



# Assessment of East Asia's Capacity Building in Ocean and Coastal Governance

16 December 2006  
Haikou City, Hainan Province, PR China



Global Environment  
Facility



United Nations Development  
Programme



International Maritime  
Organization



Partnerships in  
Environmental Management  
for the Seas of East Asia



Intergovernmental  
Oceanographic Commission  
of UNESCO (IOC)



Global Forum on Oceans,  
Coasts and Islands

# **ASSESSMENT OF EAST ASIA'S CAPACITY BUILDING IN OCEANS AND COASTAL GOVERNANCE**

*GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental  
Management for the Seas of East Asia (PEMSEA)  
RAS/98/G33/A/IG/19,*

*The United Nations Educational, Scientific and Cultural Organization-Intergovernmental  
Oceanographic Commission (UNESCO-IOC),*

and

*Global Forum for Oceans, Coasts and Small Islands*

**East Asian Seas Congress 2006  
Haikou City, Hainan Province, PR China  
12-16 December 2006**

## **ASSESSMENT OF EAST ASIA'S CAPACITY BUILDING IN OCEANS AND COASTAL GOVERNANCE**

March 2007

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes or to provide wider dissemination for public response, provided prior written permission is obtained from the Regional Programme Director, acknowledgment of the source is made and no commercial usage or sale of the material occurs. PEMSEA would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale, any commercial purpose or any purpose other than those given above without a written agreement between PEMSEA and the requesting party.

Published by the GEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and the United Nations Educational, Scientific and Cultural Organization-Intergovernmental Oceanographic Commission (UNESCO-IOC).

Printed in Quezon City, Philippines

PEMSEA. 2007. Assessment of East Asia's Capacity Building in Oceans and Coastal Governance. EAS Congress/WP/2007/04, 59 p. GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), the United Nations Educational, Scientific and Cultural Organization-Intergovernmental Oceanographic Commission (UNESCO-IOC) and the Global Forum for Oceans, Coasts and Small Islands.

PEMSEA is a GEF Project Implemented by UNDP and Executed by IMO.

The contents of this publication do not necessarily reflect the views or policies of the Global Environment Facility (GEF), the United Nations Development Programme (UNDP), the International Maritime Organization (IMO), and the other participating organizations. The designation employed and the presentation do not imply expression of opinion, whatsoever on the part of GEF, UNDP, IMO, or the Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) concerning the legal status of any country or territory, or its authority or concerning the delimitation of its boundaries.

## TABLE OF CONTENTS

<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>2. FORMAL (DEGREE GRANTING; LONG-TERM) TRAINING.....</b>	<b>3</b>
Academic Programs.....	3
Strategies to Improve Existing Programs.....	6
A “Model” ICM /Marine Affairs Program?.....	6
Problems/Constraints Encountered.....	7
Strengthening the Modes of Formal Training.....	7
<b>3. NON-FORMAL (SHORT-TERM) TRAINING.....</b>	<b>8</b>
Demand-driven Short-term Training.....	9
Strengthening the Modes of Non-formal Training.....	9
<b>4. EXTENSION SERVICES OF UNIVERSITIES AND RESEARCH     INSTITUTIONS TO COASTAL COMMUNITIES.....</b>	<b>10</b>
Knowledge Centers.....	10
<b>5. CHALLENGES FOR EAST ASIA.....</b>	<b>11</b>
Existing Need for Coastal Planners and Managers.....	11
Scaling Up.....	11
ICM Certification.....	12
<b>6. STRATEGIC SOLUTIONS.....</b>	<b>13</b>
Recommendations for PEMSEA.....	13
Recommendations for a Network of Training Institutions.....	13
<b>APPENDIX 1. Survey Results .....</b>	<b>15</b>
<b>APPENDIX 2. Survey Questionnaire .....</b>	<b>28</b>
<b>APPENDIX 3. Minutes of the Side Meeting.....</b>	<b>48</b>
<b>APPENDIX 4. Training Materials Published by PEMSEA .....</b>	<b>58</b>

## LIST OF TABLES

<b>Table 1. Programs Relating to Ocean and Coastal Governance in Selected     Universities and Research Institutions in East Asia and outside the     Region. ....</b>	<b>3</b>
<b>Table 2. List of Training Courses Offered in East Asia.....</b>	<b>8</b>

**GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia, United Nations Educational, Scientific and Cultural Organization-Intergovernmental Oceanographic Commission (UNESCO-IOC) and Global Forum for Oceans, Coasts and Small Islands**

**ASSESSMENT OF EAST ASIA'S CAPACITY BUILDING IN OCEANS AND COASTAL GOVERNANCE**

**1. INTRODUCTION**

The Regional Programme on Partnerships for Environmental Management for the Seas of East Asia (PEMSEA) and the United Nations Educational, Scientific and Cultural Organization-Intergovernmental Oceanographic Commission (UNESCO-IOC) in collaboration with the Global Forum for Oceans, Coasts and Small Islands recently conducted a survey to assess East Asia's capacity building needs in ocean and coastal governance.<sup>1</sup> The survey was undertaken in support of building strategies to strengthen capacity to implement the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA).

The survey was sent to 22 respondents; representing 20 universities in East Asia. Because of their important contribution in strengthening capacity in the region, universities outside East Asia were also invited to participate in the survey. Three respondents answered the questionnaire while data from other universities were culled out from the internet. Three training centers in the People's Republic of China and the Philippines participated in the survey.

The results of the survey (see Appendix 1) and the discussion of problems, as well as future actions, were presented and discussed during the East Asian Seas (EAS) Congress in Haikou City, Hainan Province, PR China, in December 2006. PEMSEA and UNESCO, together with the Global Forum for Oceans, Coasts and Small Islands co-organized this discussion group consisting of experts from universities, research institutions and governments. The aim of the discussion group was to initiate dialogue on how best the capacity in ocean and coastal affairs could be further developed and strengthened. The group consisted of 23 discussants representing 9 countries in East Asia, Australia and the USA (see Appendix 3).

In particular, the discussion group was invited to:

1. review current university programs on marine affairs and integrated coastal management (ICM);

---

<sup>1</sup> PEMSEA and UNESCO have identified collaborative activities in coastal and ocean management, particularly in the area of capacity building. PEMSEA is a collaborating partner in the GEF-MSP Project "Fostering a Global Dialogue on Oceans, Coasts and SIDS, and on Freshwater-Coastal-Marine Interlinkages" (Project 213GLO2003) executed by UNESCO, through its Intergovernmental Oceanographic Commission (UNESCO/IOC). This report forms part of the requirement of the Letter of Agreement No. 4500034600 between PEMSEA and UNESCO.

2. review short-term specialized training courses related to coastal areas and oceans;
3. identify capacity development gaps that require national and international efforts; and
4. explore the possibilities of a common postgraduate curriculum for ICM and marine affairs in the region.

From both the survey and the discussions, which were held as a side meeting of the EAS Congress 2006, particular issues were articulated relating to:

1. Gaps and problems in capacity and the determination of their importance relative to current and future ocean governance initiatives, including national and regional integrated ocean policy development;
2. The presence (or absence) of university formal programs related to ocean and coastal management in countries in the region, as well as needs for enhancing these;
3. The presence (or absence) of informal programs on ocean and coastal management targeted at decisionmakers in countries of the region, as well as enhancing such programs;
4. Approaches to institutionalizing “extension” services at the community/local level for problem solving and community education regarding ocean and coastal resources;
5. Approaches to accessing and providing support for capacity building and current opportunities for funding;
6. The presence (or absence) of public education and participation programs related to ocean and coastal management in countries of the region as well as needs for enhancing these; and
7. An outline of the proposed strategic solutions.

## 2. FORMAL (DEGREE GRANTING; LONG-TERM) TRAINING

### Academic Programs

The recent EAS survey showed that there are several initiatives in developing marine affairs programs, but there is no degree training in ICM (Table 1).

**Table 1. Programs Relating to Ocean and Coastal Governance in Selected Universities and Research Institutions in East Asia and outside the Region.**

Country	Institution	Program Relating to Ocean and Coastal Governance
<b>Universities and Research Institutions (East Asia)</b>		
Cambodia	Royal Phnom Penh University	University is still planning to include a program for ocean and coastal governance
	Royal University of Agriculture	Fisheries Science
China, People's Republic of	Xiamen University	Environmental Management Program; Master of Marine Affairs Program (MMA) (2007)
	China Ocean University	PhD in Oceanography (Integrated Management of Marine Resources and their Rights and Interests)
Hong Kong SAR	City University of Hong Kong	BSc (Environmental Science and Management); MSc (Environmental Science and Technology); Master of Philosophy; Doctor of Philosophy
Indonesia	Bogor University of Agriculture	MS/PhD Coastal and Marine Resource Management
Korea, Republic of	Kyungnam University	ICM Cooperation Program
Malaysia	Universiti Putra Malaysia	MS/PhD; there is presently no specific MMA or ICM program
	Universiti Sains Malaysia	ICM course
Philippines	UP Visayas	MMA
	UP Marine Science Institute	MS/PhD Marine Science
	UP Diliman (School of Urban and Regional Planning)	Diploma in Urban and Regional Planning; MA and PhD in Urban and Regional Planning
Silliman University	Silliman University	MS in Coastal Resource Management
	National University of Singapore (NUS)	There is a course on Coastal Management; but there is no dedicated ocean and coastal governance program; aspects are embedded in various other programs; NUS offers MSc in Environmental Management; Law Faculty does not offer a degree granting program in ocean and coastal governance; only some aspects are taught in a course on Ocean Law and Policy
Thailand	Prince of Songkla University,	Agricultural Development and Coastal

	Coastal Resources Institute	Resources Management
	Asian Institute of Technology (AIT)	MS and PhD in Integrated Tropical Coastal Zone Management
	Chulalongkorn University	MSc and PhD in Marine Science and Environmental Science Program
Vietnam	Water Resource University	Coastal Engineering and ICM
	University of Hanoi	MS/PhD with courses related to coastal management
<b>Universities and Research Institutions (outside of East Asia)</b>		
Australia	University of Sydney (Institute of Marine Science)	Graduate Certificate in Applied Science (Coastal Management); Graduate Diploma in Applied Science (Coastal Management); Masters in Applied Science (Coastal Management)
	James Cook University	Graduate Certificate of Science, Graduate Diploma of Science, Master of Applied Science (specializing in Protected Area Management, Natural Resource Management, Tropical Urban and Regional Planning OR Geographic Information System and Spatial Analysis)
	University of Wollongong	MS in Coastal Planning and Management; Master/Doctor of Maritime Policy; Master of Maritime Studies
Canada	Dalhousie University	Marine Affairs Program (Master of Marine Management); Marine and Environmental Law Program
USA	University of Hawaii	Graduate Ocean Policy Certificate
	University of Rhode Island	MMA; Master of Arts in Marine Affairs
	Oregon State University	Marine Resource Management Program
	University of Delaware	Master of Marine Management
	University of Washington	MMA
	University of Miami	MA and MS in Marine Affairs and Policy (MAF)
UK	University of Newcastle Upon Tyne	MSc in Tropical Coastal Management
	University of Plymouth	Joint European Program in Water and Coastal Management
Sweden	World Maritime University	Postgraduate Program in Maritime Affairs, leading to the degree of Master of Science, a Postgraduate Diploma or a Postgraduate Certificate
	Gotland University	Master Program in Environmental Science (specializing in Coastal Zone Management)
	Kalmar University	

As seen in the table, some universities in the region have started programs in ICM and marine affairs. The universities which offered such degree training programs are mostly located in the Philippines, Indonesia and Thailand where, for several decades, coastal resource management projects/programs have been undertaken through several donor initiatives including United States Agency for International Development (USAID), Asian



Development Bank (ADB), World Bank, European Union, Japan International Cooperation Agency (JICA), Danish International Development Agency (Danida) and Global Environment Facility/United Nations Development Programme.

The curricula used by the universities in the region have the following features:

1. Most marine affairs courses are patterned after those from the North American universities.
2. Some curricula appear to be more interdisciplinary in nature. The design of the courses is based on the availability and strength of the faculty. Some lack instruction on coastal and ocean policy and planning, while others have too much emphasis on specialized subjects such as fisheries, aquaculture, laws of the seas and marine engineering.
3. Most courses lack a high degree of coherence and integration between disciplinary courses.
4. Most courses lack the emphasis on practical applications.
5. The development of many of these courses was triggered by external initiatives including donors.

In short, the existing marine affairs courses in the region do not prepare the students with the needed knowledge to plan and manage the coasts and seas. However, the courses are more of an academic program to meet university requirements.

