



P E R S P E C T I V E S

on Building a Regional Mechanism for Coastal and Ocean Governance in the Seas of East Asia



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Partnerships in Environmental Management
for the Seas of East Asia

Perspectives on Building a Regional Mechanism for Coastal and Ocean Governance in the Seas of East Asia

November 2013

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Published by the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA).
188 p.

Printed in Quezon City, Philippines.

Cover photo credits:

PEMSEA, Port Authority of Thailand, Kyaw Thar and Dwight Ronan

PEMSEA. 2013. Perspectives on Building a Regional Mechanism for Coastal and Ocean Governance in the Seas of East Asia. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines.

ISBN 978-971-812-031-6

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F O R E W O R D

Very few people will disagree when I say that the age of 20 represents maturation — a milestone rife with achievement and a glimpse of what is possible. In the last two decades, PEMSEA has grown from a regional project funded by the Global Environment Facility (GEF) to a full-fledged international organization with such influence and effectiveness. The organization has much to be proud of and many to thank for the work that has been done. The most important task of remembrance and gratitude, however, is to embrace the lessons and experiences of the past 20 years. This special anniversary publication is a compilation of stories from some of the people who made possible the gains that we now enjoy.

Contributors to this book, all brilliant and accomplished individuals in the development world, share their unique view on how PEMSEA came to be. Each of them built PEMSEA brick by brick, through sheer determination coupled with the winning combination of pragmatism and idealism. For what humongous task could get done without any of these elements? It is imperative for us to relive their experiences, hardships and triumphs so we can look to the future with bright-eyed enthusiasm, as well as earthy practicality.

Before 1993, integrated coastal management (ICM) was an implementable concept, but a concept nonetheless. Now, it is a must in national environmental policymaking and should be integrated into the programming of major environmental instruments and institutions at the regional and global levels. It has become a valuable tool for the governance and management of environmental — especially coastal — economic development issues at the micro level. The greater part of this policy integration and implementation can be attributed to the hard work and ingenuity of the people of PEMSEA.

We must not forget, too, that had it not been for the support of our partner agencies, none of the programs would have been possible. The GEF, the United Nations Development Programme (UNDP), the International Maritime Organization (IMO), the World Bank, the national governments of the 11 PEMSEA Country Partners, PEMSEA's 20 Non-Country Partners, the more than 31 local governments in these East Asian nations and many other collaborating organizations and institutions have provided more than just funding, manpower and institutional support to PEMSEA. They have given the organization the recognition needed to bolster its standing as a premier institution that gets things done the way they must be done. Government officials who oversee policy have embraced PEMSEA's programming and institutionalized it. There could be no greater reward for an organization than to be heard and appreciated in such a manner. The *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA), crafted by PEMSEA countries in 2003 with the participation of the GEF, UNDP, IMO, the World Bank and 14 other regional organizations, followed in 2006 by the recognition of PEMSEA as the regional coordinating mechanism for SDS-SEA implementation, is proof of that institutionalization, and indicators of the countries' commitment to the principles and objectives of PEMSEA.

While we acknowledge how far we have come, we must not lose sight of the challenges that lie ahead. In the last half of 2013 alone, there were media reports of massive fish kills in three different locations in the region. The causes ranged from man-made pollutants to the unknown. But one thing is clear: the need to protect and manage the seas and coasts of the region is greater than ever. The increasing threat of climate change looms over us and the current and future effects are staggering. Pollutants from industrial and agricultural sources continue to be dumped into the rivers and coastal waters, causing devastation to marine resources. Destructive fishing practices employed by both large-scale fishers and desperate local fisherfolks deplete present and future generations of secure food sources. Endangered marine species that need our protection continue to be threatened as a consequence of mismanagement and misuse of limited coastal and marine space and habitats.

As we appreciate what has been done, we must plan what we still need to do. We must keep encouraging governments and the international community as a whole to give continued importance to coastal management and use it as a tool to advance their sustainable development agendas. We must keep developing actionable plans that take into account the economic and psychosocial needs of the people we serve. We must continue to inspire local governments and their constituents through our determination, industry and optimism. We must keep reminding all stakeholders, from funders and implementers to local leaders and the individual coastal dwellers, that the seas are more than a source of income — they are the source of life.

I truly hope that the perspectives that are contained in the following pages will serve as a reminder of the vision and dedication of the builders of PEMSEA, as well as an inspiration to present and future champions for protecting and sustaining our blue planet.

Here's to the next 20 years!

Stephen Adrian Ross

Acting Executive Director and
Chief Technical Officer,
PEMSEA Resource Facility

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C O N G R A T U L A T O R Y M E S S A G E

H.E. Fidel V. Ramos

Former President, Republic of the Philippines (1992 to 1998)
and Chairman, Ramos Peace and Development Foundation

We join PEMSEA's host of advocates, constituents and supporters in extending our warmest congratulations on its 20 years of remarkable partnerships and service to the East Asian Seas region.

During my term as President of the Philippines in 1993, we made a strong bid to host the first PEMSEA project, and we are highly pleased that PEMSEA is now a recognized international organization. The Government of the Republic of the Philippines has consistently pursued the ratification of the *Headquarters Agreement*, which will ensure the full functioning and operation of PEMSEA in the years ahead.

When PEMSEA invited me to the first East Asian Seas Congress held in Malaysia in 2003, I witnessed and commended the adoption of a landmark document that encapsulated the region's common vision and framework for action — the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA). As a scuba-diver, I have since followed the region's progress in coastal and ocean management and governance, and I am happy to note that the countries of East Asia have steadily advanced forward, albeit in varying degrees, with the SDS-SEA implementation. The SDS-SEA is geared not only to protect our coastal and ocean environment, but also to increase the region's resiliency to climate change impacts and enhance the immense potentials of the seas of East Asia to achieve sustainable development.

At the international level, coasts and oceans are recognized as the key driving force to Earth's survival and sustainability. In particular, the Rio+20 outcome document — *The Future We Want* — has emphasized the need to mainstream sustainable development at all levels, particularly in the promotion of integrated and sustainable management of natural resources and ecosystems. Other major international instruments and commitments related to biodiversity, climate change, as well as the Millennium Development Goals (which have significant linkages to coastal and ocean resources) are also calling for accelerated actions to meet goals that have been targeted for 2015 and 2020.

In the economic realm, we have also witnessed significant shifts in the past five years. The East Asian region, in particular, is showing unprecedented economic growth amid recession in the United States and Europe. The World Bank's *East Asia and Pacific Economic Update* (April 2013), for instance, reported East Asia to be the fastest-growing developing region in the world. Likewise, it is important for PEMSEA to support the attainment of an ASEAN Economic Community by 2015, which aims to achieve a highly competitive economic region that is integrated into the global economy.

