Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)

Mid-Term Evaluation Report

3 March to 5 April 2003

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PEMSEA is a GEF Project
Implemented by UNDP and Executed by IMO
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Acronyms</td>
<td>iv</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>vii</td>
</tr>
<tr>
<td>Unique contribution of PEMSEA</td>
<td>vii</td>
</tr>
<tr>
<td>Findings</td>
<td>vi</td>
</tr>
<tr>
<td>Recommendations</td>
<td>vili</td>
</tr>
<tr>
<td>A All PEMSEA partners</td>
<td>vili</td>
</tr>
<tr>
<td>B Donor support (GEF, UNDP, IMO and other donors)</td>
<td>vili</td>
</tr>
<tr>
<td>C Governments</td>
<td>ix</td>
</tr>
<tr>
<td>D PEMSEA management team</td>
<td>x</td>
</tr>
<tr>
<td>Taking the recommendations forward</td>
<td>x</td>
</tr>
<tr>
<td>1.0 Project concept and design summary</td>
<td>1</td>
</tr>
<tr>
<td>Context of the problem</td>
<td>1</td>
</tr>
<tr>
<td>Effectiveness of the PEMSEA programme concept and design</td>
<td>1</td>
</tr>
<tr>
<td>Assessment of the fit of the SDS-SEA to the objectives of Agenda 21, WSSD, MDG, Capacity 2015 and the results of the Third Replenishment of the GEF Trust Fund</td>
<td>4</td>
</tr>
<tr>
<td>2.0 Project results</td>
<td>11</td>
</tr>
<tr>
<td>3.0 Progress towards outcomes</td>
<td>14</td>
</tr>
<tr>
<td>Overall development objective, project development objectives and planned outputs</td>
<td>15</td>
</tr>
<tr>
<td>Progress towards achievement of project outcomes</td>
<td>15</td>
</tr>
<tr>
<td>Knowledge management</td>
<td>18</td>
</tr>
<tr>
<td>4.0 Impacts of the PEMSEA programme</td>
<td>21</td>
</tr>
<tr>
<td>Review and evaluation of the extent to which project impacts have reached the intended beneficiaries</td>
<td>22</td>
</tr>
</tbody>
</table>
Likelihood of continuation of project outcomes and benefits after completion of GEF funding

Key factors and issues that require attention

Other concerns that the programme should look into

5.0 Project Management

The project's adaptive management strategy

Roles and responsibilities of the various institutional arrangements for project implementation and the level of coordination between relevant players

Partnership arrangements with other donors

Public involvement in the project

Efforts of UNDP and IMO in support of the programme office and national institutions

Use of the logical framework approach and performance indicators as project management tools

Implementation of the projects' monitoring and evaluation plans

6.0 Main Lessons Learned

Strengthening country ownership/driverness

Strengthening regional cooperation and inter-governmental cooperation

Strengthening stakeholder participation

Application of adaptive management strategies

Efforts to secure sustainability

Role of monitoring and evaluation in project implementation

7.0 Recommendations

Overview

Specific Recommendations
  All PEMSEA partners
  Doctor Support Recommendations to GEF UNDP, IMO

39

40

40
| Annex 1 | Progress towards meeting objectives of GEF Operation Programs 8, 9 and 10 |
| Annex 2 | IMO Supported Trainings/Workshops |
| Annex 3 | PEMSEA Logframe Matrix Key Performance Indicators |
| Annex 4 | Internal Evaluation of ICM Sites Performance |
| Annex 5 | Knowledge Management Strategies and Applications |
| Annex 6 | Knowledge Management Case Studies: Balangas Bay and Bataan, Philippines |
| Annex 7 | Resource Mobilization |
| Annex 8 | PEMSEA Cooperation and Collaboration with Partners |
| Annex 9 | An example of implementation of a comprehensive set of performance indicators |
**LIST OF ACRONYMS**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<td>ASEAN</td>
<td>Association of South East Asian Nations</td>
</tr>
<tr>
<td>BC</td>
<td>Benefit - Cost</td>
</tr>
<tr>
<td>BCCF</td>
<td>Bataan Coastal Care Foundation</td>
</tr>
<tr>
<td>CITES</td>
<td>Convention on Trade in Endangered Species</td>
</tr>
<tr>
<td>CMC</td>
<td>Coastal Management Center</td>
</tr>
<tr>
<td>DA</td>
<td>Department of Agriculture</td>
</tr>
<tr>
<td>DADDA</td>
<td>Danish Agency for Development Assistance</td>
</tr>
<tr>
<td>DENR</td>
<td>Department of Environment and Natural Resources</td>
</tr>
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<td>DSS</td>
<td>Decision Support System</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
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<td>ERA</td>
<td>Environmental Risk Assessment</td>
</tr>
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<td>GEF</td>
<td>Global Environment Facility</td>
</tr>
<tr>
<td>GPA</td>
<td>Global Programme of Action</td>
</tr>
<tr>
<td>ICM</td>
<td>Integrated Coastal Management</td>
</tr>
<tr>
<td>IEIA</td>
<td>Integrated Environmental Impact Assessment</td>
</tr>
<tr>
<td>IMS</td>
<td>Integrated Information Management System</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
</tr>
<tr>
<td>IRR</td>
<td>Internal Rate of Return</td>
</tr>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>ITC CSD</td>
<td>International Training Center for Coastal Sustainable Development</td>
</tr>
<tr>
<td>IW</td>
<td>International Waters</td>
</tr>
<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
</tr>
<tr>
<td>KM</td>
<td>Knowledge Management</td>
</tr>
<tr>
<td>LFA</td>
<td>Logical Framework Approach</td>
</tr>
<tr>
<td>LUAS</td>
<td>Lembaga Urah Air Selangor</td>
</tr>
<tr>
<td>MBEMP</td>
<td>Manila Bay Environmental Management Project</td>
</tr>
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<td>MDG</td>
<td>Millennium Development Goals</td>
</tr>
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<td>MED</td>
<td>Marine Environment Division</td>
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<tr>
<td>MEG</td>
<td>Multidisciplinary Expert Group</td>
</tr>
<tr>
<td>MMCC</td>
<td>Marine Management and Coordination Committee</td>
</tr>
<tr>
<td>MOA</td>
<td>Memorandum of Agreement</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Government Organizations</td>
</tr>
<tr>
<td>PCC</td>
<td>Project Coordinating Committee</td>
</tr>
<tr>
<td>PEMSEA</td>
<td>Partnerships in Environmental Management for the Seas of East Asia</td>
</tr>
<tr>
<td>PG ENRO</td>
<td>Provincial Government - Environment and Natural Resources Office</td>
</tr>
<tr>
<td>PIR</td>
<td>Project Implementation Review</td>
</tr>
<tr>
<td>PMC</td>
<td>Project Management Office</td>
</tr>
<tr>
<td>PMMP-EAS</td>
<td>Prevention and Management of Marine Pollution of the East Asian Seas</td>
</tr>
<tr>
<td>PPP</td>
<td>Public-Private Partnerships</td>
</tr>
<tr>
<td>PSC</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td>PSEMS</td>
<td>Port Safety Environmental Management System</td>
</tr>
<tr>
<td>RNLG</td>
<td>Regional Network of Local Governments</td>
</tr>
<tr>
<td>RPD</td>
<td>Regional Programme Director</td>
</tr>
<tr>
<td>RPO</td>
<td>Regional Programme Office</td>
</tr>
<tr>
<td>RTF</td>
<td>Regional Task Force</td>
</tr>
</tbody>
</table>
SIDA  Swedish International Development Agency
SDS-SEA  Sustainable Development Strategy for the Seas of East Asia
SMPR  Secretarial Managed Project Review
SOM  Senior Officials Meeting
TCD  Technical Cooperation Division
UN  United Nations
UNDP  United Nations Development Programme
UNEP  United Nations Environment Programme
UNFAO  United Nations Food and Agriculture Organization
WB  World Bank
WSSD  World Summit on Sustainable Development
EXECUTIVE SUMMARY

Unique Contribution of PEMSEA

The unique and distinctive characteristic of Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is that it is the first international programme to develop a core base of practical knowledge in integrated management of coasts and oceans within the Seas of East Asia based firmly on its network of local demonstration and parallel sites. This has generated a wealth of intellectual capital that moves beyond technical know-how and scientific endeavours towards developing a cohesive network of relationships that makes the integrated management approach a living reality in this region. This core competence of PEMSEA has enabled nations to accelerate their progress in implementation of coasts and oceans governance through the development of institutional frameworks, mutual sharing of lessons and greater South-South dialogue. There are dangers that this international asset could be lost at the end of this programme unless the intellectual capital is nurtured by national governments and donor agencies.

Findings

The PEMSEA programme has achieved substantial progress in meeting the Overall Development Objective. To protect the life support systems and enable the sustainable use and management of coastal and marine resources through intergovernmental intersectoral and interagency partnerships for improved quality of life in the East Asian Seas Region.

The ten stated Project Development Objectives and fourteen planned Outputs as set out in the ProDoc are appropriate to the Overall Development Objective and are being implemented within or in advance of the planned timeline and in a cost-effective manner. These achievements are the result of both good project design and innovative and adaptive management which are producing commendable outcomes and beneficial social, economic and environmental impacts.

There are areas where the programme could be strengthened and the Evaluation Team is confident that the PEMSEA will be able to address these in a manner that will enhance the impact of the program at a local, national and regional level.

It is important for the Global Environment Facility (GEF), United Nations Development Programme (UNDP), and International Maritime Organization (IMO) to fully recognize the valuable information, experience and public and private support the PEMSEA programme has developed by focusing on achieving tangible progress in environmental improvements that help to form a sound basis for the expansion and diversification of economic development. This has been achieved through implementation of an integrated Management approach and developing effective partnerships for environmental improvements at a trans-national and wider regional level.
Together, these achievements have created a very valuable asset that supports the objectives of all three United Nations programs and forms a very sound foundation for helping the nations of East Asia in achieving sustainable economic development that is integrated with sound environmental management. This asset needs to be fostered and developed further as it forms an invaluable resource to help in the implementation of Agenda 21, the World Summit on Sustainable Development (WSSD), Plan of Implementation, and the Millennium Development Goals (MDG) as well as related international and national efforts to promote sustainable development of natural resources and assets of the marine and coastal areas of the region.

Recommendations

The Evaluation Team recommends the following actions to be taken by the PEMSEA partners.

A. All PEMSEA partners

1. Make full use of the momentum that has been achieved through the PEMSEA seek continuity in funding and other forms of support for PEMSEA beyond 2005 to maximize the potential benefits to the East Asian Region and beyond.

2. Seek the transformation of PEMSEA into a new regional arrangement for wider exploitation and future development of its intellectual capital to improve the integration of environmental management and economic and social development through the further development of local national and regional ICM and ocean governance initiatives.

3. Implement the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) as a collective international effort in the regional implementation of the commitments of Agenda 21, WSSD, MDG and other international instruments related to the sustainable development of coasts and oceans.

B. Donor support (GEF, UNDP, IMO and other donors)

- The GEF, UNDP, IMO, international donors and other donor partners should capitalize on the achievements of PEMSEA in helping each other meet their respective sustainable development objectives by:

  a. maintaining core roles especially in building national and local capacity in the further development and implementation of PEMSEA and SDS-SEA,

  b. fostering cooperation and partnerships with and among nations in Asia,

  c. creating a wider partnership among international donors for supporting the future of PEMSEA,

  d. supporting an international working party made up of representatives from East Asian nations with a remit to examine options for new institutional and funding arrangements for taking PEMSEA forward.
C. Governments

1. Give careful consideration to maximizing the potential benefits that could be gained from what has been achieved by the PEMSEA programme, how this can be extended and expanded to further support national and international development objectives.

2. National Governments set up review panels to determine what they need most in order to make integrated management of coasts and oceans more effective.

3. Initiate a country-driven donors meeting in 2003 to demonstrate support for the future development of PEMSEA and to communicate priorities for funding and technical assistance.

D. PEMSEA management team

1. Adopt a broader view of adaptive management so that a wider array of issues are taken into consideration, while incremental, small-scale actions at the local level are pursued towards solving problems and issues.

2. Strengthen national capacities in EIA systems where required, as an interim measure till zoning guidelines are put in place.

3. Accelerate national buy-in by using clear examples of the benefits of ICM supporting the finalization of national coastal policies, the replication of ICM sites and mainstreaming of the approaches, policies, lessons learned in the implementation of sites and in the program as a whole into major strategic development plans.

4. Enhance efforts to establish public-private partnerships (PPP) in environmental investments, particularly for small and medium sized enterprises.

5. Promote national commitment to the planned Senior Officials Meeting and the Ministerial Meeting being organized by the program.

6. Develop a monitoring and evaluation system that takes into account activity-based and cumulative impacts.

7. Target the development of an ISO 14001 Certification for ICM using the PEMSEA experience and outcomes.

8. Fully implement the Port Safety Audits and the Port Safety Environmental Management System (PSEMS) and further develop certification mechanisms.

9. Seek greater integration of river basin management, coastal land and water use management, and sea use zoning.

10. Explore ways that knowledge management practices could help expand and sustain the intellectual capital developed by PEMSEA.
Taking the Recommendations Forward

The Evaluation Team recommends that an international working party be set up to explore options for a new institutional mechanism and funding to take the PEMSEA programme forward. The Working Party should be made up of no more than 5 senior government officials representing the countries taking an active part in the PEMSEA programme. Technical advice should be made available to the Working Group as and when necessary. The Working Party should meet at least on a bi-monthly basis starting as soon as possible to allow time to develop and test the feasibility of alternatives, with a view to presenting their final recommendations by the end of 2004. This would allow actions to be put in place in 2005 to allow a smooth transition and continuity in staffing arrangements from the existing phase of PEMSEA to the new arrangements.
1.0 PROJECT CONCEPT AND DESIGN SUMMARY

Context of the problem

1.1 East Asia is a region of dynamic economic growth amidst trends of globalization. The financial crisis only strengthened the resolve of the countries of the region for economic growth while the global economic recession gave focus for infra-regional trade and commerce creating in the process a new East Asian Economy comprised of Association of South East Asian Nations (ASEAN).  

1.2 At the same time there is rapid urban population growth in the region. The annual growth rate of the urban population of East Asia from the mid-1990's to 2025 is estimated to be four times that of the highest income countries. A large number of this urban population will be coastal dwellers. Over the next 25 years half of the total population of the region will come from coastal urban centers with more than 300 million inhabitants. Many of these inhabitants will be living in sectors of the poor. Presently, majority of the 75 million people living in the coastal areas of the region are below the poverty line.

1.3 This combination of aggressive drive for economic development, high population growth and poverty will increasingly put pressure on the region's coastal environment. Coastal environment in the countries of the region are in danger of being over-exploited and rapidly degraded. So too is the regional marine environment given that the seas of the region are semi-enclosed with high ecological interconnectivities.

1.4 While there is growing awareness of "sustainable development" as the vision for development, there is also the need for appropriate and practical mechanisms for putting it into action. The need is to have a dynamic process that would deal with conflicts of use using the increasing recognition of the importance of involving local governments, the private sector and other local stakeholders as initiators.

1.5 One of the major benefits of the PEMSEA programme is the generation of intellectual capital in the form of human capital, social capital, organisational capital and stakeholder capital related to the implementation of ICM in the region. This valuable intangible asset is difficult to assess quantitatively due to the lack of sophistication of models for its application. However, case studies, stories, narratives and anecdotes provide useful guides to the strength and depth of these intangible assets. Care needs to be exercised not to assume that economic development is directly related to high levels of social and stakeholder capital in ICM as this is often not the case in planned economies.

Effectiveness of the PEMSEA programme concept and design

1.6 The focus of the programme on starting at the local site level allowed fast action to proceed at many sites. Practical field experience is developed. Appropriate demonstration sites were also selected, sites that would later exemplify how integrated management including ICM efforts could create a balance between
rapid economic growth and environmental management. Xiamen is a designated international economic city. Danang has an aggressive plan to develop the city for industry and for tourism. Batangas port was designated as an international port. Paixiang is already an international port with planned expansion. In all of these cases, there would be increased port activities, extensive infrastructure development, rapid increase in population, and various economic activities. All these will exert pressure on the environment directly and indirectly. All these sites require an ICM approach.

PEMSEA's strategy is to come in to speed up the process of ICM problem solving. As such, it selects sites where people and government are already keen to do something. This has led to fast action. The downside to this is that the experience of these sites will have low utility to sites where supportive local people and governments do not yet exist unless public awareness is created.

The programme's comprehensive landscape approach (i.e., integrating the coastal area with its linked land and sea-based ecosystems) provides more effective management than a habitat approach. The close and direct ecological as well as socio-economic interconnectivities of the various habitats or ecosystems comprising the coastal area require an integrated approach.

An integrated approach such as ICM requires partnerships with different sectors and at various levels. The shift from the Phase 1 programme title of "Regional Programme for the Prevention and Management of Marine Pollution of the East Asian Seas" to the Phase 2 title of "Building Partnerships on the Environmental Management of the Seas of East Asia" is thus very appropriate. The new title also broadens the concern to extend beyond pollution management to that of environmental management. This in turn expands the number of sectors that should be part of the programme if it is to be called an ICM effort.

The partnerships that are developed are not only at various institutional levels (site, national, subregional, and regional). There is also the partnership between sectors, particularly public-private partnerships. At the international level, the partnership or linking of environmental and development underlines PEMSEA's approach. As such, the programme also becomes a way by which various global agreements on marine concerns as well as on the broader sustainable development agreements of the WSSD Plan of Implementation, the MDGs Agenda 21, Capacity 2015 and other environmental conventions could be operationalized at the local level. It should be noted that partnerships are also linked to the development of a critical mass of counties, organizations and people which is the only way that these global agreements can be put into practice. Using the PPP framework, there is considerable potential to develop cost-effective solutions especially when industries come together and generate economic forces for environmental facilities.

The diversity of sites implementing the programme provides an advantage. Demonstration sites under the ICM approach provide for capacity building, make lessons available for other sites, and are used to convince the country to adopt ICM as a management approach. Parallel sites show that the effort could be replicated using mostly local resources, provide a way to adapt lessons from the demonstration sites to other situations, and would additionally convince the
country to adopt the ICM approach. Hotspot sites provide the opportunity to address cross-boundary issues.

The sites cover a spectrum of governance mechanisms, from highly centralized governance systems (Xiamen) to decentralized governance in Batangas, Bataan, and Manila Bay. These sites are shown in Figure 1. The sites also relate to different socio-economic situations. Fast economic growth is exemplified by Xiamen and Port Klang. Relatively slower economic growth areas are in Batangas, Bataan, and Manila Bay. Given this diverse typology of sites, the programme would be able to provide a variety of models that could meet the needs of a region with countries of differing environmental, socio-economic, and governance situations.

![Diagram: Organisational learning at demonstration and parallel sites]

The programme has taken the "soft" approach, employing resource use and environmental concerns as the entry point and avoiding security and boundary issues that could lead to inter-country conflicts and debate. Use of conventions already agreed upon as a guide and with focus on sustainable development as a goal, the programme is able to acquire immediate acceptance. In addition, with the countries developing and implementing their national strategies following the ICM approach, these countries are then in a sense already implementing the programme's proposed regional strategy, the SDS-SEA. This would make it easier for such a regional strategy to be approved and a regional mechanism for its implementation to be agreed upon.

The programme's study tours, internships, cross-ways, and Regional Task Force (RTF) provided the opportunities for South-South exchange of experiences and knowledge. Together with regional bodies such as the RNLG, Regional Experts Group, and the Pacific Coordinating Committee (PCC), they have helped create a feeling of regional programme ownership.

The co-financing approach of the programme allows local ownership to be developed. At the same time, the ability of PEMSEA to provide a certain level of funding support and technical assistance allows it to stimulate attention and
participation at certain strategically important activities. It allows the programme to be a catalyst of certain processes and decisions.

1.16 PEMSEA states that its budget allocation is more for people management rather than the provision of physical facilities. This relatively low level of funding allocated by the programme to sites builds not only capacity but also prevents the creation of false expectations and dependence. Provision of knowledge through technical assistance and sharing mechanisms augments the funding support and is well appreciated.

1.17 The most difficult aspect of PEMSEA is the many institutional levels involved in the programme. It makes the programme an exercise in the management of complexity. Links have to be maintained with various focal points - the focal points of MO, UNDP and GEF in the 12 countries involved. Relationships at the local, national, subregional, and regional levels have to be developed and appropriate coordinative mechanisms established. At the country level, there is the complexity of linking agencies in charge of land-based concerns with those for marine and coastal resources. There are also the other coastal and marine resource management projects at the regional and country levels that are supported by other donor agencies. Differences in site and focal implementing agency as well as the tendency to focus on its own approach make difficult to get coordination amongst these many programmes and projects. An understanding of some of the levels of complexity are shown in Figure 2.

1.18 As the major outputs from this programme are developing tacit knowledge in ICM promoting best practice and sharing lessons learnt across the region, the programme concept and design could be improved by making knowledge sharing practices more central in its approach. There is a danger that the action orientation of implementation processes could place the creation of organisational evaluation, storage and retrieval of new knowledge secondary to the primary purpose of meeting outputs in the logframe.

Assessment of the implementation of Agenda 21, WSSD, MDG, Capacity 2015 and the results of the Third Replenishment of the GEF Trust Fund

1.19 PEMSEA’s development objective is to protect the life support systems and enable “sustainable use and management” of coastal and marine resources through intergovernmental, interagency and intersectoral partnerships, for the improved quality of life in the East Asian region, as in a sense an operational definition of sustainable development. The coastal and ocean systems of the East Asian region’s natural heritage and source of food and livelihood for the millions of people in the region. In addition, the social and cultural values of the people of the region are linked to these resources. Properties and investments are also dependent on how well these resources are managed. PEMSEA’s activities on bringing ICM into the countries of the region, building sustainability or such management through capacity building, scientific on its integrated information management system (IIMS) stakeholder participation, environment investments and national coastal marine policies as well as upscaling and complementing all these with efforts to create inter-country partnerships through a regional mechanism are therefore not only for the environment’s sake but also for supporting two other pillars of sustainable development -- social development.
The 2002 WSSD was quite unique from that of the United Nations Conference on Environment and Development (UNCED) held in 1992 in that it emphasized good governance within each country and at the international level as essential to sustainable development. PEMSEA's efforts at getting local governments to take the lead in ICM activities as well as in helping promote stakeholder participation and national level policy-making support WSSD's call for strengthening good governance at the country level. The process of developing the SDS-SEA, on the other hand, supports the effort for strengthening good global governance in particular ocean governance.

The foundation of the SDS-SEA are based on the presentations of global and regional instruments relevant to the environment as well as on the regional programmes of action developed by ASEAN, UNEP, Regional Seas Programme, Economic and Social Commission for Asia and the Pacific (ESCAP), Asia-Pacific Economic Cooperation (APEC), and others. As such it is implementing WSSD's call for strengthening institutional arrangements for sustainable development at the regional level. As stated in the WSSD Plan of Implementation, the implementation of Agenda 21 and the outcomes of the Summit should be effectively pursued at the regional and sub-regional levels through the regional commissions and the other regional and sub-regional institutions and bodies.

The SDS-SEA provides for the active participation of all stakeholders and not just national governments and international agencies as often is the case for regional agreements and mechanisms. The participation of the local governments, the private sector, civil society, and communities are given importance the same importance that the WSSD Plan of Implementation, in numerous provisions, gives to these stakeholders. The WSSD Plan of Implementation has called for action to "enhance the role and capacity of local authorities", "enhance corporate environmental and social responsibility and accountability", "foster full public participation in sustainable development policy formulation and implementation", and "to enhance partnerships between governmental and non-governmental agencies, including all major groups as well as volunteer groups". The WSSD Plan of Implementation and the SDS-SEA Action Programs both give importance to community-based management and the recognition of the usefulness of appropriate indigenous traditional knowledge and practices. A slight difference is in the weak reference of the WSSD Plan of Implementation to concerns of artisanal fisherfolk. This is where the SDS-SEA is quite strong. Thus the Strategy augments that which should have been given importance but was somehow not given enough attention at the WSSD negotiations.

The WSSD Plan of Implementation references Chapter 17 of Agenda 21 which calls for integrated management and sustainable development of coastal areas including exclusive economic zones, marine environmental protection, sustainable use and conservation of marine living resources, addressing critical uncertainties for the management of the marine environment and climate change strengthening international, including regional cooperation and coordination, and sustainable development of small islands. A close look at the
The other output of the WSSD was the promotion of Type II partnerships. These are partnerships that link not only donors and international agencies but most especially civil society groups and the private sector as well. The objective is to draw in additional resources for the immediate implementation of actions called for by the WSSD Plan of Implementation. The SDS-SEA becomes a framework to stimulate Type II partnerships for coastal and ocean governance in the region as it is built on the pillar of “partnerships.” The SDS-SEA is meant to be implemented by all the different stakeholders - men and women, public and private, local and national - non-government organizations, governments, and international communities, working in concert with each other.

