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

Mid-Term Evaluation Report

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A GEF Project Implemented by UNDP
and Executed by IMO

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LIST OF ACRONYMS

ADB	Asian Development Bank
ASEAN	Association of South East Asian Nations
BC	Benefit – Cost
BCCF	Bataan Coastal Care Foundation
CITES	Convention on Trade in Endangered Species
CMC	Coastal Management Center
DA	Department of Agriculture
DANIDA	Danish Agency for Development Assistance
DENR	Department of Environment and Natural Resources
DSS	Decision Support System
EIA	Environmental Impact Assessment
ERA	Environmental Risk Assessment
GEF	Global Environment Facilty
GPA	Global Programme of Action
ICM	Integrated Coastal Management
IEIA	Integrated Environmental Impact Assessment
IIMS	Integrated Information Management System
IMO	International Maritime Organization
IRR	Internal Rate of Return
ISO	International Organization for Standardization
IT	Information Technology
ITC-CSD	International Training Center for Coastal Sustainable Development
IW	International Waters
JICA	Japan International Cooperation Agency
KM	Knowledge Management
LFA	Logical Framework Approach
LUAS	Lembaga Urus Air Selangor
MBEMP	Manila Bay Environmental Management Project
MDG	Millennium Development Goals
MED	Marine Environment Division
MEG	Multidisciplinary Expert Group
MMCC	Marine Management and Coordination Committee
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NGO	Non Government Organizations
PCC	Project Coordinating Committee
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PG-ENRO	Provincial Government - Environment and Natural Resources Office
PIR	Project Implementation Review
PMO	Project Management Office
PMMP-EAS	Prevention and Management of Marine Pollution of the East Asian Seas
PPP	Public-Private Partnerships
PSC	Project Steering Committee
PSEMS	Port Safety Environmental Management System
RNLG	Regional Network of Local Governments
RPD	Regional Programme Director
RPO	Regional Programme Office
RTF	Regional Task Force

SIDA	Swedish International Development Agency
SDS-SEA	Sustainable Development Strategy for the Seas of East Asia
SMPR	Secretariat 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 endeavour 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 coastal 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 time frame 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. <u>All PEMSEA partners</u>

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. <u>Donor support (GEF, UNDP, IMO and other donors)</u>

1. 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 system 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.

6. 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 program 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 program. 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.

I.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 intraregional trade and commerce, creating in the process a new East Asian Economy comprised of Association of South East Asian Nations (ASEAN) + 3.

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 belong to 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 environments in the countries of the region are in danger of being overexploited 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 lack of 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 important role that could be played by 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 such applications. 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. Port Klang 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.

1.7 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.

1.8 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.

1.9 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 then appropriately covers many other relevant concerns that should be part of the programme if it is to be called an ICM effort.

1.10 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 conceptual level, the "partnership" or linking of environment and development underlies PEMSEA's approach. As such the programme also becomes a way by which various global agreements on maritime concerns as well as on the broader sustainable development agreements of the WSSD Plan of Implementation, the MDG, 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 countries, 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 economies of scale for environmental facilities.

1.11 The diversity of sites implementing the programme provides an advantage. Demonstration sites pioneer 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.

1.12 The sites cover a typology of governance mechanisms, from highly centralized governance systems (Xiamen, Danang, Nampo), decentralized governance but with strong central direction (Port Klang) and those with highly decentralized governance practice (Batangas, Bataan, Manila Bay, Bali and Sihanoukville) as 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.

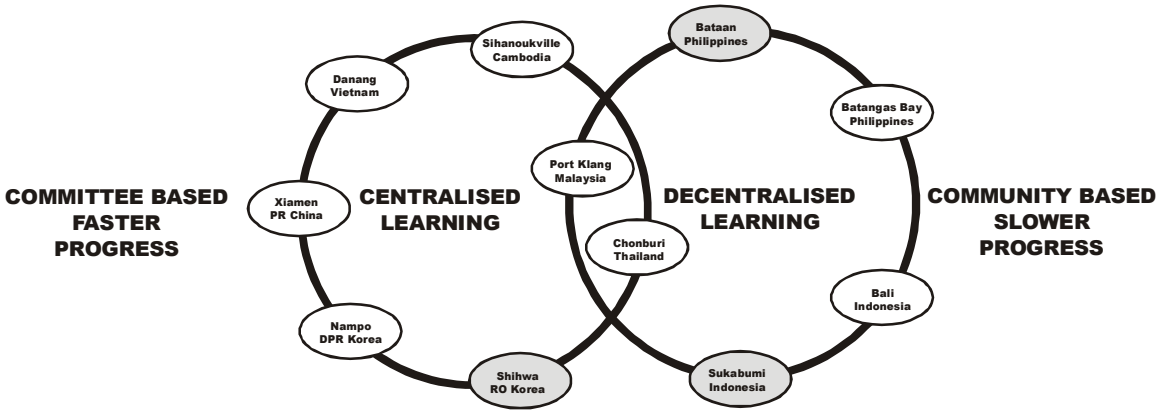


Figure1. Organisational learning at demonstration and parallel sites

1.13 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.

1.14 The programme's study tours, internships, cross-visits 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 Project Coordinating Committee (PCC), they have helped create a feeling of regional programme participation.

1.15 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 IMO, 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-charged of land-based concerns with those for marine and coastal resources. There are also the other coastal and marine resources 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 it 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, organisation, evaluation, storage and retrieval of new knowledge secondary to the primary purpose of meeting outputs in the logframe.

<u>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</u>

1.19 PEMSEA's development objective "to protect the life support systems, and enable the 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" is in a sense an operational definition of sustainable development. The coastal and ocean systems of the East Asia is the region's natural heritage and source of food and livelihood for the millions of poor 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 on such management through capacity building, scientific inputs, integrated information management system (IIMS), stakeholder participation, environmental 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

and economic development. Bringing the sustainable development direction of PEMSEA into the regional level would be facilitated by one of its outcomes, the SDS-SEA.

1.20 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.

1.21 The foundation of the SDS-SEA are based on the prescriptions 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 subregional levels, through the regional commissions and the other regional and subregional institutions and bodies".

1.22 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 actors, 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 fisherfolks. 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.

1.23 The WSSD Plan of Implementation reiterates 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

various action programs of the SDS-SEA shows that these programme areas called for by WSSD and Agenda 21 are tackled at an operational level relevant to the region.

1.24 The other output of the WSSD was the promotion of Type II partnerships. These are partnerships that bring in not only donors and international bodies 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".

1.25 In the SDS-SEA Action Programs, there are many elements that would facilitate formation of Type II partnerships. Objective 3 of the "Develop" Section of the Strategy is on "Partnerships in Sustainable Financing and Environmental Investments". All the action programs under this objective are important in supporting Type II partnerships. Similar action programs are similarly 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 vest responsibility in concerned stakeholders for use planning, development and management of coastal and marine resources". Some examples that would facilitate public-private partnership include the following: "enhancing corporate responsibility 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 user fees for ecological services" and "levying economic incentives and disincentives". For promoting partnerships at the regional level, 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 expeditiously finance environmental infrastructure 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.

1.26 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 noted in 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 crowded in coastal areas. Coastal resources are vital for 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 generation directly relate to eradication of poverty and hunger.

1.27 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 is 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.

1.28 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 relevant to 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.

1.29 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.

1.30 Capacity 2015 also seeks to maximize benefits of globalization at the local level. SDS-SEA reflects a similar objective by holistically linking the promotion of regional cooperation and the incorporation of sustainable development in subregional growth areas as a way to further support efforts (i.e. 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

tanker 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.

1.31 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 include 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.

1.32 All of the above is similar to the direction taken by SDS-SEA. The strategy also puts great importance to 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 thrust 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. re-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 lead 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 at 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 (POP). 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

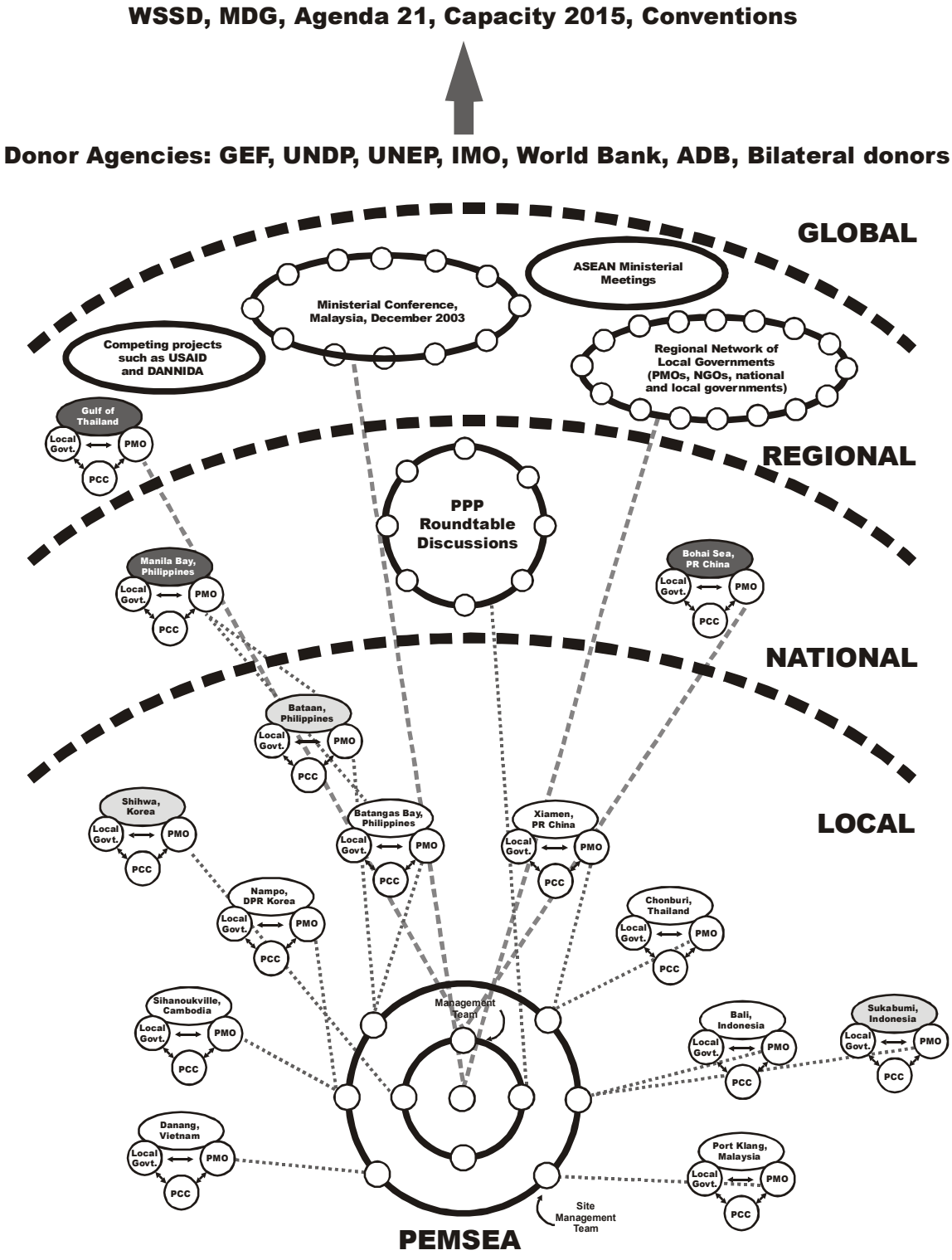


Figure 2. Organisational Networks at PEMSEA

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 2015 could then give it further impetus by providing immediate support in translating its action programs for local level implementation. This would open up additions which could further enhance its validity 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 runoff 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 primarily desertification and deforestation could also be looked into especially where drought and siltation 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, far more complex in fact than 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 applying 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.

2.2 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 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 mangrove, 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 approvals 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.

2.3 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, continuity

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 core staff, staff and counterparts at the 6 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-SEA, it has proven very difficult to assess the actual impact of the Program. There are good examples of ICM practice. Some have been catalysed by PEMSEA, while others may not be a direct result of PEMSEA activities. For example, the LUAS river basin framework in Selangor 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 ICM project site. 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 PEMSEA should be able to demonstrate rapid results and thus gain greater political 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 continuing 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 Program has achieved significant progress towards potentially very beneficial outcomes and, in time, major 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 inform planning and decision taking process and investment. Examples include: environmental profiles, risk assessments, feasibility studies, maps and scientific reports for the project and parallel sites;

i. Positive influence on investment in measures to improve environmental conditions and reduce stress within coastal and marine ecosystems;

j. Engaging private enterprises to focus on coastal management issues in their corporate responsibility agendas;

k. Support to national governments in the formulation of national coastal policies.

3.3 All of the above contribute to meeting the project's regional and global environmental objectives as per GEF Operational Programs 8 (Waterbody-Based Operational Program), 9 (Integrated Land and Water Multifocal Area Operational Program), and 10 (Contaminant-Based Operational Program). Progress in meeting the targets and indicators that support these objectives are discussed in the various sections of this evaluation. Additional discussion on PEMSEA activities as they relate to the stipulations and expected outputs of GEF OP 8, 9, and 10 is also in Annex 1.

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 costal 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 or longer-term goal. The emphasis upon protecting the life support systems that underpin sustainable production of marine and costal 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 ten stated **Project Development Objectives** (See Annex 3) and fourteen planned **Outputs** are appropriate 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 intended 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 trainee and social and economic conditions beyond the control of the project managers.

3.7 The Evaluation Team concurs with the findings of the GEF Secretariat Managed 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-over-runs and it 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 sourcing 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 denote 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 inter-disciplinary mode and providing scientific advice in a form that will be valued and applied by planners and managers. By adopting more perceptive 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 most 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 a) enriching the application of "indigenous and emerging technologies", b) addressing "cutting-edge scientific issues of leading environmental and resource concerns", and c) 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 enrich ICM in practice.

3.11 However, the Evaluation Team believe 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 in the implementation of planned activities to the protection of the life support systems that enable the sustainable use and management of costal and marine resources. Throughout the study tour of the six project and parallel sites visited it 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 the 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 do 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 “refresher” 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.

3.11.2 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 costal and marine resources.

Knowledge Management

3.12 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.

3.13 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. 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 mechanism for sustainable development.
d. The establishment of the RNLG to promote greater South-South dialogue on ICM implementation.
e. The promotion of a regional SDS through a Ministerial Conference in 2003.

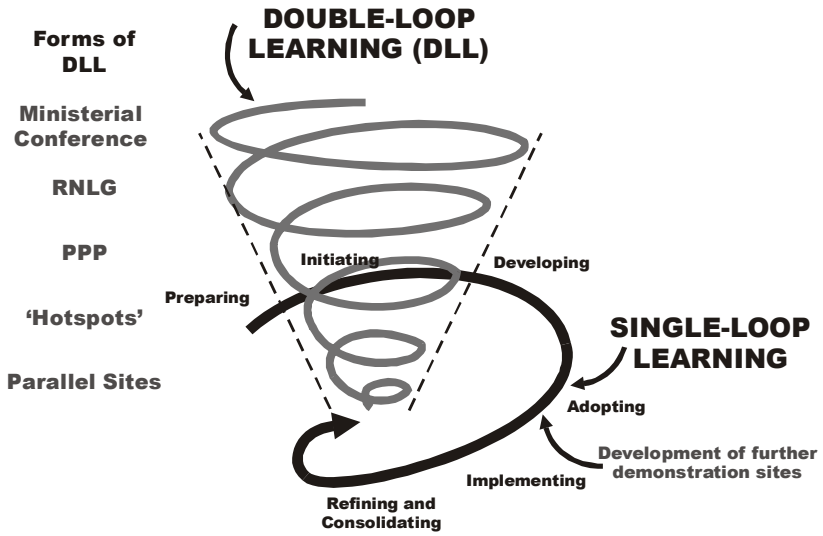


Figure 3. Single-loop and double-loop learning on the PEMSEA Programme

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 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[1] 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 parallel sites is currently limited. At present, staff at PMO sites share their knowledge centrally with site managers at the RPO 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 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 Seas region.