The Prince of Songkla University, Thailand, began a graduate degree program related to coastal resource management in the late 1980s with the establishment of the Coastal Resource Institute. Its aim was to undertake capacity building responsibility in coastal resource management for Thailand. This was followed by a donor-driven degree program in the Asian Institute of Technology (AIT), also located in Thailand. Training in AIT is intended to meet manpower requirements in coastal and ocean management for the developing countries of the region. The postgraduate program in AIT was initiated with support from the Swedish Agency for Development Cooperation and Danida. Subsequently, the Bogor University of Agriculture in Indonesia and Silliman University and the University of the Philippines (UP) Visayas in the Philippines also developed marine affairs degree programs in collaboration with universities in North America.

The Bogor University of Agriculture has taken the lead in conducting postgraduate degree training in ICM. With significant financial support from donor agencies such as USAID, World Bank and ADB in managing coastal and marine resource use in the country, capacity development has become an increasing area of concern among the institutions of higher learning. A network of universities has been established that will focus on capacity development in the country.<sup>2</sup>

---

<sup>2</sup> The Indonesia Coastal University Network (INCUNE) was established in 1999 through the *Proyek Pesisir* (initiated by the Coastal Resources Center of the University of Rhode Island). Eleven universities compose the Network: State University of Riau in Pekanbaru, University Bung Hatta in Padang, State University of Lampung in Bandar Lampung, Bogor Agricultural University in Bogor, University of Indonesia in Jakarta, Diponegoro University in Semarang, Mularawan University in Samarinda, Hasanuddin University in Makassar, Sam Ratulangi University in Manado, Pattimura University in Ambon, and Cendrawasih University in Manokwari.

In PR China's Xiamen University, its graduate program ten years ago was initially geared towards environmental management. However, a shift was made into marine management that targets policymakers. By 2005, a Coastal and Ocean Management Institute was created with courses on resource management, law and communication/public affairs, among others. A more "complete" marine affairs program is scheduled to be offered in 2008 in collaboration with Dalhousie University and the University of Washington. The Ocean University located in Shantung Province is also in the process of launching ocean development and management courses.

Vietnam, on the other hand, although a latecomer, has taken very active initiatives in the development and management of its coasts and the adjacent seas. Two universities namely, the University of Hanoi and the Water Resource University, are: 1) strengthening their courses related to coastal management; and 2) initiating an ICM program, respectively.

There is no specific program for ocean and coastal governance for a number of the institutions like the Royal University of Agriculture and Royal Phnom Penh University of Cambodia; National University of Singapore (NUS), Chulalongkorn University, UP Marine Science Institute (MSI), and Universiti Sains Malaysia (USM), although some ICM-related courses were taught in some institutions such as NUS, UP-MSI and USM.

In Malaysia, a JICA program offers short-term training. Degrees may also be obtained through research. There has been an increasing awareness on ocean governance and management, particularly, among the parliamentarians who have become "sensitized." However, there is no official university that offers ocean and coastal governance. There is a need for such a program, but apparently this is not yet considered urgent.

### **Strategies to Improve Existing Programs**

To improve or enhance their respective programs, a number of the institutions have indicated that they conduct regular program review (e.g., every five years), including updating of course materials and strengthening their curriculum and teaching methods. Others have indicated that they need to offer more practical sessions and research activities.

In East Asia, the strategy of other universities to improve their programs is to strengthen their respective niches, like putting emphasis and enhancing particular courses (e.g., environmental and food safety) and making effective use of technology.

Some institutions are contemplating broadening the scope of their course offerings to offer a "balanced" ocean and coastal governance curriculum. For example, one institution has drafted additional courses (e.g., ocean and coastal zoning and planning, governance, gender), and still another indicated a need to have an ICM course taught by an expert and a practitioner. Another indicated collaboration with other institutions in the region is a way that can strengthen their programs

### **A "Model" ICM /Marine Affairs Program?**

The participants to the EAS Congress side meeting agreed that a complete or a "model" ICM/Marine Affairs program may be very difficult or is nearly impossible to create. It is very difficult to design one academic program that incorporates everything. The

participants, however, were more keen to encourage complexity and a diversity of program offerings. They believed that universities must be encouraged to strengthen their particular niches.

### **Problems/Constraints Encountered**

The major problems and constraints encountered with the implementation of the programs included: a) decreasing enrolment; b) lack of qualified mentors; and c) lack of job opportunities for graduates. The lack of budget support for curriculum development, equipment, resources and research activities has always been a chronic limitation. Other problems were also articulated.

The challenge for UP Visayas<sup>3</sup> is that of decreasing enrolment, partly because of its geographical location. The problem could become more acute as there will be no more clientele for the next few years, because the majority of the local government and private sector (the target clientele in the area) have already taken the program.

The lack of scholarship grants to support students in programs is also critical. In the case of the AIT, the problem on the lack of scholarship funds has arisen. The number of enrollees increased, particularly in the first years of its program, when scholarship funds were available. Enrollees decreased when funding became limited.

The interdepartmental and interdisciplinary nature of existing coastal and ocean governance programs may not prove to be cost-effective. For the AIT, there is disparity among participating departments, in terms of academic inputs and income sharing; and there are constraints in budget especially when there are very few enrollees. As a result, there is weakening in the commitment and level of competence among instructors.

### **Strengthening the Modes of Formal Training**

The enhancement of existing academic graduate programs leading to expertise on ocean and coastal governance may involve: a) a non-thesis option to target practitioners, but will require the students to engage in individual/group case study; and b) a thesis option (e.g., Master of Arts Marine Affairs).

Possible models for a regional program have also been forwarded, and several platforms have been identified. One is through the Association of Southeast Asian Nations University Network or through the Asia-Pacific Rim Universities Network, where universities with common degree programs engage in faculty and student exchange. Another possible model may be the Asia-Pacific Center for Urban and Regional Management based in Singapore and the program offered by the Asian Institute of Management.

---

<sup>3</sup> UP Visayas offers a Master's in Marine Affairs, patterned after the Dalhousie University program. The program is now on its fifth year and caters to local policymakers. It is conducted on weekend mode, runs on trimester, where students can graduate in one and a half years. The program also taps experts from the region. Problems encountered include dwindling clientele, the need to offer more management-related courses, and the difficulty in getting government staff as students who then have to go on extended leave to study.

### 3. NON-FORMAL (SHORT-TERM) TRAINING

Long-term programs may not be appropriate for some areas where there is an urgent need to improve, for instance, management skills of practitioners. Thus, strengthening short-term programs for governance is imperative. However, a consensus during the meeting was that formal (long-term) training must not be neglected either, as this would address the need to generate middle-level staff and the continuing replacement of experts. Thus, there is a recognized need for more formal (long-term) programs for scholars and scientists to complement less formal (short-term) training programs for policymakers and practitioners. When these tenets are met, they can lead to, not only the enhancement of individual core competencies, but to the development of institutional core competencies as well.

Based on the survey, half of the respondents from the universities and research institutions in the region have indicated that they offer short-term training programs related to ocean and coastal governance. But they see that part of problems/constraints in the implementation of training programs include: a) lack of qualified mentors; and b) that they cannot offer the trainings regularly.

Data about the courses offered by training institutions came from only three centers (Table 2, see also Appendix 1). There is a need to identify and seek information from other areas. Two centers in the Philippines are targeting local government officials to deliver ICM courses. The Local Government Academy has recently developed ICM modules (using lessons learned and the framework developed for PEMSEA's ICM demonstration site in the Philippines). The trainings offered by the Philippine Council for Aquatic and Marine Research and Development, in Los Baños, Laguna, have been accredited by the UN-TRAINSEACOAST Programme. However, the trainings can only be given when funds are available. The ICM training program in Xiamen, PR China, was also developed using the experiences gained from PEMSEA's demonstration sites. PEMSEA has been consistent in offering short-term training on the above subjects and a list of relevant training materials have been generated (Appendix 4).

**Table 2. List of Training Courses Offered in East Asia.**

Training Courses	PEMSEA	University-led	Training center-led
ICM			
Use of Geographic Information Systems (GIS)			
Marine pollution and water quality monitoring			
Environmental Impact Assessment (EIA)			
Integrated Environmental Impact Assessment (IEIA)			
Implementing international conventions			
Environmental risk assessment and management			
Natural resource damage appraisal			
Oil pollution preparedness, response and cooperation			
Chemical spill and port audit			
Establishment of Integrated Information Management System (IIMS)			
Coastal Strategy development			

Public awareness and participation			
Project development and management for coastal and marine environmental projects			
Development and implementation of coastal use zoning plan and institutional framework			
Contingent valuation and environmental resource valuation			
Leadership in ocean and coastal governance			
Integrating social science concerns into the ICM framework and programs			
Integrated Management System regarding port safety, health and environment			
Other			
Social analysis			
Ocean and coastal zoning and planning			
Sustainable fisheries management			

### **Demand-driven Short-term Training**

The lack of financial resources in the region has driven the training programs for ICM/Marine Affairs at the “beck and call” of external funding agencies. It was noted that a number of external funding agencies hire their own nationals for such trainings in the region while others provide training that are not appropriate. It has become a supply-driven training strategy as donors design the programs. To become relevant, trainings must become demand-driven and address: “What do people need?” Offering demand-driven training (e.g., risk management and disaster risk management) may prove effective in creating a nuanced, relevant training that primarily considers the norms/culture and aspirations of the organization(s) that need training.

A human resource development plan among the countries may also prove invaluable. It could identify the specific ICM/Marine Affairs training that are needed. Scholarships are also essential for those seeking advanced training.

### **Strengthening the Modes of Non-formal Training**

Several strategies can be employed to enhance non-formal training. These include: a) on-the-job training; b) retraining, refresher courses; c) cross-fertilization; d) mobile programs, like "Marine-Affairs-on-Wheels"; and e) internships. Another strategy can be a Peace Corps-type of program. The mode of delivery could include the classroom type but more important is the need for coaching and mentoring; and there should be a good blend to address both governance and technical requirements. There is also a need to sensitize policymakers and politicians through these trainings. It is imperative that there should be consistency of messages at the local level, especially with respect to policy issues.

#### **4. EXTENSION SERVICES OF UNIVERSITIES AND RESEARCH INSTITUTIONS TO COASTAL COMMUNITIES**

The survey listed ways on how extension services are delivered. These include:

- Forum/training on problem-solving and conflict management and resolution;
- Community education regarding ocean and coastal resources and IEC strategies;
- Livelihood and enterprise development; and
- Forum/training on coastal resource/habitat assessment and monitoring.

However, extension services offered by the universities and research institutions may prove to be unsustainable because of lack of funds for implementation.

#### **Knowledge Centers**

Some structures need to be formalized to help institutions deliver extension services to their communities, particularly centers that can offer a repository of knowledge. Relevant information can be generated from these centers such as: "Who is doing what? What tools and ICM packages are available?" It was noted during the meeting that while there is a wealth of ICM products, access to them is very difficult. To become credible, there must be an accreditation system for knowledge repository centers.

## **5. CHALLENGES FOR EAST ASIA**

The capacity-building assessment has been a good start to explore the issues of human capacity in coastal and ocean governance. With the understanding of the needs and definitely the urgency of a world economy moving towards a greater reliance on the ecological and biological economies, the oceans and the coasts certainly will play a very critical role. Currently, we have to overcome the issue of creating a demand.

### **Existing Need for Coastal Planners and Managers**

One of the questions raised in the assessment acknowledged as requiring immediate action was to determine if there was “a market for graduates of ICM/Marine Affairs programs in the region?” It appears that jobs are not available, and while there may be an increase in the number of graduates with an orientation towards marine affairs and/or coastal management, these individuals pursue research careers different from what they have been trained for. Two other issues raised was the effectiveness of the extension officer programs and is there really was a "professional coastal planner and/or manager."

The discussion group also articulated what one would expect of ICM or marine affairs graduates. The group indicated that such individuals should be familiar with:

- ICM concepts;
- coastal livelihood training;
- intricacies and nuances of social structures;
- natural resources and the environment and how these are to be monitored and evaluated;
- environmental law to include local legislation as well as international (including maritime) law;
- planning process and tools; and
- resource economics.

In addition, the ICM/marine affairs graduate should have leadership, management, entrepreneurial, communication and negotiation skills.

Coastal and ocean managers are not within the traditional job categories of government offices. It was determined that it takes a great deal of effort and wisdom to create such a need. With one or two coastal planners/managers for each municipality, the job market will be very big. This is predicated on the understanding and acceptance of the usefulness of coastal planners/managers by the local government as an important addition to the local or economic planning team.

### **Scaling Up**

Scaling up is the next challenge for ocean and coastal management. The ability to place more coastal areas under integrated planning and management, in order to achieve effective ocean and coastal governance across the region, is imperative. The framework espoused by ICM has become viable and has since been advocated by international, regional, national and local programs. It is without doubt that the success of current

initiatives to scale up programs on ocean and coastal governance is predicated on the critical number of allied experts and practitioners.

### **ICM Certification**

Certification-based schemes are gaining wide acceptance because they have shown to be very effective for business. They have since gained adherents from local governments and are being viewed as a way forward. Such schemes can be very effective for ocean and coastal governance as well. A demand for “new professionals” for ocean and coastal governance, serving as auditors and certifiers, is not far-fetched.