In consideration of these international and regional developments, the recent commitment of the PEMSEA Country Partners to develop an “ocean-based blue economy,” in line with the implementation of the SDS-SEA, is indeed timely, relevant and purposeful.

As a region highly dependent on the vibrancy of our coastal and ocean sectors, it is critical for East Asian countries to manifest the valuable role of our coastal and ocean sectors within the overall context of sustainable development — if we are to sustainably benefit from the opportunities and resources therefrom.

By highlighting integrated management and the crucial contribution of coasts and oceans in sustainable development, PEMSEA’s concept of a *blue economy* complements and constitutes a positive step toward meeting our international/regional targets and commitments. The move toward a blue economy through the SDS-SEA as framework will definitely be beneficial to the East Asian region in attaining the triple bottom-line targets of enhancing human welfare, economic growth and environmental sustainability.

The ocean sector is opening up new opportunities as well as new challenges. It behooves everyone, therefore, to maximize these opportunities and transform challenges to mankind’s benefit.

The tasks ahead will not be easy, but I sincerely believe that the lessons learned, good practices and enduring partnerships and commitments established by PEMSEA in the past 20 years will help provide the momentum for East Asia to move forward faster.

We urge PEMSEA and its Country and Non-Country Partners to stay on course and nurture the unique partnerships that have made a significant difference in regional coastal and ocean governance.

We look forward to another 20 or more years of action, learning, innovation and collaboration for the sustainable development of the seas of East Asia and wish the PEMSEA Partners, management and staff the very best on this landmark occasion.

Mabuhay and best wishes!

C O N G R A T U L A T O R Y M E S S A G E



Mr. William A. O'Neil

Secretary-General Emeritus, International Maritime Organization
and Director, Tsakos Energy Navigation

I am pleased to extend my sincere congratulations to PEMSEA on its 20th anniversary.

Since its start-up in 1993 as an IMO-executed UNDP-GEF project on marine pollution prevention and management, PEMSEA has played an increased role in providing a platform for collaboration and cooperation in ocean governance to donors, governments, local communities, financial institutions, private sector, UN and international organizations, and academe, research and development institutions. Today, over a period of less than five years, PEMSEA has grown from a project-based, regional coordinating mechanism into an intergovernmental, multisectoral organization with its own legal personality and a mandate to promote and facilitate sustainable development of the seas of East Asia through partnerships.

While recognizing this success, we should keep in mind that the Millennium Development Goals, which were set by the United Nations in 2000, are due to be delivered in 2015. This means that we have less than 1,000 days to meet these noble targets. Human rights, poverty eradication, greater social equality, access to safe drinking water and ensuring environmental sustainability are targets that are still challenging. On top of it all, we have climate change with its cross-cutting impact on those least able to defend themselves or adapt. Most recently, Rio+20 generated our determination to get *The Future We Want* and sustainable development goals. There is still much to do!

It is well recognized that development is essential for the prosperity of countries worldwide. For example, the Japanese postwar economic success was largely due to the availability of an excellent maritime transport infrastructure. Ports, seafarers, shipping and shipbuilding are necessary for trade and economic growth, which foster improved well-being for all people. A number of East Asian countries are now following this path.

The future of world prosperity depends on sustainable development. While the UN is preparing for the post-2015 development agenda, the importance of shipping as a priority item in the context of development is clear and includes ports, security, navigational aids, intermodal connections, shipbuilding and repair, vessel traffic management and seafarer's education and training. All of these are essential components of the maritime transportation system.

In 1973, the IMO adopted the *International Convention for the Prevention of Pollution from Ships*, universally known as MARPOL, which has been amended by Protocols adopted in 1978 and 1997 and kept updated through other relevant amendments. The MARPOL Convention addresses (a) sewage; (b) garbage; (c) prevention of air pollution from ships; (d) harmful substances carried by sea in package form; and (e) pollution from ships by oil or by noxious liquid substances carried by bulk. MARPOL has greatly contributed to a significant decrease in pollution from international shipping and applies to 99 percent of the world's merchant tonnage.

Other IMO treaties address anti-fouling systems used on ships, environmental sound recycling of ships and the transfer of invasive aquatic species by ships' ballast water. The significant reduction of pollution generated by ships is achieved by addressing technical, operational and human element issues, and those reductions are all the more noteworthy when account is taken of the simultaneous and equally significant growth in the world's shipping industry — both in the size of the world fleet and the distances covered. Nevertheless, the IMO is continuously pursuing a proactive approach to enhance implementation and enforcement of its global standards, including an action plan to ensure that shore base reception facilities for ship-generated wastes are available to allow ships to meet international regulatory requirements. Key to this is the building of capacity in all countries through institutional and human resource development to improve their ability to comply with and enforce these requirements.

While always advocating a global approach, the IMO nevertheless recognizes that some areas need additional protection and the MARPOL Convention therefore defines certain sea areas as "special areas" in which the adoption of enhanced mandatory measures for the prevention of pollution is required. Outside the MARPOL regulations, the IMO Assembly has adopted guidelines for the designation of particularly sensitive sea areas (PSSAs), which are deemed to require a higher degree of protection because of their particular significance for scientific, ecological or socioeconomic reasons, and because they may be vulnerable to damage by international maritime activities. To date, 14 PSSAs have been designated by the IMO, none of which are located in the East Asian Seas region, which is recognized as the global center for marine biodiversity.

Therefore, while the shipping industry has been one of the key growth engines of national economies for many years, it has become even more significant as we pursue a *blue economy*, as highlighted by PEMSEA Country Partners in their *Changwon Declaration* in 2012. Taking full advantage of this development, and the commitments of governments to take ownership of PEMSEA, the IMO aims to strengthen its partnership with PEMSEA, further encouraging commitment and investment in the full implementation and enforcement of standards by flag, port and coastal states and to increase the pace of ratification of the IMO's environmental conventions. Ultimately, the IMO, PEMSEA, the shipping industry and all other interested parties at the national, regional and international levels must work together as partners.

Once again, I would like to extend my sincere congratulations and best wishes for the continued success of PEMSEA and its partners for years to come.

C O N G R A T U L A T O R Y M E S S A G E

Global Environment Facility, United Nations Development Programme and International Maritime Organization



Ms. Naoko Ishii

Chief Executive Officer and
Chairperson, Global Environment
Facility



Ms. Helen Clark

Administrator, United Nations
Development Programme



Mr. Koji Sekimizu

Secretary-General, International
Maritime Organization

The seas of East Asia play an integral role in the lives of the two and a half billion residents of the region. Aside from being an abundant source of fisheries and other marine resources for livelihoods, food security and poverty reduction, the East Asian Seas support some of the world's richest marine and coastal ecosystems and deliver vital ecosystem services. Perhaps in no other region of the world do national economies rely more on marine and coastal resources, with these in some cases contributing as much as 20 percent of GDP.