3.16 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 simulation 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 IW: 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

[1] Force field analysis is a simple tool used in strategy to identify those forces driving a change process and those forces retarding it. Strategies are developed to support and enhance the driving forces and examine ways to undermine the restraining forces. Such an analysis has a background in military planning.

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 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:

1. How are the interest areas identified and promoted?
2. How are champions or e-forum co-ordinators 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?

3.18 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 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 (RNLG). 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.

3.19 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 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 should be made into 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 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.

3.20 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 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 RNLG 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 local 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 RNLG;
- 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 interrelationships 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 with pilot communities. Where initial site consultations have been held, the concept of caring for the coastal environment has been started and the need to work together on this task. There 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 on this.

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 on-going 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-CSD) 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 on 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 ICM into operation in their project sites and have the willingness to coordinate at a regional level.

4.8 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.

4.9 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 has 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 effort, however, has 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 mariculture in these communities have not yet come in.

<u>Likelihood of continuation of project outcomes and benefits after completion of GEF funding</u>

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

4.11 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.

4.12 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.

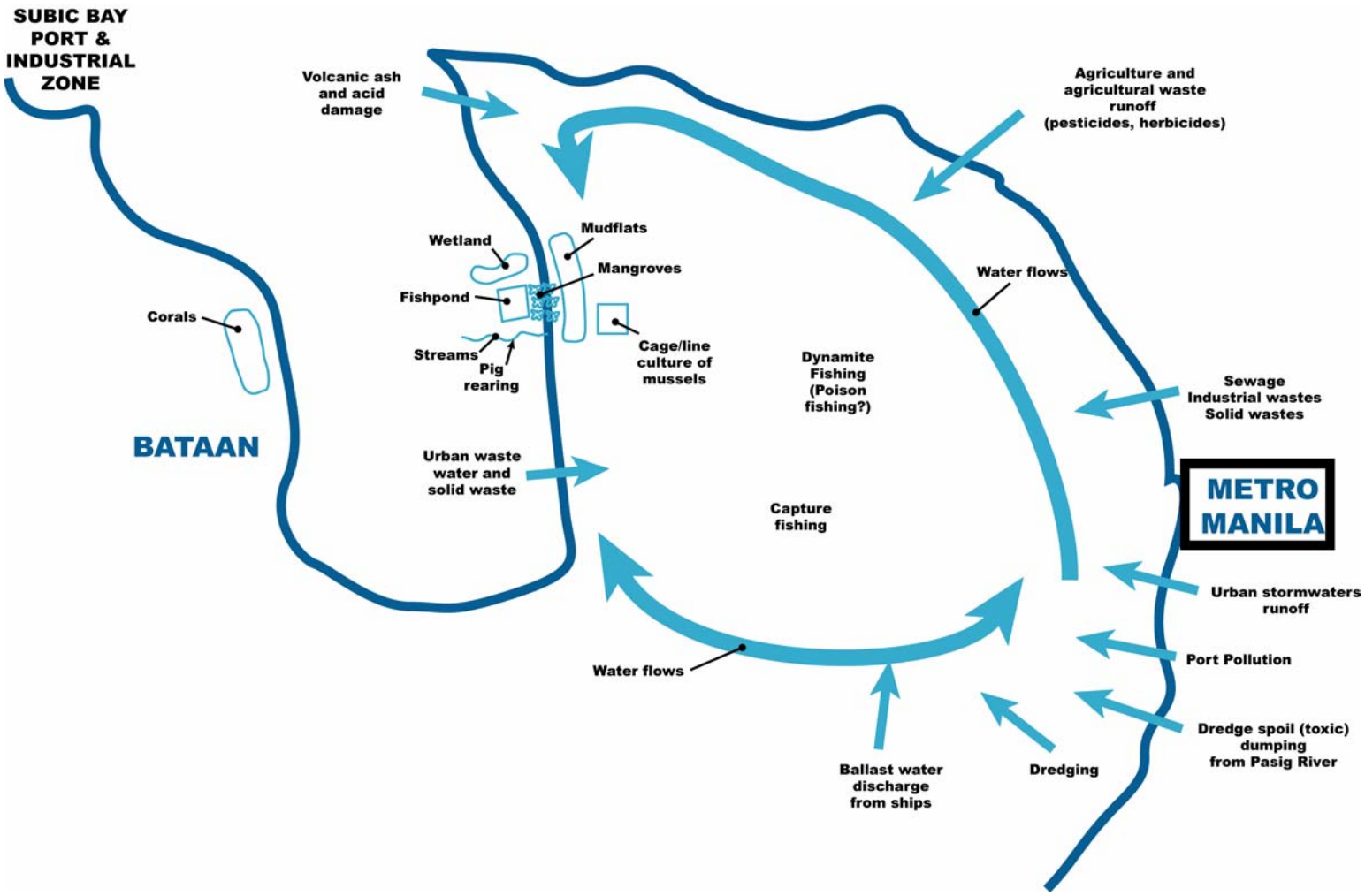


Figure 4 Coastal systems dynamics at fisherfolk livelihood project in Bataan

Key factors and issues that require attention

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 coastal and ocean projects as part of their efforts to build partnerships. However, there appears to have been limited positive response from other donor based programs, which inhibits sharing of knowledge, experience and expertise, and inhibits 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 to the Programme, there are practical limits to the human 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 serve 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 (i.e. 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 and value from other complementary activities is being lost, but it is difficult to see how this 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.

4.13.4 **SDS-SEA:** The Evaluation Team supports the recommendations of the Multi-Disciplinary Expert Group (PEMSEA/WP/2002/06, pages 3-4) for strengthening the scientific basis of the SDS-SEA.

4.13.5 **PPP:** The development of Private Public Partnerships (PPPs) is a good example of the pioneering work of the PEMSEA 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 mechanism. In the Maluan Bay rehabilitation project, as presented by the engineering consultants, 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 was 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: (1) urban development of the reclaimed land may incur high costs for piling 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 weaken 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 mechanism. This brings into fore 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 grave 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.

4.13.5a 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 land 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.

4.13.6 **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 PEMSEA as model examples of ICM in practice.

4.13.6a Although admirable progress has been made in redressing the issue of pollution of the Yuandang Bay, more 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 reclamation 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 Maluang 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 Maluang 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.

4.13.6c A further example is the need to examine the proposal to dredge the Maluan 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, tidal 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 to 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 degrared 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 tarmacadam 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 off-shore 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 Port Klang ICM demonstration 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 tourist 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 implementing ICM strategies and plans that affect their lives and welfare. This would certainly help improve the Crab Island initiative as a model for local ICM.

<u>Other concerns that the programme should look into include:</u>

4.14 Concern that because of the need to keep the concept simple for local people, that the comprehensive nature 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 riverbanks, etc.).

4.15 Changes in political leadership either through elections or new appointments would cause delays particularly where institutional mechanisms such as the

Marine Management Office and Marine Expert Group in Xiamen, and the Provincial Government-Environment and Natural Resources Office (PG-ENRO) in Batangas are absent.

4.16 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.

4.17 Decisions at the national or federal level could easily negate decisions at the local level (Batangas, Bali 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 Selangor, 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 to a newly formed local body, LUAS. Politicians 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 (i.e. auditing of EIAs) transferred to it. This situation is very similar to that of Batangas where the PMO is trying to negotiate a MOA with the DENR to transfer some EIA powers to it.

4.18 As many economic development projects have already been approved or implemented prior to ICM activities (Danang coastal road, reclamation in Turtle Island in Bali, reclamation of about 10,000 hectares of a peninsula and some islands 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 PMO 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 (better still utilizing the Integrated EIA tool developed by PEMSEA) as basis for approval of projects could serve as stop-gap measure till detailed zoning is made and strong institutional support for such zoning (i.e. gazetting in the case of Port Klang, local ownership through participatory mapping as planned in Bali) is gathered. There has to be intensive training, however, for the PMO 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.

4.19 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. Without 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 at present, the monitoring of impacts, particularly in a complex approach as ICM, is spotty and weak.

4.20 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 steps, there is the need to get regional support for the SDS-SEA.

5.0 PROJECT MANAGEMENT

<u>The project's adaptive management strategy</u>

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 actions can be applied. 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 as time taken for the process delays immediate action and as too much focus on site activities blinds 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 responsible 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$100,000. 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. Audit 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 to programme memoranda of agreements (i.e. PEMSEA with UNEP-Global Program of Action (UNEP-GPA) 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 country requests. This should be further developed to cover other aspects of program management.

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

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. On 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 allright 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

Environment and Natural Resources (DENR) and the Department of Agriculture (DA).

5.8 Decentralization has provided advantages. Local government units are more able to direct their own development plans and promulgate the regulations that would enforce its implementation. They can therefore commit to the establishment of an ICM site and the co-financing for it. But there are disadvantages as well when more than one level of political jurisdiction is involved. In Bali, where 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 level of autonomy to the regencies. The same applies to Philippine sites – Batangas, Bataan, Manila Bay – where mayors, governors, and national agencies have their own particular level of political power and autonomy.

5.9 A strong 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 Focal Point for Indonesia). But accounts from heads of PMOs (Port Klang, Manila Bay) say that even when heads of political units have given their approval, the middle level bureaucracy would still make timely decision-making and action 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.

5.10 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 that of environmental imperatives, then erroneous decisions maybe made rashly with detrimental consequences.

Partnership arrangements with other donors

5.11 Local governments have been the more substantive donors so far. Recent MOAs attest to this. The MOA signed by the Selangor Chief Minister on 19 July 2001 designating Klang as an ICM project demonstration site allocated counterpart support of US$491,895. Similarly, the Chonburi Provincial Government pledged a counterpart support of US$287,394 when Chonburi was designated a National ICM Demonstration Site in a MOA signed August 2001. National governments, however, have also put in substantial support funds. The Government of the Philippines had committed US$948,347 for 2001 and US$142,000 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$2,647,300 for the Bohai Sea Environmental Management activities. In total government contributions have totaled US$8,954,546. In comparison, private sector contributions have totaled US$400,000 while that of Swedish International Development Agency

(SIDA)/Coastal Management Center (CMC) was at US$163,820. The detailed breakdown of these contributions are in Annex 7.

5.12 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.

5.13 As there is no substantial counterpart funding coming from many national governments, national level ownership or buy-in is that much weaker. National level agencies 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 with less delay. National buy-in has to be developed in other ways than the requirement of substantial co-financing.

5.14 There are other coastal management projects funded by other donors in all the countries visited (e.g. ADB and World Bank in the Philippines, DANIDA in Malaysia, Dutch Government in Vietnam, JICA in Bali). There has been no active formal mechanism at the country level to get these projects and donors to link up with PEMSEA sites. There has been the assumption that membership of the focal agency or the focal point person to the steering committees of these other projects would create the link. Some PEMSEA PMOs have also not been active in linking with these other projects and donors. Outside of donors and donor-assisted projects, however, there is active collaboration. These are with the private sector, NGOs, government agencies and universities. A listing of PEMSEA cooperation and collaboration with these other partners are in Annex 8.

Public involvement in the project

5.15 All of the ICM project sites visited exerted efforts to provide opportunities for public involvement. The level and type of public involvement has depended on the governance mechanism of the local and national government. Public consultations have been relatively more government-led in the centrally planned economies. Where decentralized governance mechanisms exist, many non-governmental or traditional organizations were involved in the process.

5.16 Public involvement was a way of assuring social equity (i.e. compensation for aquaculturists to be relocated out of Maluan Bay in Xiamen), organizing a political constituency (i.e. formation of the Coastal Care Foundation in Bataan), and sustaining actions initiated at the local level (i.e. mainstreaming into commune activities in Danang).

5.17 Public involvement was also necessary since much of coastal environmental problems emanate from the social practices of local people (i.e. using the sea as

toilet in Danang or as a garbage dump in Manila Bay) and their economic activities (i.e. dynamite fishing in Bataan).

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 Batangas and Bataan, the continuation 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, is still basically focused on coastal pilot sites and has yet to expand to cover the whole landscape, particularly the upland watershed areas. This is the added task of the programme for the coming years, noting that in the GEF Operational Program documents, it has been noted that this would take a long-term effort, much beyond GEF's funding. This expansion then would have to come in time when commitment and capacity building of various stakeholders along the coastal areas can be directed towards the upland areas.

5.20 It has been observed that where major 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. Given this, the approach would then have to be preventive rather than curative. Public participation has to be brought in early before any other developments are given final approval. The land and sea-use zoning 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 PPP therefore is not just for the government and the private sector to be involved in. The public will eventually have to pay. The prospect of paying a fee certainly generates public interest and public participation is critical to ensure acceptability and public commitment to any future decisions.

<u>Efforts of UNDP and IMO in support of the programme office and national institutions</u>

5.22 IMO is the Executing Agency and is thus legally responsible for the management of the Programme both in terms of hiring staff as well as the execution of the programme activities. The Marine Environment Division (MED) of the IMO is 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 will 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.

5.23 At the start of the programme, the finalization of MOAs, MOUs, other partnership agreements and contracts thus took time as they had to sent to IMO headquarters in London. Thus, the decentralization by IMO of some of its executing responsibility 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 MED also visited in this initial phase. No senior officers, however, were able to visit the office in Phase 2 of the Programme.

5.25 A much closer working relationship, due partly to proximity, exists 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) overcoming obstacles related to the frequent change of and uncertainty in government administrative arrangements; (2) facilitating the use of the UNDP field offices in PEMSEA participating countries, and (3) providing valuable donor and government contacts of the UNDP, particularly that of the UNDP Manila 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 to date have not 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 if the national Government focal point specifically 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$350,000. An additional US$480,000 is being planned for 2004-5. As the Regional Programme is also providing technical support in the implementation of IMO's Technical Cooperation Projects in East Asia, IMO could further strengthen the RPO by providing technical staff to implement IMO related activities.

5.28 IMO has no medical plan for locally recruited field staff. Unfortunately, the local 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. Reports 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 well 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 need of the situation. Some PMOs, for example, were well satisfied with reaching stage 3 of the framework as called for in the workplan. The need of the situation, however, called for immediate zoning of the coastal area in order to address the impacts of rapid developments (i.e. construction of a major coastal road on the beach sand dunes or reclamation) which have been planned and/or are already under implementation.

Implementation of the project's monitoring and evaluation plans

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

5.31 There are also site managers assigned for each site. Site visits by these 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 sites visited, 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 from the project as well as the effect on 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 set 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 been 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.

5.34 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 on 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 methods in this respect.

5.35 Some efforts have been made to develop a way to monitor and evaluate the ICM programme (see Annex 4). The system uses four categories of indicators that relate to: (1) Problem Identification and Program Formulation; (2) Program Implementation; (3) Program Sustainability, and; (4) Program Impacts. 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 9). 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 could help capture the depth of progress at PEMSEA.