## **6. STRATEGIC SOLUTIONS**

The survey and the EAS Congress 2006 meeting have elicited two recommendations to further enhance capacity building in ocean and coastal governance in the region, specifically: 1) continue to strengthen the role of PEMSEA; and 2) create a functional network of training institutions.

### **Recommendations for PEMSEA**

The following are the recommendations for PEMSEA:

1. PEMSEA needs to facilitate networking and a consortium of ICM trainers and practitioners. Also, a repository of ocean governance and ICM knowledge products, principally through its website, should be made available. These would enhance replication of good practices among countries in the region and facilitate the conduct of national and regional training courses. The offering of web-based courses should also be explored.
2. Recommendations for formal training include:
  - Analysis of supply-demand for ICM people/practitioners, specifically the job market for graduates of ICM and marine affairs/policy programs;
  - Guidelines on competencies needed by ICM managers and institutions; and
  - PEMSEA to scale up effort for degree training by exploring and facilitating consortium agreements.
3. Recommendations for non-formal training include supporting the infrastructure of academics, practitioners and NGOs to conduct such training.

### **Recommendations for a Network of Training Institutions**

The following provides the recommendations for a Network of Training Institutions for ocean and coastal governance:

1. Use the current group members (or those who are interested) as standing members for an e-forum and hold some regular debates or discussions on specific subjects/issues. Other issues could include: a) creating job demand; b) determining the major qualities of a coastal/ocean manager; and c) identifying the basic knowledge he or she should possess. It is envisaged that through a three-month e-forum, some of the issues might be more thoroughly explored and conclusions reached.
2. Share and compile training course curricula for informal training courses as well as formal marine affairs training. There may be a need to work towards reviewing all ICM and marine affairs curricula worldwide and look for commonality and innovative approaches.

3. Discuss how existing efforts, such as marine affairs/ICM courses around the region, would strengthen the delivery, effectiveness and competitiveness towards a long-term and sustainable program. Relevant discussions could include: how current efforts in marine affairs training be further developed and sustained as well as exploring the gradual expansion of the e-forum to include those concerned outside the region, among others.

# **APPENDIX 1**

## **Initial Results of the Survey to Assess East Asia's Capacity Building in Ocean and Coastal Governance**

PEMSEA and UNESCO-IOC conducted a survey in December 2006 to assess East Asia's capacity building needs in ocean and coastal governance. The survey was undertaken in support of building strategies to strengthen capacity to implement the Sustainable Development Strategy for the Seas of East Asia (SDS-EAS).

Part of the initial results of the survey and the discussion on problems as well as future actions were presented and discussed during the EAS Congress in Haikou, Hainan in China in December 2006. PEMSEA and UNESCO, together with the Global Forum for Oceans, Coasts and Small Islands co-organized this Discussion Group consisting of experts from universities, research institutions and governments to initiate discussion on how best the capacity in ocean and coastal affairs could be further developed and strengthened. In particular, the discussion group was invited to:

1. review current university program on marine affairs and integrated coastal management;
2. review short-term specialized training courses related to coastal areas and oceans;
3. identify capacity development gaps that require national and international efforts; and,
4. explore the possibilities of a common postgraduate curriculum for ICM and Ocean Affairs in the region

This recent survey used the Nippon Foundation International Ocean Governance Network (IOGN) – Education Task Force survey questionnaire which was designed in the late 2003 and completed in 2004: a survey that utilized global information, including the data from four East Asian countries (Japan, Philippines, Singapore and Thailand). The survey targeted universities, research and training institutions. This recent survey, however, zeroed in on East Asia and has been expanded to include other institutions from the region not targeted before. It also utilized a number of additional parameters to reflect how new strategies have been incorporated to the programs of universities, research and training institutions (*see Survey Questionnaire in Appendix 2*). The survey was also designed to capture recent gaps, problems and constraints in the implementation of capacity building initiatives.

One of the results of the Nippon Foundation survey highlighted gaps in the courses which are offered to effect ocean governance. Box 1 lists these particular courses or course contents. In the end, several considerations were forwarded in the implementation of global capacity building that included:

1. development of model (basic) curricula as top priority;
2. need for flexibility and review of course content;
3. positive incentives for collaboration and avoidance of duplication;
4. fostering improved quality and peer review program;
5. fostering centers of excellence through regional consortia;

6. twinning arrangements between institutions with complementary strengths; and
7. clarification of relationship with other networks.

Against these backdrops that the present survey has been undertaken.

Box 1 Courses (and course contents) to effect ocean governance and which were apparently lacking in the institutions that was surveyed by IOGN
Marine Protected Areas Community involvement in ocean governance and integrated coastal management EIA courses Marine/ocean science courses for non-scientists Principled ocean governance Aquaculture governance/management Integrated environmental management Impacts from land-based activities on coastal and ocean systems Oceans and society Oceans and climate Economics especially resource economics/ valuation Tourism Lessons learned Environmental issues in enclosed seas Skills toolbox International public law and institutions Integrated management process

### The PEMSEA – IOC/UNESCO Survey Results

The survey was sent to 22 respondents; representing 20 universities in East Asia (Table 1). As shown, 15 experts returned the survey forms.

Because of their important contribution in strengthening capacity in the region, universities outside East Asia were also invited to participate in the survey. Three respondents answered the questionnaire while data from other universities were culled out from the internet.

Three training centers in the China and the Philippines participated in the survey.

Table 1 Survey respondents.

Country	Institution	Survey		Program relating to Ocean and Coastal Governance
		Respondent	Survey forms received	
<b>University and Research Institutions (East Asia)</b>				
Cambodia	Royal Phnom Penh University	Va Dany		University is still planning to include program for ocean and coastal governance

	Royal University of Agriculture	Khov Kuong	Received	Fisheries Science
China	Xiamen University	Hong Huasheng	Received	Environmental Management Program; Master of Marine Affairs Program
	China Ocean University	Xu Xiangmin	Did not submit	
Hong Kong	City University of HongKong	Paul Lam	Received	BSc (Environmental Science and Management); MSc (Environmental Science and Technology); Master of Philosophy; Doctor of Philosophy
Indonesia	Bogor Agricultural University	Rohkmin Dahuri	Did not submit	
	Indonesian Institute of Science	Aprilani Soegiarto	Did not submit	
Korea, Republic of	Kyungnam University	Lee Chan-Won	Received	Integrated Coastal Management Cooperation Program
	Seoul National University	Koh Chul-Hwan	Did not submit	
Malaysia	Universiti Putra Malaysia	Ibrahim Mohamed	Did not submit	MS/PhD; there is presently no specific MMA or ICM program
Philippines	UP Visayas	Merlina Andalecio	Received	Master in Marine Affairs
	UP Diliman (Marine Science Institute)	Gil Jacinto	Received	MS/PhD Marine Science
	UP Diliman (School of Urban and Regional Planning)	Mario de los Reyes	Did not submit (internet search)	Diploma in Urban and Regional Planning; Master in Arts in Urban and Regional Planning; Doctor of Philosophy
	Silliman University	Angel Alcala	Did not submit (internet search)	Master of Science in Coastal Resource Management
Singapore	National University of Singapore	Chou Loke Ming	Received	No dedicated ocean and coastal governance program; aspects are embedded in various other programs; NUS offers MSc (Environmental Management)
		Koh Kheng Lian	Received	Law Faculty does not offer degree granting program on ocean and coastal governance; only some aspects are taught in a course on Ocean Law and Policy
		Wong Poh Poh	Received	Course on Coastal

				Management
Thailand	Prince of Songkla University, Coastal Resources Institute	Somsak Boromthanarat	Received	Agricultural Development and Coastal Resources Management
	Asian Institute of Technology	Kwei Lin	Received	MS and PhD Integrated Tropical Coastal Zone Management
	Chulalongkorn University	Charoen Nitithamyong	Received	Marine Science and Environmental Science Program (MSc and PhD)
Vietnam	Water Resource University	Vu Minh Cat	Received	Coastal Engineering and Integrated Coastal Management
	Hanoi National University	Vu Viet Binh	Info presented on PPT slides	
<b>University and Research Institutions (outside of East Asia)</b>				
Australia	University of Sydney (Institute of marine Science)		(internet search)	Graduate Certificate in Applied Science (Coastal Management); Graduate Diploma in Applied Science (Coastal Management); Masters in Applied Science (Coastal Management)
Canada	Dalhousie University	Becky Field/ David vanderZwaag	Received	Marine Affairs Program (Master of Marine Management)
	Dalhousie University	Moira McConnell	Received	Marine and Environmental Law Programme
USA	University of Hawaii	Kem Lowry	Received	Graduate Ocean Policy Certificate
	University of Washington	Marc Hershman	Did not submit	
	University of Rhode Island		(internet search)	Master of Marine Affairs; Master of Arts in Marine Affairs
	Oregon State University		(internet search)	Marine Resource Management Programme
	University of Delaware		(internet search)	Master of Marine Management
UK	University of Newcastle Upon Tyne		(internet search)	MSc in Tropical Coastal Management
	University of Plymouth		(internet search)	Joint European Programme in Water and Coastal Management
<b>Training centers</b>				
China	Xiamen ICM Center	Xue Xiongzhi	Received	
Philippines	PCAMRD	Ester Zaragoza/ Rafael Guerrero	Received	

	CMC	Roger Juliano	Received	
	Local Government Academy	Marivel Sacendoncillo	Received	
	FAO	Derek Staples	Supports Training programs of other institutions	
Japan	OPRF	Hiroshi Terashima	Did not submit	
	NACA	Sena De Silva	Did not submit	

The major survey data are highlighted below.

## Universities and Research Institutions

### Enrolment

- The enrolment in programs relating to ocean and coastal governance is shown in Figure 1. Most universities in East Asia offer environmental science/management and degrees in fisheries. Others have started programs in integrated coastal management and marine affairs. As also indicated in Table 1 there is no specific program for ocean and coastal governance for a number of the institutions like the Royal University of Agriculture and Royal Phnom Penh University of Cambodia; National University of Singapore, Chulalongkorn University and University of the Philippines Marine Science Institute.

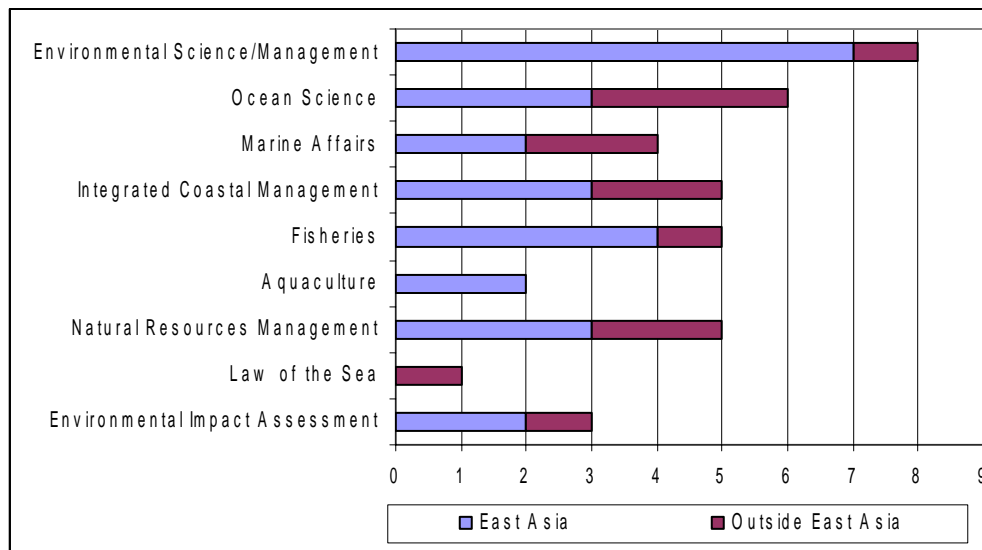


Figure 1. Enrolment in programs relating to ocean and coastal governance



- Most respondents in East Asia have indicated that their institutions have offered the programs relating to ocean and coastal governance from 5 to 10 years (Figure 2).

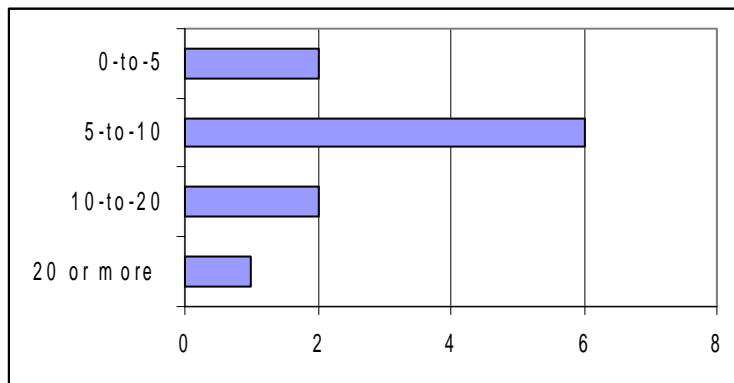


Figure 2. How long has the programs relating to ocean and coastal governance (in East Asia) had been in existence?

