPP-EAS/Info/93/03 GEF/UNDP Programme Document on Prevention and Management of Marine Pollution in East Asian Seas. 1993. 44 p.
- MPP-EAS/Info/93/04 Report of the Inter-governmental Meeting for the Regional Programme on the Prevention and Management of Marine Pollution in East Asian Seas, Xiamen, China, Regional Bureau for Asia and the Pacific, UNDP, New York. 11-13 November 1993. 57 p.

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- MPP-EAS/Info/94/05 Mission Report of the Programme Manager: Batangas, Philippines. 21 February 1994. 2 p.
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MPP-EAS/Info/94/11	Mission Report of the Programme Manager: Kuala Lumpur and Singapore. 13-18 June 1994. 5 p.
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MPP-EAS/Info/94/21	Report of Consultant (Dr. Huming Yu) on the Training Needs Survey.
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- MPP-EAS/Info/94/25 Proceedings of the UN Agency Meeting for the GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Metro Manila, Philippines. 7 June 1994. 6 p.
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MPP-EAS/Info/96/97	Mission Report of the Regional Programme Manager: Seychelles, Malaysia and Singapore. 24-31 October 1996.
MPP-EAS/Info/96/98	Third Quarter Progress Report, July-September 1996.
MPP-EAS/Info/96/99	Report on the Second Regional Training Course on the Application of Integrated Coastal Management System in the Marine Pollution Prevention and Management, Philippines, PR China and Singapore. 4-28 October 1996.
MPP-EAS/Info/96/100	Mission Report of the Technical Programme Officer: Jakarta, Indonesia. 4-8 November 1996.
MPP-EAS/Info/96/101	Mission Report of the Programme Manager to Kuala Lumpur, Singapore and New York, U.S.A. 8-22 December 1996.
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MPP-EAS/Info/96/102	A Report of Dr. Antonio G.M. La Viña on Determining the Appropriate Organizational Structure with the Responsibility and Authority to Undertake and Implement the Environmental Management Plans for the Batangas Bay Region and Strengthening of the Batangas Coastal Resource Management Foundation. December 1996.
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MPP-EAS/Info/97/103	Mission Report of the Technical Adviser to Batangas Bay Demonstration Project. 21 January 1997.
MPP-EAS/Info/97/104	Mission Report of the Technical Programme Officer and the GIS Technical Assistant to Xiamen, China. 17-26 December 1996.
MPP-EAS/Info/97/105	Trip Report of the Senior Programme Officer and Research Associate to Batangas Bay Demonstration Project. 11 February 1997.  Mission Report of the Senior Programme Officer and Assistant Network Coordinator for Regional Network on Legal Aspects of Marine Pollution, Singapore. 27 October-2 November 1996.
MPP-EAS/Info/97/106	Trip Report of the Technical Adviser and Research Associate to Batangas Bay Demonstration Project. 24 January 1997.
MPP-EAS/Info/97/107	Trip Report of the Senior Programme Officer and Research Associate to Batangas Bay Demonstration Project. 18 February 1997.
MPP-EAS/Info/97/108	Mission Report of the Regional Programme Manager to Washington DC, New York and Ottawa. 13-25 January 1997.
MPP-EAS/Info/97/109	Mission Report of the Regional Programme Manager to Singapore. 3-6 February 1997.
MPP-EAS/Info/97/110	Mission Report of the Resource Economist to Xiamen, China: Socio-Economic Impact Assessment for ICM Applications, Xiamen Demonstration Project. 5-7 March 1997.
MPP-EAS/Info/97/111	Mission Report of the Resource Economist to Xiamen, China: Socio-Economic Impact Assessment for ICM Applications, Batangas Bay Demonstration Project. 2-3 March 1997.
MPP-EAS/Info/97/112	Mission Report of the Research Associate to Batangas Bay Demonstration Project. 25 March 1997.
MPP-EAS/Info/97/113	Mission Report of the Regional Programme Manager to Bangkok, Kuala Lumpur, China. 1-24 March 1997.
MPP-EAS/Info/97/114	Mission Report of the Technical Programme Officer, Research Associate and GIS Technical Assistant to Bauan, Batangas. 10-11 April 1997.
MPP-EAS/Info/97/115	First Quarter Progress Report, January-March 1997.
MPP-EAS/Info/97/116	Mission Report of the Technical Adviser to Geneva, Switzerland. 21-25 April 1997.
MPP-EAS/Info/97/117	Malacca Straits Initial Risk Assessment