5.36 The programme is developing an IIMS, an environmental database designed to provide storage, retrieval and analytical capabilities for multi-sectoral user groups. As such it can also be a tool for monitoring, particularly environmental impacts of ICM activities. The development, however, of the IIMS is at an early stage. Site 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/drivenness

6.1 Local ownership and drivenness is strengthened when contributions derive from local sources. Financial resources from the local budget, focal agency staff assignment and time provided for the project, and the participation of officials from various agencies in coordinating and technical committees are considered co-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 PEMSEA 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,

stated preference for this project because its participants are working for it because of their commitment to their country. There is better chance of sustainability at the end of programme support.

Strengthening regional cooperation and inter-governmental cooperation

6.2 Regional cooperation and inter-governmental cooperation is strengthened through shared activities. The study tours strengthen regional cooperation by bringing different country participants together. It also helps create a common vision of what ICM 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 of the region. The RNLG further deepens this sharing with leaders of the site exchanging lessons learned, thus benefiting each other and the programme.

Strengthening stakeholder participation

6.3 Stakeholder participation is vital in that a comprehensive approach such as ICM which covers a wide spatial area, a multitude of often 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 it conveys in the initiation of site ICM activities and their sustainability. This critical mass also refers to the large coastal populations whose present overexploitation and pollution of the coastal areas have to be shifted to positive practices such as clean ups, 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

6.4 An ICM 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 office has been most effective. At site level, other developments are impinging 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

6.5 The effort to secure sustainability is supported by: (1) strong government action (i.e. permanent management structure with operational funds already allocated to it as in the Xiamen Marine Management Office and also the Batangas PG-ENRO ; (2) supportive legal system (i.e. Batangas and Port Klang trying to come up with legislation to transfer environmental powers from national to local government bodies; (3) sound scientific basis (i.e. organization of a Marine Expert Group as in Xiamen and the access to scientific expertise from universities in the other sites), and (4) enhanced capacity building (i.e. through continuous training for staff, study tours for government officials, and intensive information campaigns and public participation.

6.6 There is need for innovative mechanisms for developing financial sustainability. Xiamen provides an example with its adoption and enforcement of a user fee permit system. In Kuala Lumpur, a user fee system is planned, with one half of the fees going to LUAS to provide it financial sustainability while the other half to be shared with agencies but specifically allocated to support their environmental activities. In the other sites, the development of such mechanisms has not yet been well conceptualized. Their participation, however, in PPP activities would stimulate and facilitate the development of financial resource mobilization mechanisms.

Role of monitoring & evaluation in project implementation

6.7 ICM is the management of complexity towards the goal of sustainable development. As such it is also the balancing of competing uses. Given these, the building up of capacity and the generation of positive outcomes come 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 I and II has yielded very significant outputs that have greatly improved expertise and other supporting measures for the application of ICM by the participating nations. This is money well spent and 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 capitalizing 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 is not nurtured for 3 to five further years. This would jeopardize the development and successful implementation of the emerging SDS-SEA, which would undermine the advances that the investment by the GEF, UNDP, IMO and other organizations has achieved. The Evaluation Team sees great value to the GEF, UNDP, IMO 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, IMO and other prospective partners to consider adopting a common vision for adopting the PEMSEA concept of using ICM to 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:

B. 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, Bi-Lateral 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 SDS-SEA and the regional 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 2003 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 advanced of 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 donor's 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 for 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.

7.16.1 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 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 Where 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 their expert groups in the review of EIA and in the monitoring or audit of mitigative 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 (i.e. in Xiamen) and 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 for demonstration as well as parallel sites to show the significant benefits of ICM, SDS-SEA and other PEMSEA initiatives, this would still take time in most of the countries involved. In the more advanced sites, however, could already be seen the benefits that come from implementing ICM. These could be used as examples and arguments for appropriate adoption. In some countries the entry point for speeding up national buy-in is 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.

7.19 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 those 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 EIA developed by PEMSEA could also be utilized to look at impacts. It is important though 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.

7.20 **ISO 14001 Certification**- One means of extending the value of the PEMSEA programme would be to develop an accreditation system and standards for ICM program, projects and capacity building initiatives, Port Safety Audits and other activities similar to the ones used for Quality Assurance and Quality Control (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 Hawaii, 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. Devising 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.

7.21 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.

7.22 In order to develop and sustain the high levels of intellectual capital[2] 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 tacit 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 on best practices in the region as well as maintaining a specialised extranet to promote knowledge sharing practices especially the facilitation of communities of practice in the East Asia Seas region.

[2] Intellectual capital is more than what is in people's heads. It is about the competence of people developed through capacity building exercises and enabling environments at PEMSEA, namely human capital. Competence on its own is not enough and what PEMSEA has developed is a strong web of relationships at different levels in the form of social and stakeholder capital. This is not easily replicated and has taken years to develop through PEMSEA's adaptive management approach. A small fraction of this knowledge has manifested itself in a tangible form such as the IIMS and become part of PEMSEA's organisational capital. All these rich forms of intellectual capital contribute to PEMSEA's uniqueness in the field of ICM implementation.

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 stipulation 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 Operation 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 in 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 8th PSC Meeting. The planned Ministerial Meeting at the end of 2003 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 allow 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 project in other areas of China and in other nations 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 ICM 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 already 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 IMS 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 also 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, Danang, Klang, Bali, Xiamen and Bataan. Aside 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 challenge now faced by the programme is putting PPP projects into actual implementation. This is not as easy as it seems. Many countries of the region are still recovering from the Asian financial crisis. This has made in some cases, donor offers for low interest loans to influence government to take on government-led and government guaranteed investments to be given higher attention.

GEF Operational Programs 8, 9, and 10 all note the importance of capacity building. In this, PEMSEA has been most active. Trainings have been held at various levels. From 1999 – 2002, there has been 8 Regional Training Courses and Workshops with 142 participants from PMO, national/local governments, academe 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 PMO, local governments, academe and the private sector. Four ICM study tours, which have been most effective in terms of sharing of experiences, have also been implemented. A total of 116 senior officials have benefited from these study tours. The forums of the RNLG, the 1st Forum in Seoul, Republic of Korea and the 2nd in Xiamen, China, both with 80 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 (an explicit objective of GEF OP 10) had occurred.

It has been noted though 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 in its 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 8: 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 stakeholder 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 Bali, for example, NGOs are the ones helping the focal government agency on participatory mapping and on alternative livelihood (i.e. seaweed farming) for fisherfolks 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 synthesis 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 SDS-SEA.

Annex 2

IMO Supported Trainings/Workshops

List of Trainings/ Workshops Supported by IMO

October 1999 to February 2003 (by country)

Title of Training/ Workshop	Brunei Darussalam	Cambodia	PR China	DPR Korea	Indonesia	Malaysia	Philippines	RO Korea	Singapore	Thailand	Vietnam	Other countries	TOTAL PARTICIPANTS
OPRC "Train-the-Trainer" Course 25-29 October 1999, Singapore	2	2	2	2	2	2	3	2	0	2	2		**21**
Chemical Spill Prevention and Port Audit Training Workshop 10-15 January 2000, Manila							13						**13**
Chemical Spill Prevention and Port Audit Training Workshop 24-29 January 2000, Klang						10							**10**
Chemical Spill Prevention and Port Audit Final Workshop 26-30 June 2000, Manila							10						**10**
Chemical Spill Prevention and Port Audit Final Workshop 3-7 July 2000,Klang						11							**11**
OPRC Level 2 16-20 October 2000, Singapore	2	2	2	1	2	3	1	2		2	2		**19**
Regional Consultative Workshop on Strengthening Recovery of Ship Pollution Clean-up Costs and Damage Claims 5-6 September 2001, Singapore		2	3		2	2	4		3	2	2		**20**

Title of Training/ Workshop	Brunei Darussalam	Cambodia	PR China	DPR Korea	Indonesia	Malaysia	Philippines	RO Korea	Singapore	Thailand	Vietnam	Sweden	TOTAL PARTICIPANTS
OPRC Level 2 for Gulf of Thailand 29 October - 2 November 2001, Bangkok		2			8	2				7	4		**23**
OPRC Level 2 for Manila Bay 5-9 November 2001, Manila							28						**28**
OPRC Level 2 for Bohai Sea													**20**
24-28 June 2002, Yantai, PR China			20										
Claims Recovery and Contingency							22						**22**
Planning, Feb 18-21, 2003, Manila, Philippines													
Total Trained per Country:	**4**	**8**	**27**	**3**	**14**	**30**	**81**	**4**	**3**	**13**	**10**		**197**

Annex 3

PEMSEA Logframe Matrix:
Key Performance Indicators

LOGFRAME MATRIX I: KEY PERFORMANCE INDICATORS

Narrative Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions and Risks
Overall Development Objective			
To protect the life support systems and enable the sustainable use and management of coastal and marine resources through intergovernmental, interagency and intersectoral partnerships, for improved quality of life in the East Asian Seas Region.	• Framework and implementation strategy for a regional intergovernmental mechanism developed and adopted by the participating governments; • Multisectoral participation in the management of coastal areas and subregional seas evidenced through institutional arrangements and activities.	• Quarterly progress reports • Annual reports • Programme Steering Committee (PSC) and Tripartite Review (TPR) assessments; • Mid-term and final project evaluations.	Risk is minimized as a consequence of the following critical assumptions: • The East Asian Seas are critical to the economic development of the coastal countries, therefore mutual benefit may be achieved through cooperation; • Countries are already investing in environmental programs indicating a willingness to address the problem; • The GEF pilot project established working mechanisms and regional networks that can be developed and extended to other countries in the region.
Project Development Objectives			
To establish six national demonstration sites covering the application of integrated coastal management (ICM) for systematic and effective management of land and water resource uses, and to develop these sites for long term "in-house" training and capacity-building.	• Operationalization of six national ICM demonstration sites; • ICM framework, planning and management processes, institutional arrangements in place; • SEMPs, action plans, monitoring programmes, networks and IIMS developed and implemented; • Local officials trained in coastal planning and management; • National universities/institutions linked with demonstration sites; • Adoption and replication of ICM methodology and working model at parallel sites in participating countries.	• Same as above	• Build upon the ICM working model which was verified in Xiamen and Batangas Bay during the GEF pilot project; • There are existing national environment management efforts; • Related coastal management training existed in the region; • National expertise available in most countries; • The level of achievement, as measured by performance indicators, may vary among the countries; • The risk is limited.
To apply the environmental risk assessment and risk management process to address transboundary environmental issues in subregional sea areas under stress.	• Operationalization of risk assessment and risk management framework at three pollution "hot spots" in the region; • Strategic environmental management plans, action plans and environmental monitoring programmes established and implemented at each location; • Regional Task Force developed to replicate environmental risk assessment/risk management in other hot spots and/or to train and assist others to implement the process.	• Same as above	• Build upon the RA/RM working model which was developed and verified in the Malacca Straits; • There are existing national environmental management efforts; • The level of achievement of management actions among the sites depends on political will , funding and technical and scientific capabilities; • Regional expertise is available; • Some risks exist in the implementation of action plans, especially pertaining to transboundary issues, but these will be greatly minimized with the adoption of the RA/RM approach.

LOGFRAME MATRIX I: KEY PERFORMANCE INDICATORS

Narrative Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions and Risks
Project Development Objectives			
To assist human resource development in participating countries in areas of planning and sustainable management of coastal and marine areas, especially at the local level.	• 2 regional train-the-trainer programmes developed and implemented; • 16 specialized training courses conducted.	• Same as above	• Regional train-the trainer programmes enhance national capacity and promote diffusion of knowledge; • Some training materials and manuals have already been prepared and tested under the GEF pilot phase; • The risk is minimal.
To develop and reinforce regional networks and a Regional Task Force to provide support services for effective management of the coastal and marine environment.	• 4 regional networks established, operationalized and coordinated; • Regional integrated information management network set in place; • A multi-disciplinary Regional Task Force established; • Regional advisory and analytical support services provided to project implementors and to participating governments.	• Same as above	• Build upon the momentum of two existing networks of the GEF pilot project; • Participating individuals and institutions will be committed to provide regular input; incentives for network members will be available; • The risk is limited.
To create investment opportunities and mechanisms for environmental improvement and coastal/marine resource development and management, in selected areas of the region.	• Specific investment opportunities identified, assessed and developed; • Investors roundtables organized to promote public and private sector investment in environment; • Working models of public-private partnerships, and other types of partnership arrangements or mechanisms for investment, are established at ICM demonstration sites and "pollution hot spots"; • $600 million in environmental investments implemented.	• Same as above	• Private sector exists within the participating country; • Private sector (local and/or foreign) has available resources and increasing awareness of investment opportunities in the environmental sector; • Private investors concur that financial risks and potential returns on investment are within acceptable limits; • Government and multilateral, bilateral and other partners are willing to work within a cooperative framework; • Financial crisis in Asia may reduce availability of private sector resources; • Risk is associated with the degree to which cooperation and trust can be nurtured between the public and private sectors within and among participating countries.

LOGFRAME MATRIX I: KEY PERFORMANCE INDICATORS

Narrative Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions and Risks
Project Development Objectives			
To advance scientific inputs in support of decision- making for coastal and marine environmental management.	• 5 scientific working groups established to analyze key coastal and marine environmental concerns; • 5 working group reports translated into policy briefs and disseminated to governments; • Policy briefs used by participating countries to address relevant issues in coastal and marine policy.	• Peer review of approaches, methodologies and outputs, through scientific workshops and seminars; • Progress and final reports reviewed by the Multidisciplinary Expert Group; • PSC and TPR reviews.	• Ongoing studies and use of scientific information in participating countries imply recognition of need for scientific input to decision-making; • Appropriate scientific expertise is available within the region; • Recognized need for a multidisciplinary expert group on coastal and marine environmental issues in East Asia, with participation and links to like-minded international organizations; • Risk is limited.
To establish an integrated information management system (IIMS) for coastal and marine environmental assessment, planning monitoring and management.	• Information infrastructure installed and operationalized at 6 ICM national demonstration sites and 3 subregional seas pollution hotspots; • Integrated information management systems used by local and national agencies for environmental management, EIA, etc., within the ICM and RA/RM frameworks; • IIMS used by external groups and communities (research, academe, media, NGOs, private sector, public etc.).	• Progress reports; • PSC and TPR review; • Project evaluation report; • Assessment report on the effective use of IIMS.	• A regional network of ICM sites and pollution 'hot spot' locations is deemed desirable and helpful by participating governments; • Substantial holistic information is available at the ICM sites and hot spots and will be accessible; • There is a legal obligation and interest within participating governments in EIA and other types of environmental assessment; • Preliminary efforts in IIMS software development are already initiated in the GEF pilot phase • Risk is limited.
To enhance collaboration with and among non-government and grass-roots organizations, religious groups, environmental journalists and other stakeholder groups in coastal and marine environmental management.	• Key officials of NGOs, CBOs, POs and religious groups from selected sites trained in coastal and marine environmental management issues and methodologies; • Media resource information capability established; • 2 specialized training workshops for environmental journalists implemented.	• Progress reports; • PSC and TPR reviews; • Workshop reports; • Project evaluation. .	• NGOs, CBOs, POs and/or religious groups exist in the country and coastal and marine environmental protection and management is within the scope of their interest and activities; • Increased understanding and interest in environmental issues by all sectors; • Risk is limited.