### ***Core Courses and electives***

- The core courses and elective courses relevant to ocean and coastal governance are presented in Figure 3. The long list of courses was based (and expanded using other courses offerings on ICM and Marine Affairs programs) from IOI 's profile of 'model' curriculum on programs dealing with sustainable marine and coastal development.
- Based on information from ICM and Marine Affairs as well as other Programs in East Asia, the core courses that were often offered include: (1) development planning and management; (2) ocean and coastal law and policy; (3) marine and coastal ecology; (4) ICM; and (5) EIA.
- These same courses apparently reflect those given outside of the region (Figure 4).

### ***Strategies to improve existing programs***

- To improve or enhance their respective programs a number of the institutions (both in and outside of the region) have indicated that they conduct regular program review (e.g., every five years) including updating of course materials and strengthening their curriculum and their teaching methods as well. Others have indicated that they need to offer more practical sessions and research activities.
- In East Asia, the strategy of other universities to improve their program is to strengthen their respective "niches" like putting emphasis and enhancing particular courses (for e.g., environmental and food safety and making effective use of technology).

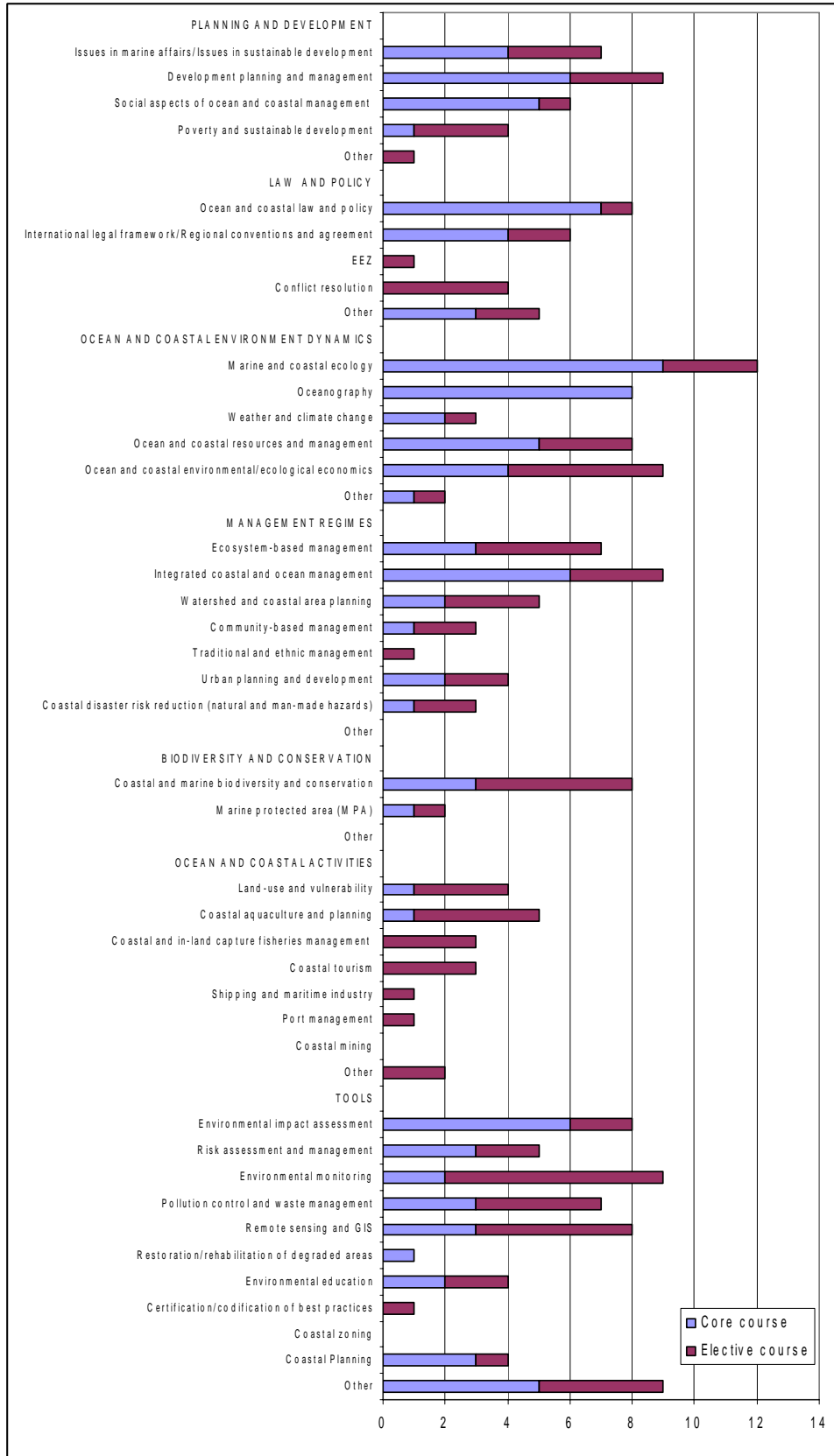


Figure 3 Courses in relevant ocean and coastal governance programs (East Asia)

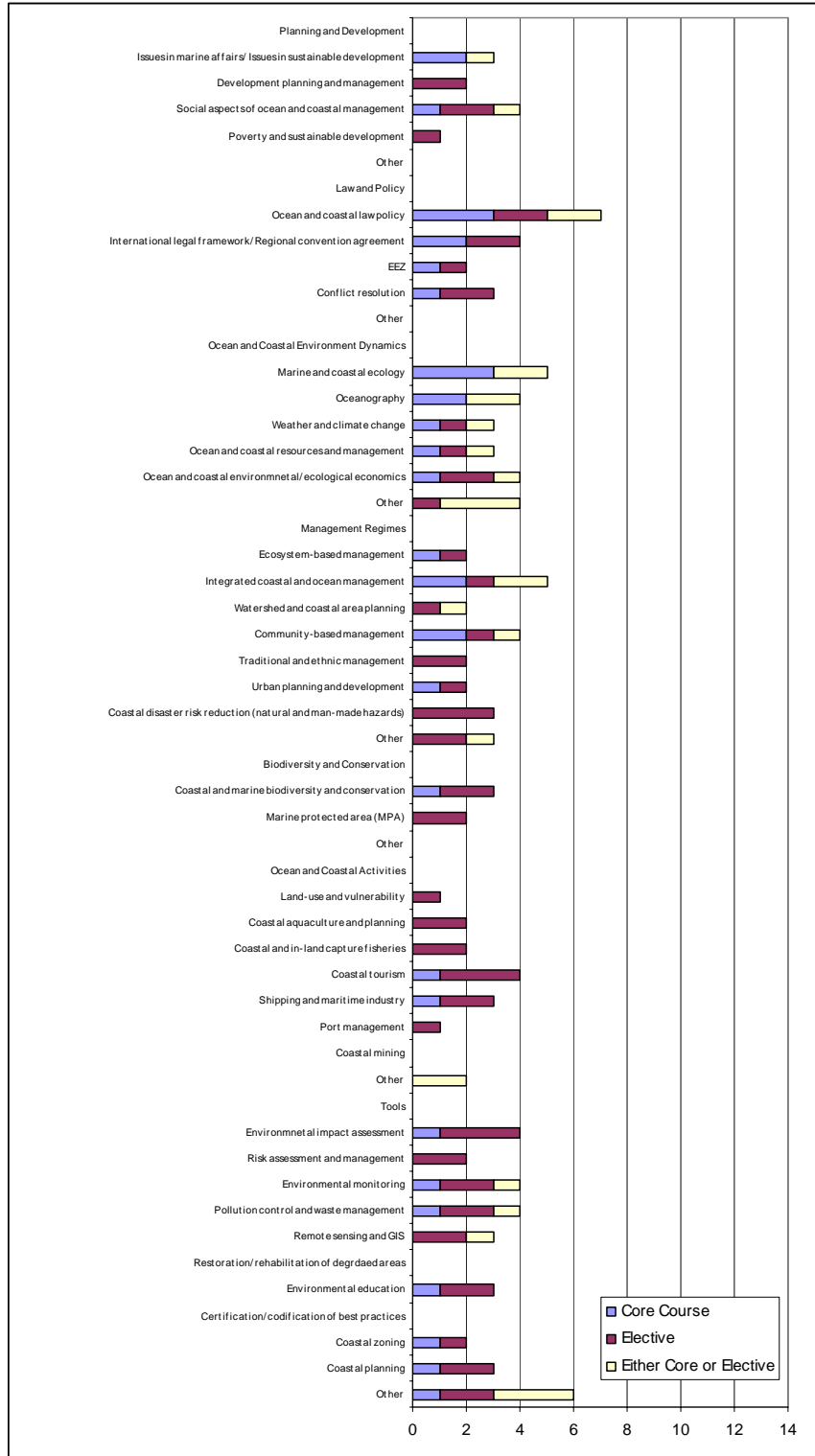


Figure 4 Courses in relevant ocean and coastal governance programs (Outside East Asia)

- Still in East Asia and in line with offering a “balanced” ocean and coastal governance curriculum, some institutions are contemplating at broadening the scope of their course offerings, for example one institution has drafted additional courses (e.g., Ocean and coastal zoning and planning; Governance; Gender) still another indicated a need to have an ICM course taught by an expert and a practitioner. Another indicated collaboration with other institutions in the region is a way that can strengthen their programs

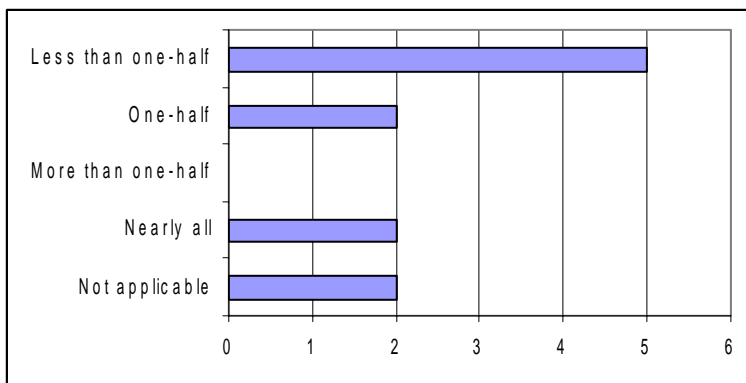


Figure 5. Proportion of graduates in East Asia who ultimately work in the ocean and coastal governance related field

### **Profile of the graduates**

- The respondents from the region have estimated that the proportion of their graduates who ultimately work in ocean and coastal governance-related field is less than one half (Figure 5). However, except for two universities, most graduates are believed to be employed in the government (Table 2). In one university, half opted to go the private sector; in others, a significant proportion are in NGOs while the rest have gone back to complete further studies. Most graduates were apparently been hired in a local office and national departments (Figure 6). An example of graduates from coastal and ocean governance–related programs who had become leaders/and experts are presented in Box 2.

Table 2. In what sector are graduates of ocean and coastal-related programs had been employed?

Sector	University/Research Institutions								
	1	2	3	4	5	6	7	8	9
Government	10	10	50	90	70	70	5	40	60
Private sector		50			10	20	10	30	20
NGO	20	20	30	10	20	10	5	10	20
Other		20							

Other: further study, teaching, business

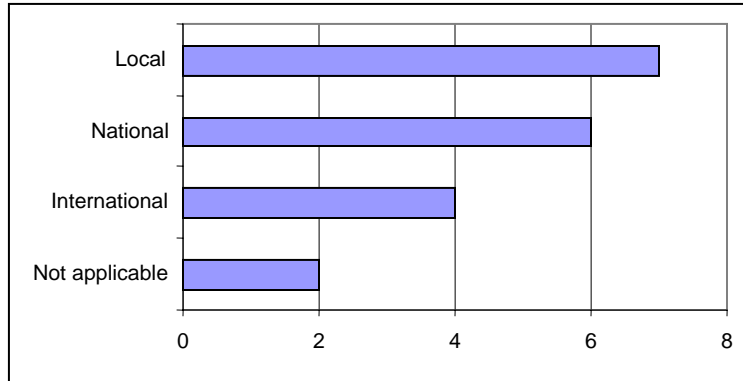


Figure 6. Where are the graduates geographically employed after graduation?