In the SDS-SEA Action Programs, there are many elements that would facilitate the formation of Type II partnerships. Objective 3 of the “Development” Sector of the Strategy is on “Partnerships in Sustainable Financing and Environmental Investments.” At the action programs under this objective are important in supporting Type II partnerships similar action programs are mutually emphasized in other sections of the Strategy. Some examples are action programs for institutionalizing innovative administrative-legal-economic and financial instruments that encourage partnership among local and national stakeholders and creating partnerships among national agencies, local governments, and civil society that is responsible for environmental stakeholders for use planning, development, and management of coastal and marine resources. Some examples include partnerships for sustainable development of natural resources through application of appropriate policy, regulatory, and economic incentive packages; exploring innovative investment opportunities, such as carbon credits for greenhouse gas mitigation and use fees for ecological services, and levying economic incentives and disincentives.

For promoting partnerships at all levels, the SDS-SEA Action Programs call for promoting south-south and north-south technical cooperation, technology transfer, and information sharing networks and working with international financial institutions, regional development banks, and other international financial mechanisms to facilitate and expedite environmentally sustainable projects and services. The communication action programs of the Strategy would further strengthen the development of Type II partnerships by raising public awareness and mobilizing various stakeholders to act.

The SDS-SEA in many senses, also supports the MDG. In particular, three of its goals: 1) eradicate extreme poverty and hunger; (2) ensure environmental sustainability; and, (3) develop a global partnership for development. As per the Agenda 21, more than half the world’s population lives within 60 km of the shoreline and this could rise to three quarters by the year 2020. Many of the world’s poor are seated in coastal areas. Coastal resources are vital to many local communities and indigenous people. The Strategy’s Action Programs under the sections on “Sustain” (East Asian countries shall ensure sustainable use of coastal and marine resources) “Preserve” (East Asian countries shall preserve species and areas of the coastal and marine environment that are
pristine or of ecological, social and cultural significance). "Protect" (East Asian countries shall protect ecosystems, human health and society from risks which occur as a consequence of human activity) - all directly contribute to ensuring environmental sustainability and consequently the maintenance of the coastal resources and oceans as source of livelihood and food. The Strategy's "Develop" section states the link between environment and development more succinctly: "East Asian countries shall develop areas and opportunities in the coastal and marine environment that contribute to economic prosperity and social well-being while safeguarding ecological values." The Action Programs on the promotion of sustainable economic development in coastal and marine areas and on building partnerships in sustainable financing and environmental investments with their implications on sustaining or increasing productivity and jobs general on directly relate to eradication of poverty and hunger.

The effort for meeting environment needs as well as the eradication of poverty and hunger extends beyond the local and national levels. Objective 2 of the Strategy's "Develop" section relates to incorporating transboundary environmental management programs in subregional growth areas or what's alternatively known as East Asia's international growth triangles. The success of SDS-SEA implementation of this will provide other developing country regions an example to look at and adapt.

The link of the SDS-SEA to the MDG goal of developing a global partnership for development is exemplified by its 'Implement' section which states that East Asian countries shall implement international instruments. "In the management of the coastal and marine environment", its Action Programs call for national government accession to and compliance with relevant international conventions and agreements and regional cooperation in integrated implementation of international instruments. The Strategy, however, goes a step further to deepen the reach of global partnership by calling for the execution of obligations under international conventions and agreements at the local government level.

The strong links between SDS-SEA implementation and that of meeting the objectives of the WSSD Plan of Implementation and the MDG also then link the Strategy to UNDP's Capacity 2015 programme. The goal of Capacity 2015 is to develop the capacities needed by developing countries and countries in transition to meet their sustainable development goals under Agenda 21 and the MDG. It seeks to build local level capacities for sustainable development and local implementation of Multilateral Environmental Agreements. The SDS-SEA highlights this in its Action Programs.

Capacity 2015 also seeks to maximize benefits of globalization at the local level. SDS-SEA reflects a similar objective by holistically linking the promoter of regional cooperation and the incorporation of sustainable development in subregional growth areas as a way to further support efforts to through South-South or North-South exchanges of technical assistance and of environmental investments for key coastal and marine sites at the local level. The ASEAN-3 framework of the Strategy is therefore very relevant not only because it allows management of the ecological interconnectivities of the semi-enclosed East Asian seas, including interconnectivities in risk due to a common pattern of oil
taker routes in the region, but at the same time, the framework is able to draw in the economic dynamism of fast-growing economies of the region (Japan, Republic of Korea, and China) and draws them to support the low and middle-income economies. Trade between the countries of the region is growing and the closer economic links that will develop could lead to a similar strengthening of links on environmental investments. The mainstreaming of SDS-SEA action programs in the national economic development plans of the countries of the region as well as in the regional trade and other economic agreements will do well to further strengthen the implementation of the Strategy.

131 The consistency of the SDS-SEA with GEF policy has been strengthened with the results of the negotiations for the Third Replenishment of the GEF Trust Fund. The Third Replenishment of the GEF Trust Fund underscored and affirmed the critical importance of supporting the goals of the United Nations Millennium Declaration and of Agenda 21. Other policy recommendations notice the following:

- GEF to support a more systematic approach to capacity building. Where capacity is a need and acts as a barrier, then it should be addressed first.
- Country ownership is essential to achieving sustainable results. Thus, integration into national priorities, strategies, and programs for sustainable development is vital. Mainstreaming and co-financing are also important.
- Need to increase interagency cooperation between the UN system and the Bretton Woods institutions at the country level such as linking the Poverty Reduction Strategy Programme (PRSP) and the United Nations Development Assistance Framework (UNDAF) processes to bring together poverty reduction strategies and sustainable development processes.
- Greater participation in the development and management of GEF projects of other executing agencies (i.e. ADB) designated under expanded opportunities.
- All activities of the GEF should be undertaken in a spirit of enhanced partnership. Cross-learning should be strengthened and accelerated.
- Document best practices of stakeholder participation.
- Better engagement with the private sector.

132 All of the above is similar to the direction taken by SDS-SEA. The strategy also puts great importance in capacity-building. The adoption of the Strategy will be through a process that builds country ownership. The plan for adoption also states that “consultations will be undertaken with a view to harnessing the objectives of intergovernmental bodies and multilateral financial institutions, including World Bank, ADB, GEF, and official development assistance ‘ODA’.” Once the Strategy is adopted, this will be used by these same partners to act decisively and proactively to conserve the Seas of East Asia. The Strategy puts emphasis on partnership, particularly public-private partnerships. The strengthening and acceleration of cross-learning and the documentation of best practices of stakeholder participation can be found in the Strategy’s Objectives-Action Programs for the establishment of information technology (IT) as a vital tool in environmental management programs partnerships with scientists and scientific institutions to encourage information and knowledge.
sharing, and the utilization of innovative communication methods for the mobilization of governments, civil society and the private sector.

1.33 The results of the GEF replenishment negotiation also points out that a new strategic trust would be to catalyze implementation that builds on foundational work. The development of the SDS-SEA is one such foundational work which with more financial and political support would contribute significantly to meeting the action objectives of Agenda 21, the WSSD Plan of Implementation and the MDG.

1.34 The replenishment negotiation documents also pointed at indicators for meeting the objectives of the International Waters portfolio. These indicators are:

- Global Coverage (transboundary waterbodies with management framework of priority actions agreed by riparian countries);
- Agreed Joint Management Actions (countries with national policies, regulations, institutions, etc. to be aligned to be consistent with agreed joint management actions);
- Regional Cooperation (regional bodies and management authorities with strengthened capacities);
- Local Technological Development (countries with demonstration technologies and management practices viable under local conditions).

1.35 Note that these indicators could be the same indicators for monitoring the SDS-SEA as the Strategy has strongly brought in Action Programs that suit to meeting the same objectives served by these indicators.

1.36 The Beijing Declaration of the Second GEF Assembly contains the same focus as that of the policy recommendations resulting from the replenishment negotiations. The Beijing Declaration also emphasized the need for GEF to assist in the implementation of the WSSD, in particular the importance placed by the Summit on regional and sub-regional initiatives and on public participation, stakeholder involvement and partnerships. It also pointed to the importance of capacity building and the enhancement of technology transfer through public-private partnerships and technology cooperation both North-South and South-South. As previously noted the SDS-SEA has placed the same high level of importance to these aspects.

1.37 The Beijing Declaration also noted that the expanded mandate of the GEF would now include dealing with Persistent Organic Pollutants (POPs). In as much as the SDS-SEA also desires control of land-based pollutants getting into coastal and marine areas, the implementation of the Strategy then also contributes to the meeting this new mandate of the GEF.

1.38 The SDS-SEA indeed has strong links and consistency in objectives and action programs with the WSSD Plan of Implementation the MDG, the strategic directions of the GEF coming out of the Third Replenishment negotiations, and the Capacity 2015 programme. What now needs to be done is to move the
Figure 2 Organisational Networks at PEMSEA
Strategy forward beyond the endorsement of the 8th Programme Steering Committee Meeting and that of the UNDP. The planned PEMSEA Ministerial Meeting of countries participating in the programme would be a good opportunity to get higher-level approval and commitment to SDS-SEA UNDP’s Capacity 2013 could then give it further impetus by providing immediate support in transposing its action programs for local level implementation. This would open up further enhancement of its validly at the local level such as bringing in a stronger reference to the participation of women and youth and a special consideration for vulnerable groups. Where local coastal sites are repositories of high levels of relief from chemical-based agriculture, due attention to POP issues could also be made. A link to the other expanded mandate of the GEF which is land degradation, mainly desertification and deforestation could also be looked onto especially where drought and climate impact on the coastal ecosystems.

2.0 PROJECT RESULTS

2.1 This mid-term evaluation of the PEMSEA programme is based upon two fundamental observations namely:

2.1.1 Integrated management approaches attempt to address extremely complex problems and issues affecting the sustainable development of highly dynamic coastal ecosystems, whose rich and diverse natural resources have generated powerful and often competing demands from a wide array of economic sectors. This means that ICM is perhaps the most complex form of human activity for more complex in fact that managing upland or purely marine areas and activities. For this reason alone, the achievement of major outcomes takes a considerable period of time and requires the development of strong political commitment to integrated rather than sectoral approaches to the formulation and implementation of human activities that influence the ability of coastal systems to sustain planned development activities.

2.1.2 When evaluating the progress of the PEMSEA programme, the four most critical features to examine are progress towards the development of:

a. A robust and self-sustaining process for implementing ICM concepts frameworks, principles and good practices;

b. Strong ICM strategies and their practical implementation at a project level that are also supported by strong political commitment at a national level;

c. A critical mass of successful ICM projects at a local level that inform and support the development of national ICM policies and supporting measures;

d. A regional mechanism to facilitate the sharing of knowledge, experience, technical assistance, and lessons learned to help nations to work together to a common purpose in solving problems and issues which affect the achievement of sustainable development objectives.
22. Given the challenge of managing the very complex issues facing the coastal nations in East Asia, it is important to understand a number of key issues that influence the progress made by the PEMSEA programme towards the development of ICM at a site, national and regional level. These include:

a. A long tradition of economic development planning based on the transformation of natural systems to meet the needs of individual sectoral activities. This forms a barrier to multiple use management of complex coastal systems such as mangroves, which can sustain more than one economic activity.

b. Different political systems characterized by strong centralized policy making where top-down decision making concerning investment and the allocation of land and water resources takes precedence over local decision making. In some countries such as Indonesia, the recent move towards decentralization and deconcentration of decision making has created a hiatus where considerable adjustment in policy making and adoption of local priorities for development is taking place.

c. Where local development priorities and plans to address coastal management issues are being formulated, these are often obstructed by a legacy of prior commitments and approval of plans by centralized agencies and powerful investors and political interests.

d. Awareness of the dynamics and functions of coastal systems, and the hazards to life, property and investment from their inappropriate development is generally low in most developing nations. This limits the perceptions of problems and issues that hinder sustainable economic development.

e. The direct and indirect linkages between coastal ecosystem functions and economic development are poorly perceived. This lack of awareness constrains the development of comprehensive and accurate analyses of problems and issues affecting specific areas and limits the utility of risk assessments and feasibility studies, and the evaluation of management alternatives available to meet stated development objectives.

f. Where the use of the English language is not widespread its use as the medium of communication can form a barrier to effective sharing of knowledge and experience in the adoption and use of complex ICM concepts, methodologies and examples of good practice.

g. Low level of understanding of ICM and acceptance of the PEMSEA framework and process as viable and valuable planning and management tools at a national and regional level.

23. These constraints add to the complexity of managing development processes in coastal areas and help to explain why the achievement of even modest advances in developing a robust ICM process take considerable time (often 5 to 10 years). Consistent technical assistance tailored to the needs of individual sites continues
of funding and the progressive development of political acceptance of ICM as a tool to help sustain development rather than adding bureaucratic hurdles.

2.4 It is clear that ICM frameworks and practices have a good deal to offer the nations of East Asia in promoting effective solutions to very complex problems and issues that undermine efforts to develop sustainable use of coastal areas and natural resources.

2.5 The PEMSEA programme is well suited to meet the needs of the new programmatic approach adopted by the GEF. Major advances have been achieved in developing the practical implementation of ICM concepts and practices across a wide spectrum of different environmental, social, and economic situations in six East Asian nations. The Evaluation Team has been impressed by the commitment of the PEMSEA project staff and counterparts at the project sites visited, and the developing support for environmental investment from the private sector. All involved are to be congratulated on their combined achievements.

2.6 While the Evaluation Team is aware of the difficulties that the PEMSEA team and their partners have overcome and that there have been advances in the adoption and application of ICM certification procedures for ports and the SDS-SFA, it has proven very difficult to assess the actual impact of the Program. There are a good examples of ICM practice. Some have been catalyzed by PEMSEA, while others may not be a direct result of PEMSEA activities. For example, the LUAS river basin framework in Solang described is designed to improve the integration and sectoral planning for land and water use management in watersheds associated with the environmental management of the Klang river, which drains into the Port Klang coastal area. However, this initiative was in place before the Port Klang coastal area was selected as a PEMSEA site. In fact, this initiative by the State Government made the Port Klang area more attractive to the PEMSEA management team and has helped strengthen the potential for longer-term positive impacts of PEMSEA efforts.

2.7 The careful choice of sites based on evidence of political commitment, available information, clearly perceived problems, and other criteria have helped form a series of sites where PFMSFA should be able to demonstrate rapid results and thus gain greater policy buy-in to the ICM process. However, the Evaluation Team believes that truly integrated forms of coastal management are at an early stage of development in the sites visited. There remain major obstacles, such as lack of understanding of how coastal systems function and continue; sectoral emphases in planning for and managing human activities that will take a considerable period of time and effort by the PEMSEA team to overcome.

2.8 Having expressed these concerns, the Evaluation Team does believe that the PEMSEA Project has achieved significant progress towards potentially very beneficial outcomes and in time may see positive impacts on environmental quality and sustainable use of the coastal lands and waters of the East Asian Region. The following paragraphs attempt to set out progress towards outcomes.
3.0 PROGRESS TOWARDS OUTCOMES

3.1 Given the above considerations and that the project is at the mid-point in the implementation of the second phase, the evaluation team believes it is too early to fully assess the outcomes and impact of the project beyond what we have witnessed during field visits and through discussions with the intended participants.

3.2 The Evaluation Team is convinced that the PEMSEA programme has achieved substantial progress in the development and implementation of ICM frameworks, processes and good management practices. There is substantial evidence of emerging outcomes resulting from one or more program outputs. These include:

a. Acceptance of ICM as a tool to help sectoral agencies reduce conflicts with other sectoral agencies and improve the effectiveness of the respective efforts to help fulfill mandates, improve the efficiency of public investment, and meet national development objectives.

b. Enhanced awareness of the added value ICM can bring to the resolution of national, provincial, and local development issues.

c. Adoption of ICM in the project sites as a tool for resolving local environmental, economic, and social management issues.

d. Major progress in developing practical measures for the formulation and implementation of sustainable ICM initiatives.

e. Learning shared between project sites, sharing of knowledge, development of shared understanding of problems and potential for complementary solutions at varying ecosystem and geographic levels.

f. Innovative and usable technologies that is strengthening comprehension of complex sets of data and information to inform ICM processes.

g. Evolution of a local, sub-regional, national, and transnational cooperation and development of solutions to common problems.

h. Development of a comprehensive data base that can be developed to provide information to better reform planning and decision making processes.

Positive influence on implementation and measures to improve environmental conditions and reduce stress within coastal and marine ecosystems.

Engaging private enterprises in strategies for waste management issues in their corporate responsibility agendas.

Support to national governments in the formulation of national coastal policies.
Overall development objective, project development objectives, and planned outputs

3.4 The stated **Overall Development Objective** is "To protect the life support systems and enable the sustainable use and management of coastal and marine resources through intergovernmental partnerships for improved quality of life in the East Asian Seas Region." This is a most ambitious higher order objective of longer-term goals. The emphasis upon protecting the life support systems that underpin sustainable production of marine and coastal resources is a key element in enabling the sustainable use and management of these resources to help improve the quality of life in the East Asian Seas Region.

3.5 The formulated **Project Development Objectives** (See Annex 3) and fourteen planned **Outputs** are appended to the **Overall Development Objective**.

Progress towards achievement of project outcomes

3.6 A clear distinction must be made between project outputs, outcomes, and impacts. The **Logical Framework Approach** is used to test the internal logic of a project design and to monitor and assess the progress in meeting intermediate objectives through the implementation of planned activities. The outputs are the stated targets of the project activities. For example, training to enhance human resource capacities may have a target of 12 people trained in Environmental Risk Assessment (ERA) by the 7th month of the project. The intended output is 12 trained people. The outcome will be different depending on a number of factors, including the additive or synergistic effects of other outputs from the project, e.g., the design and implementation of an ERA system and the provision of appropriate hardware and software, the starting competence of the trained and the social and economic conditions beyond the control of the project managers.

3.7 The Evaluation Team concurs with the findings of the GEF Secretariat Project Review (SMPR) 2002 and the UNDP Project Implementation Review (PIR) 2002 evaluations. It is clear from a comparison of the original logframe and progress reports, verbal presentations of the staff, official reports, published materials, and interviews with participants that the project is performing very well and that planned activities are on course for completion within the planned time frame or ahead of schedule. There do not appear to be any significant cost overruns and there is significant that additional funding from partners has enhanced the use of the GEF funding and has made up for the unfortunate shortfall in planned UNDP counterpart funding. Careful project management and energetic mobilizing of funding from participants and external funding bodies has allowed the project team to expand participation in planned activities and to add new activities.
3.8 Internal evaluations indicate that there are specific areas where the achievement of objectives has already been met while some objectives are expected to be fulfilled during the remaining life of the project. Please refer to Annex 4 for illustrative charts prepared by the PEMSEA staff to track progress in meeting planned activities. The Evaluation Team sees a need to strengthen the objectively verifiable indicators and methods used to track progress in the implementation of activities and performance of the individual projects as these may not give a full and accurate picture of what has been achieved. For example, where an advisory group has been established this is counted as an output. However, the actual range of expertise available in that advisory group may be limited, essential disciplines may not be available, and there may be little experience in the group of working in an interdisciplinary mode and providing scientific advice in a form that will be valued and applied by planners and managers. By adopting more sensitive indicators to assess outputs it would be possible to identify areas where selective inputs or corrections by the PEMSEA management team would help provide stronger support to local project activities and thus enhance outcomes and impacts.

3.9 It is understood that the PEMSEA staff are preparing an assessment of indicators and methods used to evaluate progress towards implementing activities and achieving stated outputs directed towards fulfilling the ten project objectives. The preliminary draft of this paper is very helpful. It explains how expanded criteria and assessment techniques could be applied and reinforces the Evaluation Team's assessment that the program is actively strengthening project management tools.

3.10 The report of the Proceedings of the First Meeting of the Multidisciplinary Expert Group (MEG) held in May 2002 makes specific reference to PEMSEA activities that have helped strengthen scientific support to the program at a regional level and at individual project level. Specific emphasis has been given to achieving the application of indigenous and emerging technologies, by addressing "cutting-edge" scientific issues of leading environmental and resource concerns, and by promoting management-oriented research to support the demonstration projects. These efforts are commendable and illustrate the determination of the program staff to better integrate information from indigenous knowledge and more formal science to ensure ICM in practice.

3.11 However, the Evaluation Team believes that action needs to be taken within the remaining life of the project to strengthen specific activities to help PEMSEA move further forward in addressing its Overall Development Objective. These are set out below:

3.11.1 The Evaluation Team is concerned that insufficient emphasis is being given to the implementation of planned activities to the protection of the life support systems that enable the sustainable use and management of coastal and marine resources. Throughout the study tour, the six project and parallel sites visited I was very clear that coastal ecosystems were under great stress from inappropriate development. When this was raised with project staff it was clear that the staff were operating under very difficult political institutional and economic conditions which made it almost impossible to protect and effectively
manage the coastal ecosystems on a sustainable basis. The Evaluation Team have identified four principal areas where the implementation of the project could be strengthened with the result that the protection of the life support systems could be addressed more effectively, namely:

a. The Training Program needs to strengthen emphasis on the functions of the coastal ecosystems. This would include environmental linkages among different ecosystems, established management guidelines and good practices that help protect the functional integrity of the different coastal ecosystems and the resources they generate and the hazards to life, property and public and private investment associated with inappropriate planning and management of human activities within both the terrestrial and marine components of the coastal zone. The Risk Assessment training materials and exercises to address some of the risks associated with coastal systems, however the Evaluation Team believes the design of the Training Program and materials need to be strengthened to address these subjects as a matter of urgency.

b. Greater effort is required to enhance awareness of the role of coastal ecosystems in sustaining human activities and the risks associated with their inappropriate development on the part of participants and stakeholders in the PEMSEA programme at all levels. The initial training of all PEMSEA staff and participants needs to be reinforced by the application of the materials in 1 above in a “refresh” program. This should then be extended in a very carefully designed and highly graphic and hard hitting manner to the senior managers, policy makers and decision makers associated with the PEMSEA programme.

c. The IIMS is intended to provide a data base for factors relevant to the management of coastal and marine areas. The Evaluation Team sees a need to avoid the IIMS being data driven and for more emphasis to be given to ensuring the data collected will be transformed into information that will be effective in informing coastal and ocean management decision making. For example, more attention could be given to the dynamics of coastal systems and good management practices such as soft engineering that would help coastal planners and managers develop more sustainable and economically equitable uses.

d. The Stakeholder based Coastal Management Strategies for various sites should more adequately address the risks associated with major interventions in coastal processes. This would help avoid increased hazards to life, property and investment.

3.1.2 Strengthening efforts to address these four factors can enhance the impact of the PEMSEA program outputs and will help remove constraints that hinder progress towards meeting Project Development Objectives and the Overall Development Objectives of protecting the life support systems and enable the sustainable use and management of coastal and marine resources.
There have been local differences in organisational learning at demonstration and parallel sites. One major distinction is between centralised learning and decentralised learning as shown in Figure 1. Project sites based in command economies such as China and Vietnam favoured centralised learning aimed more at mobilising committees rather than communities. This is not to say that public awareness and consultation was not important at these sites. Instead, progress in ICM implementation was much faster at these sites due to strong committee decision making structures in local government. In contrast, decentralised learning was more evident at project sites such as Bali which is based more on community oriented decision making. Progress at these sites was much slower as considerable efforts were placed on mobilising local stakeholders and community leaders. The distinction can be developed further as a difference between ‘top down’ approaches in centralised learning and ‘bottom up’ approaches in decentralised learning.

There are a number of examples of innovative and creative practices in Phase 2 arising from double-loop learning. Such double-loop learning involves questioning underlying assumptions and moving beyond the confines of the iterative ICM development cycle in Phase 1. These innovations have included:

a. The establishment of self-funding parallel sites
b. The development of hotspots exploring cross-boundary issues
c. The examination of PPP funding mechanisms for sustainable development
d. The establishment of the RNGLG to promote greater South-South dialogue on ICM implementation
e. The promotion of a regional SDS through a Ministerial Conference in 2003

![Diagram of Double-Loop Learning](image)

Figure 3. Single-loop and double-loop learning on the REMSFA Programme
3.14 Some of the difficulties in effective impact with key stakeholders is likely to arise from the fact that the current communications strategy is trying to cover too many stakeholders at the same time with limited resources and giving each stakeholder equal importance. The design of the current strategy is that PEMSEA may be preaching to the converted such as the 312 regular subscribers to Tropical Coasts. The result is that the media approaches chosen may become too bland as they try to please a wide variety of stakeholders and lose effective impact on particular segments. Instead an adaptive management strategy used in other parts of the PEMSEA project could be used to help improve the communications strategy. This could be based on a focus test analysis identifying key stakeholders actively driving PEMSEA's goals and stakeholders resisting PEMSEA's goals at local, national and regional levels. Reinforcement communications strategies could be used for supportive stakeholders and awareness building strategies for stakeholders resistant to PEMSEA's approach. In such cases a few stakeholders are identified segmented and the communications activities are directly targeted at them.