LOGFRAME MATRIX I: KEY PERFORMANCE INDICATORS

Narrative Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions and Risks
Project Development Objectives			
To facilitate the formulation and adoption of integrated approaches in managing land and water uses as part of a State's coastal/marine policy and strategies for addressing transboundary environmental issues, so as to achieve sustainable development goals and to contribute to financial recovery in the region.	• Cross sector reviews of relevant national policies undertaken and policy guidelines established; • National policy "good practices" developed in consultation with, and disseminated to, participating governments; • Regional policy framework and implementation strategy developed; • Workshops organized to build consensus among countries on a regional policy framework; • Consensus achieved among participating countries.	• Same as above	• Increasing recognition of use conflicts and environmental degradation warrants countries to develop national coastal and marine policies and programmes; • Coastal nations recognize the need to establish appropriate policy and programmes for their own social and economic development and benefit; • Existing marine affairs institutions in the region can assist in maritime policy development; • The level of adoption of recommended policy varies with the conditions in each participating country.
To support the development of a sustainable regional mechanism which augments the regional commitment to implementation of international conventions related to the protection and management of the coastal and marine environment of the East Asian Seas.	• Review and analysis completed on national, regional and extra-regional regimes and their capacities and effectiveness in implementing pertinent international conventions; • Regional working group on international waters projects established; • Regional framework and sustainable financing mechanisms drafted in consultation with participating countries; • Policy conference convened and a strategy and action plan for a regional mechanism endorsed; • Implementing arrangements established for the regional mechanism, including a marine environment resource facility.	• Same as above	• Most countries have already signed international conventions concerning marine environment protection; • Countries realize the common benefits and increased effectiveness through cooperation in implementing international conventions; • Some existing regional mechanisms are in place (e.g., ASEAN; COBSEA) and the project will be working with these bodies; • There is a risk that some governments may take a longer time to agree to a regional mechanism than others.

LOGFRAME MATRIX I: KEY PERFORMANCE INDICATORS

Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions and Risks
Project Outputs			
• Establish national ICM demonstration sites, ICM parallel sites and develop fast track ICM programmes; • Develop regional capacity to implement environmental risk management programs in sub-regional sea areas of LMEs; • Organize special training program for upgrading of technical skills; • Build capacity through regional networks and a Regional Task Force.	• 6 national ICM demonstration sites established; • 10 national ICM parallel sites implemented; • 3 subregional sea area pollution hotspots implemented risk assessment/risk management programmes; • 16 specialized training courses conducted; • 5 regional networks established; • Regional Task Force engaged.	• NPCC review of project progress; • PMO's quarterly and annual reports; • Reports of technical studies at each site; • Mid-term and final project evalution; • Participants' assessments of training programmes	• Experience developed in Xiamen, Batangas Bay and Malacca Straits are transferable; • Training courses developed during GEF pilot phase will be employed; • There will be variation in terms of achievement and rate of progress from site to site; • Risk is low.
• Set up a series of public-private investments; • Package bankable project proposals; • Develop project operating companies, responsible for design, financing, construction and operation of projects.	• At least US $600 million in investment opportunities identified; • At least 6 project proposals for ICM sites and 3 proposals for pollution hot spots developed; • At least 3 project operating companies established.	• PMO review of project feasibility studies; • Progress reports; • Opportunity briefs and project proposals; • Round Table meetings with investors.	• Sustainable financing mechanisms developed during GEF pilot phase will be employed.
• Case studies in relatively unexplored key areas of applied scientific research in coastal and marine environmental management.	• 5 selected case studies undertaken, peer reviewed, published and disseminated to participating governments; • Multidisciplinary expert group (MEG) and case study working group recommendations incorporated into project activities.	• MEG progress reports; • Peer review of case studies; • On-site evaluation of recommendations; • Review of scientific input to project policy or decision-making activities.	• Scientific capability available within the region; • Secondary scientific data accessible and of appropriate quality; • Indigenous and emerging technologies appropriate for priority concerns at ICM demonstration sites and pollution hot spots; • Indigenous and emerging technologies are cost-effective and competitive.

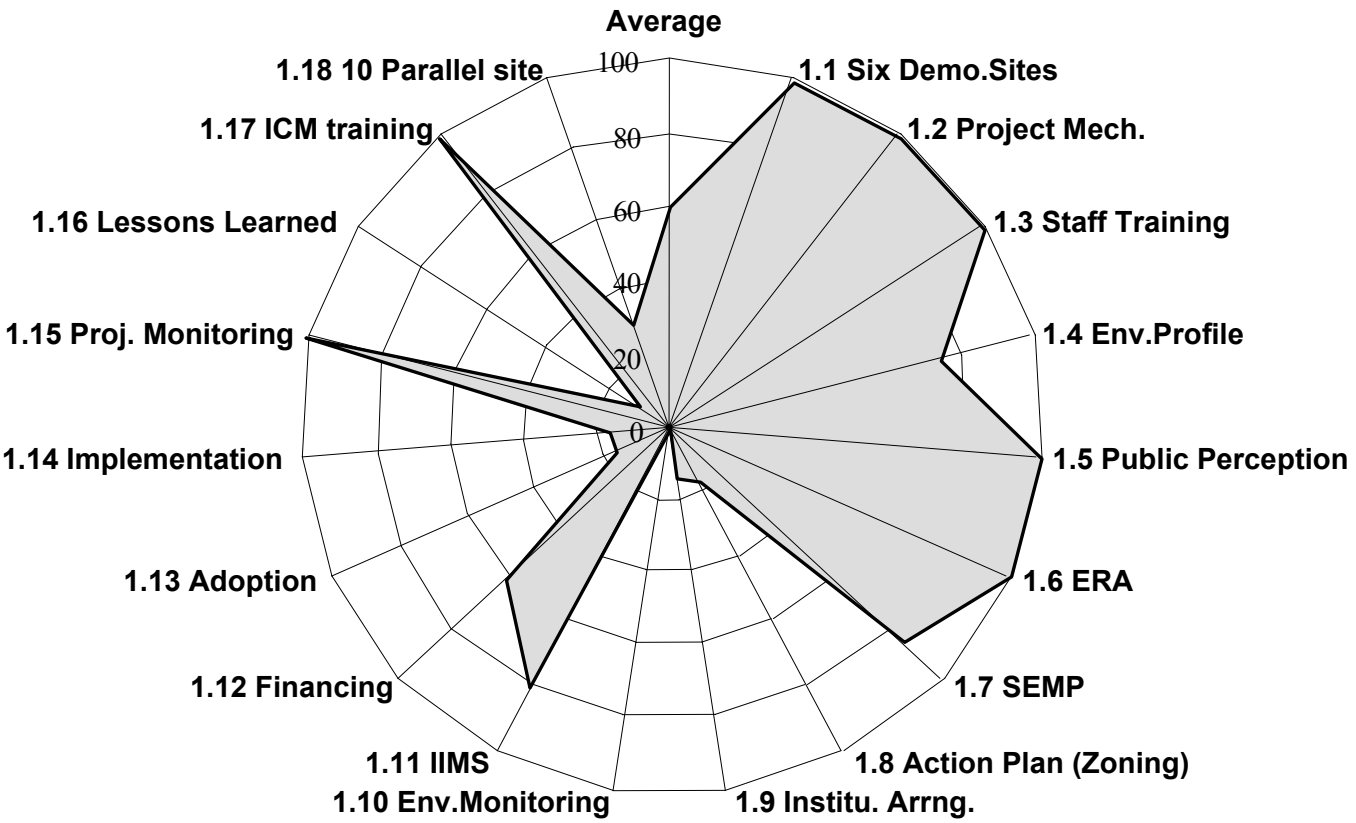
LOGFRAME MATRIX I: KEY PERFORMANCE INDICATORS

Summary	Key Performance Indicators	Monitoring and Supervision	Critical Assumptions and Risks
Project Outputs			
• A functional IIMS established at project sites; • A regional IIMS network linking project sites and international waters projects in the region.	• Hardware and software obtained and installed at relevant sites / locations; • Programme and project personnel trained in IIMS system; • Connectivity established between network hub and, where possible, various and relevant project sites; • Key technical personnel engaged, and technical applications of IIMS emerged.	• Progress and milestone reports; • PSC and TPR reviews; • Mid-term and final evaluations.	• Practitioners at ICM sites are interested and willing to share information; • Countries have sufficiently developed communication infrastructure; • Communities / sites / locations have access to broad bandwidth Internet.
• Mechanism to promote collaboration and involvement of concerned NGOs, CBOs, POs, religious groups and environmental journalists.	• NGOs, etc. participating as active members on established ICM councils or similar bodies for environmental management; • Multimedia materials related to the project developed and disseminated; • Media resource information center established.	• Same as above	• NGOs, etc. are active in participating countries and are interested in environmental issues.
• Guidelines for national and regional policy on coastal and marine environmental management issues; • Recommendations for a regional policy framework for environmental protection and management of the East Asian Seas.	• Guidelines drafted, published and disseminated; • Study of regional policy framework undertaken and report produced and disseminated; • High level consultative processes implemented for consensus building.	• Same as above	• Incremental benefits of national marine and coastal policies are recognized by participating countries.
• Set up a regional mechanism which strengthens technical capacity of participating governments and promotes greater cooperation in implementing related global instruments.	• Policy conference convened; • Marine resource center established; • Sustainable financing mechanisms verified; • Implementing arrangements defined and executed.	• Same as above	• Recognition among participating countries that it is desirable to collaborate when addressing increasing environmental transboundary issues; • Existing regional mechanisms can be used as starting points.

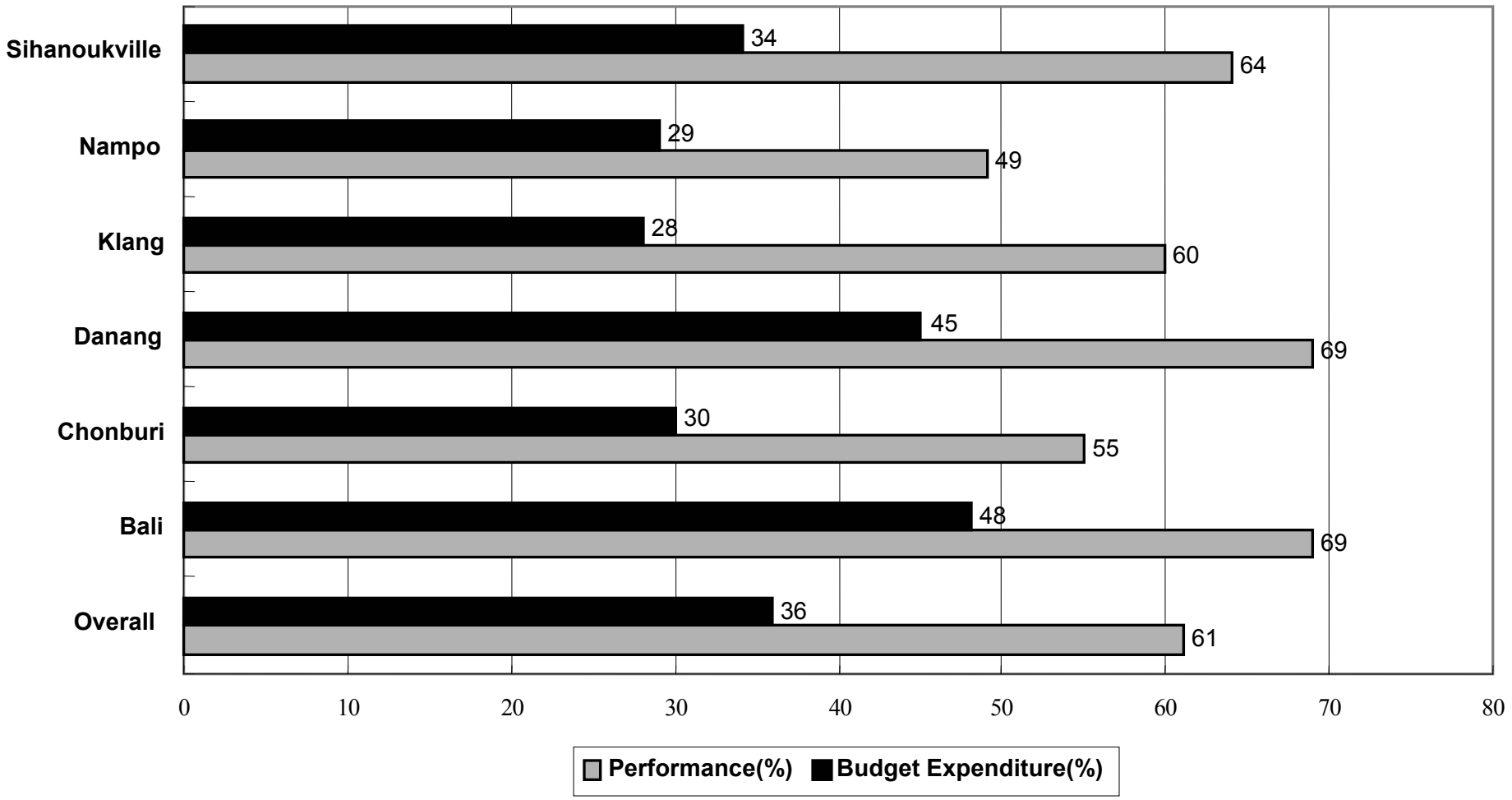
Annex 4
Internal Evaluation of ICM Sites Performance

ICM Performance

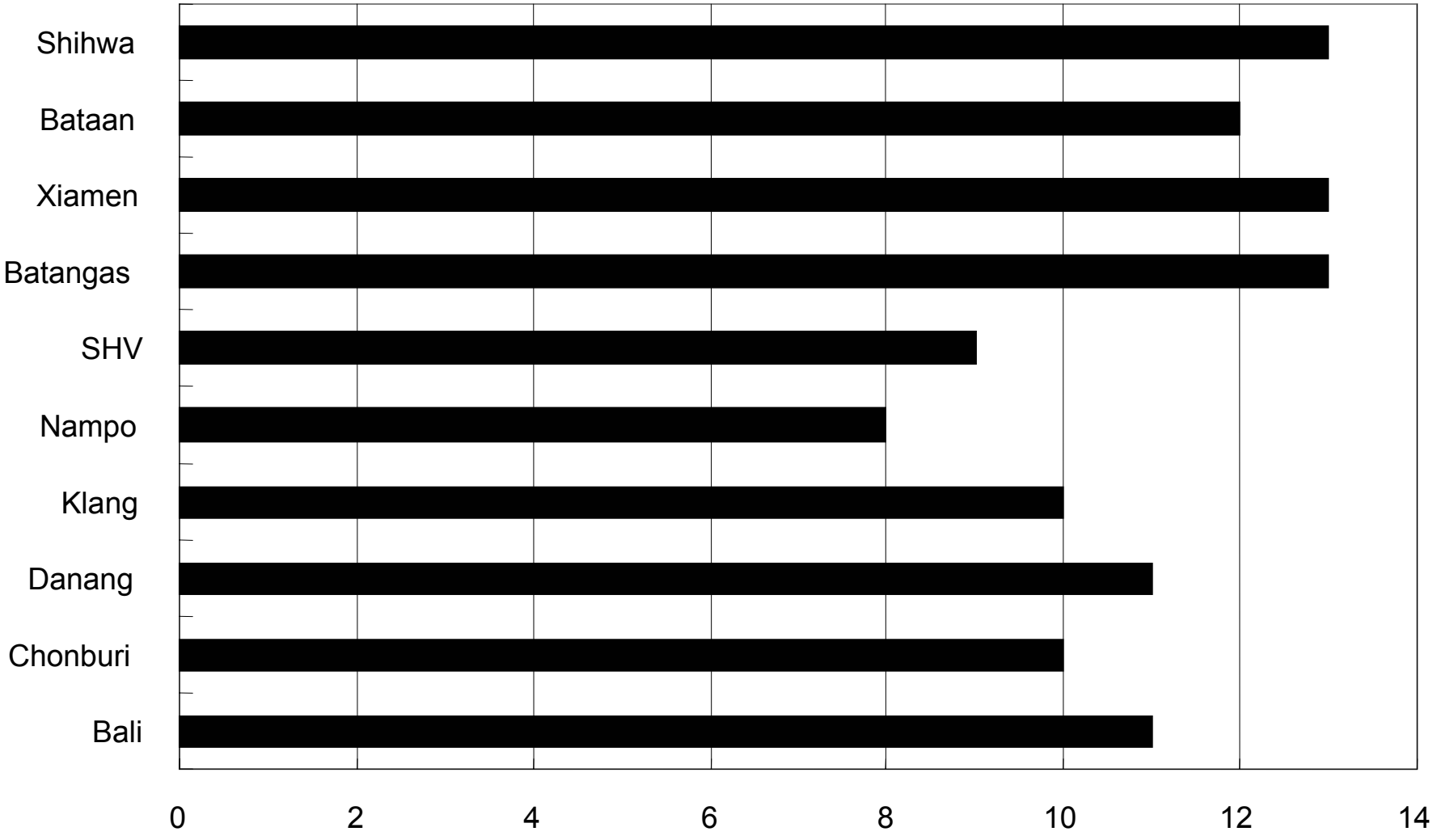
Project Document Requirements : Overall 61% (1999 2002)