Urbanization, exponential population growth and rapid economic development over recent years, however, have dramatically increased threats to these vital resources and to the billions of people who depend upon them. In addition, the region is under significant threat from the damaging effects of natural disasters and climate change.

Aware of these threats, the countries of the East Asian region and relevant international organizations have acknowledged the need for sustainable management of the seas and coasts. This recognition helped catalyze the creation of a new and innovative mechanism for regional cooperation in East Asia — Partnerships in Environmental Management for the Seas of East Asia or PEMSEA.

Since its inception two decades ago, PEMSEA has dedicated significant efforts to building and fostering regional partnerships for sustainable ocean management and governance in the region. Over the last twenty years, the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the International Maritime Organization (IMO) have each played a key role in working toward this goal.

In 1993, the GEF, together with the UNDP and IMO, launched the first of a series of GEF co-financed international waters projects, Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS), which evolved into what is now PEMSEA. Through this initiative, the application of the Integrated Coastal Management (ICM) methodology was piloted in demonstration sites in Xiamen, China, and Batangas, Philippines. The project also assessed the functional integrity of ecosystems surrounding the Straits of Malacca, the region's most important maritime highway. The success of this first phase demonstrated the utility of ICM in the region, identified bigger opportunities and challenges which PEMSEA might help address and facilitated the expansion of PEMSEA's functional and geographical coverage.

With the adoption of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) in 2003, the region established a shared vision and a framework to enable it to address common issues in an integrated and holistic manner. Through the SDS-SEA and ICM implementation, countries in the region were able to respond to various international environment and sustainable development-related commitments, including the World Summit on Sustainable Development (WSSD), Millennium Development Goals (MDGs), Convention on Biological Diversity (CBD), Common Country Assessment (CCA) and IMO conventions. The triennial Ministerial Declarations and the Regional Implementation Plan in support of the SDS-SEA have also provided concrete guidance to the region in addressing the targets and commitments at the international and regional levels, including, most recently, from the Rio+20 UN Conference on Sustainable Development.

At the institutional/organizational level, we are heartened to see the remarkable evolution of PEMSEA from a project-based arrangement to a regional coordinating mechanism for the implementation of the SDS-SEA. Today, PEMSEA is recognized as a global center of expertise for ICM. PEMSEA's work has been crucial in establishing ICM as a tool for sustainable ocean and coastal development in East Asia and beyond. Based on a recent assessment, PEMSEA's target of achieving at least 20 percent of the region's coastline being covered by the ICM programme by 2015 is within reach, with 12 percent of the region's coastline already covered, and new sites continuing to be identified. As PEMSEA further scales up its support to the implementation of the SDS-SEA, we see it playing an increasing role in sharing its ICM knowledge and experience across more sites within the East Asian Seas region, and eventually addressing growing demand for ICM beyond the region.

One of PEMSEA's key strengths lies in its capacity to link actions on the ground to global commitments entered into by countries. In particular, PEMSEA has consistently been commended for empowering local communities and cultivating the region's wealth of knowledge and experience in managing the region's seas better. Over the years, PEMSEA has also invested in strengthening the capacities of local and national governments and other stakeholders by developing various tools and knowledge products, and by conducting ICM training workshops and specialized courses. PEMSEA's network has also grown with the collaborative arrangements established with various entities including universities/learning institutions, Regional Centers of Excellence (RCoEs), national and regional experts in coastal and ocean governance, private/business sector, local governments and regional and international agencies.

Over the years, the collective partnerships and continuous support of Country and Non-Country Partners, as well as of other groups and organizations, have boosted PEMSEA's role and relevance in the region. As PEMSEA slowly transforms itself into a fully-fledged, self-sustaining regional organization, we are confident that it will continue to lead the way in promoting vibrant partnerships to protect and preserve the seas of East Asia for the benefit of present and future generations.



Twenty Years of Partnerships
for Our Shared Seas



Dr. Chua Thia-Eng

Dr. Chua Thia-Eng was the Regional Programme Director of PEMSEA from 1993 until 2007. Soon after, he was elected as Chair of the East Asian Seas Partnership Council. He served in several academic institutions, including University of Singapore, Science University of Malaysia and University of the Philippines. He also served in various international and UN organizations, managing regional projects under the GEF, UNDP, IMO, FAO/NACA, USAID and ICLARM. Dr. Chua earned his doctorate degree in zoology at the University of Singapore.

Redefining Coastal and Ocean Governance in the Seas of East Asia

When the PEMSEA Resource Facility invited me to write an article for a special publication in commemoration of its 20th anniversary, I readily accepted it, not only because this is the first time PEMSEA is celebrating its anniversary, but also because their two-decade existence is a unique story that needs to be told. I have been heavily associated with PEMSEA as one of the framers of the Global Environment Facility-financed Regional Programme that gave birth to PEMSEA. I was a key implementer of the first two phases of the Regional Programme and one of the key drivers in achieving PEMSEA's international legal personality that makes it the unique international organization that it is today. The 20th anniversary marks the end of the first and the beginning of a new era for PEMSEA. I consider it my responsibility to provide a historical perspective so that PEMSEA's new endeavor is built upon a strong historical foundation.

PEMSEA is unique in several features. First, it is one of the longest GEF International Waters Programmes since its pilot phase, with the United Nations Development Programme (UNDP) as implementing agency and the International Maritime Organization (IMO) as executing agency for the first two phases (1994–2007) and the United Nations Office for Project Services (UNOPS) for its third phase (2008–2013). Second, it is built on the concept and dynamics of regional partnerships, which promote regional cooperation and ownership in addressing the complex issues of coastal and ocean governance at local, national and regional levels. PEMSEA has been able to sustain, if not improve, such regional cooperation until now. Third, it demonstrates regional cooperation and commitments to sustainable development without a binding regional protocol or convention unlike most United Nations

Environment Programme (UNEP) Regional Seas Programmes. Fourth, it has been successful in promoting and mobilizing local governments in the region to implement and scale up integrated coastal management (ICM) practices. Lastly, PEMSEA is the only international organization on coastal and ocean governance based on governmental and non-governmental partnerships.