MPP-EAS/Info/97/118	Mission Report of the Resource Economist to Batangas: Socio-Economic Impact Assessment for ICM Applications. 14-17 April 1997.
MPP-EAS/Info/97/119	Mission Report of the Resource Economist to Batangas: Socio-Economic Impact Assessment for ICM Applications. 5 May 1997.
MPP-EAS/Info/97/120	Mission Report of the Regional Programme Manager to Singapore. 11-16 May 1997.
MPP-EAS/Info/97/121	IMO Conventions Workshops in Vietnam. 18-26 April 1997.
MPP-EAS/Info/97/122	Mission Report of the Technical Adviser to China: IOC-SOA International Training Workshop on the Integration of Marine Sciences into the Process of Integrated Coastal Management. 20-27 May 1997.
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MPP-EAS/Info/97/124	Mission Report of the Regional Programme Manager to Hong Kong. 13-15 June 1997.
MPP-EAS/Info/97/125	Mission Report of the Regional Programme Manager to Beijing and Xiamen, China. 29 May-5 June 1997.
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MPP-EAS/Info/97/127	Second Quarter Progress Report, April-June 1997.
MPP-EAS/Info/97/127	Mission Report of the Regional Programme Manager and the Senior Programme Officer to China: Evaluation Workshop for Xiamen Demonstration Project. 26-28 June 1997.
MPP-EAS/Info/97/129	Mission Report of the Regional Programme Manager to Tokyo, Japan. 27 July-3 August 1997.
MPP-EAS/Info/97/130	Mission Report of the Senior Programme Officer to Hanoi, Vietnam. 8-11 July 1997.
MPP-EAS/Info/97/131	Mission Report of the Technical Programme Officer to Malaysia and Indonesia. 29 July-13 August 1997.



MPP-EAS/Info/97/132	Mission Report of the Training Officer to Netherlands: Programme Policy Meeting. 13-15 May 1997.
MPP-EAS/Info/97/133	Mission Report of the Senior Programme Officer to Malaysia and Indonesia. 18-22 August 1997.
MPP-EAS/Info/97/134	Mission Report of the Regional Programme Manager, Bangkok, Stockholm and London. 14-24 August 1997.
MPP-EAS/Info/97/135	Mission Report of the Senior Programme Officer and Research Associate to Lipa City, Batangas. 29 August 1997.
MPP/EAS/Info/97/136	Mission Report of the Research Associate to the 1997 Philippine International Freshwater Treatment Congress & Exhibition, PICC, Manila. 2-3 September 1997.
MPP-EAS/Info/97/137	Mission Report of the Regional Programme Manager to Vietnam. 14-20 September 1997.
MPP-EAS/Info/97/138	Mission Report of the Senior Programme Officer and the Research Associate to Batangas: Presentation of the Report on Technical Study for the Establishment of a Solid Waste Management System for the Batangas Bay Region. 11 September 1997.
MPP-EAS/Info/97/139	Mission Report of the Senior Programme Officer, Technical Programme Officer and the Research Associate to Pahang, Malaysia. 18-21 September 1997.
MPP-EAS/Info/97/140	Mission Report of the Senior Programme Officer and Research Associate to Batangas. 29 October 1997.
MPP-EAS/Info/97/141	Third Quarter Progress Report, July-September 1997.
MPP-EAS/Info/97/142	Report on the Third Regional Training Course on the Application of Integrated Coastal Management System in Marine Pollution Prevention and Management in the Philippines, PR China, & Singapore. 6-26 October 1997.
MPP-EAS/Info/97/143	Mission Report of the Legal Adviser to Hanoi, Vietnam. 24-31 August 1997.
MPP-EAS/Info/97/144	Mission Report of the Regional Programme Manager and Other Staff Regional Workshop on Partnerships in the Application of Integrated Coastal Management, Chonburi, Thailand. 12-15 November 1997.
MPP-EAS/Info/97/145	Mission Report of the Regional Programme Manager to Hongkong. 1-3 December 1997.