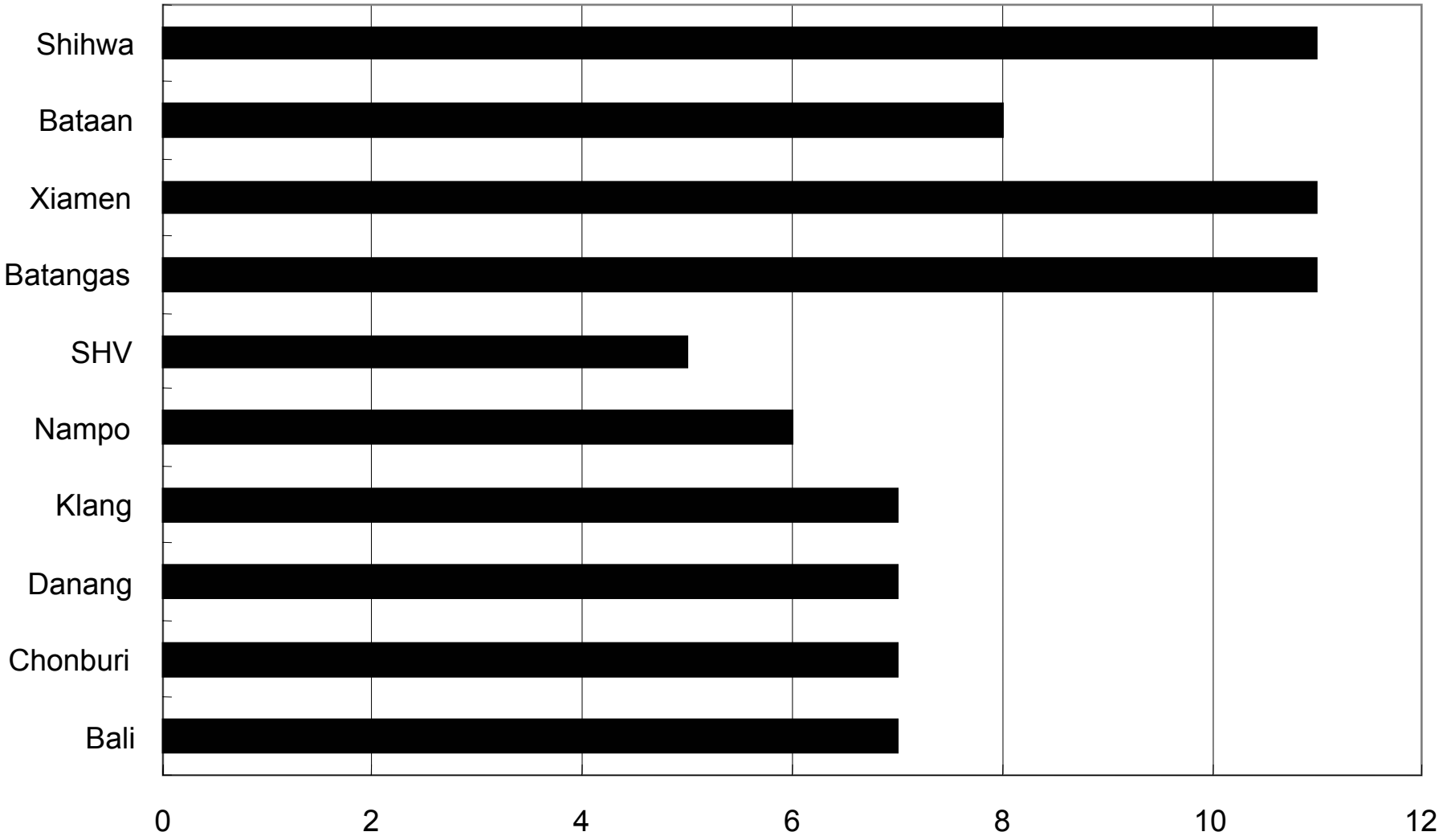
Site Performance (PD) & Budget Expenditure (1999-2002)



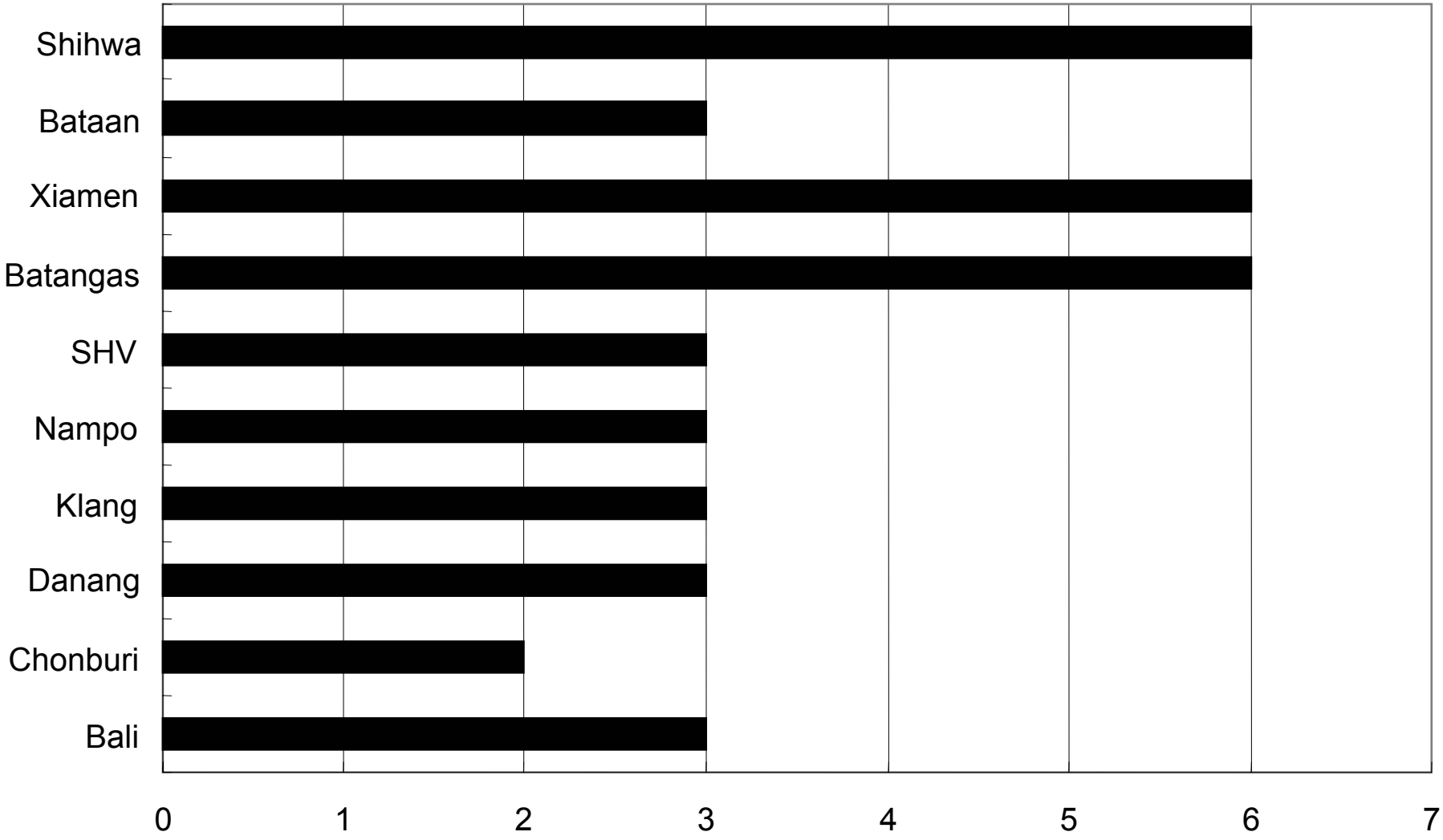
Problem Identification and Program Formulation



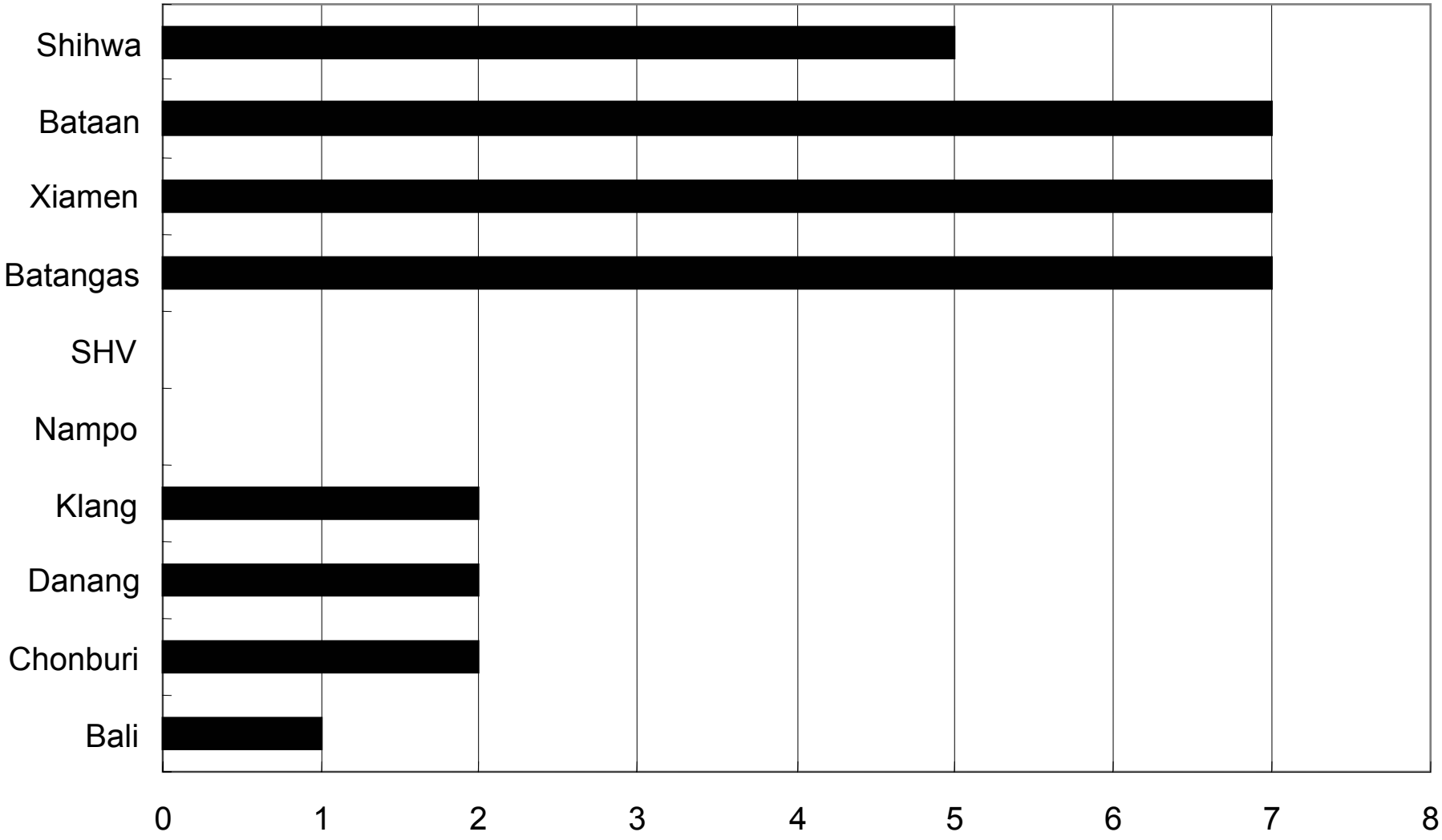
Program Implementation



Program Sustainability



Program's Impacts



Annex 5

Knowledge Management Strategies and Applications

Dr Ashok Jashapara
Knowledge Management Consultant

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, religious knowledge on mobilising religious tenets 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, 'hotspots', PPP, RNLG forums and a ministerial conference. 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 piecemeal 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 this 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 co-operation 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, namely, developing a funding mechanism for enhancing KM strategies and practices, articulating a clear ontology of ICM knowledge and systems dynamics at local sites, enhancing the communications strategy, developing the KM systems base and building communities of practice.

Table of Contents

List of Figures & Tables

1.0 Introduction

1.1 A common criticism of many integrated coastal management (ICM) projects today is that they tend to be donor or consultant driven or habitat or conservation based. 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 strict 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, representation, organisation, storing and sharing become critical assets to effectively manage ICM in these unchartered 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), this 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, dissemination of information, public awareness and adaptive management processes.
- An assessment of the systems developed and/or 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.

- Participating nations or other agencies/projects in the region, or elsewhere.

2.0 Knowledge Management Strategy

2.1 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[1]. In more simplistic terms, this 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, adopting, 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 overcoming constraints due to shortages in funding, evolving PPP and adapting the ICM cycle to local situations such as the religious tenets in Bali. A major challenge for PEMSEA's adaptive management strategy is the continual change of political leaders at local, national and regional levels.

2.3 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'[2]. The characteristics of this strategy are that it is people-led, has a tacit knowledge orientation and channels its expertise towards innovative practices. This strategy is less about technology and more about people. Knowledge sharing, mentoring and the use of creative and analytical skills 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.

[1] The dominant school of thought in strategic management treats strategy as a plan (known as the 'industrial organisation' perspective) rather than a process of everyday learning (known as the 'institutionalist' perspective). The drawback of the industrial organisation tradition is that only 10% of formulated strategies ever get implemented which brings the whole planing process into question. For further details, please see Jashapara, A. (2003). *Knowledge Management: An Integrated Approach*, Prentice Hall (forthcoming), Harlow Essex.