The new PEMSEA is expected to build upon these unique features and further lead the region in achieving the goals of sustainable coastal and marine development in the seas of East Asia. This shall be reflected in increased regional efforts to protect and conserve inland, coastal and marine ecosystems particularly in reducing biodiversity loss, protecting environmental quality, preventing loss of lives and properties from natural and human-induced disasters and ensuring sufficient supply of freshwater to meet growing population demands. There shall be better protection and management of shorelines and natural habitats and better planning and management of watersheds and coastal and marine areas to ensure continuous delivery of ecosystem goods and services. To achieve all these objectives, it will take time to install the appropriate governance and management mechanisms in place in all countries of the region. Although PEMSEA's achievement is a small step toward this direction, it has laid a solid partnership foundation and an

“To achieve all these objectives, it will take time to install the appropriate governance and management mechanism in place in all countries of the region. Although PEMSEA’s achievement is a small step toward this direction, it has laid a solid partnership foundation and an operational model for ocean and coastal governance that could help achieve the common goals of sustainable development.”



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operational model for ocean and coastal governance that could help achieve the common goals of sustainable development.

The East Asian Seas Region after World War II

The PEMSEA story should begin with an understanding of the political and socioeconomic conditions of the East Asian Seas (EAS) region after World War II (1939–1945). After the War, countries in the region immediately plunged into a state of social, political and economic reconstruction to recover from the ruins created by the War. Before, during and after the War, the region endured a period of instability over the long process of vigorous political struggles. Some countries struggled for independence from colonial rule while others fought for changes in their political system. Toward the 1960s, the region had somehow recovered and made significant progress in poverty reduction, political stability and economic success as well as improved living standards.

The region — which now consists of countries and territories including Brunei Darussalam, Cambodia, PR China, DPR Korea, Hong Kong, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, RO Korea, Singapore, Taiwan, Thailand, Timor-Leste and Vietnam — has a total population of 2.62 billion. This number is slightly more than one-third of the world's population, of which 1.36 billion are in mainland China, 237.6 million in Indonesia and 127.5 million in Japan. Brunei has the smallest population with less than 400,000 while most others have a population ranging from 13.39 million in Cambodia to over 92 million in the Philippines. Despite significant progress made, countries and territories in the region are at different stages of economic development. Some reached the income level of developed economies, such as Brunei Darussalam, Hong Kong, Japan, RO Korea, Singapore and Taiwan, while the rest remained at the level of a developing economy. Although a number of countries have successfully eradicated poverty, at least seven countries still have a percentage of their population living on less than USD

2 per day (as of 2008). The region is also diversified in terms of political beliefs, cultural affiliations, religious practices and social structures highly influenced by the long history of Chinese, Hindu, Muslim and Western civilizations.

The seas of East Asia have a total sea area of 7 million km², a coastline of 234,000 km and total watershed covering 8 million km². The region embraces six large marine ecosystems (LMEs), including Yellow Sea, East China Sea, South China Sea, Gulf of Thailand, Sulu-Celebes Seas and the Indonesian Seas, which are semi-enclosed by the landmass of East Asia (**Figure 1**). These LMEs receive discharges from a network of riverine systems dominated by Mekong, Red, Changjiang and Yellow river systems and support a range of diverse ecosystems and sustain one of the world's largest marine biodiversity center with comparable, if not more, marine flora and fauna than the Great Barrier Reef.

Over the last four decades, the rapid and impressive economic development in the region unfortunately compromised the quality of the environment, specifically eroding the functional integrity of ecosystems in inland, coastal and marine areas. The vast land and marine natural resources not only have supported the lives and livelihoods of the rapidly growing population but also formed the resource base for the fast-growing industrial development, commerce and international trades. By the early 1970s, overexploitation of fishery resources were frequently reported especially after the introduction of efficient fishing gears, such as trawlers, longliners and purse seiners, resulting in the diminution of many fish stocks and a decrease in fish size of fish catch. In inshore areas, dynamite and other illegal fishing activities was rampant. Toward the 1980s, many important fishery resources that were supporting the livelihoods of a large coastal population were heavily depleted. Many countries in the region, which were net exporters of fish and fishery products, now became net importers. Ironically, the region contributed to more than 40 percent of the world's fishery production just a decade or two ago.

Figure 1. The seas of East Asia.



“Over the last two decades, increasing coastal urbanization changed the landscape of the coastlines in the region. This led to rural population’s immigration to towns and cities as well as the change of consumption and use patterns among the people of the region. Such development unavoidably widened the income gaps between urban and rural areas and also generated enormous amounts of urban wastes.”



Despite the decline of fish landing from capture fisheries, total fish production and value of fish in the region continued to show upward trends from the 1970s. This was because of the rapid growth of inland and coastal aquaculture from small-scale family-based fish farming to large-scale commercial fish farming enterprises especially the expansion of shrimp farming in the 1970s and 1980s. It was during this period that large areas of mangroves and coastal wetlands were rampantly cleared and converted to shrimp farms in many parts of China and Southeast Asia resulting in severe loss and damage of wetland, seagrass and nearby coral reef ecosystems. The large-scale development of cage culture for high-value fish resulted in the conversion of *trash fish* (relatively smaller size fish) from trawlers and other fishing gears into fish feeds. This affected the recruitment of fish stocks leading to the collapse of some commercial fisheries. The use of chemicals, such as antibiotics and growth promoters, was becoming a human health concern in addition to polluting the water body and changing the bottom environment in cage farming locations.

Environmental quality also deteriorated especially over the last few decades of industrial development in the region. Land- and sea-based pollution severely affected the region and some with long-term ecological and health consequences. More than 50 percent of domestic wastes were, and still are, discharged directly into coastal waters, not to mention the uncontrolled non-point sources of pollution arising from mismanagement of chemical fertilizers on farmlands and organic waste discharges from animal husbandry operations, giving rise to frequent occurrence of hypoxia, dead zones and red and green tides. Increased coastal population and consequences of coastal urbanization further intensified the use of coastal lowlands for human settlements and town or city development. Large areas of coastal habitats have been destroyed through land reclamation, port development and other shoreline developments. Sea-based pollution from ships and off-shore drilling industries, especially operational and accidental oil and ballast discharges, remains a common threat to biodiversity as extensive maritime traffic in the region continues to be one of the world’s highest not

only because of the fast developing oil industry but also recognizing that more than 90 percent of world maritime trade continues to pass through the region.

Over the last two decades, increasing coastal urbanization changed the landscape of the coastlines in the region. This led to rural population's immigration to towns and cities as well as the change of consumption and use patterns among the people of the region. Such development unavoidably widened the income gaps between urban and rural areas and also generated enormous amounts of urban wastes. Water supply shortages increasingly became an emerging threat to urban growth. On the other hand, countries in the region became increasingly aware of the environmental consequences and responded to the call for environmental and economic sustainability. Almost all the countries are signatories to many international conventions and protocols related to environment, biodiversity, climate change, and sustainable development as well as issue-specific international agreements, including land- and sea-based pollution management, disaster risk reduction and oil spill preparedness and response. United Nations (UN) organizations, such as the IMO, UNDP, UNEP and the Food and Agriculture Organization (FAO), have initiated several regional and national activities toward managing coastal and marine resources, environmental protection and mitigation of the impacts of climate change.