MPP-EAS/Info/97/146	Mission Report of the Regional Programme Manager to Bangkok, Thailand, 7-9 December 1997.
MPP-EAS/Info/97/147	Sustainable Financing Mechanisms and Policy Instruments for the Prevention and Management of Marine Pollution in the Philippines.
MPP-EAS/Info/97/148	Mission Report of the Regional Programme Manager and the Head of Administration and Finance to Xiamen, China. 24-27 October 1997.
MPP-EAS/Info/97/149	Mission Report of the Technical Programme Officer to Hongkong: Integrated Environmental Impact Assessment Training Workshop. 1-8 December 1997.
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<b>1998</b>	
MPP-EAS/Info/98/151	Mission Report of the Regional Programme Manager to Kuala Lumpur, Phuket and Bangkok. 20-28 January 1998.
MPP-EAS/Info/98/152	Mission Report of the Regional Programme Manager to Singapore and Jakarta. 15-21 February 1998.
MPP-EAS/Info/98/153	Mission Report of the Senior Programme Officer to Singapore and Malaysia. 15-19 February 1998.
MPP-EAS/Info/98/154	Mission Report of the Technical Programme Officer and Mr. Tran Dinh Lan to Batangas. 12-13 February 1998.
MPP-EAS/Info/98/155	Mission Report of the Technical Programme Officer and Senior Technical Officer to Batangas. 22-23 February 1998.
MPP-EAS/Info/98/156	Mission Report of the Senior Programme Officer to Bangkok, Thailand: The Ninth Meeting of the RICAP Sub-Committee on Environment and Sustainable Development. 15-17 March 1998.
MPP-EAS/Info/98/157	Highlights of the Second Technical Workshop of the Regional Network for Marine Pollution Monitoring and Information Management, Burapha University, Bangsaen, Chonburi, Thailand. 9-11 November 1998.
MPP-EAS/Info/98/158	Mission Report of the Technical Programme Officer to Xiamen, People's Republic of China. 2-6 March 1998.
MPP-EAS/Info/98/159	Mission Report of the of the Technical Programme Officer, Senior Technical Assistant and GIS Assistant to Batangas. 25-26 February 1998.
MPP-EAS/Info/98/160	Mission Report of the Senior Programme Officer and the Assistant Technical Officer to Batangas. 17-18 April 1998.