[2] For further elaboration on personalisation and codification strategies, please refer to Hansen, M., Nohria, N., and Tierney, T. (1999). "What's your strategy for managing knowledge." *Harvard Business Review*, March-April, 106-16.

These strategies are often employed in organisations where efficiency is the dominant force controlling the organisation. A model to understand the KM strategy and its drivers is shown in Figure 2.1.

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 has not been currently developed to enable a codification strategy to be meaningful.

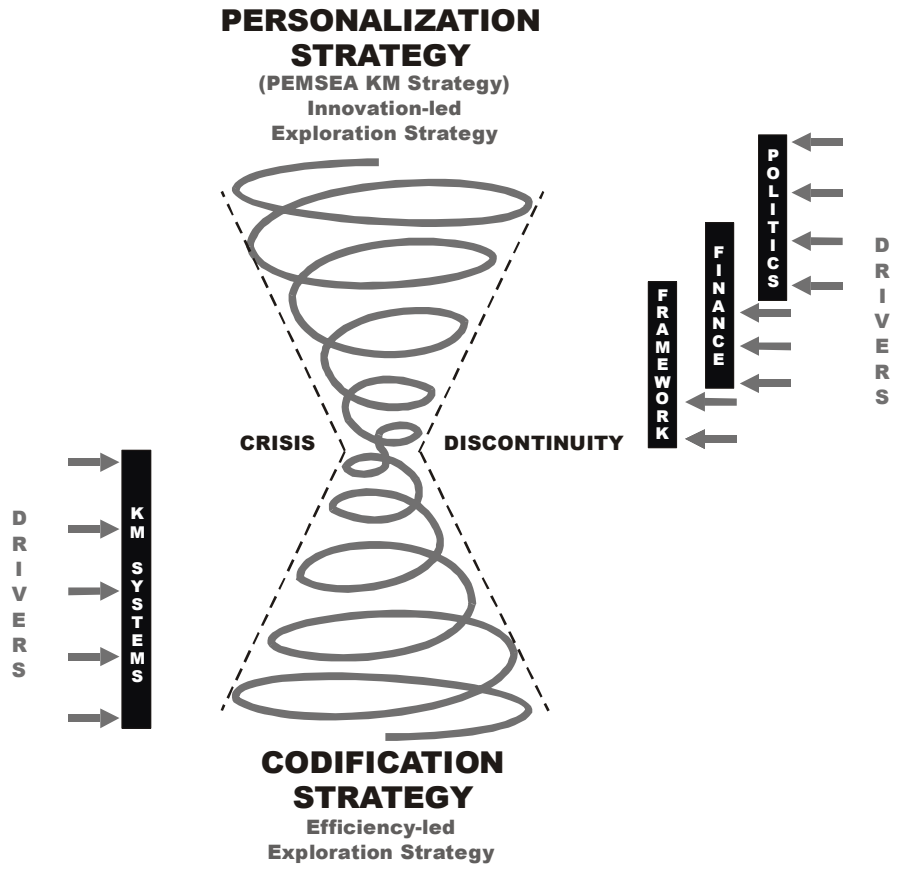


Figure 1 PEMSEA's Knowledge Management Strategy

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[3] 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 is 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 Bohai 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 practice 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 3.1.

[3] For further elaboration on strategies based on core competencies, strategic intent and stretch, please refer to Hamel, G., and Prahalad, C. K. (1993). "Strategy as Stretch and Leverage." Ibid., 71(2), 75-84.

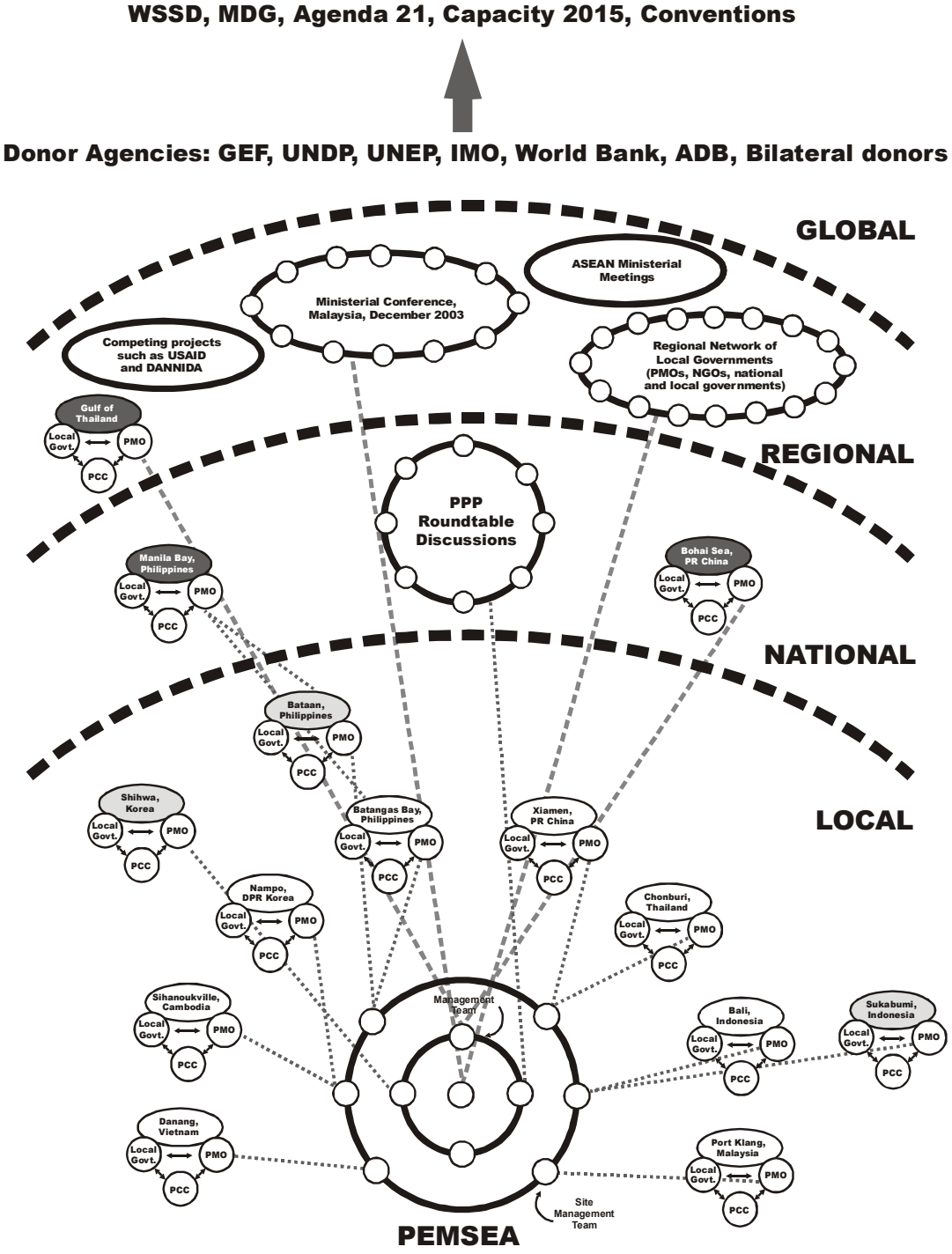


Figure 2 Organisational Networks at PEMSEA

3.2 The extension of the demonstration sites regionally represents a refinement and consolidation of lessons learnt in Phase 1. These include lessons such as the ICM development and implementation cycle, capacity building and stakeholder consultations have been replicated and applied to different demonstration sites in eight countries across the East Asia Seas. The replication of demonstration sites represents a form of single-loop learning[4] 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 organisation 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 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 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.

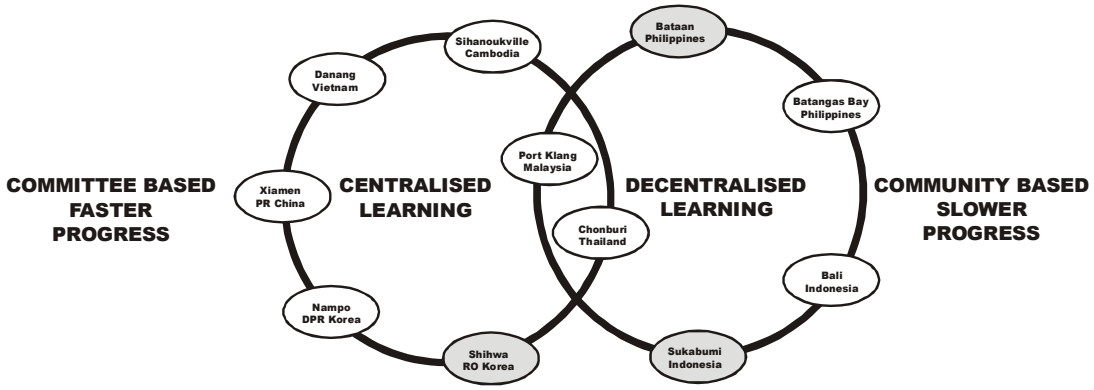


Figure 3 Organisational Learning at demonstration and parallel sites

[4] Single loop learning refers to organisations following traditional patterns of working in response to organisational problems. In contrast, double-loop learning is where organisations question the assumptions and values underlying their actions and look at ways of doing things differently (Argyris, C., and Schon, D. A. (1978). *Organizational Learning: A Theory of Action Perspective*, Addison-Wesley, Reading, MA.) Double-loop learning encourages greater exploration behaviours such as risk taking and experimenting with ideas whereas single loop learning is more concerned with exploitation behaviours such as the refinement of processes to suit efficiency goals.

3.5 The ICM implementation cycle has been adapted to local circumstances and the traditional 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 Shihwa Lake) to assist the PMO at Sihanhoukville (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[5]. The PMO was able to continue with all the respective 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.

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

3.6 Shihwa 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 as a national concern and driven by the national government. Instead, the Shihwa Watershed Management Committee was set up in 2002 by national legislation to promote interagency dialogue. In 2000, Shihwa 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 Shihwa 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 Nampo, 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 demonstration sites in the following manner:

- Mobilising public support and commitment through coastal clean up campaigns.

- Following the ICM development and implementation cycle.

[5] See Huber, G. P. (1991). "Organizational learning: The contributing processes and the literatures." *Organization Science*, 2, 88-115.

- 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 Co-ordination 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 Philippines, Shihwa Lake in Korea and Sukabumi in Indonesia. These sites allow the knowledge of ICM to be embedded in local practices through ownership of the process by local governments, private sector and other stakeholders. It is very encouraging that there have been official 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 Bohai Sea and a sub-regional 'hotspot' at the Gulf of Thailand. This encourages the further development of dynamic capabilities[6] at a 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 at PEMSEA to acquire the necessary knowledge, expertise and financial networks to make this a reality.

- The establishment of the Regional Network of Local Governments (RNLG). 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 Ministrial 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 consensus 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.

[6] A dynamic capability is a learned and stable pattern of collective activity through which an organisation systematically generates and modifies its operating routines in pursuit of improved effectiveness. For further details, please refer to Zollo, M., and Winter, S. G. (2002). "Deliberate Learning and the Evolution of Dynamic Capabilities." Ibid., 13(3), 339-351.

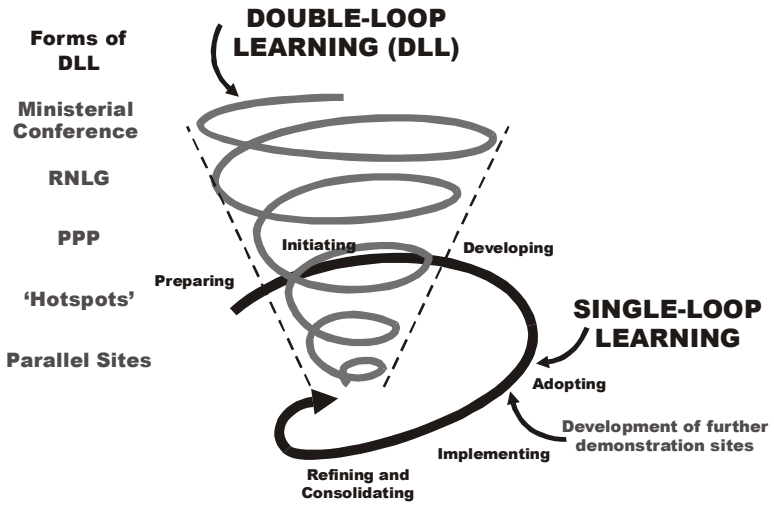


Figure 4 Single and double-loop learning on the PEMSEA Programme

4.0 Knowledge Sharing Practices

4.1 Different forms of learning have developed considerable levels of knowledge on this 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 intranet 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 doesn't 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 captivate participants and 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 major 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 mentor 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 all sites where local staff truly understand the broader picture and the systems 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 issue based level without significant foresight on how certain actions and interventions may have detrimental outcomes on certain parts of the system. In part, this is due to structural and sectoral deliniations in countries where agricultural, forestry and fisheries issues are separate and consider problems from their own perspectives rather than an integrated whole. Integration is often left to PMO staff and it wasn't evident whether staff had the necessary training in leadership and technical skills to bring this about.

4.6 PEMSEA's internship programme has encouraged vicarious learning through direct exposure to practical 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. It 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 commended for its widespread consideration of intended audiences 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 media 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 100000 hits per month. There are monthly e-updates to keep potential browsers up to date with PEMSEA's activities.
- Producing 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 exhibits for the 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 fisherfolk involved in the mangove 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.

4.10 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 leaflets 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 giving 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[7] 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.

4.12 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 exploiting this opportunity to strengthen its communication 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 centrally with site managers at the RPO 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 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 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

[7] Force field analysis is a simple tool used in strategy to identify those forces driving a change process and those forces retarding it. Strategies are developed to support and enhance the driving forces and examine ways to undermine the restraining forces. Such an analysis has a background in military planning.

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 co-ordination. Another approach to 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 formulated as a contractual requirement on 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 Information Management System (IIMS). 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 under-utilised at local site level.

5.3 A key aspect of ICM is an understanding of the dynamic coastal management systems and the different inter-relationships between key elements. At local site level, there was a limited understanding of the complexity of coastal systems and how certain simplistic interventions may have detrimental effects to 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 aid effective decision making.