3.15 Knowledge sharing across demonstration and camera sites is currently limited. All present staff at PMO sites share their knowledge centrally with site managers at the RPO rather than horizontally across other regional sites. The linkages of knowledge sharing mechanisms between local and national levels are weak and not well defined. The main knowledge sharing occurs formally through local focal points reporting site activities to the Project Steering Committee (PSC) and their local PCC. However, there is no direct linkage between staff at local site level in the region. This needs to be addressed to consolidate ICM practices and promote best practice more widely within the region. One future challenge at local level is overcoming language barriers to ensure that shared understandings are developed and similar mistakes are avoided across the East Asia Sub-region.

3.16 An ontology or taxonomy to describe the CM knowledge domain is currently implicit in PEMSEA's activities. A more explicit ontology would be useful to provide a 'knowledge map' of the area and develop shared conceptualisations of how integration occurs between technical, social, economic and political factors. Such ontologies could be used for codifying knowledge in a systematic manner and provide a further mechanism for creating organisational and sharing knowledge across sites. There have been attempts in the past to capture coastal management ontologies through simulator models such as Simcoast. However, the advantage of developing an ICM ontology at PEMSEA would be that it is embedded in practice.

3.17 The poor standing of the ILW LEARN site on search engine rankings may be principally due to its aim to develop global communities in international waters rather than supply direct explicit knowledge through a search engine. One of the difficulties in maintaining global communities of practice is sustaining the passion and interest in any given area over time. Face to face meetings are essential to renew and revitalise trust in these relationships. Community members need to
feel that they are contributing and receiving in equal measure. If these relationships become unbalanced, commitment to such communities is likely to waver. From the W LEARN brochure there appears to be a few hundred said participants with a possible few thousand other interested parties globally. However, there are a number of unanswered questions that arise from W LEARN’s e-forums:

1. How are the interest areas identified and promoted?
2. How are champions or e-forum coordinators selected to ensure that they bring the necessary passion, commitment, contacts and expertise to online discussions?
3. Are e-forums problem-centred or theme-based?
4. Is there a critical mass of participants to sustain these communities globally with all the cultural differences and language problems?
5. What role does storytelling play in these communities of practice?

3.15 Currently, none of the staff at PEMSEA are actively engaged in W LEARN communities of practice as there appears to be an imbalance in benefits derived from their contributions and pressures on their time. For example, W LEARN does not provide a one-stop shop or ICM issues in the East Asian Seas which would make the site much more valuable and useful. One way of enhancing W LEARN’s communities of practice may be to develop and co-ordinate a few regional websites such as East Asian Seas, Caribbean and so on. These regional sites could be more problem-centred, encouraging deeper debate and dialogue and sharing knowledge through regional stories. It is more likely that these communities could be nurtured through face-to-face meetings at regional forums or conferences such as the Regional Network of Local Governments (RNGL): As these regional networks and communities develop over time, there is a greater likelihood that global communities would be much more successful as they become embedded in local and regional practice.

3.18 The IIMS is still in its development phase and poses a number of challenges for PEMSEA. There is limited capacity of staff in database management or its successful future development and a limited understanding of its use at local project level. There are 192 data entry forms, most of which are unselected at local level due to the scarcity or paucity of data. There is also some hesitancy among certain countries and agencies to share their data. In essence, IIMS should be made into a decision support system (DSS) that combines data analysis with sophisticated models to support near-line decision-making. The current IIMS incarnation suffers from being data-driven rather than user-driven. The argument is that it encourages the development of baseline data to make comparisons with future interventions. However there is limited understanding at local project level on how IIMS will help make better policies or decisions in a practical manner. Some examples identifying key indicators and mechanisms for monitoring and predicting the effect of policy and management options at a local level would be helpful. This may help to bridge the gap between the scientific community and decision makers in local government, central government and the private sector. Care needs to be taken that the IIMS doesn’t become an end in itself and consumes excessive resources that could be better prioritised elsewhere.
At PEMSEA, the existing networks are more formalised and characteristic of professional networks rather than communities of practice. For instance, there is a Friday club where all RPO staff get together monthly and receive a presentation from a staff member on a certain aspect of PEMSEA's activities. There is also an annual retreat to reflect and encourage knowledge sharing between partners. There is no formalised network among PMO staff across regional countries such as the use of online discussion groups. Language is likely to be a deterrent. More formalised networks also exist at national level at 'hotspot' sites and at regional level through the annual RNGL forum. Each of these networks (including the study tours) are likely to result in some informal groupings and promote certain dialogue between participants. The challenge is how to keep this dialogue alive. In its true sense, the networks at PEMSEA are more characteristic of professional networks rather than communities of practice.

4.0 IMPACTS OF THE PEMSEA PROGRAMME

4.1 The field visits and discussions with project personnel, counterpart staff, stakeholders and senior government officials have helped the Evaluation Team to relate planned program activities to outputs and emerging social, economic and environment impacts. Caution must be exercised in assessing the relative importance of outcomes and impacts as these are relative to the specific conditions at individual sites and the extent to which the outcomes and impacts have had a measurable effect at a national or broader regional level.

4.2 Examples of Outcomes of the PEMSEA Programme include:

- Training has increased the competence of project staff to support new projects.
- Training has increased the competence of Project staff to apply ICM concepts and methods to the resolution of complex environmental problems.
- The IIMS is establishing the basis for standardizing information formats to facilitate information exchange among projects and to expand the knowledge base for managers to use in formulating and implementing ICM.
- Enhanced political awareness of coastal problems and issues that adversely influence sustainable economic, social and environmental development.

4.3 Examples of impacts of the PEMSEA Programme include:

- In Danang and Port Klang, the PEMSEA ICM Framework influenced counterpart staff to undertake stakeholder consultations.
- Knowledge sharing emerging within the region through the RNGL.
- Strengthening and enhancement of intellectual capital particularly in the form of human, social and stakeholder capital particularly in the more community-based sites where interactions and inter-relationships between stakeholders become critical.

4.4 The evaluation team reiterates the need to measure the extent or durability of these outcomes and impacts. The PEMSEA Programme is in the process of developing criteria and a stronger system for monitoring outcomes and impacts.
These efforts should be beneficial to the Programme, the GEF-UNDP, and IMO, and the counterparts in demonstrating the outcomes and impacts of their combined efforts.

Review and evaluation of the extent to which project impacts have reached the intended beneficiaries, both within and outside the project sites.

4.5 The extent of project impacts depends very much on how much the activities on the ground have progressed. In most cases, site activities relative to the larger ICM goals are at the early stages and still within pilot communities. Where initial site consultations have taken place, the concept of caring for the coastal environment has been started and the need to work together on this task seems, however, still a need to follow-up these consultations with deeper discussions and community acceptance of what ICM really should be. This would be a challenging task given that at grassroots level the PMO staff in the countries visited emphasized the need to proceed with simple concepts and on a step by step process. Beach clean-ups have been used as the “first step for awareness raising and public involvement”. The challenge is sustaining stakeholder interest beyond beach clean-ups. The succeeding process of land and sea use zoning would provide the opportunity for broadening the public and inter-agency understanding of ICM. Many of the sites, however, are still at the start-up process until now.

4.6 In Xiamen, there was a major effort in place to clean up Yuandang Lake Bay and reclaim land before PEMSEA chose the area as a pilot site. The rehabilitation of the Yuandang Lake is promoted by PEMSEA as a fine example of environmental investment that has created handsome returns in respect to enhanced property values and taxation for the municipal government. Care must be taken in using this example as an example of good practice as it may create a negative impact on PEMSEA. The true positive and negative impacts of the environmental investment would depend on how the increased revenues from increased land values, tourism, port activities and commerce would benefit the citizens. It is understood that there is an ongoing study on this, and the Evaluation Team would expect that this study should include a balanced account of environmental and economic goods and services gained or lost through the reclamation and large-scale engineering intervention in Yuandang Lake. This would be important as Xiamen is used as a Model study tour destination. A comprehensive evaluation of the economic environmental and socio-cultural impacts of the various environmental improvement and ICM activities in Xiamen would prove useful to International Training Center on Coastal Sustainable Development (ITC-CS2) of Coastal Areas in Xiamen and in training and information dissemination for the government officials and their staff in the countries participating in PEMSEA.

4.7 South-South exchange through internship trainings at various levels and study tours have had a significant positive impact. These trainings were considered valuable by the participants as “ICM is new” to them. The study tours have been helpful in showing how colleagues in similar situations have dealt with ICM issues and problems. These trainings and study tours have also provided opportunities for networking. Many of the participants met during the evaluation stated that contacts, though more of an informal level have been maintained.
with their co-participants. The Xiamen study tours have inspired local government officials and other participants on what could be accomplished by strong political will and coordinated action. These trainings and study tours have created the core of leaders and staff that would put ICZM into operation in their project sites and have the willingness to cooperate at a regional level.

While beach clean-ups are very simple activities, it has benefited local stakeholders. In the three Danang communes selected as pilot areas for beach clean-up and waste segregation, the commune members mentioned the heightened awareness that was developed and the attitude change of the local residents. Where before the sea was used for waste disposal and as a toilet, people are now segregating waste and are actively involved in regular beach clean-up. While there is almost no income that can be derived from waste segregation, recyclable waste being of low resale value, indirect income from increased services such as from motorcycle parking and sale of bottled water to increased number of beach visitors was pointed out.

In Bataan, the beach clean up was a major success. While garbage would most likely be a continuing feature of Bataan’s coastline since it comes from adjacent Metro Manila and not from its residents, the clean up campaigns have created awareness amongst the public and became an opportunity to organize joint efforts between government, civil society and the private sector. An example of the coastal dynamics in Bataan is shown in Figure 4. More long-term efforts, however, have to be directed at getting the Manila Bay Coastal Strategy to reduce the waste that eventually ends up in Bay and into Bataan. Bataan’s alternative livelihood projects with pilot coastal communities have just started and the positive experience of income gains that could institutionalize mangrove rehabilitation and sustainable aquaculture in those communities have not yet come.

Likelihood of continuation of project outcomes and benefits after completion of GEF funding.

In Xiamen, the likelihood of ICZM proceeding is high due mainly to its institutionalization in the form of a strong co-ordinator, a management office, a support system in the marine experts group, the establishment of the ITC CSD and the high revenue of the city and thus its ability to fund its own projects.

Sustainability is also dependent on how well the local sites can mainstream their action plans and zoning into the development plans and regulations of the local government and with strong buy-in at the national level meaning that national agency decisions and national leadership will respect coastal strategy and action plan and zoning developed for the site.

Continuation of project outcomes and benefits will influence on how the sites would later be considered as models of good practice in the eyes of political decision makers with effective documentation and information dissemination. There is a need to develop a critical mass of champions and stakeholders that do not change with changes in political administration.
Figure 4 Coastal systems dynamics at fisher-folk livelihood project in Bataan.
4.13 There are some elements of the programme that could be strengthened to support consistent and cost-effective investment of both public and private funds to sustain current and projected activities directed towards meeting the GEF/UNDP and IMO objectives. These are associated with:

4.13.1 Relationships between the PEMSEA programme and other donor-assisted coastal management programs and projects could be strengthened. PEMSEA staff have made attempts to communicate with other coast and ocean programs as part of their efforts to build partnerships. However, these attempts have been limited; positive response from other donor-based programs, which inhibits sharing of knowledge, experience, and expertise across the development of mutually supporting initiatives where added value could be brought to the PEMSEA programme. This point was raised by a number of individuals and agencies during the field visits. National governments could play a leading role in enhancing and promoting greater knowledge sharing between donor projects as PEMSEA’s efforts have been relatively unsuccessful so far.

4.13.2 A need to expand the number of PEMSEA core staff with practical experience in the formulation and implementation of ICM activities. Given the resources available in the Programme, there are practical limits to the number of resources available in the PEMSEA regional office and the level of support that can be given to projects. A concern that PEMSEA could not provide timely and effective technical support to individual ICM initiatives was expressed by national as well as local project staff in four of the countries visited. This brings into question the concept that PEMSEA can work as a catalyst and the individual projects must rely on their own resources to carry forward the PEMSEA framework and six-stage system for developing and implementing ICM initiatives. Staff in a number of the projects visited said that they feel that the PEMSEA framework and procedures are at times inflexible (i.e., having to go through step-by-step the six-stage process) and can waste time and effort in developing solutions to complex and urgent problems. In discussions with the national and local project staff in Danang, Bali, and other sites, adopting complementary approaches (e.g., an inception report approach where urgent problems are identified and immediate solutions are put forward) that are used in other coastal management programs and projects into the PEMSEA framework was seen as desirable. This suggests that an opportunity to gain added support for value to other complementary activities is being lost, but it is difficult to see how it is can be solved where other donor projects do not encourage partnerships.

4.13.3 Need for expanded scientific support to PEMSEA initiatives. While the PEMSEA programme’s emphasis on pragmatic implementation of often-experimental solutions to complex coastal problems and issues is to be commended, there remains a need to strengthen the integration of scientific knowledge and advice into the ICM process. This is not advocating more research to meet scientific curiosity. Instead, it has been observed that social and environmental performance of some PEMSEA ICM initiatives could be enhanced through the integration of existing knowledge from different sciences. Examples are set out in the section on Recommendations for Improving the Xiamen Model.
4.1.4 SDS-SEA: The Evaluation Team supports the recommendations of the Multidisciplinary Expert Group (PFMSEA/WP.2002/06, pages 3-4) for strengthening the scientific basis of the SDS-SEA.

4.1.5 PPP: The development of Private Public Partnerships (PPPs) is a good example of the pioneering work of the PFMSEA programme to develop sustainable financing mechanisms for ICM. Environmental and social factors, however, need to be comprehensively incorporated into the more broadly based economic assessment of the PPP mechanisms. In the Malayan Bay rehabilitation project, for example, there was an observed fundamental weakness. This is the simplistic assumption that reclamation of further areas of the former wetlands is the best way to attract private investment when in truth there is need to examine the benefits and costs of this approach within a broader framework. In fact, the suggestion made that the application of an integrated EIA, as was the case for making the decision to remove the dike across the Bay, should also be made for the rehabilitation project. These assessments have to consider that in urban development of the reclaimed land may include costs for plugging and protection against sea-level rise, which may make this proposition less viable. (2) That the placement of new roads in a position as planned will reduce the natural functions of the remaining wetlands with the result that their ability to remove pollution, store storm water and reduce flooding hazards and other environmental services would be reduced; (3) reduction in the planned social, economic and environmental benefits with the loss of these environmental services will occur and thus the need for additional PPP investment to compensate. In the end, all these will weigh on the B/C ratio and internal rate of return. Such considerations therefore should be incorporated into a more broadly based economic assessment of the PPP mechanisms. This brings into focus the need to strengthen the effectiveness of the Risk Assessment methods and procedures, the EIA methods, and the methods used to assess the economic feasibility of PPP proposals. If the project was indeed approved or would be approved without these considerations then there appears to be a serious risk that internal rates of return have been or would be calculated that would not stand up to critical economic, environmental or social evaluations. That property, lives and investment may be placed in jeopardy, and that planned activities may not be sustainable at costs that would be acceptable to either private or public sectors.

4.1.6a By taking a broader view of the economic, social and environmental costs and benefits it should be possible to improve the economic performance of both the public and private capital invested. For example, by placing less emphasis upon further destruction of the Bay's ecosystem through reclamation, flooding hazards in the surrounding area may be reduced thus reducing the need for investment in hard engineering structures. This would reduce the costs and increase the security of investment in urban development in the wider bay area.

4.1.6 Enhancing the use of Xiamen as a Model and Demonstration Site: The complexity of issues and problems faced at the various sites and the focus on attaining short-term and tangible results can cause the wrong signals to be transmitted to the local stakeholders and observers visiting demonstration sites used by PFMSEA as model examples of ICM in practice.
4.13.5a Although admirable progress has been made in redressing the issue of pollution of the Xiamen Bay, much could be done to develop a truly integrated approach to coastal management. The coastal development efforts are predicated on hard engineering approaches to removal of pollution and the enhancement of public revenues and private profits through the restoration of wetlands. Both approaches have been challenged as rational practices in other parts of the world as they send very negative signals concerning the management of coastal systems and can increase hazards to lives, property, and public and private investment. There is a consequent danger of negative lessons being transmitted from the demonstration sites.

4.13.6b It would be beneficial to better integrate fundamental knowledge of dynamic coastal processes and modern "soft engineering" into plans to 'rehabilitate' the Maluwan Bay in Xiamen. It may well be that by adopting a broader analysis of options to address issues, such as pollution and flood hazard reduction through the rehabilitation of Maluwan Bay, benefits to navigation and reduction in dredging costs in the West Sea of Xiamen could be achieved by restoring the estuarine functions of the former estuarine bays. In turn this should be seen as part of a broader strategy to restore tidal flushing between the East Sea and West Sea which would assist efforts to develop the deep water port, restore capture fisheries, redevelop aquaculture, and reduce marine pollution as part of a broader ICM strategy for the sustainable development of the Coastal City. In the above example, it would be helpful to bring in additional expertise on coastal geomorphology, systems modeling, coastal ecosystem functions and resource economics to help expand the analytical framework being applied by the marine expert group, urban planners and ocean managers.

4.13.5c A further example is the need to examine the proposal to dredge the Maluwan Bay and to place the fine sediments along the margins of the planned open water areas to form the substrate for the replanting of mangrove. The nature of the sediments needs to be examined and compared with the long-shore currents, tides, amplitude and other factors that will have an influence on whether the fine sediments stay where they are placed, and whether they will support the proposed mangrove species. There is a possibility that the sediments may return in the areas dredged or be exported into the shipping channels in the West Sea and that the mangrove may not survive. It must be stressed that PEMSEA has not been directly involved in the current plans for the Bay. PEMSEA may be able to encourage the local government in Xiamen to further apply ICM practices in revising the engineering and PPP proposals.

4.13.6d The restoration of the Gold Coast in Xiamen, where sand mining had degraded the shoreline and beaches, illustrates a commitment to improving the coastal environment. Valuable lessons were learned in the process: for example, well-established trees that form the natural vegetation of the beach-dune system were removed and replaced by grass. The grass could not maintain the dynamic stability of the beach-dune system with the result that erosion took place which required considerable effort and expenditure of public capital to correct. The current landscape approach to the management of this coast could be improved by working with the local management team to enhance...
their knowledge of beach and dune systems. At the moment, a significant portion of the fore dune areas have been built over, have had tar macadam and concrete paths inserted, and exotic trees have been planted. This disrupts the dynamic relationships between the beaches and dune systems. When a major storm hits this coast, much of this infrastructure and landscaping could be damaged and the beach eroded. The dunes will then erode to supply sand to replenish the beach. In time, the sand eroded from the beach during a storm will be returned from offshore sand banks, and the dunes will be replenished by wind-blown sand. This is a natural process and future management of this coast should allow to seek to establish a system of dynamic equilibrium where the beach and dune systems can be free to interact. This is a good example where the application of available knowledge of these coastal ecosystems would have saved money and helped to provide sustainable use to meet increasing demands for tourism and recreation.

4.13.7 The ISO 14001 certification status for the Gulangyu Island is a major achievement that demonstrates the value of a clean environment for tourism development. However, the ISO award may be in jeopardy. The management of the island is flawed by contraventions of the International Convention on Trade in Endangered Species (CITES). Specific examples are the widespread sale of corals and shells such as the increasingly rare Indian Ocean Cowrie, and the sale of stuffed marine turtles. Reportedly, senior PEMSEA staff, as well as some public opinion, have attempted to raise attention on these issues with the local government. The local government still has to fully address this issue. There is a danger that people visiting the island will receive the signal that the over-commercialization of the island and sale of marine organisms is perfectly acceptable. Greater efforts should be taken by the PEMSEA staff to point out these poor ICM practices to local officials and visitors as they pose a risk that the ISO 14001 certification could be withdrawn should international NGOs and the ISO authorities discover these blatant contraventions to international treaties and conventions.

4.13.8 There appears to have been a significant impact of the PEMSEA programme in supporting the LUAS team managing the Pasir Klang ICM demonstrator site in their efforts to make sectoral agencies aware of ICM. However, there remains a major challenge in reducing the current rigid, top-down approach in the development of plans for the "rehabilitation" and tours development of Crab Island. This could be achieved by putting more emphasis upon a rights-based approach where local stakeholders are given a greater role in formulation and implementation ICM strategies and plans that affect the lives and we care. This would certainly help improve the Crab Island initiative as a model for local ICM.

Other concerns that the programme should look into include:

4.14 Concern that because of the need to keep the concept simple for local people, the comprehensiveness of ICM is being missed. It seems that the "working with nature" principle is lost amidst the aggressive drive for man-made theme parks (e.g., dancing fountains, man-made lagoons, cemented river banks, etc.).

4.15 Concerns in political leadership either through elections or new appointments would cause delays particularly where institutional mechanisms such as the
Lack of buy-in by national level political leaders in some countries (due to lack of information, exacerbated by rapid leadership changes, as well as weak sense of ownership for locally led ICMs such as in Bataan and Batangas) and by perceived competition of other national and regional coastal management projects and programmes.

Decisions at the national or federal level could easily negate decisions at the local level (Batangas, Bata and also expressed in Kuala Lumpur and Danang). National government agencies have decision-making powers over the country’s overall direction for development and in many cases these have been exercised in the approval of major development projects prior to ICM planning and zoning activities. As such, there is the concern that ICM strategies and zoning at local sites would be very difficult to enforce unless it is championed by the strongest national agencies or better still mandated by national legislation. The LUAS head in Sabang, Malaysia related difficulties as regards coordination with various levels of the bureaucracy. Part of the difficulty lies in the residual resistance of federal agencies to transfer their powers and responsibility to a newly formed local body. LUAS Politic also gave a lower priority to environmental issues. While many senior political leaders have not obstructed environmental efforts, they have neither been champions to the cause. The head of LUAS is looking for legal ways possibly using maritime and navigation laws to have more powers on environmental management (evaluation of EIA) transferred to it. This situation is very similar to that of Batangas where the PDM is trying to negotiate a MoA to the DENR to transfer some EIA powers to it.

As many economic development projects have already been approved or implemented prior to ICM activities (Danang coastal road reclamation in Tuyens Island in Bata and reclamation of about 15,000 hectares of a peninsula and some sones in Kuala Lumpur) the challenge to ICM strategies and zoning is to mitigate against the negative impacts of on-going and past developments. At the PDM level, there is a resignation that once top political decisions have been made on a development project, there is little they could do to change it. An insistence on independently made and reviewed EIAs rather than utilizing the Integrated EIA tool developed by PEMSEA as a basis for approval of projects could serve as stop-gap measure till detailed zoning is made and strong institutional support for such zoning (e.g., gazetting in the case of Port Klang) ownership through participatory mapping as planned in Bata is gathered. There has to be intensive training, however, for the PDM staff as well as even the expert groups on EIA of coastal projects. A link to independent experts within and outside the country would also do well to increase the objectivity of the EIA. PEMSEA could identify these needs and the type of training and expert linkages when the sites do their EIA.

The lack of rigorous studies on the economic and social benefits arising out of ICM, Xiamen has applied an Integrated EIA approach to predicting the impact of a planned project but there is also need for doing the same in a post-project situation. With credible economic and social benefit studies credibility in
terms of methodology, data, and evaluators), there would be difficulty in convincing others of advantage of investing in an ICM approach. It seems that all present the monitoring of impacts, particularly in a complex approach as ICM, is scanty and weak.

4.23 The expectation is that successful ICM activities eventually lead to increased tourism income. In Xiamen, Danang, Crab Island and Bali, the ICM related plans of the local governments are directed at tourism development. The question is whether the PMO is well equipped to guide these tourism development projects towards sustainable tourism principles and approaches. Where tourism leads to the sale of corals and endangered species of shells, capture of turtles for their shell or for feeding by tourists as they swim in murky pools, then the objectives of ICM become violated. There is a need to develop sustainable tourism guidelines and train staff to make sure that these are integrated in the planning process and in operations.

4.21 The problem of "projectization" of ICM activities (i.e. Manila Bay Coastal Management Project). As a project, the efforts are seen as short-term and a special task rather than one that should be integrated into the province or city development plans and budgets.

4.22 The Regional Mechanism still has to be developed. Such mechanism will have to consider other regional institutions as well as financing concerns (i.e. can a future PEMSEA commercialize its services and products?) This mechanism should be one that does not depend solely on government financial support while at the same time able to get away from UN bureaucracy. As first shows, there is the need to get regional support for the SIDS-SFA.

5.0 PROJECT MANAGEMENT

The project’s adaptive management strategy

5.1 The concept of "Adaptive Environmental Management" has been with us for more than 35 years. Originally it was developed as a tool for integrating different experts and different interest groups to provide a comprehensive definition of specific environmental problems, to explore options for solving those problems, developing a consensus on the most effective management solution and building cooperation in applying the preferred solution and then monitoring its effectiveness and -where necessary- adapting various elements of the solution to ensure its effectiveness. Although adaptive management has been used to good effect in the management of the PEMSEA Program, the concept could be applied more widely in the development of individual projects and communications programs to develop a more robust definition of the problems and issues at project sites, and the development of alternatives for management solutions.