During the last three to four decades, some key regional organizations, such as the Association of the Southeast Asian Nations (ASEAN), Network of Aquaculture Centers in Asia (NACA), Southeast Asian Fisheries Development Center (SEAFDEC) and regional cooperative programs of ASEAN have placed considerable focus to improve environmental quality, prevent biodiversity loss, promote sustainable fisheries and sustain coastal livelihoods of the region. Of special relevance to the region was the establishment of the UNEP Coordinating Body of the Seas of East Asia (COBSEA), which has been in existence for 33 years since 1981 to implement an action plan for the Protection and Sustainable

Development of the Marine and Coastal Areas of the East Asian Seas. Other international initiatives in the region also contributed in terms of building the scientific capacity in environmental and resource management, such as: ASEAN/Canada Cooperative Programmes on Marine Sciences (I and II); ASEAN/Australia Cooperative Programmes on Marine Science; US/ASEAN Project on Coastal Resource Management; several Danish Cooperation for Environment and Development/ Danish International Development Agency (DANCED/DANIDA); Japan International Cooperation Agency (JICA); and European Union coastal management projects. The World Bank and Asian Development Bank also provided substantial financial loans and support to countries in the region in coastal management projects as well as construction of water supply and sewerage systems.

Some countries and territories made significant progress in environmental management especially the landward and part of inshore areas within their jurisdictions. These include Hong Kong, Japan, RO Korea, Singapore and Taiwan. On the other hand, environmental quality in most countries and the seas of East Asia as a whole continued to degrade. What was alarming was the rapid rate of environmental degradation that further eroded the functions of ecosystems despite increasing national and international efforts to reduce anthropogenic impacts and eventually reverse the deteriorating trend. Admittedly, these efforts in the past so far did not produce the expected results although there were significant improvements in environmental education, public awareness, development and implementation of national environmental policy and legislation as well as increase in financial investment in environmental infrastructures. What went wrong? There was no lack of reasons, including weak planning, insufficient funding, ineffective management, policy and market failures, inadequate scientific support, weak management capacity, insufficient political will, etc. To sum up, continued environmental quality degradation in the region was, and still is, the cumulative consequence of governance and management failures.

Obviously, current efforts of coastal governance and management have been inadequate to cope with the current rate and level of economic development across the region. The conventional issue-specific or crisis-oriented environmental management approach was not sufficient to curb or reverse the trend of environmental quality decline. There was a need to take a more holistic, integrative and area-specific governance approach in designing policy and management interventions within the overall framework of sustainable development. The challenge was how to balance economic development and environmental sustainability in a region marked with cultural, political, ecological and socioeconomic diversities complicated by transboundary and resource use conflicts and mistrust — a challenge that was not easy to overcome but posed enormous opportunities for management improvements.

Evolution of PEMSEA from a Pilot Programme to an International Organization

It was under the aforementioned backdrop that the first GEF International Waters project of the region was initiated. In 1992, I was invited by UNDP New York to lead a project formulation team in developing a regional project on Marine Pollution Prevention and Management for the Seas of East Asia in consultation with eligible countries of the region. This regional initiative was initially conceived by the ASEAN (consisting of five founding members, namely Indonesia, Malaysia, Philippines, Singapore and Thailand) and originally intended for Southeast Asian countries only. But because of the interest of other countries in the region, the coverage of the regional project expanded to cover all eligible countries bordering the seas of East Asia. In addition to the five founding members of the ASEAN, other eligible countries included Vietnam (which joined ASEAN in 1995), Cambodia (which joined ASEAN in 1997), PR China and DPR Korea. The members of the formulation team were carefully selected by UNDP to include experts from the USA, UK, ASEAN, Australia, New Zealand, UNEP/COBSEA and IMO. The IMO was invited because one of

the proposed areas of concern was the threat of pollution arising from increasing international shipping traffic in the Straits of Malacca and Singapore. My participation was largely because of my earlier activities as leader of the USAID/ASEAN Coastal Resource Management Project and director of the Coastal Resource Management Program of the then International Center for Aquatic Resource Management (ICLARM), which is now the WorldFish Center.

The formulation of this regional project, *Marine Pollution Prevention and Management in the East Asian Seas* (MPP-EAS), certainly benefited from the diverse expertise and experience of its members. Not only was the team able to utilize past experience in marine pollution management in developed nations but also those from the UN, and other international and regional organizations, particularly UNEP/COBSEA and ASEAN. It also considered the uniqueness and environmental challenges of the region as briefly outlined above. From extended field consultations with experts and government officials of the region, the team felt it was necessary to adopt a programmatic approach as the environmental issues were too large and complicated requiring longer management interventions. The team finally developed and formulated a regional program with focus on four major areas: Integrated Coastal Management (ICM), Pollution Prevention and Management of the Malacca Straits, Capacity Development and Sustainable Financing.

The first component was limited to demonstrating how local governments could effectively implement and sustain ICM practices. Two local governments, one in China (Xiamen Municipality) and one in the Philippines (Batangas Province), were selected. If successful, the ICM approach and methodology in Xiamen and Batangas as well as their experience and insights, would be useful for ICM application in other countries of the region with varying social and political systems. The second component on the Malacca Straits was aimed at improving information gathering and management to strengthen marine safety and security in the international straits and for more effective implementation



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of relevant IMO conventions (such as the International Convention for the Prevention of Pollution from Ships [MARPOL] and International Convention on Oil Pollution Preparedness, Response and Co-operation [OPRC]). The third component focused on the development of technical and managerial capacity at local and national levels while the fourth component focused on exploring a public-private sector mechanism that would contribute by mobilizing private sector financing in support of environmental improvement projects.

Marine Pollution Prevention and Management for the Seas of East Asia (MPP-EAS) (1993–1999)

The inaugural meeting for the MPP-EAS Regional Programme took place in 1993 at the then Mandarin Hotel in Xiamen, PR China, participated by representatives from the IMO, UNDP and most participating countries. In addition to the long process of recruiting international and local staff for the Programme, a series of workshops and visits took place in 1993 in various countries to jointly plan the implementation of program activities and secure their commitments for counterpart resources through memoranda of agreement or understanding. By 1994 and early 1995, all 11 participating countries embarked on program component

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activities in accordance with the strategies and action plans agreed upon with specific performance indicators to be evaluated during mid- and terminal evaluations by external evaluators. The Programme Steering Committee (PSC), composed of national focal points, reviewed the program performance and provided policy direction on a yearly basis. The Regional Programme was successfully completed in 1998.