**Box 2. Examples of leaders graduating from ocean and coastal governance related courses in selected universities**

**Chulalongkorn University**

- Dr. Pornsuk Chongprasit, the Director of Marine Environment, Pollution Control Department
- Dr. Anond Snidvongs, the Director of SEA START RC and faculty member of the Department of Marine Science, Chulalongkorn University;
- Prof. Dr. Saowapa Angsupanich, expert in benthic organisms and University Professor at Songkla University
- Asst. Director Thaithaworn Lerdwittayaprasit, an expert in harmful algae bloom and faculty member at Chulalongkorn University;
- Dr. Thammasak Yeemin, expert in coral ecology, a lecturer in Ramkhamhaeng University

**Kyungnam University**

- Director in the Department of Marine and Fisheries of Local Government

**National University of Singapore**

- Many have gone back to their home countries and continued with jobs that require environmental management background

**University of the Philippines – Diliman (Marine Science Institute)**

- With researchers at SEAFDEC, WorldFish Center, WWF, Conservation International, Burapha University

**Dalhousie University (Master of Marine Management)**

- Director General, Maritime Authority of Jamaica
- Senior Assistant Secretary (UNCLOS), Ministry of Foreign Affairs, Bangladesh
- Deputy Director of Legislation Dept, Vietnam Maritime Administration (Vinamarine)
- Regional Director General, Federal Government Department of Fisheries and Oceans, Canada, Maritime Region
- Regional Manager, Environmental Assessment and Major Projects, Oceans and Habitat Branch, Federal Government Department of Fisheries and Oceans Canada, Maritimes Region
- Principal Marine Planner, Marine Policy and Planning Branch, Department of Environment and Conservation, Western Australia
- Fisheries Analyst, David Suzuki Foundation, Canada
- Environment/Ecosystem Advisor, Federal Government of Canada Environment Department
- Commander, Coast Guard Station, Puerto Princesa, Philippines
- Coastal Zone Coordinator, Nova Scotia Provincial Government Department of Fisheries and Aquaculture
- Assistant Professor, University of the Philippines in the Visayas
- Chief Marine Conservation Officer, Marine Parks and Reserves, Ministry of Natural Resources and Tourism, Tanzania

Dalhousie University (Masters/Doctorals in Law)

- Graduates are practicing in law firms around the globe in the fields of shipping law, fisheries law, oil and gas law and other related ocean law areas. Many have attained senior positions in government departments or agencies. The program has also fosters numerous professors and lecturers in maritime and environment law in countries such as Australia, New Zealand, China, Fiji, Germany, Indonesia, South Korea, Scotland, Singapore, Papua New Guinea and the Philippines.

University of Hawaii

- Senior officials in state government; head of major environmental NGO

### **Problems/constraints encountered**

The major problems and constraints encountered in the implementation of the programs include: (1) decreasing enrolment; (2) lack of qualified mentors; and (3) lack of job opportunities for graduates. Other problems that have been listed are:

- Geographical location – for the University of the Philippines in the Visayas, the problem of a decreasing enrolment could become more acute as there will be no more clientele for next years because the majority of the local government and private sector (the target clientele in the area) have already taken the program.
- Lack of scholarship grants to support students in the program – in the case of the Asian Institute of Technology and in Dalhousie University the problem of the lack scholarship funds have arisen. In AIT, the number of enrollees increased, particularly in the first years of its program, when scholarship funds were available; enrollees decreased when funding became limited.
- Lack of budget support for curriculum development, equipment, resources and research activities
- The inter-departmental and inter-disciplinary nature of existing coastal and ocean governance programs may prove to be not cost-effective - For AIT in particular, there is (1) disparity among participating departments, in terms of academic inputs and income sharing; and there is (2) constraints in budget especially when there are very few enrollees; and as a result there is (3) weakening in the commitment and level of competence among instructors.

### **Short-term training**

- Half of the respondents from the universities and research institutions in the region have indicated that they offer short-term training programs related to ocean and coastal governance. They see that part of problems/constraints in the implementation of training programs include: (1) lack of qualified mentors; and (2) that they cannot offer the trainings regularly
- Data about the courses offered by training institutions came from only three centers (Table 2). There is a need to identify and seek information from other areas. The two centers in the Philippines are targeting local government officials to deliver ICM courses. The Local Government Academy has recently developed ICM modules (using lessons learned and the framework developed for the PEMSEA's ICM demonstration sites in the Philippines). The trainings offered by

PCAMRD, in Los Banos, Laguna, Philippines, have been accredited by the UN-TRAINSEACOAST Programme. However, the trainings can only be given when funds are available. The ICM training program in Xiamen, China was also developed using the experiences gained from PEMSEA's demonstration sites.

Table 2 List of training courses\* offered in East Asia

Training Courses	University-led	Training center-led
ICM		
Use of Geographic Information Systems (GIS)		
Marine pollution and water quality monitoring		
Environmental Impact Assessment (EIA)		
Integrated Environmental Impact Assessment (IEIA)		
Implementing international conventions		
Environmental risk assessment and management		
Natural resource damage appraisal		
Oil pollution preparedness, response and cooperation		
Chemical spill and port audit		
Establishment of Integrated Information Management System (IIMS)		
Coastal Strategy development		
Public awareness and participation		
Project development and management for coastal and marine environmental projects		
Development and implementation of coastal use zoning plan and institutional framework		
Contingent valuation and environmental resource valuation		
Leadership in ocean and coastal governance		
Integrating social science concerns into the ICM framework and programs		
Integrated Management System regarding port, safety, health and environment		
Other		
Social analysis		
Ocean and coastal zoning and planning		
Sustainable fisheries management		

\*Except for the training courses listed in *Other*, all are training program offerings of PEMSEA

### **Extension services of universities and research institutions to coastal communities**

Extension services are delivered in several ways:

- Forum/training on problem-solving; conflict management and resolution
- Community education regarding ocean and coastal resources; IEC strategies
- Livelihood and enterprise development
- Forum/training on coastal resource/habitat assessment and monitoring

However, extension services offered by the universities and research institutions may prove to be unsustainable because of lack of funds for implementation.

## **APPENDIX 2**



***Survey on Capacity Building in Ocean and Coastal Governance in East Asia –  
Universities and Research Institutions***

PEMSEA and UNESCO-IOC is carrying out this survey to assess East Asia's capacity building needs in ocean and coastal governance. This survey is undertaken in support of putting forward capacity building strategies to implement the Sustainable Development Strategy for the Seas of East Asia (SDS-EAS).

We would like to invite you to take part in this activity.

The results from this survey will be presented in a meeting during the EAS Congress 2006 in Haikou, Hainan in China in December 2006. PEMSEA and UNESCO-IOC, together with the Global Forum for Oceans, Coasts and Small Islands are co-organizing this discussion group consisting of experts from universities, research institutions and governments to initiate a discussion on how best capacity in coastal and ocean affairs could be developed and strengthened. In particular, the discussion group is invited to (a) review current university programs on marine affairs and integrated coastal management; (b) review short-term specialized training courses related to coastal areas and oceans; (c) identify capacity development gaps that require national and international efforts; and (d) explore the possibility of a common postgraduate curriculum for ICM and Ocean Affairs in the region.

This survey uses and expands the Nippon Foundation International Ocean Governance Network- Education Task Force Survey done in 2004. It, however, utilizes a number of additional parameters to reflect how recent strategies have been incorporated to the programs of universities, research and training institutions. This survey is also designed to capture recent gaps, problems and constraints in the implementation of capacity building initiatives. It has also been expanded to include other institutions not targeted by the aforementioned survey.

***General Guidelines***

1. The following survey form is designed for universities and research institutions. It consists of five parts: I. Respondent's information; II. Information about the Institution; III. Information about the degree-granting program; IV. Information about the courses; and V. Information about other capacities of the Institution.
2. The survey form is an *MS Word* document. We encourage that you type in your responses directly to the file. Simply type in within the allocated space or use "(x)" for the "cross cells" - as highlighted in the form.
3. Your additional comments are very valuable; please use the comment boxes liberally. Should you need to insert additional items (particularly, in items with "Other" as an option), it is very easy to add another row or rows as the whole survey form is designed in a *Table* format.

4. Your institution may have several degree-granting programs relevant for ocean and coastal governance. Use the template (attached in this email) to indicate separate responses for another program.
5. The survey questions for *Part IV. The Courses* is on another file. As there are several Courses in a Program you need to use a separate form for each. A template for the Courses is attached.

When you have completed this survey, please email it to Mr. Danilo A. Bonga at [dbonga@pemsea.org](mailto:dbonga@pemsea.org).

Thank you very much.

### I. Respondent's information:

Name:
Title:
Work Address:
Work Phone:
Email:

### II. The Institution

1. Name of Institution:			
2. Institution's Web address:			
3. Type of Institution (4-year University, Research Institution, etc.):			
4. Post-graduate Student Enrolment (2006) in:			
<i>Program</i>	<i>Number of students</i>	<i>Program</i>	<i>Number of students</i>
Environmental Science		Fisheries	
Ocean Science		Aquaculture	
Marine Affairs		Natural Resources Management	
Integrated Coastal Management		Law of the Sea	
		EIA	

### III. The Degree-granting Program for Ocean and Coastal Governance

1. Name of Program which relates to Ocean and Coastal Governance:
2. Department of the institution that oversees the program:
3. What is the language of instruction?

4. Which degrees are offered through this program? (Please cross (x) all that apply)			
<i>Undergraduate Degree:</i>		<i>Postgraduate Degree:</i>	
Diploma	<input type="checkbox"/>	PhD	<input type="checkbox"/>
Certificate	<input type="checkbox"/>	MS (by Research)	<input type="checkbox"/>
Other, please explain	<input type="checkbox"/>	MS (by Coursework)	<input type="checkbox"/>
		MA	<input type="checkbox"/>
		Other, please explain	<input type="checkbox"/>
5. This program concentrates on the following areas/courses: (Please cross (x) all that apply)			
<i>Courses</i>	<i>Core Course</i>	<i>Elective</i>	<i>Comments</i>
<i>Planning and Development</i>			
Issues in marine affairs/Issues in sustainable development	<input type="checkbox"/>	<input type="checkbox"/>	
Development planning and management	<input type="checkbox"/>	<input type="checkbox"/>	
Social aspects of ocean and coastal management	<input type="checkbox"/>	<input type="checkbox"/>	
Poverty and sustainable development	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Law and Policy</i>			
Ocean and coastal law and policy	<input type="checkbox"/>	<input type="checkbox"/>	
International legal framework/Regional conventions and agreement	<input type="checkbox"/>	<input type="checkbox"/>	
EEZ	<input type="checkbox"/>	<input type="checkbox"/>	
Conflict resolution	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Ocean and Coastal Environment Dynamics</i>			
Marine and coastal ecology	<input type="checkbox"/>	<input type="checkbox"/>	
Oceanography	<input type="checkbox"/>	<input type="checkbox"/>	
Weather and climate change	<input type="checkbox"/>	<input type="checkbox"/>	
Ocean and coastal resources and management	<input type="checkbox"/>	<input type="checkbox"/>	
Ocean and coastal environmental/ecological economics	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Management Regimes</i>			
Ecosystem-based management	<input type="checkbox"/>	<input type="checkbox"/>	
Integrated coastal and ocean management	<input type="checkbox"/>	<input type="checkbox"/>	
Watershed and coastal area planning	<input type="checkbox"/>	<input type="checkbox"/>	
Community-based management	<input type="checkbox"/>	<input type="checkbox"/>	
Traditional and ethnic management	<input type="checkbox"/>	<input type="checkbox"/>	
Urban planning and development	<input type="checkbox"/>	<input type="checkbox"/>	
Coastal disaster risk reduction (natural	<input type="checkbox"/>	<input type="checkbox"/>	

and man-made hazards)			
Other			
<i>Biodiversity and Conservation</i>			
Coastal and marine biodiversity and conservation			
Marine protected area (MPA)			
Other			
<i>Ocean and Coastal Activities</i>			
Land-use and vulnerability			
Coastal aquaculture and planning			
Coastal and in-land capture fisheries management			
Coastal tourism			
Shipping and maritime industry			
Port management			
Coastal mining			
Other			
<i>Tools</i>			
Environmental impact assessment			
Risk assessment and management			
Environmental monitoring			
Pollution control and waste management			
Remote sensing and GIS			
Restoration/rehabilitation of degraded areas			
Environmental education			
Certification/ codification of best practices			
Coastal zoning			
Coastal planning			
Other			
6. How long has this program been in existence? (Please cross (x) that which applies)			
0-5 years	<input type="checkbox"/>		
5-10 years	<input type="checkbox"/>		
10-20 years	<input type="checkbox"/>		
20 or more years	<input type="checkbox"/>		
7. Is this a joint program:			
Between your institution and other local/national institutions? (Please indicate names of the other institutions)			
Between your institution and other institutions in the East Asian region? (Please indicate names of the other institutions)			
Between your institution and other institutions outside of East Asia? (Please indicate names of the other institutions)			