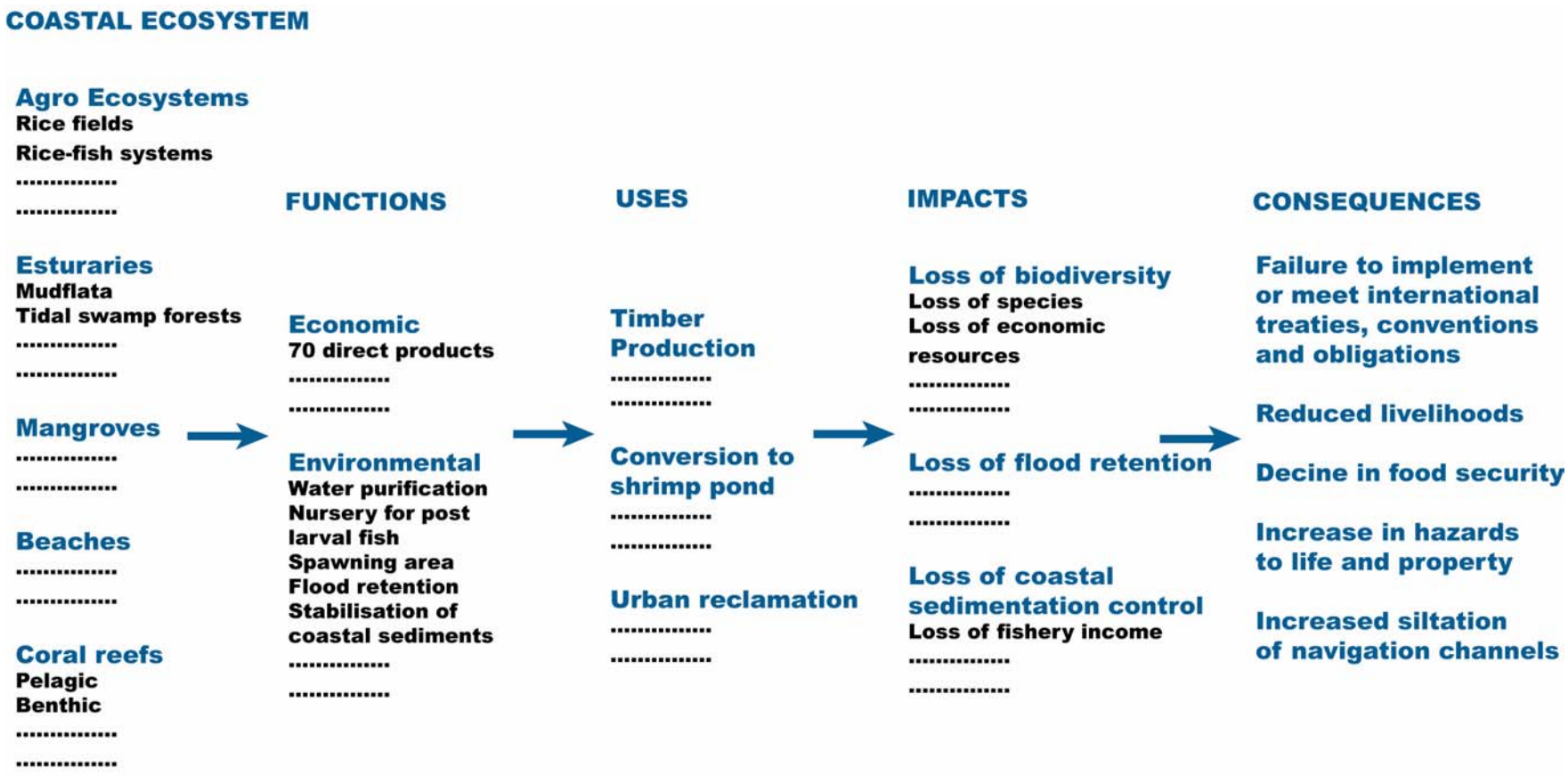


Figure 5 Example of a technically based ICM knowledge taxonomy

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 simulation models such as 'Simcoast'. However, the advantage of developing 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 web site 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 web site is the Young Environmentalists section with potential to grow substantially given the much higher internet usage by young people. The current target audience of the web site 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 programme. This would build on PEMSEA's uniqueness of a repository of practical ICM knowledge based on ground level operations. The extranet could serve two important purposes; namely developing a 'Regional Learning Centre' and supporting online 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 RPO in line with local user needs and frequently asked questions (FAQs) of site managers. This would take some of the pressure of site managers and allow them to focus more on atypical issues. In time, local and national sites could be encouraged to contribute to this knowledge repository so that valuable knowledge and lessons were shared and it engendered greater two-way dialogue promoting sustainability.

5.7 The current PEMSEA website still has a Philippines bias given that the top keywords as 'PEMSEA', 'Manila Bay' and 'Land pollution in the Philippines' and the three top visiting countries are Philippines, Netherlands and Thailand. As the internet is principally about sharing knowledge and information, a survey was conducted to ascertain how easy it was for users to find PEMSEA and IW: 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 web site scored poorly in all the relevant keywords related to this programme.

Keyword	PEMSEA	IW: LEARN
Integrated Coastal Management	30	>100
Sustainable development marine water	44	>100
Marine zonation	69	>100
Coastal zonation	82	>100
Coastal partnership	>100	>100
Coastal management	>100	>100
Integrated information management system	>100	>100

Table 1 Keyword Ranking for PEMSEA & IW: LEARN on internet search engine[8]

5.8 The poor standing of the IW: LEARN site on search engine ranking 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 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 co-ordinators selected to ensure that they bring the necessary passion, commitment, contacts and expertise to online discussions?
- Are e-forums problem centred or theme based?
- Is there a critical mass of participants to sustain these communities globally with all the 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 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

[8] The internet survey was conducted on 28th March 2003 using the Google search engine at www.google.com.

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 RNLG. 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 RPO 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 frequently asked 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-feasibility studies could be indexed and published on the intranet/extranet. On the one hand, local users at site level could search and retrieve necessary documents to help them solve their current problems 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 its 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 segmentation 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 transactions, 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 staff more self reliant through exploring different approaches using vicarious 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 ICM.

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 sessions could be encapsulated in CD format using video recordings of training sessions, case studies and Powerpoint presentations. There would still be a need to run 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 rises, a case based reasoning (CBR) system could be employed to see if past cases could throw insights into current problems. CBR offers a technique for acquiring and storing past problems, their solutions and the reasoning behind them into a retrieval system. The CBR system could be developed in terms of descriptors such problem identification, project delivery solutions and project outcomes.

5.14 The Integrated Information Management System (IIMS) is still in its development 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 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.

6.0 Communities of Practice

6.1 One of the major strengths of PEMSEA is the tacit knowledge of ICM developed 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 from 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. Stories are self perpetuating creating new knowledge that reinforces and renews itself.

6.3 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 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 RNLG 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.

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.
- Producing knowledge artefacts such as documents, tools, stories and websites.

7.0 Intellectual Capital

7.1 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 could be further enhanced through the application of KM principles and practices. Intellectual capital is the economic value of two categories of intangible assets of a company: organisational ("structural") capital and human capital[9].

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

[9] This definition of intellectual capital comes from OECD. "Guidelines and instructions for OECD symposium." *International Symposium Measuring and Reporting Intellectual Capital: Experiences, Issues and Prospects*, Amsterdam. There is consensus in the literature customer capital needs to be included in the OECD definition. For example, please refer to Stewart, T. A. (1997). *Intellectual Capital: The New Wealth of Organizations*, Doubleday/Currency, New York, Svieby, K. (1997). *The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets*, Berrett-Koehler, San Francisco.

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 systems, models and databases. Given the strong political persuasion skills developed at PEMSEA, an additional important factor in intellectual capital is customer capital. This includes the reputation and influence it has build up over key stakeholders and political leaders in the region and the strength and influencing power of these external relationships.

7.4 The collective experience at PEMSEA including its skills and general know how in ICM has led to the development of various intellectual assets. These intellectual assets exist in the form of documents, drawing (zonation 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 certification process such as ISO14001 in the future. This would require a much greater strategic and concerted effort by donor agencies and international bodies 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 3.2. Committee based learning may produce much greater results in terms of concrete developments and organisational capital. 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 implementation developed over the past eight years. There is a danger that the richness 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 five 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 GEF focused on capturing, organising, evaluating, storing and retrieving the vast range of ICM knowledge and expertise through human resource interventions 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 co-operation 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 inter-relationships. This can be updated regularly at the RNLG forum.

- Institutionalising the use of a common and simple systems model showing the nature and dynamics of the coastal problem at each project site to aid enhanced decision making by PCC and PMO staff. This common understanding of the problem is more likely to lead to concerted action by various stakeholders and avoid the pursuance of simplistic and ill-defined sectoral interests. Systems modelling 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 immediate changes in the behaviour 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 influenced through media and PR interventions. This may include targeting provincial governors who's political support is required to speed up a process or fisherfolk who need greater awareness of PMO interventions in their neighbourhood. 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 not misdirected to those already familiar with PEMSEA's programme. The review may provide the opportunity to segment

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 UNDP 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 in 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. Again consultations 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 EIA, lots of examples of completed documents, legal arrangements and zonation 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 Who's Who or Expertise Yellow Pages database will enhance greater horizontal integration between project sites and increase the 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 of 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 passions among RPO and PMO staff and identifying people willing to assume the role and responsibilities of 'community co-ordinators'.
- 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 on the PEMSEA programmme to further develop innovative insights and create new ways of looking at ICM implementation.

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March 2003

Annex 6

Knowledge Management Case Studies: Batangas and Bataan Bay, Philippines

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BATANGAS BAY AND BATAAN CASE STUDY

"Partnerships in Environmental Management for the Seas of East Asian" (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.