5.2 From observations in the field it is clear that there are broader issues that may overwhelm the coastal strategies that are being developed for the project sites. A case in point is Bali where major reclamation works that have had a major impact on islands close to shore and proposals for port expansion, dredging and
further land reclamation in the project area could overwhelm the discrete actions set out in the Coastal Strategy for the southeastern coast of Bali.

5.3 The PEMSEA strategy has been to focus on achieving implementation of actions that can demonstrate that ICM can make a difference. In successive iterations of the ICM process new issues, problems and corresponding actors can be added. However, there is a danger that in sites such as Bali, an opportunity to take a more holistic view of problems and issues that threaten the sustainability of tourism, fisheries and nature conservation will be lost. It is taken for granted that the process delays immediate action and as too much focus on site activities minds stakeholders to the powerful influences coming from the national and even global levels. The result is that the effectiveness of the planned PEMSEA ICM actions to reduce pollution, develop sustainable fishing practice and sea use zoning will be undermined. This would adversely affect the credibility of PEMSEA and degrade confidence in the utility of ICM. There is need for adaptive management in terms of being able to extend assessments beyond the site and in implementing timely interventions.

5.4 An example of an adaptive management strategy is the decentralization of certain decisions from IMO to that of the Regional Programme Office (RPO). These decisions include the recruitment of local staff, approval of contracts up to US$50,000 and procurement up to US$1,000,000. This has been made possible by designing standard contracts that do not anymore need scrutiny by lawyers of IMO. This has facilitated operations of the program. Such findings show that this is also cost effective.

5.5 The need to establish linkages with other programs yet bypassing institutional bureaucracies has led to the practice of developing programme in programme memoranda of agreements; i.e. PEMSEA with UNEP-Global Program of Action (UNEP-CPA); on sharing of knowledge and experiences rather than UNDP with UNEP.

5.6 Adaptive management through a decentralized non-bureaucratic system is important for the programme to be able to respond quickly to facility requests. This should be further developed to cover other aspects of program management.

Roles and responsibilities of the various institutional arrangements for project implementation and the level of coordination between relevant players

5.7 The city of Xiamen exemplifies the strong inter-agency coordination needed to make ICM a success. Its Marine Management and Coordination Committee has very well clarified the roles and responsibilities of the various government agencies involved in the city’s ICM. At the top of this, the Deputy Mayor who heads this Committee is in charge of both the infrastructure development and the coastal management concerns of the city. There is, however, no private sector and national government agency participation in Xiamen. This might well be all right for Xiamen but is a problem in other governance systems such as in Batangas and Bataan where decisions on the use of coastal resources is still very much within the jurisdiction of national agencies such as the Department of
Decentralization has provided advantages. Local governments are more able to direct their own development plans and implement policies that would otherwise be ineffective. They can therefore commit to the establishment of an ICM site and the co-financing for it. But there are also disadvantages as well when one level of political jurisdiction is involved. In Bali, the site involves five regencies, there has to be coordination between the governor and the heads of the regencies. The ability of the governor to coordinate has been weakened, however, because Indonesia's latest decentralization policy has given substantial autonomy to the regency. The same applies in Philippine sites—Batangas, Bataan, Manila Bay—where mayors, governors, and national agencies have their own separate level of political power and autonomy.

A more political champion one that wields political power beyond what decentralization policies provide is needed to create the “good coordination in the making of decisions” approach as stated by the National Food Authority (Indonesia). But accounts from heads of PEMSEA (Penang Island) say that, even when heads of political units have given their approval, the middle level bureaucracy would still make their decision-making and implementation difficult. A suggested solution would be to start at the very lowest political level with the city or regency rather than with a province or sub-region. It has been pointed out, however, that this would not allow the many interactions that go beyond a city or regency to be considered in the project. In a sense, the notion of an ICM approach would be placed into question.

There is thus an advantage in countries with centralized governance mechanisms. There is much stronger coordination among local agencies and decisions are made much more quickly. The concern, however, is that when the basic principles of ICM are not well understood such as when short-term economic considerations are placed above the long-term environmental imperatives, then erroneous decisions might be made imply with detrimental consequences.

Partnerships arrangements with other donors

Local governments have been the more substantive donors so far. Recent MOAs signed to this effect. The MOA signed by the Selangor Chief Minister on 9 July 2001 designating Klang as an ICM pilot Demonstration site allocated counterpart support of US$41,895. Similarly, the Chonburi Provincial Government signed a counterpart support of US$287,994 when Chonburi was designated as a National ICM Demonstration Site in a MOA signed August 2004. National governments, however, have also contributed in substantial support funds. The Government of the Philippines had committed US$548,347 for 2001 and US$142,061 for 2002 for the Manila Bay Environmental Management as well as US$777,000 as support for PEMSEA. The State Oceanic Administration (SOA) of the People's Republic of China had committed US$2,473,300 for the Bohai Sea Environmental Management activities in total government contributions have totaled US$5,934,546. In comparison, private sector contributions have totaled US$400,000 while that of Swedish International Development Agency
The advantage of local government counterpart funding is that it helps develop local ownership of the local project. There is interest in the city bureaucracy to follow up on the project as it has an investment in it. The weakness lies in the size of the counterpart funding. These funds are mostly for support services, primarily for PMO operations for consultations and information campaigns. Substantial financing for needed environmental infrastructures such as for wastewater treatment and solid waste or hazardous waste management would still have to be negotiated with private investors or another set of donors.

As there is no counterpart funding coming from many national governments, national level ownership or buy-in is that much weaker. National level governments have tended to give more attention to other much larger donor-assisted coastal management projects. On the other hand, the lesser requirement for substantial national level co-financing has allowed the local project sites to proceed with start-up action almost autonomously and without delay. National buy-in has to be developed in other ways than the requirement of substantial co-financing.

There are other coastal management projects funded by other donors in all the countries visited, e.g., ADB and World Bank in the Philippines, JICA in Malaysia, and Government in Vietnam. Some of these projects and donors have been given partnership status with PENSEA. It is important to establish relations with the various national, provincial, and municipal level governments and local communities. A variety of PENSEA concepts and collaboration with these other partners are in Annex 1.

Public involvement in the project

All of the CM project sites visited indicated efforts to promote opportunities for public involvement in the local and national government. Public involvement is vital for the success of the local and national government. Public involvement must be done with the input of the local government and the private sector. This must then be followed up by the national government. Public involvement is a key component of the Coastal Actions. Stakeholders were involved in the local level in mainstreaming the action in their locations in Bataan.

Public involvement is also necessary since much of coastal environmental problems continue and the social problems of local people are only seen at the sear
toilet in Danang or as a garbage dump in Manila Bay) and their economic activities (e.g. dynamic fishing in Balao).

5.18 In decentralized governance systems, public involvement is vital to the political sustainability of the site projects. The governor or mayor derives political power from strong public support and could therefore make difficult political decisions in favor of coastal environmental measures. For the governors of both Balao and Balao, the continued involvement of what they have started after their terms of office depends on the continued demand of environmental issues from their constituencies and the engagement of private sector enterprises in their localities.

5.19 Public involvement, however, still requires focused on coastal protection and has yet to expand to cover the whole landscape, particularly the inland waters and areas. This is the first task of the programme for the coming years, as noted in the GEF Operational Program documents. This has been noted that this would take a long-term effort, much beyond GEF's funding. The expansion of this project would then have to come in time when commitment and capacity building of various stakeholders, including the coastal areas can be directed towards the inland areas.

5.20 It has been observed that where coastal development projects have already been decided at the top level, public involvement in decision-making is not sought or given enough weight. Perhaps, the concern is that public participation at this point could lead to opposition and protests. However, the approach would then have to be proactive rather than reactive. Public participation has to be brought in much earlier and other developments are given time to unfold. The land and sea use pattern of the sites and intensive public participation in this area have to be speeded up to match the speed by which other developments are being planned.

5.21 Aside from consultations and beach clean ups, there are other ways by which public participation can be enhanced. The willingness to pay surveys can be implemented in such a way as to enhance public participation. The PPI therefore is not just for the government and the coastal sector to be involved in, but can also be used to pay the cost of installing public access and public participation is critical to ensure acceptability and public commitment on future decisions.

Effects of UNDP and IMO in support of the programme office and national institutions

5.22 IMO is the executing agency and is thus legally responsible for the management of the Programme. It is responsible, in terms of hiring staff as well as the execution of the programme's activities. The Marine Environment Division (MED) of the IMO's responsible for overseeing the RPO. IMO has established a PEMSEA Management Committee in London which is made up of representatives from various concerned administrative and technical divisions of the organization in London to provide management support to PEMSEA. All MOAs, MOUs and other partnership agreements with governments and other partners that PEMSEA developed with have to be cleared by the Legal Office of IMO. The Personnel Unit
of IMO handles the recruitment of international staff in consultation with the RPO, while the RPO is solely responsible for the recruitment of national staff.

5.22 At the start of the programme, the introduction of MOAs, MOUs, other partnership agreements and contracts took some time as they had to reach MO headquarters in London. Thus, the decentralization by IMO of some of its executive responsibilities to the RPO through a Memorandum of Agreement dated 08 July 1999 was a welcome move. PEMSEA was able to operate more effectively and efficiently, with minimum supervision and management support from IMO.

5.24 The IMO Secretary General visited the Regional Programme twice during Phase I. The Director of MEA also visited in this initial phase. No senior officials, however, were able to visit the office in Phase 2 of the Programme.

5.25 A much closer working relationship due partly to proximity exist between the Programme and UNDP. UNDP is not supposed to be involved in project execution as an implementing agency of the GEF. Substantial support, however, was given to the RPO through the direct involvement of the Principal Project Resident Representative Support has come in the way of (1) streamlining of administrative arrangements, (2) facilitating the use of the UNDP field offices in PEMSEA participating countries, and (3) providing valuable data on government contacts of the UNDP, particularly that of the UNDP Resident Representative.

5.26 UNDP Manila’s Resident Representative have also made personal efforts to find ways of fulfilling UNDP’s co-financing commitment to the programme, which is the most urgent yet been met. There would also be difficulties for UNDP country offices where PEMSEA sites are located to provide additional funds. UNDP country offices also have their own operational fund problems, and could only utilize the funds available from its programs for the project of the National Government. Sufficiently allocates the funds for the project when the Country Program Outline is developed.

5.27 IMO’s contribution to co-financing is realized through the implementation of IMO’s Technical Cooperation Division supported projects. IMO’s contribution has reached US$359,000. An additional US$380,000 is being planned for 2004. As the Regional Programme is also providing technical support to the implementation of IMO’s Technical Cooperation Projects in East Asia, IMO will further strengthen the RPO by providing technical staff to implement IMO technical activities.

5.28 IMO has no medical plan for locally recruited field staff. Unfortunately, the field staff cannot also avail of the UNDP medical insurance plan as such plan is exclusive to UNDP staff only. While the Regional Programme Office was able to secure its own medical insurance plan, such plan exposes the Regional Programme to a major financial burden if there is a major medical catastrophe.
Use of the Logical Framework Approach (LFA) and performance indicators as project management tools

5.29 The programme and its project sites have adhered to the logical framework approach and the performance indicators they have set for themselves. Records and presentations indicate where programme and the project sites are in relation to the targets and indicators they have set. This has the advantage of helping the programme and the project sites see where they are in advance and where they are lagging behind. But this is only as far as the workplan is concerned. There is a difference between outputs and outcomes or impacts and where indicators are more linked to outputs, then there could be situations where outputs have been met but impacts are not commensurate to the needs of the situation. Some NGOs for example were well satisfied with reaching stage 3 of the framework as a call for reconsidering the workplan. The need of the situation however, called for immediate removal of the coastal area in order to address the impacts of rapid developments like construction of a major coastal road or the beach sand dunes or reclamation which have been planned and are already under implementation.

Implementation of the project’s monitoring and evaluation plans

5.30 Monitoring and evaluation of progress in achieving logicframe indicators and workplan targets are done through reports and presentation of progress in various levels of project management. Meetings of experts, NGOs and the PCC provide the venue for monitoring and evaluating progress in programme and site activities.

5.31 There are also site managers assigned for each site. Site visits by those site managers, aside from site visits from senior staff and the Programme Director, are conducted for technical assistance as well as for monitoring and evaluation purposes. Mission reports are prepared after each visit, circulated and filed for reference. Case studies have also been written and published.

5.32 From the site visits, there is what can be called disciplined monitoring of how far they have progressed in terms of the ICM framework provided by PEMSEA. But there seems to be a lack of organized monitoring and evaluation of impacts, particularly the cumulative impacts of many activities coming ‘on the project’ as well as the rest or such impacts of the many other activities outside the project. Note that ICM has a complex set of activities and institutional arrangements. Monitoring and evaluation of their impacts must also be at a programmatic and strategic level.

5.33 The monitoring and evaluation of impacts must be well at the outset using appropriate mechanisms (i.e. case studies) that could surface out what could be incremental value added benefits arising out of site ICM activities. Note that much of what PEMSEA would be setting up are processes – products that are non-physical and non-infrastructure – and therefore difficult to identify much less measure unless there is a proactive effort and the proper instrument to do so in many cases. No grandiose monuments of success will be evident. The “balancing act” that will be implemented in most areas will have its “steps forward” i.e. removal of waste from coastal areas but also its “steps backward” i.e. damage
from massive reclamation from a previously approved development. The
damage would most likely be noticed more. Clean-ups are only appreciated by
those who have seen how polluted the area was before. The argument that
situations would have became worse had ICM activities not been there would not
hold unless proper documentation and credible evaluation of the complex
processes involved and their impacts are made.

4.3 The same difficulty exists with the monitoring and evaluation of awareness
campaigns. Awareness raising is incremental and there are issues concerning
the lack of follow-up of campaigns, the risk of not being able to reach those
stakeholders that really count and the problem of trying to reach too many people
with too few resources. The communications plan needs to give some
consideration as how the impact of various communication activities would be
monitored and evaluated. A clear understanding of the size and nature of the
target audience would help determine the most appropriate measures in this
respect.

4.3.6 Some efforts have been made to develop a way to monitor and evaluate the CM
programme (see Annex 4). The system uses five categories of indicators that
relate to (i) Problem Identification and Program Formulation, (ii) Program
Implementation, (iii) Program Sustainability, and (iv) Program Impact. While the
list of indicators under each of the categories need to be expanded to take in new
findings, the use of the system allows the program manager and staff to see
which sites are progressing fast and which ones are not (see Annex 5). However,
the current indicators give very little indication of the quality of progress and
some of the richness may be lost. Some form of narrative with key indicators
need to be captured the depth of progress at PENSEA.

5.6 The programme is developing an IIMS, an environmental database designed to
provide storage, retrieval and analytical capabilities to multi-sectoral user
groups. As such it can also be a tool for monitoring particularly the environmental
impacts of ICM activities. The development however, is at an early
stage. The stakeholders interviewed still find difficulty meeting the data
requirements of the system. They also do not yet see the potential of the
system's analytical capabilities in solving their immediate problems.

6.0 MAIN LESSONS LEARNED

Strengthening country ownership and awareness

6.1 Local ownership and awareness is strengthened when contributions derive from
local sources. Financial resources from the local budget, local agency staff
assignment and time provided for the project, and the participation of officials
from various agencies in coordinating and technical committees are considered
critical investments. The monetary co-financing from local sources in many sites are
at least half of the total costs. The non-monetary contributions are not intensively
monitored and valued but these are most likely significant given the many
meetings and consultations that a complex project such as PENSEA requires. At
least one of the stakeholders interviewed in comparing this project with others
which received much higher funding and foreign consultant support from donors,
Strengthening regional cooperation and inter-governmental cooperation

Regional cooperation and inter-governmental cooperation is strengthened through shared activities. The study tour strengthened regional cooperation by bringing different country participants together. It also helps create a common base of what ICMM could eventually accomplish with committed political leadership and strong inter-agency cooperation as exemplified by Xiamen. The Regional Task Force shows how South-South cooperation can assist countries in the region. The RMG further deepens this sharing with leaders of the site—exchanging lessons learned, thus benefiting each other and the programme.

Strengthening stakeholder participation

Stakeholder participation is vital in that a comprehensive approach such as ICMM which covers a wide spatial area, a multitude of unevenly competing concerns and an array of institutions at various levels requires a critical mass of people and institutions working together. This critical mass is necessary for the political support to ensure the initiation of site ICMM activities and their sustainability. This critical mass also refers to the large coastal populations whose present over-exploitation and pollution of the coastal areas have 'to be shifted to positive practices such as 'clean up' patrols against dynamite and cyanide fishing and 'willingness to pay' for solid and hazardous waste facilities and sewage management systems.

Application of adaptive management strategies

An ICMM program or project that deals with the management of complexity within a highly dynamic social, economic, and political environment must have adaptive management as its strategy. At the programme level, there is always the need to respond quickly to changing needs of countries. Decentralization of decisions at the programme level has been most effective. At site level, other developments are underway on the project area requiring redirection of efforts to meet what could be negative impacts of such developments. All these are only possible within an adaptive management framework.

Efforts to secure sustainability

The effort to secure sustainability is supported by strong government action. In the permanent management structure with operational funds already allocated to it as in the Xiamen Marine Management Office and also the Batangas PG-ENRO has a supportive legal system (e.g. Batangas and Port Klang having to come up with legislation to transfer environmental powers from the national to local government). Likewise, sound scientific basis of the organization of a Marine Expert Group as in Xiamen and the access to scientific expertise from universities in the other sites and enhanced capacity building i.e. through continuous training for staff, study tours for government officials, and internet information campaigns and public participation.
6.6 The need for innovative mechanisms for developing financial sustainability in rail systems provides an example of how adopting and enforcing a user fee system, such as a ticketing system, could be a viable solution. In Kuala Lumpur, a user fee system is planned, with one-fifth of the fees going to LUAS to provide financial sustainability while the other half is to be shared with agencies. However, the development of such mechanisms has not yet been well conceptualized. Their participation in PPP activities would stimulate and facilitate the development of financial resource mobilization mechanisms.

Role of project monitoring and evaluation in project implementation

5.7 ICM is the management of conflict towards the goal of sustainable development. As such, it is also the balancing of competing uses. Given these, the development of capacity and the generation of positive outcomes are in increments, with full attainment of goals being reached only after several ICM cycles. Unlike infrastructure projects, many of its outcomes and impacts are not easily evident i.e. change in government officials’ attitudes. The development and application of appropriate monitoring and evaluation systems, particularly for cumulative impacts, is therefore critical.

7.0 RECOMMENDATIONS

A. Overview

7.1 The investment over Phases 1 and 2 has yielded very significant outputs that have greatly improved revenue, and other support measures for the implementation of ICM by the participating nations. This has created an asset of great value in helping to meet sustainable development goals. Careful consideration needs to be given by the participating agencies to capitalize on this investment to maximize the potential benefits that could be gained from what has been achieved by the PEMSEA programme that can be extended and expanded to further support their respective development objectives.

7.2 This raises the issue of whether the momentum that has been achieved can be sustained if no further international support is given. Our assessment is that there is a danger that the momentum that has been achieved in developing local, national, and regional cooperation could evaporate unless the PEMSEA ICM process and activities are not nurtured for at least five further years. This would jeopardize the development and successful implementation of the emerging SIDS-SEA, which would undermine the advances that have been made by the GEF UNDP, IDRC in other organisations has achieved. The Evaluation Team sees great value in the GG UNDP, IDRC and other Partners in maintaining their support for and active participation in the future development of PEMSEA.

7.3 The evaluation has identified an urgent need for the GEF UNDP, IDRC and other proactive partners to consider adopting a common vision to adopt the PEMSEA concept of using ICM’s foster cooperation among nations in Asia in
developing sustainable environmental, economic and social benefits from the use of their coastal resource heritage. The SDS-SEA offers a logical progression of the PEMSEA programme and opportunities for selective investment by the participating UN agencies that would add value to what has been achieved and maintain continuity in the development of regional capacities to use the ICM process and supporting measures to meet their respective sustainable development objectives across sectors of interest whether on land or in the marine environment. To this end we would like to propose the following recommendations.

8 Specific Recommendations

All PEMSEA partners

7.4 Make full use of the momentum that has been achieved through the PEMSEA seek continuity in funding and other forms of support for PEMSEA beyond 2005 to maximize the potential benefits to the East Asian Region and beyond.

7.5 The Evaluation Team suggests that the PEMSEA Programme be transformed into a new regional arrangement that will capitalize on the PEMSEA intellectual capital to improve the integration of environmental management and economic and social development through a wider integration of the application of available financial, technical and information resources to the further development of local, national and regional ICM initiatives.

7.6 Implement the Sustainable Development Strategy for the Seas of East Asia as a collective international effort in the regional implementation of the commitments of Agenda 21, WSSD, MDG, and other international instruments related to the sustainable development of coasts and oceans.

Donor Support Recommendations to GEF, UNDP, IMO and other donor partners

7.7 The GEF, UNDP, IMO international donors and other donor partners should capitalize on the achievements of PEMSEA in helping each other meet their respective sustainable development objectives by maintaining core roles in the further development and implementation of the PEMSEA programme and SDS-SEA

7.8 Seek a wider partnership for developing the future of the PEMSEA programme. It is recommended that a new diversified funding approach be adopted that will

a. Expand beyond dependence on UN based funding, which is most likely to become more limited due to a number of circumstances beyond the UN’s control.

b. Provide secure core funding that will allow PEMSEA to evolve into a more robust regional mechanism to support the further development and expansion of integrated coastal management initiatives at a local, national and regional level.
c. Increase the number and range of the PEMSEA core staff available to provide technical assistance that is appropriate to the needs of different sites.

d. Promote a wider partnership among international donors seeking to strengthen ICM within the East Asian region.

7.9 Make more full use of technical and funding support available through international financing mechanisms, including UN organizations, international banks, bilateral and multi-lateral donor assistance programs, charitable foundations, universities, and technical and research-based institutes.

7.10 Foster cooperation and partnerships with and among nations in Asia in their sustainable development efforts, particularly in coastal and ocean governance, as this would further support the SDGs in the region and arrangements for its implementation.

7.11 Support an international working party made up of representatives from East Asian nations with a remit to examine options for new institutional and funding arrangements for taking PEMSEA forward.

Governments

7.12 Give careful consideration to maximizing the potential benefits that could be gained from what has been achieved by the PEMSEA programme. How this can be extended and expanded to further support national and international development objectives.

7.13 National Governments set up review panels to determine what they need most in order to make ICM as well as ocean management more effective.

7.14 Initiate a country-driven donors meeting in 2017 to demonstrate support for the future development of PEMSEA and to communicate priorities for funding and technical assistance.

7.15 A major donors meeting should be planned well in advance at the end of this phase of the programme. UNDP, IMO, and the GEF should be leading players in preparing, supporting and taking the lead in this. It would do well, however, following the policies of the GEF, UNDP and many donors that the whole process be country driven, meaning that the call for such a donors meeting be made by the countries of the region and the lead institutions managing such a meeting be decided on by the same countries.

PEMSEA management team

7.16 The concept of Adaptive Management should be applied more widely in the development of individual projects to develop a more robust definition of the problems and issues at project sites, and the development of alternatives or management solutions. The concept could be applied more widely in the development of individual projects to develop a more robust definition of the
problems and issues at project sites, and the development of alternatives for management solutions.

7.15 By adopting a broader view of Adaptive Management, it may be possible to promote greater interaction between the PMO in Bali and the Governor's Office and key staff who appear to be resisting major pressure for port development and expansion of the airport because they sense these developments may cause extensive and irreparable damage to the environment and degrade opportunities to expand tourism. However, they lack comprehensive advice to elaborate their concerns and to develop more integrated management strategies. There is a good opportunity for PEMSEA to have a greater positive impact in Bali. However, this would require stronger technical support from the PEMSEA office to strengthen the existing port project and build stronger communications with the Governor and his staff and to set out the implications of the cumulative effect of the sectoral plans and investment proposals. This broader application of adaptive management could pay positive dividends in terms of building greater awareness of risks to the environment and sustainable economic development promoting improved environmental impact assessment of the proposed development projects, and strengthening the role of ICM.

7.17 While developments are occurring fast, the sites have to find ways of speeding up their zoning activities. In the interim, other mechanisms of ensuring the balance between development and environment should be fully utilized. The EIA system is one such mechanism. It would have to be strengthened, however, through policies of non-exemption of projects and the strong participation of the site PMOs and the expert groups in the review of EIA and in the monitoring of mitigation measures as is being negotiated by the Batangas and Port Klang PMOs. The Integrated EIA tool developed by PEMSEA should be further developed using experience so far gained in its implementation in Xiamen and it should be made part of the training offered by the programme either in-country or in ITC-CSD in Xiamen.