The main outcome and lessons learned from this pilot program were well documented in *Sharing Lessons and Experiences in Marine Pollution Management* (MPP-EAS Technical Report 20, 1999). Over a span of five years, the Programme produced 26 technical reports, 22 information series, 15 issues of *Marine Pollution Updates* (a quarterly newsletter), 11 conference proceedings, 8 issues of *Tropical Coasts* (a biannual newsletter) and 5 meeting reports. These documents reflect the level and intensity of activities undertaken in each country. As a whole, the Programme met its objectives and targets as reflected by the Terminal Report of the UNDP/IMO evaluation but more significantly it had:

- (a) Demonstrated that the ICM methodology was an appropriate and effective tool for local governments to address complex coastal governance and management challenges. Both Xiamen Municipality and Batangas Province had set up the necessary policy instrument and institutional arrangements to strengthen their management actions. The successful stories of these two ICM demonstration sites were available in several PEMSEA publications. The working experience of the two demonstration sites, however, gave rise to further improvements and refinements of the ICM methodology;
- (b) Conducted a comprehensive assessment of available information including risk assessments arising from increased shipping traffic and multiple uses of the Straits of Malacca and Singapore with the participation of a great number of senior marine and environmental experts from the three neighboring countries. Substantial information from gray literature in native languages were reviewed, and relevant information were incorporated in the preparation and subsequent



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publication of the *Malacca Straits Environmental Profile* (MPP-EAS Technical Report 10, 1997). Data were stored in a newly established regional database on the Straits of Malacca Environmental Information System. The needs and possibility for Malacca Straits to be declared as a particularly sensitive sea area (PSSA) were also explored with positive recommendations. Unfortunately, it had not been able to follow up as the economic consideration by the littoral states outweighed that of the environmental concerns. However, the Malacca Straits component resulted in an informal network of marine experts which continued to be active in the region;

- (c) Developed a pool of local, national and regional expertise in sustainable management of coastal and marine areas. The strengthening of technical capacity of national experts made them more effective in providing technical and scientific expertise and advice to the respective countries in many essential areas, such as risk assessment, Integrated Information Management Systems (IIMS), environmental accounting and natural resource valuation and application of Geographical Information System (GIS); and
- (d) Explored a new financing mechanism involving public and private sector partnerships in environmental improvement projects in addition to conventional “build, operate and transfer” (BOT) and “build, own, operate and transfer” (BOOT) processes. Although this component was successfully completed, the unduly long process and local politics involved made it difficult to achieve expected results within the time frame.

The most important outcome of this phase was the general appreciation of several major achievements, particularly ICM demonstrations, ability to utilize national and regional resources for implementing various component activities, and demonstration of ownerships illustrated by the delivery of counterpart resources. In short, the first phase had laid a sound foundation for regional cooperation.

Building Partnerships in Environmental Management for the Seas of East Asia (2000–2007)

A major lesson learned from the implementation of the MPP-EAS was that marine pollution was just one of the major threats to environmental and economic sustainability. Other interlinked threats, such as natural disasters, loss of biodiversity and overexploitation of fisheries resources, should also be addressed together in a holistic manner considering their cumulative impacts on the sustainable delivery of ecosystem services.

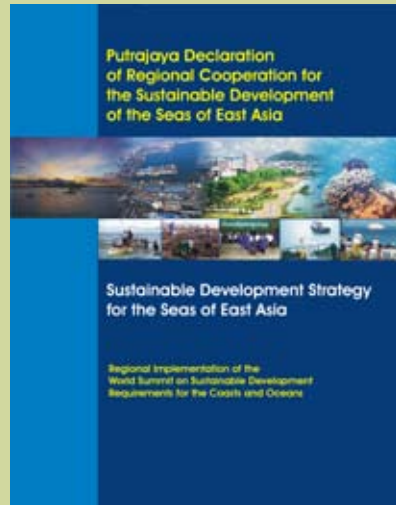
Another major lesson learned was that the holistic, integrative approach in governance and management of the coastal areas, as adopted in the two demonstration sites, had proven to be effective in promoting interagency coordination and cooperation as well as participation by local stakeholders. The emerged ICM model, therefore, could be adopted and implemented in other countries.

The third major lesson was that the private sector, especially the business sector, had demonstrated keen interest in participating and contributing to environmental improvements as part of their corporate social responsibility (CSR). The business sector found that the ICM program could provide them a broad environmental management framework within which they could make substantive contribution not only in financing but also in sharing their expertise as in the case of Batangas Province.

The fourth major lesson was that the on-the-ground learning-by-doing approach of the ICM program could generate the necessary management and technical skills within the region and much needed for the scaling up of ICM practices throughout the region.

The fifth and most important major lesson was the need for a nationwide vision and mission to provide clear goals and direction to achieve sustainable coastal and ocean development. Understandably, the challenges to social, economic and environmental sustainability in

“The Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) was finally formulated with 217 action programs under 20 objectives and 6 strategies and to be implemented at local, national and regional levels.



The SDS-SEA, which took three years to develop after extensive consultations and reviews, was finally adopted through a ministerial declaration by Ministers or their representatives from all participating countries in 2003 at Putrajaya, Malaysia.”



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the region were too large and too complicated to be handled by one country alone. As such, the region was in need of a common regional governance framework and strategic action plans that would move collective national efforts in achieving the goals of sustainable development. Based on these conclusions or major lessons, the next phase of the Regional Programme began to focus on building regional cooperation and partnerships with a long-term scenario.

The title of the second phase of the Programme, *Building Partnerships in Environmental Management for the Seas of East Asia* (PEMSEA), clearly reflects the new program objectives. During the process of intensive consultation with governments and stakeholders of the region, a shared vision for the region was finally adopted:

“The sustainable resource systems of the Seas of East Asia are a natural heritage for the people of the region, a medium of access to regional and global markets and a safeguard for a healthy food supply, livelihood, economic prosperity and harmonious coexistence for present and future generation.”

This common vision, in fact, was similar to the goals of sustainable development. The stakeholders also agreed on a regional mission:

“To build interagency, intersectoral and intergovernmental partnerships for achieving the sustainable development for the Seas of East Asia.”

With a clear vision and mission, the drafting team was able to incorporate local implementation of appropriate and relevant UN and international conventions and protocols into the strategies and action plans, which most countries in the region had already ratified. Consequently, participating countries agreed to expand the initially proposed “Marine Environmental Strategy” into a “Sustainable Development Strategy” in line with the aspiration of the shared vision.