Other arrangement			
8. Are there efforts to improve/enhance this program			
If Yes, please explain			
If No, please explain			
9. <i>The Students of the Program</i>			
9.1 Trends in the number of students graduating from the program			
<i>Year</i>	<i>Number of students</i>	<i>Year</i>	<i>Number of Students</i>
1980-1985		1995-2000	
1985-1990		2000-2005	
1990-1995		2005-present	
9.2 Have any graduates from your program gone on to become leaders in their field (Please cross (x) that which applies)			
Yes	<input type="checkbox"/>		
No	<input type="checkbox"/>		
Don't Know	<input type="checkbox"/>		
If yes, who are these graduates and what do they do now?			
9.3 Of the students who go through the program, what proportion, to the best of your knowledge, ultimately work in the Ocean and Coastal Governance related field? (Please cross (x) that which applies)			
Less than ½	<input type="checkbox"/>		
½	<input type="checkbox"/>		
More than ½	<input type="checkbox"/>		
Nearly all	<input type="checkbox"/>		
9.4 What percent of the graduates from the program work in the Ocean and Coastal Governance field work in the following sectors:			
<i>Sector</i>	<i>Percent</i>		
Government	<input type="checkbox"/>		
Private Sector	<input type="checkbox"/>		
NGO	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
9.5 As the students graduate from your program, where geographically are they employed?			
Local	<input type="checkbox"/>		
National	<input type="checkbox"/>		
International	<input type="checkbox"/>		
10. Problems/Constraints encountered			
Decreasing enrolment	<input type="checkbox"/>		
Lack of qualified mentors	<input type="checkbox"/>		
Lack of job opportunity for	<input type="checkbox"/>		

graduates		
Others, please explain		
11. General Comments		

**IV. The courses in the program (Please fill-up the separate questionnaire regarding the courses in this program)**

## V. Other Capacities of the Institution to Effect Coastal and Ocean Governance

<b>A. Short-term Training Courses</b>			
1. Does your institution provide short-term training course(s) relevant to coastal and ocean management?			
Yes	<input type="checkbox"/>		
No	<input type="checkbox"/>		
2. List of Training Courses			
<i>Training Courses</i>	<i>Duration</i> (1 week; 2 weeks; etc.)	<i>Frequency</i> (annually, twice per year; every other year, etc.)	<i>Average number of participants per class</i>
ICM			
Use of Geographic Information Systems (GIS)			
Marine pollution and water quality monitoring			
Environmental Impact Assessment (EIA)			
Integrated Environmental Impact Assessment (IEIA)			
Implementing international conventions			
Environmental risk assessment and management			
Natural resource damage appraisal			
Oil pollution preparedness, response and cooperation			
Chemical spill and Port audit			
Establishment of Integrated Information Management System (IIMS)			
Coastal Strategy development			
Public awareness and participation			
Project development and management for coastal and marine environmental projects			
Development and implementation of coastal-use zoning plan and institutional framework			
Contingent valuation and environmental resource valuation			
Leadership in ocean and coastal governance			
Integrating social science concerns into the ICM framework and programs			
Integrated Management System regarding port safety, health and environment			
Others (Please specify)			
3. Problems/Constraints encountered in the training courses:			

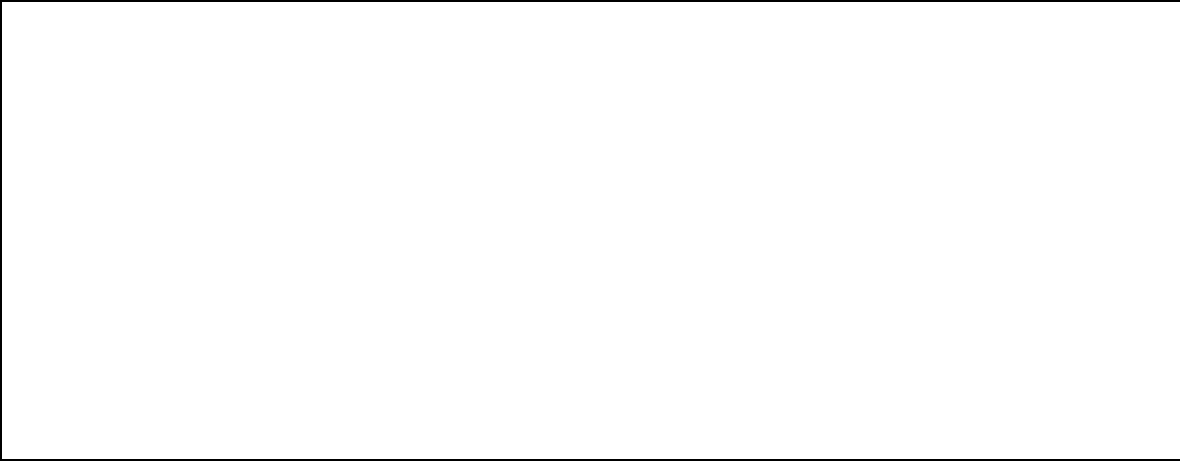
<b><i>B. Extension Services to Coastal Communities</i></b>		
1. Does your institution provide extension services to coastal communities?		
Yes	<input type="checkbox"/>	
No	<input type="checkbox"/>	
2. What extension services does your institution provide (please cross (x) all that apply)		
<i>Extension services</i>		<i>Comments</i>
Forum/training on problem-solving; conflict management and resolution	<input type="checkbox"/>	
Community education regarding ocean and coastal resources; IEC strategies	<input type="checkbox"/>	
Livelihood and enterprise development	<input type="checkbox"/>	
Forum/training on ecotourism	<input type="checkbox"/>	
Forum/training on coastal resource/habitat assessment and monitoring	<input type="checkbox"/>	
Other	<input type="checkbox"/>	
3. Problems/Constraints encountered in extension services		
4. General Comments for Part IV		



#### IV. The Course(s)

1. Course Title:	
2. Is the course description available online? If so, please provide us with appropriate URL: http://	
3. Course Description	
4. Course Details:	
4.1 Level of course: (Please cross (x) that which applies)	
Undergraduate	<input type="checkbox"/>
Postgraduate	<input type="checkbox"/>
Both	<input type="checkbox"/>
Other, please explain	
4.2 Qualification for admission	
Indicate qualification requirement here:	
4.3 Mode of Delivery: (Please cross (x) that which applies)	
Face-to-face	<input type="checkbox"/>
Extension	<input type="checkbox"/>
Web-based Learning	<input type="checkbox"/>
Field Course	<input type="checkbox"/>
4.4 This course is a: (Please cross (x) that which applies)	
Required course	<input type="checkbox"/>
Elective Course	<input type="checkbox"/>
4.5 This course is offered: (Please cross (x) that which applies)	
Every term	<input type="checkbox"/>
Every other term	<input type="checkbox"/>
Annually	<input type="checkbox"/>
Every other year	<input type="checkbox"/>
Other, please explain	
4.6 The last time this course was taught was: (Please cross (x) that which applies)	
Current term	<input type="checkbox"/>
Previous term	<input type="checkbox"/>
Last year	<input type="checkbox"/>
Two years ago	<input type="checkbox"/>
Other, please explain	
4.7 Qualifications of the instructor: (Please cross (x) that which applies)	
PhD	<input type="checkbox"/>
Master (or equivalent)	<input type="checkbox"/>
Bachelor (or equivalent)	<input type="checkbox"/>
Other, please explain	

4.8 Number of students enrolled in most recent offering: (Please cross (x) that which applies)		
Less than 10	<input type="checkbox"/>	
10-20	<input type="checkbox"/>	
20-30	<input type="checkbox"/>	
30-50	<input type="checkbox"/>	
More than 50	<input type="checkbox"/>	
4.9 Over the past five years enrolment has: (Please cross (x) that which applies)		
Increased	<input type="checkbox"/>	
Decreased	<input type="checkbox"/>	
Remained Constant	<input type="checkbox"/>	
4.10 Number of credits/Credit-Hours:		
Number of contact hours:		
4.11 Course evaluation:		
<i>Parameter</i>	<i>Percent</i>	
Exams	<input type="checkbox"/>	
Essays or papers	<input type="checkbox"/>	
Presentations	<input type="checkbox"/>	
Projects	<input type="checkbox"/>	
Participation	<input type="checkbox"/>	
Other, please explain		
4.12 Please rate this course to its' relevant importance within the Program: (Please cross (x) that which applies)		
High	<input type="checkbox"/>	
Medium-High	<input type="checkbox"/>	
Medium	<input type="checkbox"/>	
Medium-Low	<input type="checkbox"/>	
Low	<input type="checkbox"/>	
4. Problems/Constraints encountered		
5. General Comments		



***Survey on Capacity Building in Ocean and Coastal Governance in East Asia –  
Training Institutions***

PEMSEA and UNESCO-IOC is carrying out this survey to assess East Asia's capacity building needs in ocean and coastal governance. This survey is undertaken in support of putting forward capacity building strategies to implement the Sustainable Development Strategy for the Seas of East Asia (SDS-EAS).

We would like to invite you to take part in this activity.

The results from this survey will be presented in a meeting during the EAS Congress 2006 in Haikou, Hainan in China in December 2006. PEMSEA and UNESCO-IOC, together with the Global Forum for Oceans, Coasts and Small Islands are co-organizing this discussion group consisting of experts from universities, research institutions and governments to initiate a discussion on how best capacity in coastal and ocean affairs could be developed and strengthened. In particular, the discussion group is invited to (a) review current university programs on marine affairs and integrated coastal management; (b) review short-term specialized training courses related to coastal areas and oceans; (c) identify capacity development gaps that require national and international efforts; and (d) explore the possibility of a common postgraduate curriculum for ICM and Ocean Affairs in the region.

This survey uses and expands the Nippon Foundation International Ocean Governance Network- Education Task Force Survey done in 2004. It, however, utilizes a number of additional parameters to reflect how recent strategies have been incorporated to the programs of universities, research and training institutions. This survey is also designed to capture recent gaps, problems and constraints in the implementation of capacity building initiatives. It has also been expanded to include other institutions not targeted by the aforementioned survey.

***General Guidelines***

6. The following survey form is designed for training institutions. It consists of three parts: I. Respondent's information; II. Information about the Institution; and III. Information about the training courses.
7. The survey form is an *MS Word* document. We encourage that you type in your responses directly to the file. Simply type in within the allocated space or use "(x)" for the "cross cells" - as highlighted in the form.
8. Your additional comments are very valuable; please use the comment boxes liberally. Should you need to insert additional items (particularly, in items with "Other" as an option), it is very easy to add another row or rows as the whole survey form is designed in a *Table* format.
9. The survey questions for *Part III. The Training Courses* is repeated three times; indicating three separate courses. Should your institutions have more courses please use the template for the Courses which is attached in this email.

When you have completed this survey, please email it to Mr. Danilo A. Bonga at [dbonga@pemsea.org](mailto:dbonga@pemsea.org).

Thank you very much.

## II. Respondent's information:

Name:
Title:
Work Address:
Work Phone:
Email:

## II. The Training Institution

1. Name of the Institution:	
2. Institution's Web Address	
3. Type of organization: (Please cross (x) that which applies)	
Government	<input type="checkbox"/>
NGO	<input type="checkbox"/>
UN Agency	<input type="checkbox"/>
Other, please indicate	<input type="checkbox"/>
4. What is the primary function of your institution?	