7.18 With two and a half years remaining under the present phase, national buy-in has to be speeded up. While the best way would have been to demonstrate as well as parallel sites to show the significant benefits of ICM SDS-SEA and other PEMSEA initiatives, this would take time in most of the countries involved. In the more advanced sites, however, could be ready to access the benefits that come from implementing CM. These could be used as examples and arguments for appropriate adoption. In some countries the entry point for speeding up national buy-in through the countries' on-going development of their national coastal policy (Malaysia, Philippines). In others, it could be through plans for replication (China, Indonesia). It has also been strongly suggested by key stakeholders that the approaches, policies and lessons learned in the implementation of sites and in the programme as a whole be mainstreamed into major strategic development plans. Another form of buy-in is to support the establishment of PPP in environmental investments. The planned Senior Officials Meeting that is preparatory to the Ministerial Meeting, as well as the Ministerial Meeting itself would be critical activities as far as developing national support and commitment to ICM is concerned.
PEMSEA should further develop their system of monitoring and evaluation that takes into account not just the accomplishment of outputs in the programme logframe but also the impacts of various activities as well as their cumulative impact as a whole. Due attention should be given to these aspects, such as social and institutional changes, that are not so easily evident. Process documentation leading to case studies would be one such approach. The Integrated EA developed by PEMSEA could also be utilized to rank all impacts. It is important that as much as possible, independent expert groups be utilized with PEMSEA staff to conduct these studies-cum-M & E activities. This will not only enhance the credibility of the results but at the same time be a way of expanding the community of ICM champions. The results of such an M & E system should then help provide strategic guidance to the programme. A similar M & E system should be developed for site level activities.

ISO 14001 Certification One means of extending the value of the PEMSEA programme would be to develop an accreditation system and standards for ICM programs, projects and capacity building initiatives, Port Safety Audits and other activities similar to the ones used for Quality Assurance and Quality Centre (ISO 9000 ISO 14001). The iterative ICM process has now become well established in many parts of the world and would serve as a common basis for establishing an accreditation system. The PEMSEA programme is in the process of achieving significant advances in the development of ICM practices based on this process. In fact, many of these advances could set standards for Integrated Coastal Management that could usefully be adopted in other regions to improve both the outputs of other coastal management projects and help ensure the cost-effective use of public and private funds. The GEF and UNDP might well consider this as a task in an advanced phase of the PEMSEA programme. The iterative ICM process has now become well established and would serve as the basis for establishing an accreditation system. Specific tasks to elaborate the system could include:

1. Developing a system for comparing experience from different ICM initiatives from around the world and deriving lessons learned for good practice. This has been done as part of Phase I and would need to be updated through linking with the Cross Portfolio Learning Program that is being developed by the University of Rhode Island and the University of Hawai’i. The UNDP initiative to examine means of evaluating the success of ICM programs and projects, and other international initiatives.
2. Promoting the adoption of internationally agreed standards of practice for the six main elements of the ICM process, such as building public awareness, capacity building, knowledge management, etc.
3. Developing an International Code of Practice for the design and implementation of ICM initiatives, including policy plans and management arrangements.
4. Developing the procedures for gaining accreditation for an ICM initiative in based on current ISO 9000 and 14001 procedures and standards of practice.

The integration of river basin management, coastal land use planning and management, and sea use zoning represents a major advance in ICM in Asia. Valuable lessons are being learned from this project on how to promote greater...
Integration of these concepts and PEMSEA is encouraged to use these lessons to promote wider application of the integration of river basin management and coastal management, including marine systems where feasible.

In order to develop and sustain the high levels of intellectual capital generated on the PEMSEA programme, there are six areas that need critical consideration (see Appendix for further elaboration):

a. Develop a self-sustained funding mechanism to broaden and enhance the knowledge management dimensions of ICM implementation in the East Asian Seas region.

b. Articulate a clear ontology of ICM knowledge to promote a shared understanding of the complexity of coastal systems among diverse stakeholders.

c. Review the current public awareness strategy and action plan to increase knowledge sharing of PEMSEA’s activities and to achieve greater impact.

d. Review the current KM tools and systems and explore how technology could be used to enhance and embed ICM knowledge more effectively.

e. Build on current professional networks to further develop communities of practice to enhance the creative and innovative capabilities at PEMSEA.

f. Establish a Regional ICM Knowledge Centre focused on implementation issues and responsible for developing an ICM knowledge repository of best practices in the region as well as maintaining a specialised extract to promote knowledge sharing practices especially the facilitation of communities of practice in the East Asia Seas region.
Annex 1

Progress Towards Meeting Objectives of GEF Operational Programs 8, 9 & 10
Progress Towards Meeting Objectives of
GEF Operational Programs 8, 9, and 10

PEMSEA has ten (10) components: (1) Integrated Coastal Management; (2) Risk Assessment and Risk Management in Subregional Sea Areas and Pollution Hotspots; (3) Capacity Building; (4) Regional Networks and Regional Task Force; (5) Environmental Investments; (6) Scientific Inputs; (7) Integrated Information Management System; (8) Civil Society; (9) Coastal/Marine Policy, and (10) Regional Mechanism. These components are managed and implemented in a programmatic manner. As such the synergy created contributes to meeting expected outputs of GEF’s Operational Programs Number 8 (Waterbody-Based Operational Program), Number 9 (Integrated Land and Water Multifocal Area Operational Program), and Number 10 (Contaminant-Based Operational Program). GEF’s Operational Programs 8, 9, and 10 are themselves interrelated. The implementation of one supports the others. PEMSEA’s accomplishment in any one of these operational programs therefore has a direct positive impact on the others.

Progress toward meeting GEF Operational Program Number 8

PEMSEA’s Component 2: (Risk Assessment and Risk Management in Subregional Sea Areas and Pollution Hotspots) directly relates to meeting GEF’s Operational Program Number 8 (Waterbody-Based Operational Program). Three hotspots have been identified for interventions by the programme: namely, the Bohai Sea, Gulf of Thailand and Manila Bay.

PEMSEA’s own evaluation of progress of work in these hotspots show that 70 percent accomplishment for Manila Bay, 50% for Bohai Sea and 25% for Gulf of Thailand. The lower accomplishment level for the Gulf of Thailand is due to its large area coverage and the many other coastal and marine projects that have to be coordinated with. Nonetheless, PEMSEA has already organized a regional workshop involving the littoral States and international agencies working in the Gulf of Thailand resulting in an action plan for the integration of PEMSEA activities with ongoing national/international programs. As such the programme meets a stimulation of GEF’s Operational Program Number 8 for interagency coordination.

GEF’s Operational Program Number 8 is also expected to help develop monitoring and evaluation indicators related to international waters. At present there are difficulties for developing countries to gather and put oceanographic data into the global data base. PEMSEA is helping break this barrier by helping in the environmental profiling and risk assessment of local ICM sites and hotspots. Networking and data sharing between sites and hotspots (i.e. Bohai Sea Web Site) then makes the data gathered more available. This also puts into practice the call of GEF OP 8 and also of GEF OP 10 for "linkage through computer-based networks.”

GEF Operational Program Number 8 particularly mentions in its expected outcomes that collaborative processes are fostered through a logical progression of GEF-funded
activities -- from project development to analyses of transboundary priority environmental concerns to formulation of an international water Strategic Action Program to eventual regional capacity building. Aside from such an approach also being taken as PEMSEA’s approach, the programme’s support in developing an SDS-SEA and getting it adopted directly contributes to the formulation of an international water Strategic Action Program and regional capacity building. The SDS-SEA has already adopted in principle by the 6th PSC Meeting. The planned Ministerial Meeting at the end of 2004 to consider its finalization and formal adoption would be critical.

Regional collaboration and capacity building is also supported by the formation of the Regional Network of Local Governments (RNLG). A Network of Coastal Ocean Governance was also initiated.

Progress toward meeting GEF Operational Program Number 9

Integrated Coastal Management is a dynamic process of developing the expertise, institutional capacity and stakeholder support for the creation of pragmatic solutions to problems and issues that threaten the sustainability of human use of coastal ecosystems and their natural resources. Emphasis is placed on the concept of developing a robust ICM process rather than an end product such as a paper plan. This emphasis allows for progressive development of the human resources capacity, sophistication of legal and institutional arrangements, range of issues and problems dealt with, and the geographic scale of the management effort. The iterative nature of the ICM process supports this notion that learning by doing is more important than attempting to solve all the complex problems associated with human development of coastal systems using a land-use planning approach.

It is important for the GEF, UNDP, IMO, and other participating organizations to recognize that the PEMSEA programme has made major advances in developing the utility of the ICM process by creating a number of sound management procedures, practices, and pragmatic tools that support the practical application of ICM in both developing and more developed nations. Momentum has been established that has taken the Program well beyond other similar initiatives that have made the mistake of focusing on science and information creation rather than on improved application of available information and experience development of a wide body of public support, and building the capacity to solve common issues and problems that face nations in Asia and other parts of the world.

The PEMSEA programme has achieved major progress in meeting GEF Objective 9 by focusing on building the capacity to formulate and implement integrated coastal management initiatives that provide viable solutions to complex coastal development issues. By focusing on capacity building and pragmatic approaches to the development of the institutional mechanisms for implementation of ICM, PEMSEA has achieved a higher level of ICM in practice than can be seen in other international efforts. Emphasis has also been placed on developing a robust ICM process that overcomes limitations in institutional capacities and scientific information by using an adaptive management approach where iterative cycles of ICM promote increased experience and confidence and the practice of ICM becomes a mutually reinforcing process.
A major strength of the PEMSEA programme is the horizontal and vertical integration of policies, investment and day-to-day management among sectoral agencies. One example is Xiamen, an emerging coastal city in China where the integration of the economic development and investment in environmental management has provided the basis for sustainable economic and social development of the terrestrial and marine resource base. Valuable lessons have been learned through adopting an adaptive management approach that have been taken on board by the municipal, provincial and national administrations which are being used to improve the environmental, economic and social performance of successive ICM efforts. The experience gained from the successes and mistakes are providing valuable illustrations of how to develop ICM programs and projects in other areas of China and in other countries in Asia and in other regions.

This emphasis upon developing comprehensive integration of different stakeholders' interests across economic sectors in the formulation of priorities for action and adaptive management in the process of implementation of planned actions makes the PEMSEA programme different from other international efforts in developing ICM. For example, the UNFAO efforts in CM have focused mainly on fisheries, efforts by UNEP have focused primarily on the landward part of the coastal zone and most donors have based their ICM initiatives on improving the information base through investment in various science based studies in the belief that better information will lead to the improved formulation of coastal management strategies, plans and management arrangements. By placing emphasis on developing the human resources capacity and institutional capacity to develop innovative solutions to complex land and ocean issues in a variety of different political, social and economic situations throughout East Asia, the PEMSEA programme has created conditions conducive to the demonstration of how ICM can be used to develop robust solutions that can be shared and eventually form the basis for the development of concerted provincial, national and wider regional solutions to common issues and problems that undermine sustainable development.

Progress toward meeting GEF Operational Program Number 10

PEMSEA had a ready supported a substantial number of training programs related to controlling contaminants released from ships and resulting from port activities. These included Oil Pollution Preparedness Response and Cooperation (OPRC); level 2 trainings in which all countries participating in PEMSEA have sent trainees to. Other trainings are on chemical spill prevention and port audit from which participants from Malaysia and the Philippines were able to attend. Except for the Democratic People's Republic of Korea and Indonesia, all PEMSEA participating countries have been able to send participants to the Regional Consultative Workshop on Strengthening Recovery of Ship Pollution.

A recent output related to this is the development, field testing and publication of a Port Safety Audit Manual for use by port authorities and port operators in improved environmental management of port operations. Study tours to Xiamen also exemplify concretely how good port management can lead to environmental sustainability. The rare white dolphin was spotted several times in the bay close by the port during the March 2003 bayside tour of the Xiamen's international port joined by the evaluation team.
The development of an Integrated Information Management System (Component 7) directly contributes to meeting the expected output of GEF OP 10 for the "development of computer simulation models, use of remote sensing technology and information systems". At present, an IIMS software has been developed with a guide for establishment of an IIMS and a user manual. Project personnel from all sites have been trained with follow-on training in IIMS applications scheduled for 2003. This follow-on training is important in that some of the IIMS focal persons in the sites have to be given further orientation on the utility of the data and analysis that could come from the IIMS.

Although still early in their implementation, several sites have prepared for the integration of strategies to address land-based activities. The LUAS, the local focal agency implementing the ICM demonstration site in Klang, Malaysia, has taken not just the coastal area but the river basins feeding into the coast. The Manila Bay hotspot site is another example in the way it has delineated and included watershed areas under its jurisdiction. The success in these efforts contribute to the success of objectives of GEF's OP 9 and 10.

Progress towards common objectives of GEF Operational Programs 8, 9, and 10

In all of GEF OP 8, 9, and 10 emphasis is made that projects under these programs require long-term commitment on the part of governments. PEMSEA's approach in requiring co-financing from local governments and policy support from national governments goes a long way in helping create this commitment. This is further strengthened with local ICM sites developing their coastal strategies. Certain sites and hotspots have already succeeded in getting commitments from government and other stakeholders through signed "declarations". The "Bohai Declaration" committed the local authorities in the provinces, coastal cities, municipalities, and districts surrounding the Bohai Sea to adopt the ecosystem management approach, functional zoning schemes, reduction of sewage and discharge of industrial wastes, and promotion of environmental awareness. The "Manila Bay Declaration" brought in the commitment of representatives from the national government, provinces, cities, and municipalities in the Bay and adjacent watersheds. Business and industry, civil society, UN agencies, and the donor community as well joined in. The declaration and the Manila Bay Coastal Strategy was then presented to the Philippine President. These activities of the PEMSEA will serve as the foundation for mainstreaming objectives of GEF Operational Programs 8, 9, and 10 into national strategic development plans, a task that the programme should pursue in its remaining years.

The promotion of private sector participation is also emphasized by GEF Operational Programs 8, 9, and 10. Towards this, PEMSEA has already identified more than US$600 million of environmental investment opportunities at Bohai Sea, Manila Bay, Darang, Klang, Bali, Xiamen and Batasan Area from PEMSEA's direct implementation of its Component 5 (Environmental Investments) particularly its Public-Private Partnership (PPP) activities. Private sector contribution is promoted by the fact that with ICM programs resulting in comprehensive coastal strategies and strengthened regulatory policies, the risks for environmental investments are reduced.

Private sector contribution is also promoted with PEMSEA's support in the conduct and analysis of "willingness to pay" surveys. Sites which are now seriously looking at PPP projects have also started the conceptualization of possible economic or market-based
instruments for sustainable financing. These activities all contribute to meeting the call for innovative market approaches in Operational Program 8, ensuring financial sustainability in Operational Program 9, and the high priority given for demonstrations involving the use of economic instruments in Operational Program 10. Broadening the range of economic incentives or market-based instruments available for sustainable financing from what has already been initiated would further strengthen the programme’s contribution to the objectives of Operational Programs 8, 9, and 10.

The challenges now faced by the programme are putting PPP projects into actual implementation. This is not as easy as it seems. Many countries in the region are still recovering from the Asian financial crisis. This has made it difficult for low interest loans to influence governments to take up government-led and government guaranteed investments, i.e., be given higher attention.

GEF Operational Programs 8, 9, and 10 all note the importance of capacity building. In this regard, PEMSEA has been most active. Trainings have been held at various levels. From 1999 – 2002, there has been a Regional Training Course and Workshops with 142 participants from national institutions, academic and private sector. A Leadership Seminar in Ocean and Coastal Governance was held in 2002 with 82 senior officials in attendance. At the site level, 23 training courses and workshops were held with 387 participants from local governments, academic and the private sector. Four ICM study tours have been very effective in terms of sharing of experience. Workshops have been implemented. A total of 116 senior officials have benefited from these study tours. The ROSO of the RNLG, the 11th Forum in Seoul, Republic of Korea and the 21st in Xiamen, China, both with 85 participants, not only from local governments but other sectors as well, could also be considered as capacity building. In these forums, rich exchange of lessons learned from projects undertaken for explicit objective of GEF OP 10 had occurred.

It has been noted that more trainings had to be conducted by the programme than the number targeted in its logframe. It may do well for the programme to do so because creating a "critical mass" of technically prepared advocates for ICM and for coastal and ocean governance will mean more than just those in the selected demonstration parallel and hotspot sites. The establishment of the Regional ICM Training Center in Xiamen does a lot to answer this need. Strengthening the Regional ICM Training Center by incorporating it in the system the lessons learned and experiences of the other ICM sites in the region, as per the thinking of the Vice-Mayor of Xiamen himself, is an immediate priority.

The importance of stakeholder participation has also been highlighted in GEF OP 8, 9, and 10. PEMSEA’s Component B Civil Society has been designed to meet this objective. While the intensity of civil society participation is uneven, there is effort from participating countries to bring in stakeholders participation as fully as it could be organized. Some of the site managers noted that in the past, they were not keen on stakeholder participation. The emphasis that PEMSEA’s ICM framework puts to this, however, served to guide them to put effort into it. The participation of NGOs has had value added to the total effort. In Batu, for example, NGOs are the ones helping the local government agency on participatory mapping and on alternative livelihood (i.e., seaweed farming) for fisherfolk affected by the downturn in tourism.
The call for capacity building and the adoption of best practices implies that scientific expert support is created. Component 6 (Scientific Inputs) of the programme answers this. At the site level, links with experts and academic institutions have been made. Many sites, however, would still have to organize their expert group to the level of Xiamen which has a Marine Expert Group broadened to include those in the social and economic sciences. At the regional level, the programme has organized a Multidisciplinary Expert Group (MEG). The MEG has the potential to produce updated regional syntheses of available information on science and management focusing on regional critical issues such as transboundary impact assessment. A self-sustained MEG would also help facilitate the implementation of the SOS-SEA.
Annex 2

IMO Supported Trainings/Workshops
<table>
<thead>
<tr>
<th>Title of Training/Workshop</th>
<th>Date</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPRC &quot;Tortilla Trainer&quot;</td>
<td>25-29 Oct 1999</td>
<td>Singapore</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Chemical Spill Prevention and Response Audit Training Workshop</td>
<td>11-15 January 2000</td>
<td>Manila</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Chemical Spill Prevention and Response Audit Training Workshop</td>
<td>24-29 January 2000</td>
<td>KL, Malaysia</td>
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<tr>
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<tr>
<td>Chemical Spill Prevention and Response Audit Training Workshop</td>
<td>26-29 May 2000</td>
<td>Manila</td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Chemical Spill Prevention and Response Audit Training Workshop</td>
<td>3-7 July 2000</td>
<td>KL, Malaysia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPRC Level II 10/20-22 October 2000</td>
<td>KL, Malaysia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Consultative Workshop on Strengthening Recovery of Anti Pollution Clean-up Costs and Damage Claims 5-6 September 2001</td>
<td>Singapore</td>
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</tr>
</tbody>
</table>

---

**List of Training/Workshops Supported by IMO**

**October 1999 to February 2000 (by country)**
Annex 3

PEMSEA Logframe Matrix:
Key Performance Indicators
### Narrative Summary

**Overall Development Objective**

1. The project aims to support the local development of a local management system in Tawi-Tawi.
2. The project will focus on environmental planning and management to address local needs.
3. The project will utilize local resources and expertise to develop sustainable development strategies.

**Project Development Objectives**

- Develop a comprehensive environmental planning and management framework at the project site.
- Strengthen environmental management plans and corresponding monitoring programs to address local needs and expectations.
- Develop a local management system, including local planning and monitoring.
- Enhance local resources and expertise to support the project objectives.

### Key Performance Indicators

**Monitoring and Evaluation**

- Early warnings
- Resource availability
- Project sustainability
- Project impact assessment

**Critical Assumptions and Risks**

- Inadequate data and resources
- Lack of local resources and expertise
- Unforeseen changes in local conditions

- Risk management plan developed for unforeseen situations.
- A comprehensive risk management framework is in place.
- Regular monitoring and evaluation of project progress.
- Adequate resources and support available for project implementation.

### Logframe Matrix

<table>
<thead>
<tr>
<th>Project Development Objectives</th>
<th>Key Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>draft environmental planning and management framework at the project site</td>
<td>potential risks to project</td>
</tr>
<tr>
<td>Strengthen environmental management plans and corresponding monitoring programs to address local needs and expectations</td>
<td>monitoring and evaluation of project progress</td>
</tr>
<tr>
<td>Develop a local management system, including local planning and monitoring</td>
<td>risk management plan developed for unforeseen situations</td>
</tr>
<tr>
<td>Enhance local resources and expertise to support the project objectives</td>
<td>comprehensive risk management framework is in place</td>
</tr>
</tbody>
</table>

### Project Milestones

1. Development of environmental planning and management framework.
2. Strengthening of environmental management plans and corresponding monitoring programs.
3. Development of a local management system, including local planning and monitoring.
4. Enhancement of local resources and expertise to support project objectives.
<table>
<thead>
<tr>
<th>Key Performance Indicators</th>
<th>Monitoring and Supervision</th>
<th>Critical Assumptions and Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Improved water supply</td>
<td></td>
<td>- Regular review of the project performance and impact</td>
</tr>
<tr>
<td>- Improved sanitation</td>
<td></td>
<td>- Staff training and capacity building measures have been</td>
</tr>
<tr>
<td>- Increased awareness</td>
<td></td>
<td>implemented under the UN pilot phase.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No risk identified.</td>
</tr>
</tbody>
</table>

**Project Development Objectives**

- Develop and test relevant tools and a Regional Task Force to provide support and advice, but not financing, for national and urban communities.

**Monitoring and Supervision**

- Regular review of project performance and impact.

**Critical Assumptions and Risks**

- Staff training and capacity building measures have been implemented under the UN pilot phase.
- No risk identified.
### LOGFRAME MATRIX: KEY PERFORMANCE INDICATORS

<table>
<thead>
<tr>
<th>Narrative Summary</th>
<th>Key Performance Indicators</th>
<th>Monitoring and Supervision</th>
<th>Critical Assumptions and Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Development Objectives</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>To facilitate the formation of a new political order in the region</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Cross-sectoral acceptance of relevant policies and frameworks established</td>
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<tr>
<td></td>
<td>National policy and practice developed to complement and build on existing frameworks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional policy framework and implementation strategy developed</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Workshops organized to build consensus among countries on a regional policy framework</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consensus achieved among participating countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To support the development of a sustainable energy framework which supports the overall achievement of sustainable outcomes in implementation of international conventions related to the protection and management of the coastal and marine environment of the East African States</td>
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<td></td>
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<tr>
<td></td>
<td>Review and analysis completed on national/regional and international policies and their integration and effectiveness in implementing international conventions</td>
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<tr>
<td></td>
<td>Regional working group on international waters project established</td>
<td></td>
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<tr>
<td></td>
<td>Regional framework and sustainable financing mechanisms drafted in consultation with participating countries</td>
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<tr>
<td></td>
<td>Policy consensus reached and a strategy and action plan for a regional mechanism endorsed</td>
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<tr>
<td></td>
<td>lined up</td>
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<td></td>
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<td></td>
<td>Critical assumptions and risks identified</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate commitment by countries to implement regional agreements and strategies</td>
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<tr>
<td></td>
<td>Country makes no contribution to regional benefits and in assess effectiveness through cooperation in implementing international conventions</td>
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<tr>
<td></td>
<td>Some existing regional bodies need a plan for integrated management and the perverse incentive to work against</td>
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<tr>
<td></td>
<td>There is a risk that some governments may take longer to accept regional mechanisms than others</td>
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<tr>
<td>Summary</td>
<td>Key Performance Indicators</td>
<td>Monitoring and Supervision</td>
<td>Critical Assumptions and Risks</td>
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<tr>
<td>---------</td>
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</tr>
<tr>
<td>* Set up a series of feasibility investments.</td>
<td>* Project completion impacts social, economic, and environmental sustainability.</td>
<td>* Project completion impacts social, economic, and environmental sustainability.</td>
<td>* Project completion impacts social, economic, and environmental sustainability.</td>
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<tr>
<td>* Case studies on governance.</td>
<td>* Project completion impacts social, economic, and environmental sustainability.</td>
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<td>* Project completion impacts social, economic, and environmental sustainability.</td>
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## Program Matrix: Key Performance Indicators

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<th>Summary Project Outputs</th>
<th>Monitoring and Supervision</th>
<th>Critical Assumptions and Risks</th>
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</tbody>
</table>

### Key Performance Indicators

- Project success and sustainability
- Program and project outcomes
- Financial performance
- Staff performance
- Organizational development

### Monitoring and Supervision

- Project and program outputs
- Program and project outcomes
- Financial performance
- Staff performance
- Organizational development

### Critical Assumptions and Risks

- Assumptions
- Financial risks
- Operational risks
Annex 4

Internal Evaluation of ICM Sites Performance
ICM Performance

Project Document Requirements: Overall 61% (1999-2002)
Site Performance (PD) & Budget Expenditure (1999-2002)

Annex 4 Graphics – 2
All text and lines solid black

<table>
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<tr>
<th>Location</th>
<th>Performance (%)</th>
<th>Budget Expenditure (%)</th>
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<tr>
<td>Sihanoukville</td>
<td>34</td>
<td>64</td>
</tr>
<tr>
<td>Nampo</td>
<td>29</td>
<td>49</td>
</tr>
<tr>
<td>Klang</td>
<td>28</td>
<td>60</td>
</tr>
<tr>
<td>Danang</td>
<td>45</td>
<td>69</td>
</tr>
<tr>
<td>Chonburi</td>
<td>30</td>
<td>55</td>
</tr>
<tr>
<td>Bali</td>
<td>48</td>
<td>69</td>
</tr>
<tr>
<td>Overall</td>
<td>36</td>
<td>61</td>
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Problem Identification and Program Formulation
Program’s Impacts

- Shihwa
- Bataan
- Xiamen
- Batangas
- SHV
- Nampo
- Klang
- Danang
- Chonburi
- Bali
Annex 5

Knowledge Management Strategies and Applications
KNOWLEDGE MANAGEMENT STRATEGIES & APPLICATIONS

"Partnerships in Environmental Management for the Seas of East Asia" (PEMSEA)

Knowledge Management Evaluation – March 2003
Executive Summary

The most important contribution of the PEMSEA programme is the unique knowledge it has developed on ICM implementation at local, national and regional levels. This includes technical knowledge on understanding complex ecosystems, political knowledge on securing commitment from regional leaders, social knowledge on engaging local communities through stakeholder consultations, cultural knowledge on adapting the ICM framework to different contexts, and religious knowledge on mobilising religious leaders and financial knowledge on securing commitment for PPP. In this process, numerous lessons have been learnt in each of these areas and PEMSEA has played a vital role in sharing this distinctive knowledge.