Thus, the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA) was finally formulated with 217 action programs under 20 objectives and 6 strategies and to be implemented at local, national and regional levels. The SDS-SEA, which took three years to develop after extensive consultations and reviews, was finally adopted through a ministerial declaration by Ministers or their representatives from all participating countries in 2003 at Putrajaya, Malaysia.

With the ICM working models successfully developed and tested in the first phase, six more ICM sites were selected for replication in the second phase. These were Sihanoukville (Cambodia), Bali (Indonesia), Danang (Vietnam), Nampho (DPR Korea), Port Klang (Malaysia) and Chonburi (Thailand). With this arrangement, the ICM concept and practices were further tested and verified in varying political, cultural, ecological and socioeconomic conditions. The outcome of these ICM initiatives was the methodological improvements from a rather loose coastal management framework into an ICM system. The ICM system consists of a governance framework to enable the development of policy, legislation and institutional arrangements backed up by institutional capacity development, sustainable financing and information management. The management framework, on the other hand, was especially designed to enable management efforts to address a host of sustainable development challenges including pollution, overexploitation, biodiversity loss, freshwater shortage, climate change and loss of livelihoods. A cyclical planning and implementing process was instituted under the ICM cycle, which aimed at facilitating a participatory approach, conducting monitoring and evaluating performances and reporting of outputs and outcomes. The ICM system became the standard integrated planning and management approach for current and future ICM initiatives.

Capacity development continued to be one of the main focus of the second phase of the Regional Programme. Aside from the numerous short-term training workshops on ICM and specialized courses, an



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additional 1,841 local officials, national experts and members of networks were trained. To prepare for scaling up ICM practices throughout the region, ICM Learning Centers were established in several universities in the region. At present, ICM Learning Centers were established in the Royal University of Phnom Penh (Cambodia), Xiamen University (PR China), Kim Il Sung University (DPR Korea), Bogor Agricultural University (Indonesia), De La Salle University-Lipa (Philippines), University of the Philippines Visayas (Philippines), Xavier University-Ateneo de Cagayan (Philippines) and University of Danang (Vietnam). These centers received support from PEMSEA in terms of training materials, ICM case studies, ICM tools and training of their academic staff in the field of coastal and ocean governance. PEMSEA also established a network of national and regional experts in coastal and ocean governance to assist national implementation of ICM practices and other action programs. Regional Centers of Excellence (RCoE) were also encouraged to provide technical research and advice to PEMSEA participating countries. The Centre for Marine Environmental Research and Innovative Technology (MERIT) of Hong Kong was the first RCoE for Marine Pollution.

Another significant achievement of PEMSEA during this phase was the establishment of the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG). The PNLG was established in

2006 with increasing membership as the number of local governments practicing ICM increased from 2 in 1994 to more than 33 in 2013. The PNLG evolved from the Regional Network of Local Governments (RNLG) established in 2001. The RNLG held regular annual workshops for exchange of lessons and experience among ICM practitioners. The RNLG transformed into PNLG in 2005 with its own charter, officials and secretariat (hosted by the Xiamen municipal government). Of equal importance was the establishment of another regional network focusing on twinning ecosystem management of large bays and estuaries, such as Jakarta Bay, Manila Bay, Masan-Chinhe Bay, Seto Inland Sea and Bohai Sea as management of these bays and large area of habitats required comprehensive management approach covering extensive areas from inland watershed to estuaries or coastal sea.

Perhaps, another significant endeavor during this phase was the initiation of the East Asian Seas Congress designed to take place every three years. The EAS Congress is meant to serve as an international intellectual marketplace to be participated by decisionmakers and government officials, experts of various disciplines, members of the academic, scientific and business communities, nongovernment organizations (NGOs) and concerned communities. The Congress includes a scientific forum, a ministerial forum, a youth forum, an exhibition and several side events and workshops. It was at the Ministerial Forum of the first EAS Congress in 2003 that the regional marine strategy, SDS-SEA, was adopted through the *Putrajaya Ministerial Declaration*. This regional Ministerial Forum was unique since Ministers from different line agencies aside from environment ministries — such as oceans and fisheries, transport, economic development and trade — participated, driven by a common concern for environmental and economic sustainability and safety of the regional seas.

The first EAS Congress proved to be successful with more than 400 participants from over 40 countries. The number of participants rose to over 800 at Haikou, PR China, in 2006, 1,500 in 2009 in Manila,

Philippines, and 1,201 in 2012 in Changwon City, RO Korea. With experience and feedbacks from past congresses, future congresses are greatly enriched in terms of contents and level of participation.

The EAS Congress and Ministerial Forum play a critical role in providing direction and focus for sustainable development of the regional sea. Through this triennial event, the international conference serves as a knowledge-sharing event among stakeholders within and outside the region on issues pertaining to the sustainable management of the seas of East Asia. Ministers receive reports on the international conference, including recommendations concerning improvements in governance and management interventions at the regional, national and local levels. The Ministers provide their opinions and directions during the forum through a formal Ministerial Declaration. In addition to the Putrajaya Declaration endorsing the SDS-SEA in 2003 and the *Haikou Partnership Agreement* in 2006 establishing PEMSEA as the regional coordinating mechanism for the SDS-SEA, Ministers also directed PEMSEA to undergo transformation and have the necessary organizational framework and structures to undertake long-term implementation of the SDS-SEA. As part of the organizational restructuring, the PEMSEA Resource Facility (PRF) was established in 2007 with a small core team to provide secretariat and technical services to the participating countries.

Implementation of Sustainable Development Strategies for the Seas of East Asia (2008–2013)

With the completion of the second phase and the GEF approval for the third phase to begin in 2008, it was time for me to retire from the IMO after completing 15 years of services with the two phases of the Regional Programme (1993–2007). Although long overdue, I left with a sense of satisfaction that PEMSEA was, and still is, in the right path. Prof. Raphael Lotilla, former Secretary of the Department of Energy of the Philippines, was recruited to replace me. He has been involved with PEMSEA activities as a law professor from the University of



the Philippines and former Deputy Director General of the National Economic and Development Agency (NEDA). He finally joined as the Regional Programme Director of the third phase and concurrently served as Executive Director of the PRF.

The third phase of the Regional Programme took off in 2008 with a clear mandate and focus to transform PEMSEA and initiate the SDS-SEA implementation. To prepare for PEMSEA's transformation, a Partnership Council was established. The EAS Partnership Council was indeed an unprecedented and unique establishment with participating Country and Non-Country Partners as members. All countries in the region are eligible to be a Country Partner. Non-Country Partners include national, regional and international organizations and institutions which share the vision of the SDS-SEA and whose operations cover the EAS region. To date, there are 11 Country and 20 Non-Country Partners. The EAS Partnership Council meets once a year and addresses business matters through three sessions: Council Session, Intergovernmental Session and Technical Session.