## III. The Training Courses

### Training Course 1

1. Training Course Title
2. Is the course description available online? If so, please provide us with the appropriate URL: http://
3. Course Description
4. Course Details
4.1 What is the language of instruction?
4.2 Duration of the Course:

4.3 What is the major target group (market) for the course?			
4.4 This course is offered: (Please cross (x) that which applies)			
Annually	<input type="checkbox"/>		
Two times per year	<input type="checkbox"/>		
Every other year	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
4.5 Type of Course: (Please cross (x) that which applies)			
Lectures	<input type="checkbox"/>		
Extension	<input type="checkbox"/>		
Web-based	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
4.6 Mode of Delivery: (Please cross (x) that which applies)			
Lectures	<input type="checkbox"/>		
Simulation Exercise	<input type="checkbox"/>		
Practical Exercise	<input type="checkbox"/>		
Projects	<input type="checkbox"/>		
Combination of several of the above	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
5. Enrolment			
5.1 What is the average number of participants in this course?			
5.2 Is there a limit on enrolment? (Please cross (x) that which applies)			
Yes	<input type="checkbox"/>		
No	<input type="checkbox"/>		
If Yes, what is the limit?	<input type="checkbox"/>		
5.3 Trends in Enrolment			
<i>Year</i>	<i>Number of Students</i>	<i>Year</i>	<i>Number of Students</i>
2000		2003	
2001		2004	
2002		2005	
6. Upon completion of the Course			
6.1 Upon completion of the course, is a certificate awarded? (Please cross (x) that which applies)			
Yes	<input type="checkbox"/>		
No	<input type="checkbox"/>		
If Yes, what type of certificate?	<input type="checkbox"/>		
6.2 How is the course evaluated (graded)? (Please cross (x) that which applies)			
Pass/Fail	<input type="checkbox"/>		

Grade	<input type="checkbox"/>	
Attendance Certificate	<input type="checkbox"/>	
Other, please explain		
6.3 Does the course carry any credit? (Please cross (x) that which applies)		
Yes	<input type="checkbox"/>	
No	<input type="checkbox"/>	
If Yes, how many credits?		
6.4 Outputs: (Please cross (x) that which applies)		
Skill enhancement (job training)	<input type="checkbox"/>	
Academic improvement	<input type="checkbox"/>	
Upgrade of qualifications (eg., the course is an accredited course)	<input type="checkbox"/>	
Other, please explain		
7. Please discuss the problems/constraints in the conduct of the training course		
8. General Comments		

## Training Course 2

1. Training Course Title			
2. Is the course description available online? If so, please provide us with the appropriate URL: http://			
3. Course Description			
4. Course Details			
4.1 What is the language of instruction?			
4.2 Duration of the Course:			
4.3 What is the major target group (market) for the course?			
4.4 This course is offered: (Please cross (x) that which applies)			
Annually	<input type="checkbox"/>		
Two times per year	<input type="checkbox"/>		
Every other year	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
4.5 Type of Course: (Please cross (x) that which applies)			
Lectures	<input type="checkbox"/>		
Extension	<input type="checkbox"/>		
Web-based	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
4.6 Mode of Delivery: (Please cross (x) that which applies)			
Lectures	<input type="checkbox"/>		
Simulation Exercise	<input type="checkbox"/>		
Practical Exercise	<input type="checkbox"/>		
Projects	<input type="checkbox"/>		
Combination of several of the above	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
5. Enrolment			
5.1 What is the average number of participants in this course?			
5.2 Is there a limit on enrolment? (Please cross (x) that which applies)			
Yes	<input type="checkbox"/>		
No	<input type="checkbox"/>		
If Yes, what is the limit?	<input type="checkbox"/>		
5.3 Trends in Enrolment			
<i>Year</i>	<i>Number of Students</i>	<i>Year</i>	<i>Number of Students</i>
2000		2003	
2001		2004	
2002		2005	



6. Upon completion of the Course	
6.1 Upon completion of the course, is a certificate awarded? (Please cross (x) that which applies)	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If Yes, what type of certificate?	
6.2 How is the course evaluated (graded)? (Please cross (x) that which applies)	
Pass/Fail	<input type="checkbox"/>
Grade	<input type="checkbox"/>
Attendance Certificate	<input type="checkbox"/>
Other, please explain	
6.3 Does the course carry any credit? (Please cross (x) that which applies)	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If Yes, how many credits?	
6.4 Outputs: (Please cross (x) that which applies)	
Skill enhancement (job training)	<input type="checkbox"/>
Academic improvement	<input type="checkbox"/>
Upgrade of qualifications (eg., the course is an accredited course)	<input type="checkbox"/>
Other, please explain	
7. Please discuss the problems/constraints in the conduct of the training course	
8. General Comments	

### Training Course 3

1. Training Course Title			
2. Is the course description available online? If so, please provide us with the appropriate URL: http://			
3. Course Description			
4. Course Details			
4.1 What is the language of instruction?			
4.2 Duration of the Course:			
4.3 What is the major target group (market) for the course?			
4.4 This course is offered: (Please cross (x) that which applies)			
Annually	<input type="checkbox"/>		
Two times per year	<input type="checkbox"/>		
Every other year	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
4.5 Type of Course: (Please cross (x) that which applies)			
Lectures	<input type="checkbox"/>		
Extension	<input type="checkbox"/>		
Web-based	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
4.6 Mode of Delivery: (Please cross (x) that which applies)			
Lectures	<input type="checkbox"/>		
Simulation Exercise	<input type="checkbox"/>		
Practical Exercise	<input type="checkbox"/>		
Projects	<input type="checkbox"/>		
Combination of several of the above	<input type="checkbox"/>		
Other, please explain	<input type="checkbox"/>		
5. Enrolment			
5.1 What is the average number of participants in this course?			
5.2 Is there a limit on enrolment? (Please cross (x) that which applies)			
Yes	<input type="checkbox"/>		
No	<input type="checkbox"/>		
If Yes, what is the limit?	<input type="checkbox"/>		
5.3 Trends in Enrolment			
<i>Year</i>	<i>Number of Students</i>	<i>Year</i>	<i>Number of Students</i>
2000		2003	
2001		2004	
2002		2005	

6. Upon completion of the Course	
6.1 Upon completion of the course, is a certificate awarded? (Please cross (x) that which applies)	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If Yes, what type of certificate?	
6.2 How is the course evaluated (graded)? (Please cross (x) that which applies)	
Pass/Fail	<input type="checkbox"/>
Grade	<input type="checkbox"/>
Attendance Certificate	<input type="checkbox"/>
Other, please explain	
6.3 Does the course carry any credit? (Please cross (x) that which applies)	
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
If Yes, how many credits?	
6.4 Outputs: (Please cross (x) that which applies)	
Skill enhancement (job training)	<input type="checkbox"/>
Academic improvement	<input type="checkbox"/>
Upgrade of qualifications (eg., the course is an accredited course)	<input type="checkbox"/>
Other, please explain	
7. Please discuss the problems/constraints in the conduct of the training course	
8. General Comments	

## **APPENDIX 3**

**Minutes of the Discussion Group Meeting on Capacity Development  
on Coastal and Ocean Governance  
East Asian Seas Congress 2006 (Side Event)**

**Date: Thursday, 15 December; 1330H-1730H  
China Institute for Reform and Development (CIRD) Hotel**

**Participants:**

**Australia**

Ms. Heidi Schuttenberg – James Cook  
University

**Cambodia**

Ms. Va Dany –Royal University of  
Phnom Penh

**China**

Prof. Hong Huasheng – Xiamen  
University

**Japan**

Mr. John A. Dolan – Ocean Policy  
Research Foundation  
Ms. Ayako Okubo – Ocean Policy  
Research Foundation

**Malaysia**

Prof. Mohd. Ibrahim b. Hj. Mohamed –  
Universiti Putra Malaysia

**Philippines**

Dr. Angel Alcala – Siliman University  
Dr. Merlina N. Andalecio – University  
of the Philippines Visayas  
Dr. Rafael Guerrero III – Philippine  
Council for Aquatic and Marine  
Research Development  
Dr. Gil S. Jacinto –University of the  
Philippines – Marine Science  
Institute

Dr. Rogelio O. Juliano – Coastal  
Management Center

Ms. Marivel C. Sacendoncillo – Local  
Governmen Academy – DILG

Ms. Ester Zaragoza – Philippine  
Council for Aquatic and Marine  
Research Development

Mr. Danilo Bonga - PEMSEA

**Singapore**

Dr. Chou Loke Ming – National  
University of Singapore

Dr. Kheng-Lian Koh – National  
University of Singapore

Dr. Poh Poh Wong – National  
University of Singapore

**Thailand**

Dr. Kwei Lin – Asian Institute of  
Technology

Prof. Somsak Boromthanarat – Prince  
of Songkla University

Dr. Charoen Nitithamyong –  
Chulalongkorn University

Dr. Derek Staples – Regional Office  
for Asia and the Pacific – FAO

**USA**

Dr. Biliانا Cicin-Sain – University of  
Delaware

Dr. Kem Lowry, Jr. – University of  
Hawaii

## **Facilitators**

Dr. Billiana Cicin-Sain, Chair

Dr. Gil Jacinto, Co-Chair

Dr. Chou Loke Ming, Co-Chair

## **Objectives of Workshop**

- (a) review current university programs on marine affairs and integrated coastal management;
- (b) review short-term specialized training courses related to coastal areas and oceans;
- (c) identify capacity development gaps that require national and international efforts; both formal (post-graduate) training and informal training
- (d) explore the possibility of a common post-graduate curriculum for ICM and Ocean Affairs in the region.

## **Discussion Points:**

### **A. Global Initiatives on capacity development:**

#### 1. The Nippon Foundation International Ocean Governance Network

- Development of “model” curriculum
- provides fellowships
- collaboration between/among regions
- emulated the model of the World Maritime University which networked maritime programs

#### 2. Global Forum for Oceans, Coasts, and Small Islands

- Strategic capacity assessment in several regions of the world (completed in some regions; on-going in others, e.g. in East Asia)
- Development of long-term marine affairs program
- Recognition that the East Asian Seas region is a different case more complex and more diverse

### **B. Existing Marine Affairs/ICM programs in EAS**

#### 1. The recent EAS survey showed that there is no comprehensive program for marine affairs and ICM that is being offered in the region

#### 2. Examples of existing programs

- Thailand – in AIT, a systematic ICM/Marine Affairs degree offering is lacking; although the present program is multi-disciplinary it is not very coherent; this is because policy directions are likewise lacking. Another pressing issue is that while there are quite a number of applicants to the degree program from the region, there are no longer scholarships available; thus, there are less students compared to the period when there was funding from **DANIDA?**

- China – Xiamen University’s graduate program ten years ago was initially geared towards Environmental Management but then a shift was made into Marine Management that particularly targets policy-makers. In collaboration with PEMSEA, an International Training Center on ICM was set-up 2001. By 2005, a Coastal and Ocean Management Institute was created with courses on resource management, law and communication/ public affairs, among others. A more “complete” Marine Affairs Programs is scheduled to be offered starting 2008 in collaboration with Dalhousie University and *University of Washington(?)*.
- Philippines - UP Visayas offers a Master's in Marine Affairs that is patterned after the Dalhousie University. The program is now on its 5<sup>th</sup> year and caters to local policy makers. It is conducted on a weekend mode, runs on tri-mester and where students can graduate in 1 ½(?) years. The program also taps experts from the region. Problems encountered include dwindling clientele, need to offer more management- related courses and the difficulty in getting government staff as students who then have to go on extended leave to study. (*How about Siliman University?*)
- Malaysia - a JICA program offers short term training. Degrees may also be obtained through research. There has been an increasing awareness on ocean governance and management, particularly, among the parliamentarians who have become ‘sensitized. However, there is no official university that offers ocean governance. There is a need for such a program, but apparently this is not yet considered urgent. Also, there is concern is about the sustainability of these programs

### C. Needs/Issues

- Jobs -
  - Is there a market for graduates of ICM/Marine Affairs programs in the region? It appears that jobs are not available, and while there may be an increase in the number of graduates with an orientation towards marine affairs and/or coastal management, these individuals pursue research careers different from what they have been trained. The issue was also raised if the extension officer programs are effective and if there is such as thing as a "coastal planner"?
- Market segmentation –
  - On the discussion of a unified ICM or Marine Affairs program, the observation is that graduate programs are designed as products to suit specific markets. However, there is a recognized need for more formal (long-term) programs for scholars and scientists to complement less formal (short-term) training programs for policy makers and practitioners.
- Long-term programs may not be appropriate for some areas where there is an urgent need to improve, for instance, on management skills of practitioners. Thus, strengthening short-term programs for governance is imperative. However, formal (long-term) training must not be neglected either as this would address the need to generate “middle-level’ staff and the continuing replacement of ‘experts’.
- A “complete” or a “model” ICM /Marine Affairs program is impossible to create –

- It is very difficult to design one academic program that has everything built in; encourage complexity, diversity of program offerings; universities must be encouraged to strengthen their particular niches.
- Issues with some funding agencies that provide ICM/Marine Affairs training –
  - It was noted that a number of external funding agencies hire their own nationals for ICM projects in the region while others provide training that are not appropriate. It has become a supply-driven training strategy as donors design the programs. Trainings must become demand-driven: “What do people need?” It is also important to consider the norms/culture of the organization(s) that need training.
- Other needs –
  - Offer “demand driven” training (e.g. risk management; disaster risk management); a human resource development plan among the countries that could identify the need for ICM/Marine Affairs training; and scholarships for those seeking advanced training. There is also a need to sensitize policy-makers and politicians.
  - There should be consistency of messages at the local level, especially with respect to policy issues
  - Consider major issues & have real on-site, on-the-ground exposure of students
  - In addition to individual core competencies, need to develop institutional core competencies
  - There is a need to formalize certain structures, particularly centers that can offer a repository of knowledge (Who is doing what; what tools and ICM packages are available?). There is a wealth of ICM products that are existing but access to them have proven to be very difficult
  - Accreditation system for knowledge repository centers
- Types of capacity-building needed:
  - (1) on the job training; (2) retraining, refresher courses; (3) cross-fertilization; (4) mobile program, like “Marine Affairs-on-wheels.”
  - Can a “Peace Corps”-type of program be effective?
  - Mode of delivery could include the classroom type but more important is the need for coaching and mentoring; there should be a good blend to address governance and technical requirements.
- Gaps in formal academic programs on ICM include:
  - (1) resource economics; (2) aquaculture governance; (3) human skills; conflict resolution and (4) policy/law

#### **D. Training Modes for ICM**

1. Formal (long-term)
  - a. Academic (Graduate) Programs –
    - (i) Non-thesis option to target practitioners but will involve (require?) the students to engage in individual/group case study; and,
    - (ii) Thesis option – (e.g., Master of Arts Marine Affairs).