Even though knowledge management is not strictly part of PEMSEA's TOR, many of its practices have followed KM principles and approaches. For instance, PEMSEA has engaged in 'single-loop learning' through consolidating its learning from Phase 1 and developing routines to replicate their experience at new demonstration sites in the region. PEMSEA has also developed creative and innovative insights in the form of 'double-loop learning' through pursuing parallel sites, hosting PPP, NNLG, and ministerial conferences. Each has deepened PEMSEA's knowledge of ICM implementation.

There is a danger that the significant intellectual capital arising from the PEMSEA programme could be lost unless it is cultivated. This is not simply the explicit knowledge but the tacit knowledge, social relationships and commitment developed at different levels which would be difficult to replicate in the future. There are a number of KM interventions that PEMSEA could pursue using its limited resources such as making the IIMS more user-friendly and developing its communities of practice. However, such interventions are likely to be incremental and leave the real value of KM practices unrealised. The principal challenge for PEMSEA is to secure additional funding for strengthening KM strategies for sustainable ICM. This could come from co-financing arrangements from GEF or an independent foundation. The opportunity for any donor agency is ensuring that its valuable knowledge is cultivated, embedded in local communities, codified and shared rather than dissipated where the same mistakes would be perpetuated across the region. PEMSEA is an excellent example of South-South cooperation that is leading international knowledge and thinking on the implementation of ICM. However, it is not currently being communicated or shared effectively.

There appears to be little knowledge sharing between different donor projects in the same country such as USAID and DANIDA so that best practices are rarely shared. This needs to be driven by national governments. PEMSEA could play a role in helping national governments integrate the lessons learnt through a Regional Learning Centre for knowledge generation, sharing, and dissemination. Five recommendations are presented: (a) developing a funding mechanism for enhancing KM strategies and practices; (b) articulating a clear ontology of ICM knowledge and systems dynamics at local sites; (c) enhancing the communication strategy; (d) developing the KM systems base; and (e) building communities of practice.
Table of Contents

Executive Summary

Table of Contents

List of Figures

1.0 Introduction

2.0 Knowledge Management Strategy

3.0 Organisational & Network Learning

4.0 Knowledge Sharing Practices

5.0 Knowledge Management Tools & Systems

6.0 Communities of Practice

7.0 Intellectual Capital

8.0 Recommendations
# List of Figures & Tables

<table>
<thead>
<tr>
<th>Table/Figure</th>
<th>Description</th>
<th>Page</th>
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<tbody>
<tr>
<td>Figure 1</td>
<td>PEMSEA's Knowledge Management Strategy</td>
<td>3</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Organisational Networks at PEMSEA</td>
<td>5</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Organisational learning at demonstration and parallel sites</td>
<td>6</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Single and double-loop learning on the PEMSEA Programme</td>
<td>9</td>
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<tr>
<td>Figure 5</td>
<td>Example of a technically based ICM knowledge taxonomy</td>
<td>14</td>
</tr>
<tr>
<td>Table 1</td>
<td>Keyword Ranking for PEMSEA &amp; LEARN on internet search engine</td>
<td>16</td>
</tr>
</tbody>
</table>
1.0 Introduction

1.1 A common criticism of many integrated coastal management (ICM) projects today is that they tend to be donor-driven initiatives on the background of the need for effective and efficient coastal management, each has merits in its own right, but it is common that many global coastal management related projects have poor coordination.

1.2 In contrast, a major strength of the PEMSEA approach is its ability to move beyond the design phase and focus on the difficult and real-life issues of implementing ICM. This requires developing partnerships between public and private sector stakeholders, generating and sustaining commitment and responding to everyday opportunities and threats that may aid or hinder the project. Nothing is ever certain in this environment.

1.3 If PEMSEA was a single issue project, the traditional modes of knowledge creation and sharing would be based on scientific principles with dissemination directed towards professional and local stakeholder audiences. However, PEMSEA is engaged in the challenging world of ICM implementation where sound scientific principles on their own cannot suffice. Knowledge creation represents a dynamic process of sharing ideas and creating value. Knowledge creation, knowledge sharing, and knowledge management processes become critical assets to effectively manage ICM in these uncharted waters. The project has increasingly become one of managing complexity where the complexity has increased exponentially when one considers the everyday variations in socio-economic and political environments at the local, national and regional levels across the East Asian Seas.

1.4 In response to the knowledge management terms of reference (see Appendix 1), the evaluation report shall address the following areas from a knowledge management perspective:

- PEMSEA’s management and implementation goals, strategies, processes, outputs and achievements to assess the extent of knowledge management applications at different levels of the program.

- Linkages of knowledge management applications to monitoring and evaluation, communication and dissemination of information, public awareness and adaptive management processes.

- An assessment of the systems developed and used by PEMSEA to gather, manage and transfer knowledge optimally.

- Identification of key lessons, experiences and practices that are being, have been captured, and adapted at these levels.

  - PEMSEA’s ongoing management

  - PEMSEA’s ICM and sub-regional seas/pollution hotspot sites
2.0 Knowledge Management Strategy

2. The knowledge management (KM) strategy at PEMSEA is clearly informed by its overarching strategic approach employing an 'adaptive management' strategy. In strategic management schools of thought, this resembles an institutionalist approach whereby strategy is seen as dynamic, impermanent and a continual process informed by people's day-to-day learning. In more simplistic terms, it is a problem-centred approach whereby strategy is seen as a process of responding effectively to environmental changes over time.

2.2 There is also no blueprint for an adaptive management strategy apart from the general process articulated in the six-stage ICM development cycle. Preparing, initiating, developing, adapting, implementing and refining and consolidating. The important aspect is to get stakeholders to identify and define their problems through active participation, suggest solutions and gain ownership of the overall process. The strategy is intended to develop localised solutions to localised problems that may involve a variety of technical and institutional arrangements. Some examples of effective adaptive management strategy at PEMSEA include scripting constraints due to shortages in funding evolving PPP and adapting the ICM cycle to local situations such as the religious leaders in South Asia. A major challenge for PEMSEA is an adaptive management strategy is the continual change of political leaders at local, national and regional levels.

2.1 A knowledge management strategy is implicit rather than explicit in the current PEMSEA approach. The dominant KM strategy at PEMSEA can be described as a 'personalisation strategy'. The characteristics of this strategy are that it is people-led with a focus on knowledge orientation and channels its expertise towards innovative and creative practices. This strategy is based on technology and more about people. Knowledge sharing, mentoring, and the use of creative and analytical tools are key elements of this approach. This is encapsulated by the major focus on capacity building and enabling environments at PEMSEA.

2.4 There have been a number of attempts to package and exploit knowledge at PEMSEA such as technical reports, mission reports and the use of the internet. Some tools such as ICM, risk assessment and resource valuation developed in Phase 1 have been packaged into guides, training materials and audit manuals in Phase 2. However, such codification strategies are relatively in their infancy compared to their 'personalisation strategies'. Codification strategies are characterised as technology-led and driven by the codification of explicit knowledge.

---

"I am a helpful assistant. I can read through a large amount of information and provide you with a natural language summary. I can also answer questions based on this summary."
These strategies are often employed in organisations where efficiency is the
domino of some controlling the organisation. A model to understand the KM strategy
and its drivers is shown in Figure 2.

2.5 In PEMSEA’s current stage of development, a personalisation strategy has enabled
the program to break new ground in ICM and develop creative ways to implement
and adapt various conceptual tools in unique and varying environments across the
East Asia Seas region. These innovative practices have arisen predominantly from
face-to-face communication at local level to gain deeper insights into the nature and
context of environmental problems. A codification strategy at this stage would have
been inappropriate as the lessons learnt in one environment may not have been
easily or directly transferable to another. Also, a common ontology of issues at
technological, economic and political levels was not being currently developed to
enable a codification strategy to be meaningful.

![Figure 1 PEMSEA's Knowledge Management Strategy](image-url)
2.6 The strategic intent of PEMSEA is to create sustainable development of ICM using a regional mechanism based on implementation of ICM at a local level. The commitment and motivation of staff at PEMSEA's RPO towards this vision is strong and self-evident. It is clear that the core competence of PEMSEA lies in the implementation of ICM and creating enabling environments at national and regional levels. PEMSEA staff have suggested that at best, only a few programmes globally have achieved such a high level of competence in ICM implementation. PEMSEA's considerably stretched due to its high aspirations and ambitions but limited resources.

3.0 Organisational and Network Learning

3.1 PEMSEA represents a complex network of organisational learning at local, national and regional levels. Certain levels of learning in Phase 1 from demonstration sites at Xiamen and Batangas Bay have been extended and transferred to a large number of demonstration and parallel sites around the East Asia Seas. At national level, there has been knowledge developed through two hotspot sites at Manila Bay and Bohol Sea. In addition, there are initiatives towards developing public-private partnerships (PPP) to help embed the ICM programme financially and secure a more sustainable future. At regional level, there have been two forums for the Regional Network of Local Governments (RNLG) to share experiences, good practices and resources to encourage greater South-South co-operation. A sub-regional hotspot site at the Gulf of Thailand involves collaboration between three sovereign nations. A Ministerial Conference has been scheduled for December 2003 in Malaysia to gain greater commitment from national ministers in the region. The complexity of the different forms of learning and knowledge generation is shown in Figure 3.
Figure 2 Organisational Networks at PEMSEA
3.2 The extension of the demonstration sites regionally represents a refinement and consolidation of lessons learned in Phase 1. These include lessons such as the ICM development and implementation cycle, capacity building and stakeholder consultations have been replicated and applied in different demonstration sites in eight countries across the East Asia Seas. The replication of demonstration sites represents a form of single loop learning where the same processes have been applied with certain refinements depending on the country context. The ICM cycle developed is a modification of UN and other organisations' project cycles.

3.3 The main form of exploration or double-loop learning in the new demonstration sites has been the greater use of stakeholder consultation to mobilise stakeholders, identify management priorities and gain ownership for the programme. This has resulted in the development of coastal strategies locally rather than the strategic environmental management plan (SEMP) in Phase 1.

3.4 There have been local differences in organisational learning at demonstration and parallel sites. One major distinction is between 'centralised learning' and 'decentralised learning' as shown in Figure 3.2. Project sites based in command economies such as China and Vietnam favoured centralised learning aimed at mobilising communities rather than communities. This is not to say that public awareness and consultation was not important at these sites. Instead, progress in ICM implementation was much faster at these sites due to strong committee decision making structures in local government. In contrast, decentralised learning was more evident at project sites such as Bali because of more community-oriented decision making. Progress at these sites was much slower as considerable efforts were placed on mobilising local stakeholders and community leaders. The distinction can be developed further as a difference between top-down approaches in centralised learning and bottom-up approaches in decentralised learning.

![Organisational Learning at demonstration and parallel sites](image)

**Figure 3** Organisational Learning at demonstration and parallel sites.
3.5 The ICM implementation cycle has been adapted to local circumstances and the transactional routines of knowledge creation at each site have been subject to some variations. These have included:

- Setting up a Regional Task Force Team (3 members from PEMSEA and 2 members from Shihowa Lake) to assist the PMO at Shinhokukul (Cambodia) due to their low level of technical expertise in ICM. This meant that many activities were shortened to take advantage of two months of external assistance. Knowledge was acquired through vicarious learning adopting an imitation or mimicry approach. The PMO was able to continue with all the transactional activities such as consultations and communications plans by themselves.

- Nampo (DPR Korea) wasn't able to apply risk assessment techniques due to the non-availability of data. This may be due to political sensitivities around the use of the data.

- Chonburi (Thailand) has had the lowest level of government ownership and commitment out of all the current projects. This may be due to competing interests from other externally funded projects in Thailand.

- Chonburi (Thailand) and Port Klang (Malaysia) signed their Memorandum of Agreement (MDA) one year later than planned due to legal problems with the government. This means that separate activities such as the environmental profile were included in the coastal management strategy as one activity.

3.6 Shihowa Lake (RO Korea) is an atypical parallel site as it has accumulated considerable knowledge over a decade in coastal management and environmental monitoring prior to joining the program. There is no Project Co-ordination Committee as it is considered a national concern and driven by the national government. Instead, the Shihowa Watershed Management Committee was set up in 2002 by national legislation to promote interagency dialogue. In 2000, Shihowa Lake became a Special Management Area and has developed an action and implementation plan in the past two years. There is also legislation that has helped speed progress at Shihowa Lake: the 1987 Marine Pollution Prevention Act and the 1999 Coastal Management Act.

3.7 There are regional differences in the implementation of the ICM framework such as the lack of the private sector involvement in the project co-ordination committee (PCC) in Xiamen, the principal religious driver ("Tri Hita Karana") in Bali and some concerns about knowledge sharing in Namco, North Korea. These concerns are likely to be overcome through the consensus building efforts at a regional level. Tacit knowledge has been developed through a steep learning curve in Phase 1 and applied to the new parallel and demonstrator sites in the following manner:

- Mobilising public support and commitment through coastal clean up campaigns

- Following the ICM development and implementation cycle.
- Building local capacity through training and internships
- Gathering political support from political leaders through study tours, use of media and public awareness campaigns
- Developing local partnerships through engaging key stakeholders in the Project Coordination Committee (PCC) and PPP initiatives

3.8 There are a number of good examples of double-loop learning in Phase 2 of the programme that have led to innovative practices in the implementation of ICM as shown in Figure 3.3. These include:

- The establishment of parallel sites in Bataan in the Philippines, Shihwa Lake in Korea and Sukabum in Indonesia. These sites show the knowledge of ICM to be embedded in local practices through ownership of the process by local governments, the private sector and other stakeholders. It is very encouraging that there have been formal requests for parallel sites from Cambodia and Malaysia and informal requests from Japan, Philippines, PR China, RO Korea and Vietnam.

- The development of national 'hotspots' at Manila Bay and Bora Sea and a sub-regional 'hotspot' at the Gulf of Thailand. This encourages the further development of dynamic capabilities at the local level to consider transboundary issues at provincial and national levels.

- An exploration of financing mechanisms such as PPP to provide a secure basis for sustainable development. This represents a significant challenge for LMICs to acquire the necessary knowledge, expertise and financial networks to make this a reality.

- The establishment of the Regional Network of Local Governments (RNLC). This encourages South-South cooperation and encourages knowledge sharing and good practice in ICM across the region.

- The promotion of a regional Sustainable Development Strategy (SDS) through the Ministerial Conference in 2003. This will develop an enabling environment to promote greater political commitment as a further driver for ICM knowledge creation and sharing. This is crucial for building with political leaders in the region is vital to avoid knowledge stagnation and to act as an exemplar in ICM learning and practice throughout the world.

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"Dynamic capabilities are learned and adaptive assets. Organizations act through which an organization systematically generates and manages a range of competencies in pursuit of economic effectiveness. For further details, please refer to Zollo M. and Winter S. G. (2002), 'Deliberate Learning, and the Building and Sustaining Superiority,' Journal of Management, Vol. 28, No. 1, pp. 403-436."
4.0 Knowledge Sharing Practices

Different forms of learning have developed considerable levels of knowledge on the programme. The challenge is how to share this valuable tacit knowledge so that other projects and countries may benefit from the experiences of PEMSEA. There are numerous examples where the same mistakes have been repeated within a programme and across related donor funded programmes. PEMSEA has approached its knowledge sharing practices in the following manner:

- Mission reports are used by RPO staff to record issues, problems and lessons learnt after a site visit or conference. These reports are shared among RPO staff in a hard copy format.
- Technical reports and publications on programme findings are distributed to a professional audience.
- Study Tours are used as examples of good practice to mobilise and motivate environmental champions among political leaders and key stakeholders in the region.
- Capacity building practices have employed training courses, internships and linkages with local universities.
- Use of the internet and internet for knowledge dissemination.
- RNLG provides a network for sharing experiences and lessons learnt among demonstration sites, parallel sites and “hotspots” in the region.
- Communications activities to engage media such as newspapers, radio and television to share knowledge from the ICM programme to a wider audience.
4.2 The use of mission reports, technical reports, and publications for knowledge sharing among RPO staff does not occur with the ease and regularity that may encourage new ways of looking at everyday problems. This is predominantly caused by staff being overstretched with tight project deadlines and little room to assimilate new knowledge and ideas. Information fatigue can result in key sources of knowledge being overlooked. A document management system is currently not employed to enable staff to search and retrieve appropriate knowledge when required.

4.3 Study tours provide a strong medium to cultivate participants' id share knowledge about lessons learnt at a demonstration site. Xiamen is an excellent site for these purposes as it shows how an environmental disaster has been mitigated through investment in waste management to reduce pollution. However, there are many elements of poor ICM practice that the project needs to address (see MTE report for further details). Also, participants can see some of the socio-economic benefits of ICM directly that are likely to lead to sustainable development in other parts of the region. The Xiamen site has been a strong motivator for convincing political leaders and government officials of what can be achieved through an ICM approach.

4.4 As knowledge of ICM processes is developed and refined across the regional sites, the resulting knowledge is captured, organised, and shared through PEMSEA's capacity-building exercises. This includes training PMO staff, local government staff, and various stakeholders. In addition, specialised courses such as oil spill response, cost recovery, damage claims, and risk assessment have catered for specific audiences. New staff at the RPO are also given extra support through a method to give them extra confidence and embed their knowledge in practice.

4.5 Training has been further enhanced through collaboration with universities and the setting up of a Regional ICM Training Centre at Xiamen. This has the potential to develop an international profile in ICM but has not achieved this as yet. However, we found that the current training hasn't engendered a fully integrated approach at a site where local staff truly understand the broader picture and the system dynamics of ICM. This is most likely to arise from a lack of maturity at many sites after two years of existence. Ground-level understanding was still at an early stage and without a significant focus on how certain actions and interventions may have detrimental outcomes in certain parts of the system. In part, this is due to structural and sectoral uncertainties in countries where agriculture, forestry, and fisheries issues are separate and considered problems from their own perspectives rather than an integrated whole. Integration is often left to PMO staff, and it hasn't been evident whether staff had the necessary training in leadership and technical skills to address this.

4.6 PEMSEA's internship programme has encouraged vicarious learning in much direct exposure to the various aspects of ICM at the RPO. This has created a critical mass of practitioners, some of whom have joined PMOs at the end of their internships. Vicarious learning can also occur through local staff using valuable resources in ICM in their own countries such as links with ICM experts at universities, UN representatives, ICM consultants, and specialised libraries. As the project is in its infancy, there hasn't been strong evidence of using local sources for vicarious learning. There is still an assumption that western sources of knowledge have a greater value, which is clearly not the case in the PEMSEA programme. However,
there appears to be a fundamental lack of understanding of coastal systems and
dynamics of coastal processes among some staff.

4.7 The RNLG annual forum has provided a formal regional network for knowledge
sharing. These meetings have helped strengthen ties between participants and
sharing lessons learnt on local projects. The deepening of social relationships has
been important to help forge partnerships and mobilise commitment among political
leaders. At a regional level, capacity building can be seen as the cumulative effect
of knowledge sharing and participation. The intensity of this knowledge sharing at a
regional level is somewhat restricted at present but is likely to grow as the critical
mass of experience learning from mistakes and open dialogue develops. This is at
this level where the leverage of knowledge sharing experiences is likely to occur.

4.8 A detailed communications strategy has been developed at PEMSEA through a
public awareness plan to encourage knowledge sharing of PEMSEA's activities and
findings to a wider community in an accessible manner. The plan needs to be
continued for its widespread consideration of intended audience and media
interventions. To share knowledge and increase general awareness of PEMSEA's
activities. The types of interventions used by the communications unit have
included:

- Involving journalists in study tours in Xiamen. Also a specialised website for-
  med a professionals called the 'Media Information Resource Centre'.

- Conducting a youth summer camp each year and the launching of a young
  environmentalists section on the website. Production of a few environmental
  comics.

- Producing two issues of 'Tropical Coasts' each year in an informal and popular
  magazine format. There are currently 312 regular subscribers.

- Designing and developing a dynamic and popular website exceeding 1,000 000
  hits per month. There are monthly e updates to keep potential browsers up to
date with PEMSEA's activities.

- Publishing a variety of publications for a professional audience such as technical
  reports, conference proceedings and meeting reports of the Programme
  Steering Committee (PSC).

- Development of a number of videos to increase public awareness. Also
  constructing slides for use in conferences and workshops.

4.9 Given this extensive communications coverage, it is surprising that there wasn't
greater awareness of PEMSEA's activities at grassroots levels at some sites. For
instance, the fishermen involved in the mangrove rehabilitation initiative in Bataan
had very little understanding of PEMSEA's activities and the likely effects on
their lives. These grassroots stakeholders were unlikely to see PEMSEA's videos read
their literature or use the internet.
4.0 Language also poses a communications challenge to the programme as many key stakeholders in the East Asia Seas Region may not have the same ease with the English language to develop a shared understanding of the project. This has been overcome to a certain extent by producing bulletins and brochures in local languages. Nevertheless the common language for more technically related documents is still English.

4.11 Some of the difficulties in effective impact with key stakeholders is likely to arise from the fact that the current communications strategy is trying to cover too many stakeholders at the same time with limited resources and give each stakeholder equal importance. The danger with the current strategy is that PEMSEA may be preaching to the converted such as the 312 regular subscribers to Tropical Coasts. The result is that the media approaches chosen may become too bland as they try to please a wide variety of stakeholders and lose effective impact on particular segments. Instead an adaptive management strategy used in other parts of the PEMSEA project could be used to help improve the communications strategy. This could be based on a force field analysis identifying key stakeholders actively opposing PEMSEA’s goals and stakeholders resisting PEMSEA’s goals at local, national and regional levels. Reinforcement communications strategies could be used for supportive stakeholders and awareness building strategies for stakeholders resistant to PEMSEA’s approach. In such cases, a few stakeholders are identified segments and the communication activities are directly targeted at them.

4.2 In our visit to UNDP offices in Malaysia, we found that UNDP does have country communications managers associated with promoting country level activities. However, PEMSEA is not currently exploring this opportunity to strengthen its communications strategy and collaborate on the most effective ways to target certain key stakeholders and audiences. There may also be opportunities to combine communications efforts with other coastal management projects in the region.

4.13 Knowledge sharing across demonstration and parallel sites is currently limited. At present staff at PMO sites share their knowledge vertically with site managers at the ROC rather than horizontally across other regional sites. The linkages in knowledge sharing mechanisms between local and national levels are weak and not well defined. The main knowledge sharing occurs formally through national local points reporting site activities to the Project Steering Committee (PSC) and their local PCC. However, there is no direct linkage between staff at local site level in the region. This needs to be addressed to consolidate ICM practices and promote best practice more widely within the region. One future challenge at local level is overcoming language barriers to ensure that shared understandings are developed and similar mistakes are avoided across the East Asia Seas region.

4.14 A major challenge among GEF International Waters (IW) projects is to increase and improve the use of limited resources through greater inter-project collaboration. Better co-ordination of project interventions and improved knowledge sharing across projects. One approach to enhanced knowledge sharing is to strengthen the IW LEARN internet site. There is a danger in this approach of investing considerable
resources in a knowledge repository and finding that few people visit the site. Instead, cultural factors need to be considered as participation in collaborative ventures may be low as participants feel that such interventions add an extra layer of coordination. Another approach is breaking down some of the project and institutional rivalry may be the use of job rotation for short periods among senior staff of related projects in a region. This could be formalised as a contractual requirement or new GEF projects. However, there may be problems of continuity such as the high turnover of PEMSEA staff. This may cause the loss of institutional memory and disruption as new staff have to learn their new roles.