MPP-EAS/Info/98/161	Mission Report of the Regional Programme Manager to Vancouver, Washington, Rhode Island, New Delhi. 15 March-4 April 1998.
MPP-EAS/Info/98/162	First Quarter Progress Report, January-March 1998.
MPP-EAS/Info/98/163	Mission Report of the Regional Programme Manager to Seoul, Beijing, Dalian and Xiamen. 14-30 April 1998.
MPP-EAS/Info/98/164	Mission Report of the Senior Programme Officer to DPR Korea. 3-9 May 1998.
MPP-EAS/Info/98/165	Mission Report of the BBDP Officer to Xiamen, China: Contingent Valuation Survey in Xiamen Demonstration Project. 27 April-1 May 1998.
MPP-EAS/Info/98/166	Mission Report of The Senior Programme Officer and Assistant Technical Officer to Batangas Bay for the Vessel Traffic System (VTS) Workshop. 28 April 1998.
MPP-EAS/Info/98/167	Study Tour: ICM Demonstration Sites In Batangas, Philippines and Xiamen, PR China: Mission Report of the Senior Programme Officer and Assistant Technical Officer. 27 May-4 June 1998.
MPP-EAS/Info/98/168	Mission Report of the Regional Programme Manager to Hongkong: 2 <sup>nd</sup> International Conference on Marine Pollution and Ecotoxicology. 10-14 June 1998.
MPP-EAS/Info/98/169	Mission Report of the Senior Programme Officer and Technical Programme Officer to Hongkong: 2 <sup>nd</sup> International Conference on Marine Pollution and Ecotoxicology. 9-15 June 1998.
MPP-EAS/Info/98/170	Mission Report of the Senior Programme Officer to Dalian, Beijing, People's Republic of China. 21-27 June 1998.
MPP-EAS/Info/98/171	Mission Report of the Senior Programme Officer to Batangas. 8-9 July 1998.
MPP-EAS/Info/98/172	Mission Report of the Regional Programme Manager to Japan. 6-11 July 1998.
MPP-EAS/Info/98/173	A Study on the Compliance of Philippine Domestic Merchant Fleet with MARPOL 73/78 Convention.
MPP-EAS/Info/98/174	Mission Report of the Regional Programme Manager, Senior Programme Officer and Technical Assistant to Malaysia: Selection of ICM Demonstration Site. 13-17 July 1998.
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MPP-EAS/Info/98/176	Mission Report of the Senior Programme Officer and Programme Officer to Jakarta Indonesia: Oil Spill Modelling Workshop. 25-27 August 1998.
MPP-EAS/Info/98/177	Mission Report of the Regional Programme Manager to Lisbon: IGU International Conference. 27 August-11 September 1998.

MPP-EAS/Info/98/178	Mission Report of the Senior Programme Officer to Indonesia: Selection of ICM Demonstration Site. 28 August-3 September 1998.
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MPP-EAS/Info/98/180	Mission Report of the Senior Programme Officer and Senior Programme Specialist: Study Tour to ICM Demonstration Sites in Batangas and Xiamen. 14-22 October 1998.
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MPP-EAS/Info/98/184	Mission Report of the Senior Programme Officer and Network Coordinator on Marine Pollution Monitoring Information Management Network to Vietnam: ICM Site Selection. 3-10 October 1998.
<b>1999</b>	
MPP-EAS/Info/99/185	Mission Report of the Senior Programme Officer to Kuala Lumpur, Malaysia 13-15 October 1998
MPP-EAS/Info/99/186	Natural Resource Damage Assessment Training Report
MPP-EAS/Info/99/187	Mission Report of the Legal Adviser to Vietnam, 5-11 June 1998
MPP-EAS/Info/99/188	Mission Report of the Regional Programme Manager, Senior Programme Officer and Head of Administration and Finance to Bali, Indonesia and Malaysia, 2-9 December 1998.
MPP-EAS/Info/99/189	Mission Report of the Regional Programme Manager: Regional project Appraisal Committee (PAC) Meeting New York and Washington DC, 15-19 February 1999
MPP-EAS/Info/99/190	National Coastal Policy for East Asian Seas: Status Review and Model Policy Development
MPP-EAS/Info/99/191	Natural Resources Damage Assessment and the Malacca Straits
MPP-EAS/Info/99/192	Marine Pollution Prevention & Management In the East Asian Seas: A Benefit Cost Framework
MPP-EAS/Info/99/193	Sustainable Financing for Ship Based Pollution Prevention and Management in the Malacca Straits