- b. Possible models for a regional program - Through ASEAN University Network or through the Asia-Pacific Rim Universities Network where universities with common degree programs engage in faculty and student exchange. Another possible model may be the Asia-Pacific Center for Urban and Regional Management based in Singapore and the program offered by the Asian Institute of Management.

2. Informal (short-term)

a. Targets:

- (i) policy/decision-makers; politicians;
- (ii) local government staff & officials;
- (3) practitioners

b. Mode:

- (i) training of trainers thru NGO's
- (ii) not classroom based but preferably site-based, or a combination;
- (iii) short-term training courses
- (iv) cross-site visits
- (v) internships

## **E. Expected core competencies of ICM degree holders**

The group also discussed what one would expect of ICM or Marine Affairs graduates and indicated that such individuals should familiar with:

- ICM concepts
- coastal livelihood training
- intricacies and nuances of social structures
- natural resources & environment and how these are to be monitored and evaluated
- environmental law to include local legislation as well as international (including maritime) law
- planning process & tools
- resource economics

In addition the ICM/Marine Affairs graduate should have: leadership, management, entrepreneurial, communication and negotiation skills.

## **F. Recommendations for PEMSEA**

1. PEMSEA to facilitate networking and consortium of ICM trainors and practitioners, and make available a repository on ocean governance and ICM knowledge products principally through its website. This would enhance replication of good practices among countries in the region and facilitate the conduct of national and regional training courses. The offering of web-based courses could also be explored.
2. Recommendations for formal training
  - Analysis of supply-demand for ICM people/practitioners, specifically the job market for graduates of ICM & Marine Affairs/Policy programs.
  - Guidelines on competencies needed by ICM managers and institutions.

- PEMSEA to scale up effort for degree training by exploring and facilitating consortium agreements
3. Recommendation for non-formal training
- Support infrastructure of academics, practitioners and NGO's to conduct such training

**List of Participants**  
**Discussion Group on Capacity Development on Coastal and Ocean Governance**  
**East Asian Seas Congress 2006**  
**Haikou, Hainan Province PR China**  
**15 December 2006**

**Australia**

**Ms. Heidi Schuttenberg**

James Cook University  
Email: heidi.schuttenberg@jcu.edu.au

**Cambodia**

**Ms. Va Dany**

Head  
Environmental Science Department  
Royal University of Phnom Penh  
Tel: 011-876-037  
Email: vadany@hotmail.com

**China**

**Prof. Hong Huasheng**

Professor  
Xiamen University  
Environmental Research Centre,  
Xiamen University, Xiamen  
Fujian 361005  
People's Republic of China  
Tel: 86-592 219-2216  
Fax: 86-592 209-5242  
Email: hshong@pub.ic.xm.fj.cn;  
hshong@xmu.edu.cn

**Japan**

**Mr. John A. Dolan**

Research Fellow  
Ocean Policy Research Foundation  
Kaiyo Senpaku Bldg., 1-15-16,  
Toranomon, Minato-ku, Tokyo 105-0001  
Tel: +81 335 021 907  
Fax: +81 335 022 127  
Email: j-dolan@sof.or.jp

**Ms. Ayako Okubo**

Research Fellow  
Ocean Policy Research Foundation  
Kaiyo Senpaku Bldg., 1-15-16,  
Toranomon, Minato-ku, Tokyo 105-0001  
Tel: +81 335 021 907  
Fax: +81 335 022 127  
Email: a-okubo@sof.or.jp

**Malaysia**

**Prof. Mohd. Ibrahim b. Hj. Mohamed**

Department of Environmental Science  
Faculty of Sc. and Environmental  
Studies  
Universiti Putra Malaysia  
43400 Serdang  
Selangor Darul Ehsan  
Malaysia  
Tel: 603 948-6101 ext. 3661  
Fax: 603 943-8109;  
Mobile: +60122051952  
Email: drmihm8@yahoo.com;  
mibrahim@fsas.upm.edu.my;

**Philippines**

**Dr. Merlina N. Andalecio**

Assistant Professor  
Institute of Fisheries Policy and  
Development Studies  
College of Fisheries and Ocean  
Sciences  
UP in the Visayas  
Miagao, Iloilo 5023  
Tel/Fax: 033-3159030  
Email: mandalec@yahoo.com

**Dr. Angel Alcalá**

Director  
Siliman University

2nd Flr. Siliman Marine Laboratory  
Building, Bantayan Dumaguete City  
Negros Oriental 6200  
Tel: +63 35 422-5698  
Fax: +63 35 225-2500

**Dr. Rafael Guerrero III**  
Executive Director  
Phil. Council for Aquatic and Marine  
Research Development  
Jamboree Rd., Timugan  
Los Baños, Laguna  
Philippines 4030

**Ms. Ester Zaragoza**  
Officer-in-Charge Marine Resources  
Division  
PCAMRD  
Los Baños, Laguna 4030  
Tel: +63 49 536-1564  
Fax: +63 49 536-1566  
Email: mrd@laguna.net

**Dr. Rogelio O. Juliano**  
Executive Director  
Coastal Management Center  
E2603 Philippine Stock Exchange  
Center, Ortigas Center, Pasig City  
Telefax: +63 2 635-5065  
Email: coastal\_mgt\_ctr@yahoo.com  
rogerj@pltdsl.net

**Ms. Marivel C. Sacendoncillo**  
Executive Director  
Local Government Academy – DILG  
8F Agustin Bldg., F. Ortigas Jr. Rd.,  
Ortigas Center, Pasig City  
Tel: +63 2 634 6416  
Fax: +63 2 634 6567  
Email: mcsacendoncillo@yahoo.com  
execdir@lga.gov.ph  
Website: www.lga.gov.ph

## **Singapore**

**Dr. Chou Loke Ming**  
Professor - Department of Biological  
Sciences  
National University of Singapore  
Blk. S2, 14 Science Drive 4  
117543 Singapore

Tel: 65 68742696 / 67787112 (lab)  
Home Phone: (65) 67778885  
Fax: 65 6779-2486  
Email: dbsclm@nus.edu.sg

**Dr. Kheng-Lian Koh**  
Professorial Fellow  
Asia-Pacific Centre for Environmental  
Law, Faculty of Law  
National University of Singapore  
469G Bukit Timah Road, Eu Tong Sen  
Building 259776  
Tel: +65 65166246  
Fax: +65 68721937  
Email: lawkohkl@nus.edu.sg  
Website: <http://law.nus.edu.sg/apcel>

**Dr. Poh Poh Wong**  
Department of Geography, National  
University of Singapore  
1 Arts Link, Singapore 117570  
Email: geowpp@nus.edu.sg

## **Thailand**

**Dr. Kwei Lin**  
Agricultural & Aquatic Program  
Asian Institute of Technology  
P.O. Box 4 Klongluang, Pathumthani  
Bangkok 12120  
THAILAND  
Fax: 662 524 6200/ 5162126  
Tel: 662 524 5458 (office)  
Email: lin@ait.ac.th ;  
lin\_kwei@yahoo.com,  
Mobile:+66-60300936  
Hp: 66-2-2794615.

**Prof. Somsak Boromthanasat**  
Director  
Coastal Resources Institute (CORIN)  
Prince of Songkla University  
Hat Yai, Songkla 90112  
THAILAND  
Tel: 66 74 212800/212752  
Fax: 66 74 212782

**Dr. Charoen Nitithamyong**  
Head  
Department of Marine Science  
Faculty of Science

Chulalongkorn University  
Phyathai Road, Pathumwan, Bangkok  
10330  
Tel: +66 2 2185396  
Fax: +66 2 2550780  
Email: c\_nitihamyong@yahoo.com  
ncharoen@chual.ac.th

**Dr. Derek Staples**  
Senior Fisheries Officer  
Regional Office for Asia and the Pacific  
– FAO  
39 Phra Atit Road, Bangkok 10200  
Thailand  
Tel: +662 697 4119  
Fax: +662 697 4445  
Email: derek.staples@fao.org  
Website: www.fao.org

## **USA**

**Dr. Biliانا Cicin-Sains**  
The Graduate College of Marine Studies  
Center for the Study of Marine Policy  
Robinson Hall  
University of Delaware  
Newark, Delaware 19716-3501  
Tel: 302 831 8086  
Fax: 302 831 3668  
Email: bcs@UDel.Edu

**Dr. Kem Lowry, Jr.**  
Professor  
Department of Urban and Regional  
Planning  
University of Hawaii  
Social Sciences Building, #107F  
Hawaii, USA  
Email: lowry@hawaii.edu

## **PEMSEA Secretariat**

**Dr. Gil S. Jacinto**  
Director  
Marine Science Institute  
University of the Philippines  
Diliman, Quezon City  
Philippines  
Tel.: 9223944  
Mobile: 09178118172; 09177907554  
Fax: 9247678  
Email: gilj@msi01.cs.upd.edu.ph

**Mr. Danilo Bonga**  
Senior Technical Assistant  
PEMSEA  
DENR Compound, Visayas Avenue  
Diliman Quezon City  
Tel: 632-9202211  
Fax: 632-9269712  
Email: dbonga@pemsea.org

## **APPENDIX 4**

## Training Materials Published by PEMSEA

<p><b>Manuals</b></p> <ol style="list-style-type: none"> <li>1. Environmental Risk Assessment Manual</li> <li>2. Natural Resource Damage Assessment Manual</li> <li>3. Manual on Economic Instruments for Coastal and Marine Resource Management</li> <li>4. Manual on Strategies, Tools and Techniques for Implementing International Conventions on Marine Pollution in the East Asian Seas</li> <li>5. Integrated Environmental Impact Assessment for Coastal and Marine Areas: A Training Manual</li> <li>6. Port Safety Audit Manual Vol. 1 and Vol. 2</li> <li>7. IIMS Guide and Manual</li> <li>8. Manual of Practice: Contingent Valuation Survey for Integrated Coastal Management Applications</li> </ol>
<p><b>Technical Reports</b></p> <ol style="list-style-type: none"> <li>1. Enhancing the Success of Integrated Coastal Management Initiatives</li> <li>2. Coastal Environmental Profile of Xiamen</li> <li>3. Integrated Waste Management Action Plan for the Batangas Bay Region</li> <li>4. Integrated Coastal Management Contingent valuation Survey in Batangas Bay, Philippines</li> <li>5. Pollution Prevention and Management in the East Asian Seas</li> <li>6. Initial Environmental Risk Assessment of Pesticides in the Batangas Bay Region, Philippines and the Xiamen Seas, China</li> <li>7. Benefit-Cost Analysis of Tourism Development and Sustainability in the Malacca Straits</li> <li>8. Sharing Lessons and Experiences in Marine Pollution Management</li> <li>9. Malacca Straits: Refined Risk Assessment</li> <li>10. Water Use Zoning for the Sustainable Development of Batangas Bay, Philippines</li> <li>11. The Development of National Coastal and Marine Policies in the People's Republic of China; A Case Study</li> <li>12. Case Study on the Integrated Coastal Policy of the Republic of Korea</li> <li>13. Manila Bay Refined Risk Assessment</li> <li>14. Southeastern Coast of Bali Initial Risk Assessment</li> <li>15. Danang Initial Risk Assessment</li> <li>16. Bohai Sea Environmental Risk Assessment</li> <li>17. Port Klang Initial Risk Assessment</li> <li>18. Framework for National Coastal and Marine Policy Development</li> <li>19. A Perspective on the Environmental and Socioeconomic Benefits and Costs of Integrated Coastal Management: The Case of Xiamen, PR China</li> <li>20. Xiamen: an ICM Journey</li> <li>21. Securing the Future through ICM: The Case of the Batangas Bay Region</li> </ol>
<p><b>Strategies and Declarations</b></p> <ol style="list-style-type: none"> <li>1. Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia/ Sustainable Development Strategy for the Seas of East Asia</li> <li>2. Manila Bay Coastal Strategy</li> <li>3. Coastal Strategy of Nampho City, DPR Korea</li> <li>4. Coastal Strategy for the Southeastern Coast of Bali</li> <li>5. Sihanoukville Coastal strategy</li> <li>6. Danang Coastal strategy</li> <li>7. Bohai Sea Sustainable Development Strategy</li> <li>8. Bohai Declaration 200</li> </ol>
<p><b>Policy Briefs and IEC Materials</b></p> <ol style="list-style-type: none"> <li>1. PB on Sustainable Trade in marine Endangered Species in East Asia</li> <li>2. PB on Integrated Coastal Management: Revitalizing the Coasts and Oceans Programs in the Philippines</li> <li>3. PB on Sustainable Development and Management of Manila Bay: A Focus on Water Quality</li> <li>4. Sustaining Benefits</li> </ol>