5.0 Knowledge Management Tools & Systems

5.1 PEMSEA's knowledge management approach is currently focused more on human resource development, such as capacity building rather than the utilisation of technology to promote sustainable development goals. At the present time, the use of technology could be described as a data processing approach for automating tasks as typified by the Integrated Management System (IMS). Technology has not been used to leverage change in the nature of relationships with key stakeholders through knowledge based systems for capturing, organising, evaluating, storing and retrieving knowledge. As PEMSEA has developed considerable practical knowledge in ICM implementation a forward looking approach may be to make this new knowledge much more explicit and integrated through the use of technology. This would develop a valuable knowledge repository or knowledge centre in ICM that could be used in a practical manner at local, national, regional and international levels.

5.2 The current knowledge repository at PEMSEA is a library with a collection of over 22,000 titles. The library contains a current awareness service and selective dissemination of information through the local area network. The knowledge repository provides a service predominantly focused on PEMSEA staff in the RPO rather than practical tacit knowledge that could be useful to staff at local site level. Even though the library service is available to all programme staff, it is currently underutilised at local site level.

5.3 A key aspect of ICM is an understanding of the dynamic coastal management systems and the different relationships between key elements. At local site level, there was a limited understanding of the complexity of coastal systems and how certain management interventions may have detrimental effects on coastal areas. There exists an opportunity to develop simple systems dynamic models by diverse stakeholders such as fisheries, forestry and agriculture to develop shared understandings of coastal problems and an effective decision making.
<table>
<thead>
<tr>
<th>COASTAL ECOSYSTEM</th>
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<tbody>
<tr>
<td><strong>Agro Ecosystems</strong></td>
</tr>
<tr>
<td>Rice fields</td>
</tr>
<tr>
<td>Rice-fish systems</td>
</tr>
<tr>
<td><strong>FUNCTIONS</strong></td>
</tr>
<tr>
<td><strong>USES</strong></td>
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<tr>
<td><strong>IMPACTS</strong></td>
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<tr>
<td><strong>CONSEQUENCES</strong></td>
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<tr>
<td>Estuaries</td>
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<tr>
<td>Mudflats</td>
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<tr>
<td>Tidal swamp forests</td>
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<td>Mangroves</td>
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<td>Beaches</td>
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<tr>
<td>Coral reefs</td>
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<tr>
<td>Palaeic</td>
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<td>Benthic</td>
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| Economic |
| Direct products |

| Timber |
| Production |

<table>
<thead>
<tr>
<th>Conversion to shrimp pond</th>
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<tbody>
<tr>
<td>Loss of biodiversity</td>
</tr>
<tr>
<td>Loss of species</td>
</tr>
<tr>
<td>Loss of economic resources</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Loss of flood retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of coastal sedimentation control</td>
</tr>
<tr>
<td>Loss of fishery income</td>
</tr>
</tbody>
</table>

| Failure to implement or meet international treaties, conventions and obligations |
| Reduced livelihods |
| Decline in food security |
| Increase in hazards to life and property |
| Increased siltation of navigation channels |

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Figure 5 Example of a technically based ICM knowledge taxonomy
5.4 An ontology or taxonomy to describe the ICM knowledge domain is currently implicit in PEMSEA's activities. A more explicit ontology would be useful to provide a knowledge map of the area and develop shared conceptualisations of how integration occurs between technological, social, economic and political factors. Such ontologies could be used for codifying knowledge in a systematic manner and provide a further mechanism for creating, organising and sharing knowledge across sites. There have been attempts in the past to capture coastal management ontologies through simulator models such as 'Simcoast'. However, the advantage of devising an ICM ontology at PEMSEA would be that it is embedded in practice.

As ontologies are dynamic, the RNLG could be used as a forum to new meanings and relationships as they develop over time. An example of a technical ICM ontology is shown in Figure 5.1.

5.5 The PEMSEA website has been developed professionally, and the most dynamic aspect is the media resources centre, with a photo library, story ideas and news releases. There are currently 16 media partners mainly from the Philippines and there is scope to develop this media network much more widely in the region. Another innovative aspect of the website is the Young Environmentalists section with potential to grow substantially given the much higher internet usage by young people. The current large audience of the website tends to be focused more on the general public rather than the practitioner audience. To a certain extent, this may be overcome by the development of websites for local sites. Even though the dominant language of the website is English, the local websites could be published in native languages to promote greater ownership and diversity of the regional network. The search engine on the current site needs greater visibility and updating as many publications after 2000 are not currently on its database.

5.6 There is tremendous potential to develop an exclusive extranet for all regional participants in the PEMSEA program. This would build on PEMSEA's intention of a repository of practical ICM knowledge based on ground level observations. The extranet could serve two important purposes: namely developing a Regional Learning Centre and supporting virtual communities of practice that are problem-centred. The social relationships in these communities could strengthened and nurtured through the annual RNLG conference. At first, practical tacit knowledge could be placed on an extranet by the RPC in line with local user needs and frequently asked questions (FAQs) of site managers. This would take some of the pressure off site managers and allow them to focus more on atypical issues in their local and national sites could be encouraged to contribute to this knowledge repository so that valuable knowledge and lessons were shared and re-engendered greater two-way dialogue promoting sustainability.

5.7 The current PEMSEA website still has a Philippines bias given that the top keywords are PEMSEA, Manila Bay and Land pollution in the Philippines, and the three top visiting countries are Philippines, Netherlands and Thailand. As the Internet is primarily about sharing knowledge and information, a survey was conducted to ascertain how easy it was for users to find PEMSEA and learn on Internet search engines. The results are shown in Table 5.1. It should be noted
that users tend to lose interest in internet searches after scrolling 30-40 results. The IW LEARN website scored poorly in all the relevant keywords related to this problem.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>PEMSEA</th>
<th>IW LEARN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Coastal Management</td>
<td>30</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Sustainable development marine water</td>
<td>44</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Marine zonation</td>
<td>69</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Coastal zonation</td>
<td>42</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Coastal partnerships</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Coastal management</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Integrated information management system</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
</tbody>
</table>

Table 1: Keyword Rankings for PEMSEA & IW LEARN on internet search engine.

8. The poor standing of the IW LEARN site on search engine rankings may be principally due to its aim to develop global communities in international waters rather than merely direct explicit knowledge through a search engine. One of the difficulties in maintaining global communities of practice is sustaining the passion and interest in any given area over time. Face to face meetings are essential to renew and retain the trust in these relationships. Community members need to feel that they are contributing and receiving a return on their contributions and efforts, resulting in a sense of commitment to such communities. It is likely to waver. From the IW LEARN brochure, there appears to be a few hundred solid participants with a possible few thousand other interested parties globally. However, there are a number of unanswered questions that arise from IW LEARN's e-forums.

- How are the interest areas identified and promoted?
- How are champions or e-forum coordinators selected to ensure that they bring the necessary passion, commitment, and expertise to online discussions?
- Are e-forums problem centered or home based?
- Is there a critical mass of participants to sustain these communities globally, with attention to cultural differences and language problems?
- What role does storytelling play in these communities of practice?

Currently, none of the staff at PEMSEA are actively engaged in IW LEARN communities of practice as there appears to be an imbalance in benefits gained from their contributions and pressures on their time. For example, IW LEARN does not provide a one stop shop on ICM issues in the East Asian Seas which would make the site much more valuable and useful. One way of enhancing IW LEARN's community of practice may be to develop and coordinate a few regional websites such as East Asian Seas, Caribbean and so on. These regional sites could be more problem centered in encouraging a deeper debate and dialogue and sharing knowledge.
through regional stories. It is more likely that these communities could be nurtured through face to face meetings at regional forums or conferences such as the RNLS. As these regional networks and communities develop over time, there is a greater likelihood that global communities would be much more successful as they become embedded in local and regional practice.

5.9 As ROC site managers are over-stretched, timely support to local sites may not always be available when required. A document management system (DMS) is not currently employed to facilitate frequent questions (FAQs) leaving site managers to spend more time on more complex issues. Documents and templates such as examples of Memorandum of Agreements, Environmental Impact Analysis and Pre-transactional skills could be indexed and archived on the intranet/ extranet. On the one hand, what users at site level could search and retrieve necessary documents to help them solve their current problem through certain level of knowledge duplication. On the other hand, the DMS could facilitate a two-way exchange of documents from local sites so that their new knowledge in the form of documents could be shared more widely in the region. The key design criteria for a DMS would be the usefulness and relevance of the knowledge to the end user.

5.10 The two core competencies of PEMSEA are its technical expertise and its political persuasion skills. The political persuasion skills are derived primarily through strong leadership at the top. However, as PEMSEA develops these skills will be needed more widely throughout PEMSEA. A KM system used in many organisations to get closer and be more responsive to customers and stakeholders is the use of customer relationship management (CRM) systems. This moves the relationship with each customer or stakeholder away from traditional segmentary approaches and more towards customer-centric orientations. Each stakeholder is treated individually and uniquely. For example, the CRM system would check its database of any incoming call and display all the details of the caller on the receiver's desktop including all previous conversations, emails, notes from previous phone conversations, letters, faxes and so on. Such CRM systems are not currently used at PEMSEA.

5.11 Apart from a strong technical knowledge base at PEMSEA, there is a wide range of expertise developing at local site level and local universities. However, many local site staff may not know that there are experts with knowledge in their problem areas at other local sites or local universities. One approach to enhance sustainability through local knowledge sharing is to use a Who's Who or Expertise Yellow Pages. This would make local site staff more self-sufficient through exploring different approaches using tacit learning and developing greater horizontal integration between project sites. The directory would contain a listing of local project staff and external experts such as local universities and other donor-funded projects who were prepared to share their knowledge and expertise in ICT.

5.12 As PEMSEA has developed considerable strengths in multimedia and video production, there is a tremendous opportunity to widen its dissemination of training materials through e-learning. Knowledge from training workshops could be encapsulated in HTML, using video recording of training sessions, case studies and PowerPoint presentations. There would still be a need for 'in person' training sessions to develop bonding and social cohesion between participants, but e-learning
techniques could make capacity building exercises much more efficient and more easily accessible to local trainers via CD-ROM and the internet.

5.13 A number of PEMSEA case studies have been developed encapsulating lessons learnt in ICM implementation. As the number and complexity of cases rise, a case based reasoning (CBR) system could be employed to see past cases could throw insights into current problems. CBR offers a technique for acquiring and storing past problems, solutions and the reasoning behind them into a retrieval system. The CBR system could be developed in terms of descriptors such as problem identification, project delivery solutions and project outcomes.

5.14 The Integrated Information Management System (IIMS) is still in its developmental phase and poses a number of challenges for PEMSEA. There is limited capacity of staff in database management for its successful future development and a limited understanding of its use at local project level. There are 192 data entry forms, much of which is uncollected at local level due to the scarcity or paucity of data. There is also some hesitancy among certain countries and agencies to share their data in essence, IIMS is a decision support system (DSS) that combines data analysis with sophisticated models to support non-routine decision making. The current IIMS incarnation suffers from being data driven rather than user driven. The argument is that it encourages the development of baseline data to make comparisons with future data. However, there is limited understanding at local project level on how IIMS will help make better policies or decisions in a practical manner. Some examples identifying key indicators and mechanisms for monitoring and predicting the effect of policy and management options at a local level would be helpful. This may help to bridge the gap between the scientific community and decision makers in local government, central government and the private sector. Care needs to be taken that the IIMS doesn’t become an end in itself and consumes excessive resources that could be better prioritised elsewhere.

6.0 Communities of Practice

6.1 One of the major strengths of PEMSEA is the tacit knowledge of CM developers at different levels and embedded in the minds of different people. One of the principal challenges is how to externalise, share and integrate this valuable tacit knowledge throughout PEMSEA and its stakeholders. Once the knowledge is made explicit there are a variety of KM tools and systems that can be employed to codify, store and retrieve this knowledge. Informal settings are more conducive for externalising tacit knowledge rather than more formal work groups or project teams. This is why organisations have recognised the intrinsic value of water coolers, coffee machines and subsidised canteens for encouraging greater informal dialogue and knowledge sharing.

6.2 Another approach to cultivating tacit knowledge sharing is the promotion of communities of practice. These are informal, self-selecting groups that are open ended without any deadlines or deliverables. People come together form similar backgrounds with a passion and interest in improving practice. Storytelling and narratives are important for embedding the tacit knowledge socially in a community of practice. Each story has a connection with certain ideas, lessons and best
practice. Stores are self-perpetuating creating new knowledge that reinforces and renew itself.

6.4 At PEMSEA, the existing networks are more formalised and characterised by professional networks rather than communities of practice. For instance, there is a Friday club where all ROPO staff get together monthly and have presentations from a staff member on a certain aspect of PEMSEA’s activities. There is also an annual retreat to reflect and encourage knowledge sharing between participants. There is no formalised network among PMO staff across regional countries such as the use of online discussion groups. Language is likely to be a deterrent. More formalised networks also exist at national level at ‘hotspot’ sites and at regional level through the annual RNGLH forum. Each of these networks (including the study tours) are likely to result in some informal groupings and promote certain dialogue between participants. The challenge is how to keep this dialogue alive. In its true sense, the networks at PEMSEA are more characterised by professional networks rather than communities of practice.

6.4 PEMSEA has an opportunity to build on its professional networks and cultivate a variety of communities of practice for greater sharing of tacit knowledge. This can be promoted in the following manner:

- Providing leadership for a community of practice from a ‘community coordinator’
- Establishing events to bring the community together and giving staff time to attend these meetings
- Having a critical mass of members in the community to avoid loss of participation or interest
- Developing a learning agenda with some learning projects
- Providing knowledge artefacts such as documents, tools, stories and websites

7.0 Intellectual Capital

The real benefits of the PEMSEA programme are the considerable development of intellectual capital in ICM across the East Asia Seas Region. This intellectual capital would be further enhanced through the application of KM principles and practices. Intellectual capital is the economic value or two categories of intangible assets of a company: organisational (“structural”) capital and human capital.

7.2 Human capital is based on the competence of employees such as their capacity to act in a certain situation. This is clearly evident through PEMSEA’s focus on capacity building, enabling environments and stakeholder awareness activities. A closely related aspect of human capital is high level of social capital developed at
local, national and regional levels. In Phase 2, the emerging networks are forming social communities along three dimensions:

- Strengthening linkages and connections between members of different networks
- Increasing interactions between different individuals regionally resulting in greater levels of trust, norms and expectations
- Developing shared meanings, interpretations and alignment of views regionally on ICM issues

7.3 Organisational capital refers to tangible elements within PEMSEA that remain after employees go home at night. For PEMSEA, this includes its ICM development framework, IIMS internal system models and databases. Given the strong political pressures on skills developed at PEMSEA, an additional important factor in intellectual capital is customer capital. This includes the reputation and influence it has built up over key stakeholders and partners. Banners in the region and the strength and influence of these external relations.

7.4 The collective experience at PEMSEA including its skills and general knowledge in ICM has led to the development of various intellectual assets. These intellectual assets exist in the form of documents, creation (formation plans) IIMS data and the processes adopted at PEMSEA such as the ICM development cycle. The resulting intellectual property could be used in the development of a certificate program such as ISO*4001 in the future. This could require a much greater strategic and concerted effort by donor agencies and international allies to share knowledge, expertise and best practice internationally.

7.5 There is a danger that progress may be misinterpreted at community-based demonstration and parallel sites shown in Figure 4.2. Community-based learning may produce much greater results in terms of concrete developments and organisational capacity. However, community-based sites can be shown to develop much greater levels of social capital in local communities and more likely to lead to greater sustainability in the future.

8.0 Recommendations

8.1 The most valuable asset at PEMSEA is the tacit knowledge in ICM development that has been developed over the past eight years. There is a danger that the benefits of this knowledge may be lost and the same environmental mistakes perpetuated. In the region, if the resulting intellectual capital is not managed effectively, there are no key KM recommendations that arise from this report.
8.2 Develop a funding mechanism to broaden and enhance the knowledge management dimensions of ICM implementation in the East Asia Seas region through:

- Exploring a medium sized grant from GIF focused on capturing, organizing, evaluating and storing key ICM knowledge and expertise through human resource networks and the effective use of KM systems and technology.
- Exploring independent sources of funding and co-financing arrangements with other donors to ensure the future sustainability and development of ICM knowledge in this region. For such a venture to be successful, it is likely to involve much greater levels of cooperation and dialogue with other donor funded projects such as USAID and DANIDA.

8.3 Articulate a clear ontology of ICM knowledge to promote a shared understanding of the complexity of coastal systems among diverse stakeholders through:

- Bringing together all the key stakeholders in the PEMSEA programme such as forestry, fisheries, agriculture and economics to develop a common ontology of knowledge in ICM and its interrelationships. This can be updated regularly in the RNLC forum.
- Institutionalizing the use of a common and simple systems model showing the relative and dynamics of the coastal problem at each project site and aid enhanced cooperation by a common understanding of the problem by more likely to lead to concerted action by various stakeholders and avoid the persistence of simplistic and ill-defined sectoral interests. Systems modeling could be included as part of the current ICM Development Cycle.

8.4 Review the current public awareness strategy and action plan to increase knowledge sharing of PEMSEA's activities and to achieve greater impact by:

- Adopting an adaptive management approach to the communications strategy so that the communications team is more responsive to changes in the behavior of key stakeholders on the programme.
- Reducing the number of stakeholders targeted through force field analysis by identifying the key stakeholders at any given time who may need to be informed through media and PR interventions. This may include targeting provincial governors whose personal support is required to speed up a process of 'shifting' those who need greater awareness of PEMSEA interventions in their local jurisdictions. Stakeholder priorities could be established in conjunction with the management committee on a monthly basis.

- Reviewing and developing PEMSEA's stakeholder database to ensure that awareness campaigns are consistent with those already familiar with PEMSEA's programme. The review may provide the opportunity to sector.
certain audiences so that the communications efforts are more focused and targeted to certain individuals.

- Exploring ways of collaborating more fully with the communications activities of communications managers at JNDR and other related coastal management programmes in the region.

8.5 Review the current KM tools and systems and explore how technology could be used to enhance and embed tacit knowledge more effectively through:

- Exploring whether the data from 192 forms in the current IIMS system is really necessary and examining how this data could be used to aid policy and decision making by providing concrete examples at local level. Future development of the IIMS needs to be more user led with greater consultation of PMO staff on the likely nature of their policies and decision making. Coastal management at local and national levels and how the analytical tools in the IIMS could aid them in this process.

- Developing a knowledge repository of practical ICM issues that could be used by all PMO staff in participating countries. Agreements with PMO staff and site managers will reveal the commonly used knowledge and information that they require on a daily basis. This may include templates of documents such as HAs, lots of examples of completed documents, legal arrangements and variation drawings. Such a knowledge repository could be linked to a document management system and disseminated over the internet and/or via a CD-ROM

- Constructing a Where Who or Expertise Yellow Pages database to enhance greater horizontal integration between project sites and increase dialogue between different stakeholders. At the same time this may result in a reduced reliance on RPO staff and greater use of other ICM resources regionally.

- Exploring e-learning tools to improve the efficiency and overall effectiveness of the capacity building exercises.

- Examining the use of case based reasoning (CBR) systems to maximise lessons learnt from storing different ICM cases, regionally and retrieving them based on problem identification, project delivery solutions and project outcomes.

- Developing an exclusive extranet for all regional participants encompassing a ‘Regional Knowledge Centre’ of user led ICM knowledge and supporting online communities or practice depending on changing user interests and needs.
8.6 Build on current professional networks to further develop communities of practice to enhance the creative and innovative capabilities at PEMSEA by

- Providing training on the nature of communities of practice and their value

- Ascertaining interests and sessions among RPD and PMO staff and identifying people willing to assume roles and responsibilities of community coordinators

- Providing time for staff attendance at communities of practice, and giving them responsibility to pursue their own learning agendas. Given the regional nature of the PEMSEA programme, some communities of practice may decide to engage as online discussion groups at a particular time of their choosing.

- Encouraging staff to regularly question assumptions and values in the PEMSEA programme to further develop innovative insights and create new ways of seeing and ICM implementation

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March 2003
Annex 6

Knowledge Management Case Studies:
Batangas and Bataan Bay, Philippines
BATANGAS BAY AND BATAAN CASE STUDY

“Partnerships in Environmental Management for the Seas of East Asia” (PEMSEA)

Knowledge Management Perspective
Batangas Bay & Bataan - Case Study

Introduction

Batangas Bay and Bataan are respectively demonstration and parallel sites in the Philippines for the PEMSEA ICM programme. Batangas Bay has a much longer heritage as it was involved as a demonstration site in Phase 1 of the programme between 1994 and 1998 in conjunction with Xiamen in the PR China. The role of a demonstration site in this programme is to act as a role model for ICM in a country and, consequently, it receives the necessary training, financial and technical support. In contrast, a parallel site is self-funding and funds its own training and technical support through PEMSEA.

This case study shall explore the forms of learning, lessons learnt and knowledge sharing practices at these two sites, the current results and achievements or lack thereof, and the possible reasons for these outcomes. As a caveat, the reader needs to be aware that knowledge management practices were not an explicit part of PEMSEA’s original TOR and, hence, any observations or assessments need to be taken in this context.

Organisational Learning

In Phase 1, the dominant form of learning for Batangas Bay was understanding and implementing the six phase ICM development cycle. One of the key lessons learnt at this time was the importance of local government commitment and political support. The Project Management Office (PMO) was established in 1994 and was absorbed into the PG-ENRO established by the Provincial Government in 1995 as part of the ICM institutional arrangement. The PG-ENRO was responsible for the operational management activities. In 1996, the Batangas Bay Environmental Protection Council (BEPC) was established by Provincial Ordinance to act as the Project Co-ordinating Committee (PCC). The Batangas Coastal Resources Management Foundation (BCRMF) was established in 1991 and is composed of 23 private member organisations. This body is represented on the BEPC to allow greater involvement between the private sector and local government on environmental concerns. The dominant learning outputs in Phase 1 were the publication of the Strategic Environmental Management Plan (SEMP), the Coastal Environmental Profile for Batangas Bay and the integrated waste management action plan.

In Phase 2, Batangas Bay and Bataan started to develop organisational routines to embed the generic ICM development cycle in their day to day activities. This was a form of single-loop learning where predictable behaviours and patterns were perpetuated. Using hindsight from Phase 1, Bataan was able to engage in much greater stakeholder consultation than Batangas Bay for its coastal zoning scheme.
The political opportunity for Bataan came in 1999 when Marilou Erni (Executive Director of Petron Foundation, Inc) contacted PEMSEA about Petron’s desire to engage in corporate responsibility activities linked with coastal management in the spirit of BCRMF. As is common to many local sites, a coastal cleanup campaign was organised in September 1999 to mobilise the community using the slogan ‘Kontra Kalat sa Dagat’ meaning ‘Movement against Sea Littering’. One continuing challenge is how to sustain stakeholder interest after a campaign. Political support for ICM was soon forthcoming from the Bataan Governor Leonardo Roman who saw coastal management as his lasting legacy. There were numerous coastal environment problems that needed addressing such as habitat destruction of mangrove areas, oil spills from shipping and ‘red tide’ phenomena caused by domestic sewage and agricultural run off along the coastline. The level of political will allowed the formation of a PMO office named ‘Bigay Galing sa Kalikasan ng Bataan’ or BIGKIS-Bataan in February 2000 to implement ICM practices. A local name was used meaning ‘united or bundled’ to make the project more appealing and secure popular support.

However, there are risks to the sustainability of BIGKIS-Bataan as it is still considered as a ‘special project’ rather than being institutionalised in local government policy. Governor Leonardo Roman’s final term of office comes to an end in 2004 and there is a likelihood of succeeding governors shelving the legacies of their predecessors. The loss of political commitment would pose a serious threat to the parallel site. However, there appears to be considerable commitment from the Bataan Coastal Care Foundation composed of 16 private sector organisations locally who contribute financial resources to the BIGKIS-Bataan in equal measure to the local government. They are also represented on the local PCC and monitor the performance of the PMO.