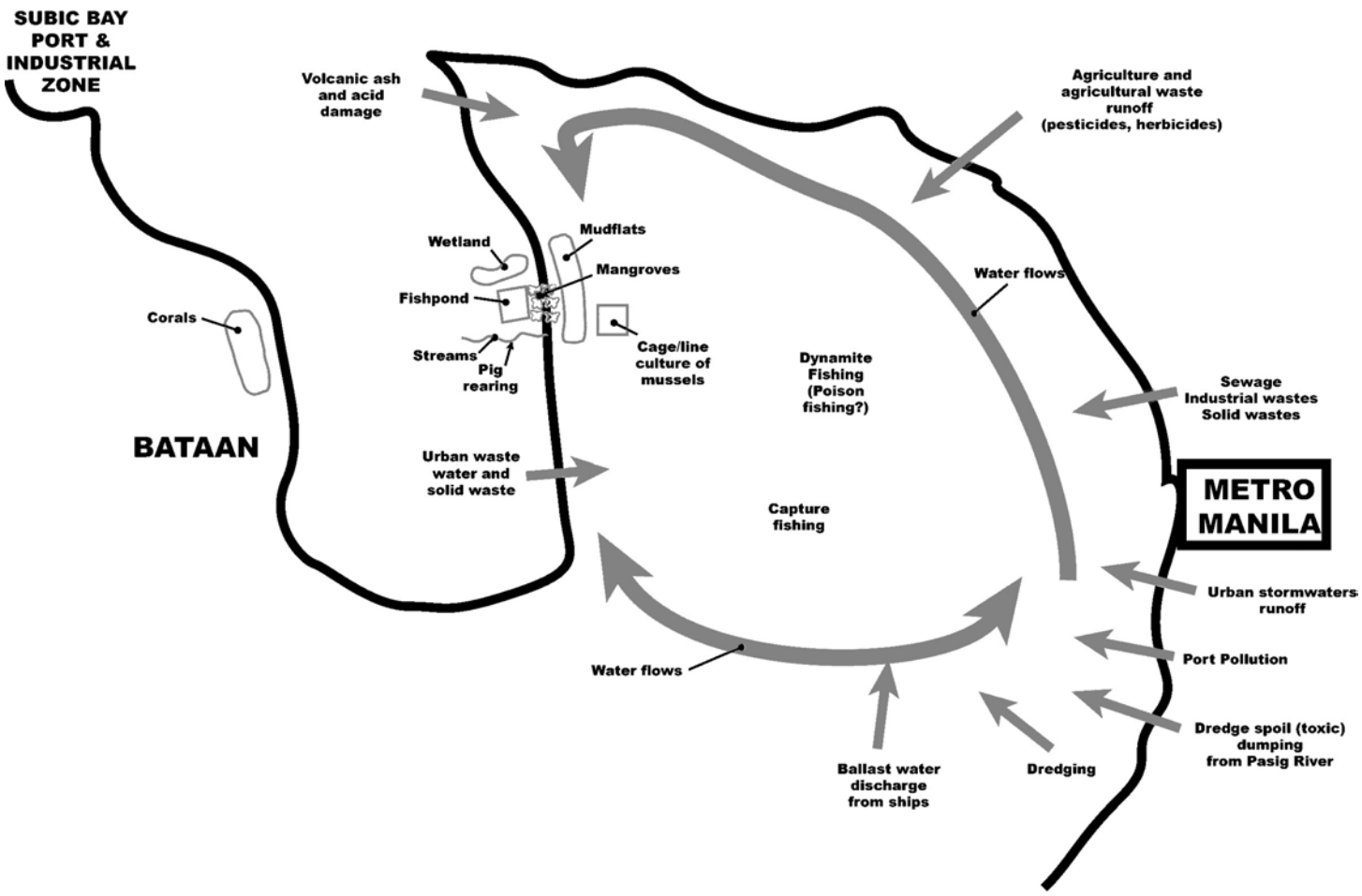

Figure 1 Coastal systems dynamics at fisherfolk livelihood project in Bataan

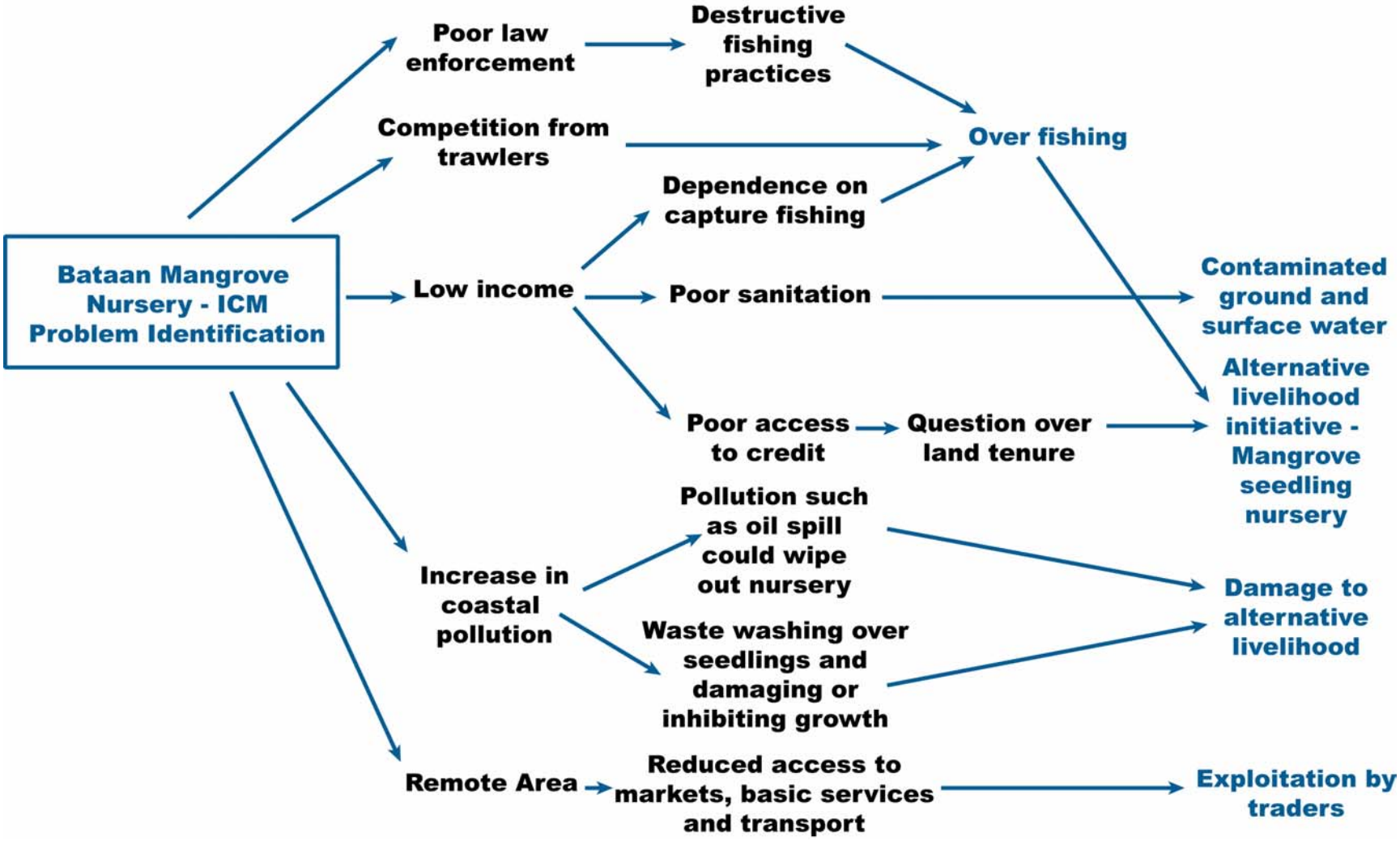

Figure 2 Problem Identification at the Bataan Mangrove

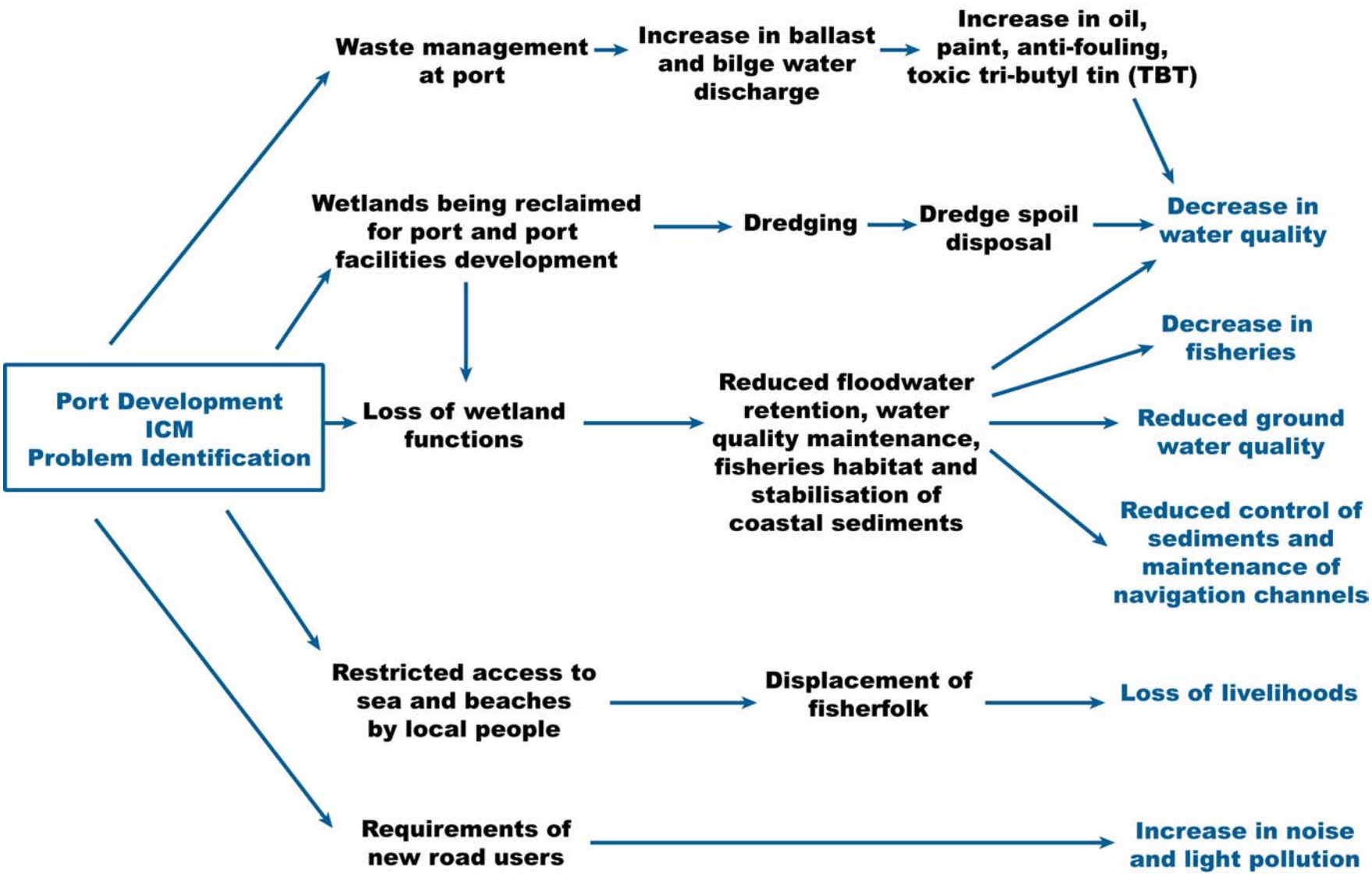

Figure 3 Problem Identification at Batangas Bay Port Authority Development

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, occurance 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 cooperative 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 litlle 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.

[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'[2] 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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March 2003.

[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/UNDP/IMO, pp. 12.

Annex 7

Resource Mobilization
(as of December 2002)

RESOURCE MOBILIZATION (as of December 2002)

Partner	Counterpart Support (US$)	Purpose	Remarks
Government:			
Municipal Government of Sihanoukville (Cambodia)	596,500.00	ICM demonstration site (5 yr)	MOA of 12 June 2000
GBCIO[1] (DPR Korea)	698,435.00	ICM demonstration site (5 yr)	MOA of 08 Sept 2000
Provincial Government of Bali (Indonesia)	520,000.00	ICM demonstration site (5 yr)	MOA of 13 March 2000
State Government of Selangor (Malaysia)	491,895.00	ICM demonstration site (3 yr)	MOA of 19 July 2001
Provincial Government of Chonburi (Thailand)	287,394.00	ICM demonstration site (5 yr)	MOA of August 2001
People's Committee of Danang Municipality (Vietnam)	709,250.00	ICM demonstration site (5 yr)	MOA of 07 June 2000
Provincial Government of Bataan (Philippines)	50,000.00	ICM parallel site (first yr)	MOA of 10 Feb. 2000
State Oceanic Administration (PR China)	2,647,300.00	Bohai Sea Environmental Management	MOA of 23 July 2000
Department of Environment and Natural Resources	948,347.00	Manila Bay Environmental Management	MOA of 8 January 2001
Government of the Philippines	777,000.00	Support for PEMSEA	MOA of 8 January 2001
Government of the Philippines	142,000.00	Manila Bay Environmental Management	Letter, January 2002
MOMAF[2] (RO Korea)	600,000.00	Shihwa ICM parallel site	MOA of 15 March 2001
MOMAF (RO Korea)	40,000.00	Workshop on Local Govt. Network	
MOMAF (RO Korea)	80,000.00	Environmental Investment Support Fund	
Municipal Government of Xiamen (PR China)	350,000.00	Second Cycle ICM	MOA of July 2001
Municipal Government of Xiamen (PR China)	16,425.00	RNLG workshop, Leadership training, Study tour	
Total government	**8,954,546.00**		
Private:			
Wastes Systems New Zealand	200,000.00	Waste management facility (Batangas)	MOA of 14 July 1999
Hatfield Consultants	150,000.00	Quest simulation model (Bali)	Proj. Doc. 22 June 2000
Bataan Coastal Care Foundation	50,000.00	ICM parallel site	
Total private sector	**400,000.00**		
Sida/CMC	36,000.00	Tropical Coast	
	39,480.00	Regional Training on IEIA	
	38,700.00	Regional Training on Proj Dev't. Management	
	49,640.00	Regional Training on ICM	
Total: Sida/CMC	**163,820.00**		
IMO	200,000.00	Training/Regional Mechanism (2000 – 2001)	
	150,000.00	Port Safety & Environmental Management System 2002 – 2003)	PID, 08 Feb 2002
Total IMO	**350,000.00**		
Grand Total	**9,868,366.00**		

[1]General Bureau for Cooperation with International Organizations

[2] Ministry of Maritime Affairs and Fisheries

Annex 8

PEMSEA Cooperation and Collaboration with Partners

PEMSEA Cooperation and Collaboration with Partners

1. *Collaborative activities that the Regional Programme has undertaken from July 2000 to December 2001.*

   (1) Oil Pollution Preparedness, Response and Cooperation (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 Manila 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 Network for Local Governments, implementation of the Shihwa ICM parallel site, and development of an environmental investment support fund with MOMAF, Kyonggi Provincial Government, City Governments of Ansan and Siheung, and the County of Hwasung, RO Korea.

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

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

   (6) Development of a simulation model for Bali, Indonesia with Hatfield Consultants and Envision Sustainability Tools, Inc.

   (7) Development of a hydrodynamic and water quality model with Seaconsult Marine Research, Ltd.

(8) 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.

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

(10) 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.

(11) Establishment of a PEMSEA 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 ICM. 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.

(12) 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.

(13) The Ministry of Maritime Affairs and Fisheries (MOMAF), RO Korea is jointly undertaking with PEMSEA a study on the establishment of an environmental investment support fund and environmental investment center.

(14) Cooperation with World Wildlife Fund (WWF), Philippines in the development of an environmental sensitivity index mapping process for Batangas Bay, Philippines.

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's Ministry of Science, Technology and the Environment, and the Institute of Biological Sciences of the University of Malaya.

(16) The Regional Programme collaborated with the Environmental Studies Institute of Miriam College, Globe Programme, Philippine Science High School, Volunteer Service Overseas and the World Wildlife Fund for the Development and Implementation of an Environmental Youth Camp Program.

(17) The Regional Programme, in cooperation with the East Asia Response PTE Limited (EARL) and Yantai Maritime Safety Administration and with the financial support of IMO, conducted a training course on Oil Pollution Preparedness, Response and Cooperation for Supervisors and On-Scene Commanders (OPRC Level 2) in Yantai, 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 PEMSEA exhibit 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 "Experts 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 *gratis et amore*, the right to use the excerpts from the motion picture *Muro-Ami* to be included in the documentary entitled, "The PEMSEA Story";

2. *For 2003:*

(1) Letter of Intention with the Ship and Ocean Foundation 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 Marine Department (formerly the Harbor Department) will host the 9th Programme Steering Committee (PSC) Meeting in Pattaya, Chonburi 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 Center

3. *During the 8th PSC Meeting, potential collaboration with the following observers were discussed:*

(1) ILO 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, oil spill response, and the ratification and implementation of international conventions by various countries in the region;
(3) IOC/WESTPAC concerning testing 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;

(5) The Global Ballast Water Management Project on the development of a regional action plan for ballast water control and management;

(6) The IMO Technical Cooperation Project on Particularly Sensitive Seas Areas;

(7) The IAEA 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 GIS for 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; and

(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)[1]

[1] Chua, T.E. 1998. Lessons Learned from Practicing Integrated Coastal Management in Southeast Asia. Ambio. Vol. 27(8): 599-609.

ICM Performance Assessment
Site: DANANG

Indicators	Danang	Background Information
I. Problem Identification and Program Formulation		
Environmental profile prepared (1); problems identified and prioritized (1); management boundary defined (1)	3	• Inception workshop conducted, June 2000 • Environmental profile prepared, September 2000
Program planning undertaken (1), stakeholder consulted (1)	2	• Stakeholders consultation workshop held, June 2000
Primary data related to program formulation gathered (1)	1	• Data gathered for IIMS, risk assessment and coastal strategy
Public awareness created (1)	1	• ICM project newsletter published and disseminated, December 2000, May, June, October and December 2001, April, September, October and December 2002 • Action plan on beach clean up submitted, July 2001 • Action plan on waste segregation submitted, August 2001 • Flyers on waste segregation published and disseminated, August 2001, May and June 2002 • Posters on beach clean up published and disseminated, August 2002, May and June 2002 • Flyers on ISO 14001 published and disseminated, September 2001 • Communication plan completed and revised, December 2001 • Regular contribution to PEMSEA E-Updates – March, June, September & December 2000; January, February, March, April, May & October 2001; January, July, August and December 2002
EIA/risk assessment performed (1)	1	• Risk assessment team established, September 2001 • Training workshop conducted, December 2001 • Preliminary risk assessment report submitted, January 2002 • Final draft IRA submitted, January 2003
Strategic management plan formulated/ 1) and adopted (1)	2	• Coastal strategy completed, November 2001 • Coastal strategy adopted by the People's Committee, December 2001 • Declaration for coastal strategy implementation, June 2002
Issue or special area plan developed (1) and adopted (1)	0	
Organizational (1) and legal (1) arrangements proposed	0	
Financial options developed (1)	0	
Environmental monitoring protocol developed (1)	0	

Information management system established (1)	1	• IIMS Guide and User's Manual prepared and distributed, February 2001 • IIMS installed and operationalized, July 2001 • Assessment report on site capacities submitted, November 2001 • Data encoded in IIMS submitted, November 2002 • Report on application of IIMS and GIS for generation of data, tables, graphs and maps submitted, November 2002 • Final report on establishment of IIMS/GIS and plan for updating and maintenance submitted, January 2003
II. Program Implementation		
Interagency, intersectoral council/committee/group established (1)	1	• Project Coordinating Committee established, July 2000 • Communicators Network established, November 2000 • Green Productivity Group established, May(?) 02 • PPP Task Force for environmental investments established, June 2002 • Multisectoral committee on the development and implementation of coastal use zoning established, October 2002
Coordinating agency/office for program implementation established (1)	1	• Project Management Office established, August 2000
Capacity (1) and information generating arrangements established (1)	2	Regional Training • 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 OPRC level 2 for supervisors/on-scene 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 Site Training • Training on coastal strategy development, February 2001 • IIMS 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 Thi 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
Prioritized agenda for management action undertaken (1)	1	• Coastal strategy adopted, December 2001
Financial mechanism for program implementation established (1)	0	
Environmental monitoring mechanism established (1) and operational (1)	0	
Concerned ordinance/legislation developed (1) and approved (1)	0	
Law enforcement mechanism established (1)	0	
Program monitoring and evaluation protocols developed (1) and implemented (1)	2	• Monthly reports submitted, July 2000-February 2003 • Quarterly reports submitted, January 2000 – 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)	1	• Participation in study tours and RNLG Forum • Participation in PA activities
Critical mass of local/national officials knowledgeable about ICM formed (1)	1	• Participation in trainings, study tours and RNLG Forum
Major stakeholders participated in program implementation (1)	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 and beach clean up, mid-2001 to 2002 • Coastal strategy development, February-November 2001

		• Coastal strategy declaration, June 2002 • Public consultation on environmental investments, May-June 2002 • Contingent valuation survey, July-August 2002
Human and financial resources by government and stakeholders for continuation of program committed (1)	0	
Continue implementation of prioritized agenda of the action plan committed by local government (1)	0	
Integration of ICM program into local government environmental management and sustainable development framework undertaken (1)	0	
IV. Program's Impacts		
Environmental quality shows sign of improvement (1)	1	• Cleaner beaches • Proper handling of waste in coordination with URENCO, the local waste management authority
Some environmental degradation arrested (1)	0	
Interagency conflicts reduced or resolved (1)	1	• Through the establishments of interagency, intersectoral council/committee/groups and ICM Project Coordinating Mechanism
Use conflicts minimized or resolved (1)	0	
Evidence of ecological improvement (1)	0	
Evidence of socioeconomic benefits (1)	0	
Additional financial support from national government/ External sources (1)	0	
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Note: numbers in parentheses represent scores