MPP-EAS/Info/99/194	Malacca Straits, Special Area?
MPP-EAS/Info/99/195	Marine Pollution Management in the Malacca/Singapore Straits: Lessons Learned*
MPP-EAS/Info/99/196	Mission report of the Regional Programme Manager to Singapore, Malacca, Kuala Lumpur and Xiamen, 15-30 April 1999
MPP-EAS/Info/99/197	Mission Report of the Regional Programme Manager and Senior Programme Officer: International Conference on the Straits of Malacca. 19-22 April 1999
MPP-EAS/Info/99/198	Mission Report of the Regional Programme Manager and Senior Staff, London and Paris 4-14 May 1999
MPP-EAS/Info/99/199	Socio-Economic Assessment Framework and Guidelines for Integrated Coastal Management
MPP-EAS/Info/99/200	Mission of Report of the Regional Programme Mmanager and senior Programme Officer to Batangas, Philippines: PPP MOA Signing, 14 July 1999
MPP-EAS/Info/99/201	Assessment of National Marine Pollution Legislation in East Asia
MPP-EAS/Info/99/202	Guidelines and Model Framework for National Marine Pollution Legislation in East Asia
MPP-EAS/Info/99/203	MARPOL Project Philippines: Final Report
MPP-EAS/Info/99/204	Mission Report of the Senior Programme Officer and the Training Coordinator to Batangas: Inception Meeting for the development of the ICM Training Center Project, August 12, 1999, Batangas City
MPP-EAS/Info/99/205	Mission Report of the Senior Programme and Training Coordinator to Batangas: Training of Local Professionals for the Conduct of Training Courses and Study Tours, August 25-26, 1999
MPP-EAS/Info/99/208	Mission Report of the Seniro Programme Officer World Ports Conference of the International Association of Ports and Harbors (IAPH '99) Selangor, Malaysia, May 20-23, 1999
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- MPP-EAS/Cont/95/02 Chua, T.-E. (1994). Integrated coastal management: role of research, fact-finding and databases. A paper presented at the 2nd International Conference on Oceanography. 14-19 November 1994. Lisbon, Portugal. 16 p.
- MPP-EAS/Cont/95/03 Chua, T.-E. (1994). Marine pollution: development since UNCLOS III and prospects for regional cooperation. A paper presented at the Singapore Conference on Sustainable Development of Coastal and Ocean Areas in South-East Asia: Post-Rio Perspectives. 26-28 May 1994. Singapore. 34 p.
- MPP-EAS/Cont/95/04 La Viña, A.G.M. (1995). South-south cooperation in the East Asian Seas: developing regional networks for environmental management. A paper presented at the International Boundaries and Environment Security Conference. 4-16 June 1995, Singapore. 8 p.

## Annex 12

### List of UNDP Resident Representatives

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### List of IMO Officials Involved in the Regional Programme

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Subdivision for Pollution Response and TC Co-ordination

James Paw  
Technical Officer  
Technical Cooperation Implementation  
MED

Saara Lintu  
Technical Programme Officer  
Technical Cooperation Implementation  
Marine Environment Division

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Henning Brathaug  
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Hugh O'Neill  
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Marianne Harvey  
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David Edwards  
Director  
Technical Co-operation Division

Jianxin Zhu  
Head  
Asia and Pacific Section  
TED

### **Annex 13**

Roger Jones  
Head  
Administration Division

D. Muthumala  
Head of Finance and Budget Section  
Administrative Division

Maw Tun  
Principal Administrative Assistant  
Work Programme and Budget Unit  
Administrative Division

Mr. Leif Gunnstedt  
Head, Personnel Section

Ms. Amanda Ardila  
Personnel Officer  
Personnel Services

Manfred Nauke  
Deputy Director/Chief  
Office for the London Convention  
MED

O Jung-Keun  
Senior Finance Officer  
Finance and Budget Section

Patricia Richards  
Internal Auditor  
Internal Audit

Gurpreet Singhota  
Senior Technical Officer  
Navigation Section  
Maritime Safety Division

Tore Fossum  
Senior Deputy Director  
Sub-division for Navigation and Cargoes  
MSD