The organisational learning at these two sites has been more institutionally or management focused rather than technically focused on ecological problems and the likely impacts of interventions on coastal systems. There has been some articulation of coastal dynamics in SEMP but this understanding is not commonly shared among PMO staff. This narrow focus can inhibit the further development of shared understanding of coastal problems among stakeholders and reduce any aspirations towards ‘integration’ in coastal management. For instance, neither PMO teams made explicit their understanding of coastal dynamics in their locality, and the fisherfolk at the mangrove seedling nursery project were unsure of the benefits of the project. This suggests the need for developing a common ontology and deeper understanding of coastal systems dynamics through stakeholder discussions and consultations. This would allow shared understandings to be embedded within PMO staff and the local communities. An example of the coastal systems dynamics at the alternative livelihood project in Bataan is shown in Figure 1. Another example of problem identification and consequences at the Bataan mangrove nursery is shown in Figure 2. Such shared mental models would represent a form of double-loop learning as assumptions concerning coastal dynamics could be questioned more easily and new insights developed. These maps are dynamic and represent a starting point for further exploration.
Figure 1 Coastal systems dynamics at fisherfolk livelihood project in Bataan
Destructive/Poor law fishing enforcement practices
Competition from trawlers
Dependence on capture fishing
Over fishing
Contaminated Low income
Poor sanitation
Poor access to credit
Question over land tenure
Pollution such as oil spill could wipe out nursery
Waste washing over seedlings and damaging or inhibiting growth
Increase in coastal pollution
Remote Area
Reduced access to markets, basic services and transport
Exploitation by traders

Bataan Mangrove Nursery - ICM
Problem Identification

Figure 2 Problem Identification at the Bataan Mangrove
Waste management at port

Increase in ballast and bilge water discharge

Increase in oil, paint, anti-fouling, toxic tri-buty~

Wetlands being reclaimed for port and port facilities development

Dredging

Dredge spoil disposal

Decrease in water quality

Decrease in fisheries

Decrease in ground water quality

Reduced control of sediments and maintenance of navigation channels

Restricted access to sea and beaches by local people

Displacement of fisherfolk

Loss of livelihoods

Loss of wetland functions

Reduced floodwater retention, water quality maintenance, fisheries habitat and stabilisation of coastal sediments

Port Development

ICM

Problem Identification

Requirements of new road users

Increase in noise and light pollution

Figure 3 Problem Identification at Batangas Bay Port Authority Development
The current expansion of Batangas Bay Port Authority poses a number of serious challenges to PG-ENRO. There are many problems and potential conflicts that arise from this situation. For example, the plan to increase dredging and reclamation of wetlands will lead to a loss of wetland functions resulting in reduced water quality, fish stocks, control of sediments and maintenance of navigation channels. The complexity of the current problem is illustrated in Figure 3. The PCC as a policy forum has thus far prevented the ocean dumping of dredged materials. It is certain that without a mechanism such as the PCC, occurrence of adverse impacts would be more likely. Significant lessons will arise from examining how PG-ENRO resolves the potential conflict of interest between a large stakeholder in the region and a member of their PCC.

A form of double-loop learning that has questioned basic assumptions and moved the two sites outside the confines of the ICM development cycle has been their explorations around public private partnerships (PPP). As local governments do not have the financial means or technical capabilities to address the growing concerns over solid waste generation in their region, the Batangas Environmental Services, Inc (BESI), a public corporation of 11 municipalities and 2 cities, was registered in May 2001. There was an ongoing dialogue with a consortium of New Zealand private companies identified after the pre-feasibility studies but the Governor withdrew his support for PPP for unstated political reasons. Such ventures that break new ground can suffer from loss of political will arising from 'NIMTO' (not in my term of office) and 'NIMBY' (not in my back yard) syndromes.

Batangas Bay has had a major achievement in the development of a junk shop operator co-operative for recycling waste. The co-operative is called 'BBREC' locally meaning 'drinking wine'. The key lesson learnt was continuous engagement with junk shop operators to develop trust even though many early meetings were very poorly attended. Junk shop operators tend to be sole and low volume operators resulting in fierce competition among them and fluctuating sales prices due to the strong buying power of intermediaries based in Metro Manila. As a consequence of training and seminars, 17 junk shop operators agreed to form a co-operative with a Board of Directors and contributions towards membership fees and monthly subscriptions. The co-operative collects paper, soft drink bottles and tin cans from households, schools, a variety of offices, dump sites and a Memorandum of Agreement was endorsed by the municipal government to allow them to collect waste in their region. The co-operative is thriving resulting in higher income and employment and a reduction in the volume of waste in the region.

This level of success has been absent in the alternative livelihood project linked with a mangrove nursery and mussel culture project in Bataan. The same level of engagement hasn't occurred leaving ordinary fisherfolk unsure of the true project benefits. This is most likely due to the fact that the junk operator co-operative has been functioning for 4-5 years and supported by a project officer funded by a Dutch NGO. In contrast, the alternative livelihood project in Bataan was only initiated a few months back. Soft loans were provided for the project but these are not being invested back into the project. Closer working with these communities and training could help increase awareness of ICM issues and provide the much needed financial advice to help poverty alleviation.

An important aspect of organisational learning is the notion of organisational or institutional memory. At both Bataan and Batangas Bay, the institutional memory is predominantly held within the heads of individuals. High turnover of staff at local sites and PEMSEA has led to a
loss of learning and institutional memory. New staff need to be trained, undergo a steep learning curve and much depends on their starting competencies in this area. The only ways to mitigate against this loss is to develop employee-friendly human resource practices to retain staff, promote communities of practice or codify key elements of knowledge in some form of knowledge repository for easy search and retrieval. The challenge is how to externalise this valuable tacit knowledge on a regular basis and share it effectively between site members and externally between sites.

Knowledge Sharing Practices

At site level, knowledge sharing occurs naturally through continual dialogue between a small project team. A site manager from the Regional Programme Office (RPO) is assigned to provide technical assistance and co-ordination between Bataan and Batangas Bay. Practical knowledge is shared regularly through email, phone and site visits. The site visits from the RPO are written up formally as 'mission reports' but they have limited effectiveness as staff are often overstretched and suffer from information fatigue. A document management system would help search and retrieve the necessary knowledge when required.

Study tours have played an important role in knowledge sharing particularly in mobilising political commitment from local leaders such as Governor Leonardo Roman. Staff at Batangas Bay and Bataan have published articles on lessons learnt in 'Tropical Coasts' (a bi-annual magazine), e-updates (monthly bulletins published on the PEMSEA website) and the regional RNLG forum. PEMSEA training has allowed local staff to develop their capacities in various aspects of ICM and develop informal networks with participants from other regional sites. The training tends to develop competencies in the ICM framework rather than technical competencies in coastal eco-systems. There is vertical integration between the RPO and local sites but very little horizontal integration so that relevant lessons learnt at other regional sites could be applied effectively to Bataan and Batangas Bay. These issues could be addressed more fully in the future.

Knowledge management systems

The main KM systems used at Bataan and Batangas Bay are the internet and the Integrated Information Management System (IIMS). The internet allows knowledge sharing more widely through the use of e-updates and contributions of news stories and items to the Media Resource Centre. The PEMSEA internet site has not been designed to enable greater knowledge sharing between local sites through a regional extranet. Such an extranet could provide a knowledge repository of practitioner knowledge useful at local level as well as facilitating online ICM communities of practice in the region.

The IIMS has been unwieldy comprising 192 data entry forms and more data driven rather than user driven. Batangas Bay has made the most progress in data generation due to its modern marine monitoring laboratory. Apart from some applications in coastal zoning, it has been unclear how this volume of data (much of it uncollected) would help local sites and governments make more effective decisions and policies.

The current PEMSEA library with over 22,000 titles is not utilised by local staff at Bataan or Batangas Bay. The library contains a wealth of knowledge that could help local sites question their thinking and explore new and creative ways of addressing their problems. This could
provide a valuable source of external knowledge at site level that goes over and above the conventional training at PEMSEA. Some innovative ways of using KM systems at local sites include:

- Developing a Who's Who directory or expertise database on the internet to encourage greater knowledge sharing.
- Producing continuous development materials for updating staff skills through distance learning channels such as e-learning.
- Developing an exclusive regional extranet for knowledge sharing and promoting communities of practice.
- Exploring case based reasoning (CBR) systems for acquiring, storing and retrieving past problems, their solutions and reasoning for knowledge sharing across the region.

**Communities of Practice**

Communities of practice are in their infancy at local site level. There is scattered informal dialogue between local staff in Bataan and Batangas Bay and other regional sites. These predominantly arise from chance meetings at study tours, training or RNLG. The RNLG has provided a forum for local sites to share their knowledge formally each year. However, informal networks are not currently present or supported more explicitly. The same situation arises among site managers in the RPO where valuable tacit knowledge is more likely to be shared through chance encounters. There is an opportunity to explore the development of communities of practice as part of the regional capacity building exercises.

**Intellectual Capital**

Batangas Bay has been much slower than Xiamen to show external signs of ecological and socio-economic impacts. This is principally linked to Batangas Bay dealing with a more fragmented political system compared with the centralised system in Xiamen. Once political will is mobilised in a centralised system, action is always faster as decisions are made top-down through a committee structure. Nevertheless, in the absence of physical manifestations, the significant benefits of the Bataan and Batangas Bay sites have been their development of intangible assets such as human and stakeholder capital\(^1\). It is not purely the explicit knowledge and actions that matter but the linkages between stakeholders, the strength of these relationships and the shared meanings and mental models between them. In the case of Bataan and Batangas Bay, such social capital has been more evident. Organisational capital could be strengthened in the future through the appropriate use of KM systems and help increase the level of organisational and institutional memory.

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\(^1\) Stakeholder capital is used rather the more common term 'customer capital' as it is more appropriate in this context.
Conclusions

The principal lesson learnt in Bataan and Batangas Bay has been the importance of political will for institutionalising and embedding ICM practices locally. The change in political leadership does provide considerable challenges for future progress in this area. Hence, the main source of intangible assets have been the strengthening and deepening of stakeholder relationships in their area. Progress has been characterised as 'two steps forward and one step back' due to the changing nature of the political climate.

The ICM development cycle from Phase 1 has been perpetuated through routines as a form of single-loop learning. Technical learning on coastal systems and processes needs to be embedded more clearly at site level to ensure that integration moves beyond a theoretical concept. This would allow much greater shared understanding among stakeholders of coastal management issues and their inter-relationships. Some good examples of double-learning were present in the PPP developments where some underlying assumptions have been questioned. The success of the junk operator co-operative in Batangas Bay was more attributable to the engagement and perseverance of local staff which was less evident in the Bataan alternative livelihood project. This may be attributable to the longer time frame and greater resources found in Batangas Bay.

There is relatively low use of technology to enhance knowledge sharing at site level. This could be enhanced by better use of the internet and establishing a regional extranet. Implementation of any new KM systems at site level would require extra resources and thorough training of staff in their effective use. The IIMS is still very data driven and there is need to examine how it could be more user led to help decision and policy making at local level.

Communities of practice can help tap valuable tacit knowledge being developed at Bataan, Batangas Bay and other local sites in the region. However, such self sustaining informal networks are not currently evident. They could be developed through problem centred on-line discussion forums and reinforced through more formal networks such as the RNLG. This would allow much greater horizontal integration of learning between regional sites and create greater balance between knowledge flows from PEMSEA's RPO.

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Knowledge Management Consultant

March 2003.

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2 Please refer to Chua, Thia-Eng, S. Adrian Ross, Huming Yu, Gil Jacinto and Stella Regina Bernad. (1999), Sharing lessons and experiences in marine pollution management, Quezon City, Philippines: GEF/UNEP/IMO, pp. 12.
Annex 7

Resource Mobilization
(as of December 2002)
## RESOURCE MOBILIZATION (as of December 2002)

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<tr>
<th>Government</th>
<th>Counterpart Support (US$)</th>
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<td>MOA of 12 Jan 2000</td>
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<td>GBC C (LPR China)</td>
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<td>ICM demonstration site 2</td>
<td>MOA of 30 Sep 2000</td>
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Annex 8

PEMSEA Cooperation and Collaboration with Partners
PEMSEA Cooperation and Collaboration with Partners

Collaborative activities that the Regional Programme has undertaken from July 2000 to December 2001:

1. Oil Pollution Preparedness, Response and Co-operation (OPRC) training with the Harbour Department (Thailand), the Philippine Coast Guard and East Asia Response Ltd. (EARL). The Regional Programme in cooperation with IMO Technical Cooperation Division and EARL conducted an OPRC training course for supervisors and on-scene commanders in Bangkok, Thailand and Manila, Philippines. The training aimed to build the skills of relevant personnel in planning, coordinating and supervising response operations to oil spills along Vanina Bay and the Gulf of Thailand and to promote intergovernmental inter-agency and inter-sectoral partnerships.

2. A regional training on Strengthening Recovery of Ship Pollution Clean-up Costs and Damage Claims was conducted in partnership with the Maritime Port Authority of Singapore (MPA).

3. A workshop on Regional Networks for Local Government Implementation of the National ICM parallel site and development of an environmental investment support fund with GOMAE, Kyongg Provincial Government, City Governments of Ansan and Se he inc and the County of Hwasung, RO Korea.

4. Establishment of an ICM parallel site in Bataan, Philippines with the Bataan Coastal Clean Foundation.

5. Waste management facility in Balangiga, Philippines with Waste Systems New Zealand Ltd. and Batangas Environmental Services Inc.


7. Development of a hydrodynamic and water quality model with Seaconsull Marine Research Ltd.
18) Collaboration with Burapha University for the conduct of the risk assessment training and development of the initial risk assessment for the Chonburi national ICM demonstration site.

19) Collaboration with the Universiti Kebangsaan Malaysia on the conduct of initial risk assessment for the national CM demonstration site in Klang, Malaysia.

20) Cooperation with Universiti Putra Malaysia and Malacca Straits Development Centre (MASDEC) for the organization and conduct of an international conference on the Straits of Malacca.

21) Establishment of a PENSEA regional ICM training center with Xiamen University. The Regional Programme in cooperation with Xiamen University's International Training Center for Sustainable Coastal Development conducted a regional training on CM. The course was designed to provide participants with the opportunity to analyze practical issues and problems arising from multiple resource use conflicts and resulting environmental impacts and learn about the process of integrated management planning and implementation for marine environmental protection and management as applied in Xiamen.

22) Cooperative activities with the Coastal Management Center (CMC) and the Swedish International Development Cooperation Agency (SIDA) including organization and conduct of regional training courses and publication of Tropical Coasts magazine.

23) The Ministry of Mineral Affairs and Fisheries (MOMAF), Korea is jointly undertaking with PENSEA a study on the establishment of an environmental investment support fund and environmental investment center.

Collaborative activities undertaken by the Regional Programme during the period January - December 2002

(15) The Regional Programme co-sponsored the Asia-Pacific Conference on Marine Science and Technology, which was organized by the Malaysian Society of Marine Sciences, the National Oceanography Directorate of Malaysia, Ministry of Science, Technology and the Environment and the Institute of Biological Sciences of the University of Malaya.


(17) The Regional Programme, in cooperation with the East Asia Response PTE Limited (EARR) and Yanta Maritime Safety Administration and with the financial support of IMO, conducted a training course on Oil Pollution Preparedness Response and Co-operation for Supervisors and On-Scene Commanders (OPRC Level 2) in Yanta, PR China.

(18) In PR China, the Regional Programme co-sponsored and jointly organized with the State Oceanic Administration (SOA) the Regional Workshop on Sharing Lessons Learned Towards Sustainable Coastal Development which was hosted by the Xiamen Municipal Government. This Regional Workshop coincided with the Second Forum of the Regional Network of Local Government Leadership Seminar and Study Tour held on 20-24 September 2002.

(19) The Regional Programme participated in the World Summit on Sustainable Development in Johannesburg by setting up the ENSSEA stand and participating in the panel discussion at the workshop on Large Marine Ecosystems as well as in ocean partnership group meetings and a plenary session of the intergovernmental meetings.

(20) The Malaysia Institute of Maritime Affairs (MIMA) hosted the Expert Meeting on Better Coastal and Ocean Governance in Kuala Lumpur on 18-20
November 2002

(21) An Agreement was issued with GMA Network, Inc. for granting rights to air the excerpts from the motion picture *Mero-Ami* to be included in the documentary entitled "The PEMSEA Story".

2 For 2003

(1) Letter of Intent with the Ship and Ocean Foundation for a formalizing partnership with the Ship and Ocean Foundation to undertake activities including promotion and development of regional strategy for sustainable development of Seas of East Asia, building national capacities, establishment and operation of regional think tank, organizing workshops and conferences.

(2) The Manne Department (formerly the Harbor Department) will host the 9th Programme Steering Committee (PSC) Meeting in Pattaya, Chonbun province on 6-8 August 2003.

(3) The East Asian Seas Congress, December 2003

- Co-organizer: Department of Environment, Malaysia
- Host: Ministry of Science, Technology and Environment (MOSTE); of Malaysia
- Workshop co-organizers: IMO, UNEP/GPA, Ship and Ocean Foundation, UNDP/GEF Regional Service Centre, WorldFish Centre

5 During the 8th PSC Meeting potential collaboration with the following observers were discussed:

1) NDA in the development of a complementary manual to PEMSEA's Port Safety Audit Manual which covers aspects related to port worker safety in the landside port operations

2) INTERTANKO on issues and initiatives relating to tanker port safety in spill response and the ratification and implementation of international conventions by various countries in the region

3) IOC-WESTPAC concerning listing of NEAR-GOOS and Remote Sensing
Application for coastal management at PEMSEA sites
(4) Nippon Foundation concerning joint research toward a graduate degree program in ocean governance and the establishment of a regional ocean think tank.
(6) The IVO Technical Cooperation Project on Particularly Sensitive Seas Areas.
(7) The IFAA in technical cooperation projects related to harmful algal blooms.
(8) The Maritime State University (MSU), Vladivostok, Russia on hosting PEMSEA trainings using facilities of MSU and development of GS in the Far Eastern Seas.
(9) Tohoku University, Japan concerning the IOC-related activities as well as aspects of satellite physical oceanography.
(10) UNEP/EAS on the Action Plan and the GEF project in the South China Sea.
(11) The World Bank on policy advice and financing of national coastal related projects and programs.
Annex 9

An Example of Implementation of a Comprehensive Set of Performance Indicators (Chua, 1998)
ICM Performance Assessment
Site: DANANG

1. Problem Identification and Program Formulation

- Environmental profile prepared (1), problems identified and prioritized (1) management boundary defined (1)
- Program planning undertaken (1), stakeholder consulted (1)
- Primary data related to program formulation gathered (1)
- Public awareness created (1)

2. Program Implementation

- Inception workshop conducted, June 2000
- Environmental profile prepared, September 2000
- Stakeholder consultation workshop held, June 2000
- Data gathered for ICM risk assessment and coastal strategy
- ICM project newsletter published and disseminated, December 2000
- Action plan or beach clean up submitted, July 2001
- Action plan on waste segregation submitted, August 2001
- Flyers on waste segregation published and disseminated, August 2001
- Posters on beach clean up published and disseminated, August 2001
- Flyers on ISO 14001 published and disseminated, September 2001
- Communication plan compiled and revised, December 2001
- Regular contribution to PEMSFA Update - March 2001, September & December 2000

- EIA risk assessment performed (1)

3. Strategic Management Plan Formulation

- Strategic management plan formulated (1) and adopted (1)

4. Issue of Special Area Plan Developed (1) and adopted (1)

5. Organizational (1) and equal (1) arrangements proposed

6. Financial options developed (1)

7. Environmental monitoring protocol developed (1)
<table>
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<th>Program Implementation</th>
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<td>Interagency implementation committee established</td>
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| Coordinating agency/office for program implementation established                     |
| Capacity enhancement and information generation established                      |

- ILMS installed and operationalized, July 2001
- Assessment report on site capacities submitted, November 2001
- Data encoded in ILMS submitted November 2002
- Report on application of ILMS and GIS for generation of data, tables, graphs, maps submitted, November 2002
- Final report on establishment of ILMS:GIS and plan for updating and maintenance submitted, January 2003

- Project Coordinating Committee established, July 2001
- Communicators Network established, November 2000
- Green Productivity Group established, May 2002
- PPP Task Force for environmental investments established, June 2002
- Multisectoral committee on the development and implementation of coastal use zoning established, October 2002

- Project Management Office established, August 2000

<table>
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<th>Regional Training</th>
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- Regional training course on the development, implementation, and management of coastal and marine environmental projects: April 2000 & October 2001, Manila, Philippines
- Regional training course on QPR level 2 in supervision/onscene commanders: October 2000, Singapore
- Regional training course on environmental impact assessment for coastal and marine areas: December 2000, Hong Kong
- Regional training on integrated coastal management: November 2001, Manila, Philippines & Xiamen, PR China
- Regional training on environmental risk assessment: July 2000, Manila, Philippines
- Regional training workshop on the development and implementation of coastal use zoning and institutional framework: August 2002, Manila, Philippines

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<th>Site Training</th>
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- Training on coastal strategy development: February 2001
- ILMS Training: February 2001
- Workshop on public awareness and planning for...
ICM, April 2001
- Training on risk assessment and management, December 2001
- Training workshop on public perception and willingness to pay using CVM, July 2002
- Training for project task team and multisectoral committee on the development and implementation of coastal use zoning, October 2002

Internship at RPO
- Pham Trin Chin May-November 2002

Information generating arrangements
- Information sharing on risk assessment
- Information sharing on IIMS
- Information sharing through the Communicators Network
- Information sharing through the Multisectoral Committee in-charge of zoning

1

Coastal strategy adopted, December 2001

1

2

- Monthly reports submitted, July 2002-February 2003
- Quarterly reports submitted, January 2000 to December 2002
- PCC meetings held June & October 2000, April and August 2001, January & December 2002 to discuss project implementation

III Program Sustainability
Perception and attitude changes among stakeholders detected (*)

1

- Participation in study tours and RNLG Forum
- Participation in PA activities

1

- Participation in trainings, study tours and RNLG Forum

1

- Stakeholder consultation January 2000
- Communication planning and survey on public awareness and participation April 2001
- Stakeholders consultation on waste segregation and beach clean up, August 2001
- Waste segregation campaign & beach clean up, mid-2001 to 2002
- Coastal strategy development, February-November 2001
Human and financial resources by government and stakeholders for continuation of program committed (1)

Continue implementation of prioritized agenda of the action plan committed by local government (*)
Integration of ICM program into local government environmental management and sustainable development framework undertaken (1)

IV Program's Impacts
Environmental quality shows sign of improvement (1)

Some environmental degradation arrested (1)
Interagency conflicts reduced or resolved (1)

Use conflicts minimized or resolved (1)
Evidence of ecological improvement (1)
Evidence of socioeconomic benefits (1)
Additional financial support from national government
External sources (1)

- Coastal strategy declaration, June 2002
- Public consultation on environmental investments, May June 2002
- Contingent valuation survey, July-August 2002

Note: Numbers in parentheses represent scores
The Mid-Term Evaluation Team

Dr. Delmo Ganapao was the team leader and institutional arrangement specialist of the Mid-Term Evaluation (MTE) Team. He obtained his Ph.D. in Environmental Science and Management from the State University of New York specializing in Environmental Policy and Planning. From July 1995 to June 1998, he served as Undersecretary of the Philippines Department of Environment and Natural Resources at the same time handling its Coastal Resources Management Program. Dr. Ganapao was the focal point for the Philippines in the Global Environment Facility (GEF) and was GEF Council member as the regional representative for the Philippines, Indonesia, and South Pacific Islands from 1995 to mid-1997. He has been an active advocate for civil society participation and concurrently chairs four organizations, namely, the GEF/UNDP SGP National Steering Committee, the Board of Trustees of the Foundation for the Philippine Environment, the NGO-PO Civil Society Counterpart in the Council for Sustainable Development and the Philippine Federation for Environmental Concerns. He is also the Secretary General of the Earth Day Network Philippines. Dr. Ganapao has a very broad consulting experience in the field of environmental management and environmental policy, both in the public and private sectors.

Dr. Peter Burbridge was the coastal and marine expert in the MTE Team. He is Professor Emeritus for Coastal Management at the School of Marine Science and Marine Technology of the University of Newcastle upon Tyne. He finished his Ph.D. in Natural Resource Management with specialization in Coastal Resources Management minor in Resource Economics and Remote Sensing and Environmental Evaluation at Cornell University, USA. Over the past 30 years, Dr. Burbridge has provided technical and management advice on a wide range of resource development and environmental management issues. Most of his work has been associated with resource development and management in developing countries, including project formulation, development, monitoring and evaluation, applied research, and training. He has extended his professional advice for several United Nations agencies including the World Bank, the Food and Agriculture Organization, United Nations Environment Programme, United Nations Development Programme, and the United Nations Education, Scientific, and Cultural Organization, the World Conservation Union, World Wide Fund for Nature, International Council for Exploration of the Seas, international aid agencies and private consulting firms.

Dr. Ashok Jashapara was the knowledge management specialist of the MTE Team. He is an internationally recognized expert in the field of knowledge management and Chair of the Knowledge Management Research Group at Loughborough University. He has considerable consultancy experience in Europe, the United States, and with the United Nations in the Far East. Dr. Jashapara is Senior Lecturer in Knowledge Management in the most prestigious information science department in the United Kingdom (UK). He has published leading books and journals and has won a number of awards for his work. He has written the first truly integrated book on knowledge management, which integrates the human resource, information systems, and practitioners' perspectives. Dr. Jashapara is a Trustee of the Joseph Rowntree Foundation - one of the largest independent social policy research and development charities in the UK.