## Annex 14

### Quarterly and Annual Reports

1. MPP-EAS/Info/94/26 First Quarter Report, January-March 1994
2. MPP-EAS/Info/94/27 Second Quarter Report, April-June 1994
3. MPP-EAS/Info/94/28 Third Quarter Report, July-September 1994
4. MPP-EAS/Info/94/29 Fourth Quarter Report, October-December 1994
5. MPP-EAS/Info/95/45 First Quarter Report, January-March 1995
6. MPP-EAS/Info/95/57 Second Quarter Report, April-June 1995
7. Bi-Annual Report 1994-1995
8. MPP-EAS/Info/96/77 First Quarter Progress Report, January-March 1996
9. MPP-EAS/Info/96/90 Second Quarter Progress Report, April-June 1996
10. MPP-EAS/Info/96/98 Third Quarter Progress Report, July-September 1996
11. Annual Report 1996: Marine Pollution Prevention and Management in the East Asian Seas:  
From Planning to Action
12. MPP-EAS/Info/97/115 First Quarter Progress Report, January-March 1997
13. MPP-EAS/Info/97/127 Second Quarter Progress Report, April-June 1997
14. MPP-EAS/Info/97/141 Third Quarter Progress Report, July-September 1997
15. Annual Report 1997: Paradigm Shift in Concept, Approach and Methodology
16. MPP-EAS/Info/98/162 First Quarter Progress Report, January-March 1998
17. MPP-EAS/Info/98/175 Second Quarter Progress Report, April-June 1998
18. MPP-EAS/Info/98/181 Third Quarter Progress Report, July-September 1998
19. Sharing Lessons & Experiences in Marine Pollution Management, 1994-1998
20. Programme Report, 1994-1999

## Annex 15

### Financial Audits

10-25 October 1995	Internal Audit, Patricia Richards Batangas included
7-15 August 1996	Internal Audit, D. Muthumala Batangas included
16-22 February 1997	National Audit Office, Fraser Montgomery Batangas included
1-12 September 1997	Internal Audit, Andrina Ambrose
16-28 February 1998	Internal Audit, Patricia Richards
28 September-9 October 1998	Internal Audit, Maw Tun
25-29 January 1999	National Audit Office, Paul Carter

## Annex 16

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Haji Hamidon  
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### **PHILIPPINES**

Dr. Angel Alcalá (June 1994 – June 1995)  
Secretary  
Department of Environment and Natural Resources  
Visayas Ave., Diliman, Quezon City  
Philippines

## **Annex 16**

Dr. Delfin Ganapin (June 1995 - January 1996)  
Undersecretary  
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Dr. Antonio La Viña (February 1996 – May 1998)  
Undersecretary  
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Mr. Elmer Mercado (September 1998 – Present)  
Undersecretary  
Office for the Environment and Programs Development  
Department of Environment and Natural Resources  
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Mr. Mario Rono  
Undersecretary  
Department of Environment and Natural Resources  
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### **SINGAPORE**

Mr. Bin Chee Kwan (June 1994 – Present)  
International Environment & Policy Department  
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### **THAILAND**

Mr. Vichet Rojanadhamkul (June 1994 – April 1995)  
Inspection General  
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Miss Kannegar Boontanon (May 1995 – Present)  
Senior Inland Waterway Transport Planning Expert  
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### **VIETNAM**

Dr. Nguyen Ngoc Sinh (June 1994 – Present)  
Director General  
National Environment Agency (NEA)  
39 Tran Hung Dao  
Hanoi, Vietnam



## **Annex 16**

### **GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas**

#### **Roles/Functions of national focal Points**

1. Serve as key contact/liaison for operational matters of the Programme.
2. Serve as the permanent member of the Programme Steering Committee or identify alternate member in the absence of the permanent member.
3. Assist in the operation of Programme activities in their respective countries.
4. Extend Programme results and findings to their respective countries.
5. Help secure funding support to implement Programme activities in their respective countries
6. assist in the provision of data and information needed by the Programme