The Council established an Executive Committee (EC), which meets when the Council is not in session. The EC is composed of seven members elected through consensus. Six members of the EC serve as the Council Chair, Intergovernmental Session Chair and Technical Session Chair respectively for a term of three years with three others serving as corresponding co-chairs. The PRF Executive Director serves as the secretary to the Council and the EC.

I was elected to serve as Chair of the Council and Executive Committee and continued assisting PEMSEA's transformation in this capacity, with the support of the EC members. With the new setup, the Council took a stronger role in providing policy direction and responsibility on budget approval and appointment of the Executive Director, who assumed the overall responsibility of both secretariat and technical services of the new organization.

The transformation of PEMSEA from a project to an international organization was, in fact, a formidable task.

- First, it had to secure an international legal personality to achieve international organization status. This required formal recognition from at least three countries through their own national approval processes.
- Second, a Headquarters Agreement with the host country had to be finalized to ensure the necessary diplomatic status and immunity accorded to an international organization. The Philippine government expressed its interest to continue hosting PEMSEA, and since the process of approval had to secure the endorsements of all concerned agencies — particularly the Department of Foreign Affairs (DFA), Department of Finance, Bureau of Immigration, Office of the President, Congress and Senate — PRF established a committee of legal experts, headed by a law professor and former deputy secretary of the DFA, to provide legal advice and help move the process forward.
- Third, the new organization also needed to restructure itself with appropriate check and balance mechanism in terms of procurement, financial accounting and disbursement, personnel management and audit system, etc.

The PRF developed several plans for approval of the Council including PEMSEA Rules of Governance, a reengineering plan for the management structure of the PRF, a sustainable financing plan for addressing the survival of the organization beyond GEF funding, and a Management and Operations Manual delineating the various management, core operations and support processes in the PRF, including financial control mechanisms to meet international fiduciary requirements. These plans were reviewed by the EC and

the Council and made necessary improvements. As such, PEMSEA prepared itself to embark into the new operation as an international organization.

In 2009, eight participating countries, more than the required minimum of three, formally recognized PEMSEA's international legal personality. As such, PEMSEA was officially transformed into a full-fledged international organization operating in the EAS region with special focus on coastal and ocean governance. As of this writing, the process of the Headquarters Agreement has also been moving steadily toward ratification having received approval from concerned line agencies and the DFA. The only remaining step is the endorsement by the Office of the President and Senate, which is expected to be completed by the end of the year or early 2014.

The next major focus of the third phase was to prepare for the national implementation of the SDS-SEA. This would include consolidation and scaling-up of ICM practices to cover the designated target of 20 percent of regional coastline by 2015. With many countries formulating national coastal and ocean policy, legislation and strategies in the region, such as PR China, Indonesia, Japan, RO Korea, Philippines and Vietnam, PEMSEA participating countries could take advantage of the SDS-SEA as a regional framework and the improved ICM methodology for preparing their national SDS-SEA action programs to be implemented as the final phase of the GEF-funded Regional Programme scheduled to begin in 2014.

Another change of PEMSEA leadership occurred before the completion of the third phase. Prof. Lotilla completed his term in July 2012. The Council named Mr. Adrian Ross, the Chief Technical Officer of the Regional Programme, as Acting Executive Director of the PRF, and requested him to continue the process of PEMSEA's transformation as well as the preparation of the work program for the next phase of PEMSEA (2014–2019).

Introducing a New Paradigm in Coastal and Ocean Management and Governance — The PEMSEA Model

The PEMSEA Model

A working model for coastal and ocean governance and management has emerged over the last 20 years of concerted efforts of PEMSEA's Country and Non-Country Partners through the implementation of the three phases of the GEF-funded programs. This model reflects a paradigm shift in the concept and methodology pertaining to coastal and ocean governance as well as marine management practices verified and tested in the region.

Concept — The new conceptual paradigm emphasizes that coastal and marine natural resource systems are to be managed in a sustainable manner through effective governance and adaptive management practices to safeguard the sustainable supply of ecosystem goods and services by preventing or reducing human-imposed threats on the functioning of ecosystems at local, national and regional levels. It takes into consideration the cultural, political, environmental and socioeconomic challenges and management complexities in designing strategic action programs.

Methodology — The new paradigm adopts a comprehensive, integrative, area-wide proactive and reactive management approach to address prioritized sustainable development challenges instead of the conventional, issue-oriented or crisis-response management approaches. At the local level, this new paradigm allows effective integration of environmental concerns into the long-term economic development agenda of coastal entities such as municipalities or provinces. It promotes the application of ICM approach, harmonizes multiple uses and puts in place appropriate policy and management fundamentals for regulating human activities. This methodological reorientation affirms the crucial and leading roles of local governments



in environmental management by optimizing their comparative advantage in better understanding of local environmental issues, management challenges and aspirations of local stakeholders. At the national level, the new paradigm promotes the development and implementation of coastal and ocean policy and ICM legislation, the implementation of which strengthens coastal governance including implementation of ICM programs and their scaling up across borders. At the regional level, the new paradigm facilitates joint planning and development of a regional marine sustainable development strategy (SDS-SEA), which provides a regional cooperative framework for achieving a common vision on the sustainable utilization of the regional seas.

The ICM System

One of the significant achievements of PEMSEA is its success in establishing ICM practices throughout the region. The ICM system is a tested working model that evolved from ICM demonstration programs practiced in eight countries in the region. The systematic and process-oriented planning and implementation approaches have provided the region a working model for ICM application in different political, ecological and socioeconomic conditions.

The ICM system consists of a governance component and a program management component designed to address a host of governance and management challenges in addressing environment and other sustainable development concerns. The governance component enables the following: (a) development of appropriate local policies and legislations/ordinances that complement or reinforce national coastal/ocean policy or ICM legislation; (b) create interagency coordinating mechanism to reduce interagency/sectoral conflicts; (c) strengthen information management for the development of science-based, issue-focused action plans; (d) strengthen communication to keep the public informed; (e) catalyze financing for marine

conservation and other environment improvement initiatives; and (f) develop necessary local institutional capacity for integrated and adaptive management.

The program management component, on the other hand, is designed to address prioritized sustainable development challenges including those related to pollution, disasters, livelihoods, freshwater, biodiversity, overexploitation and the increasing threats of temperature and sea-level rise. These sustainable development challenges are addressed collectively, partially or individually under a common governance framework.

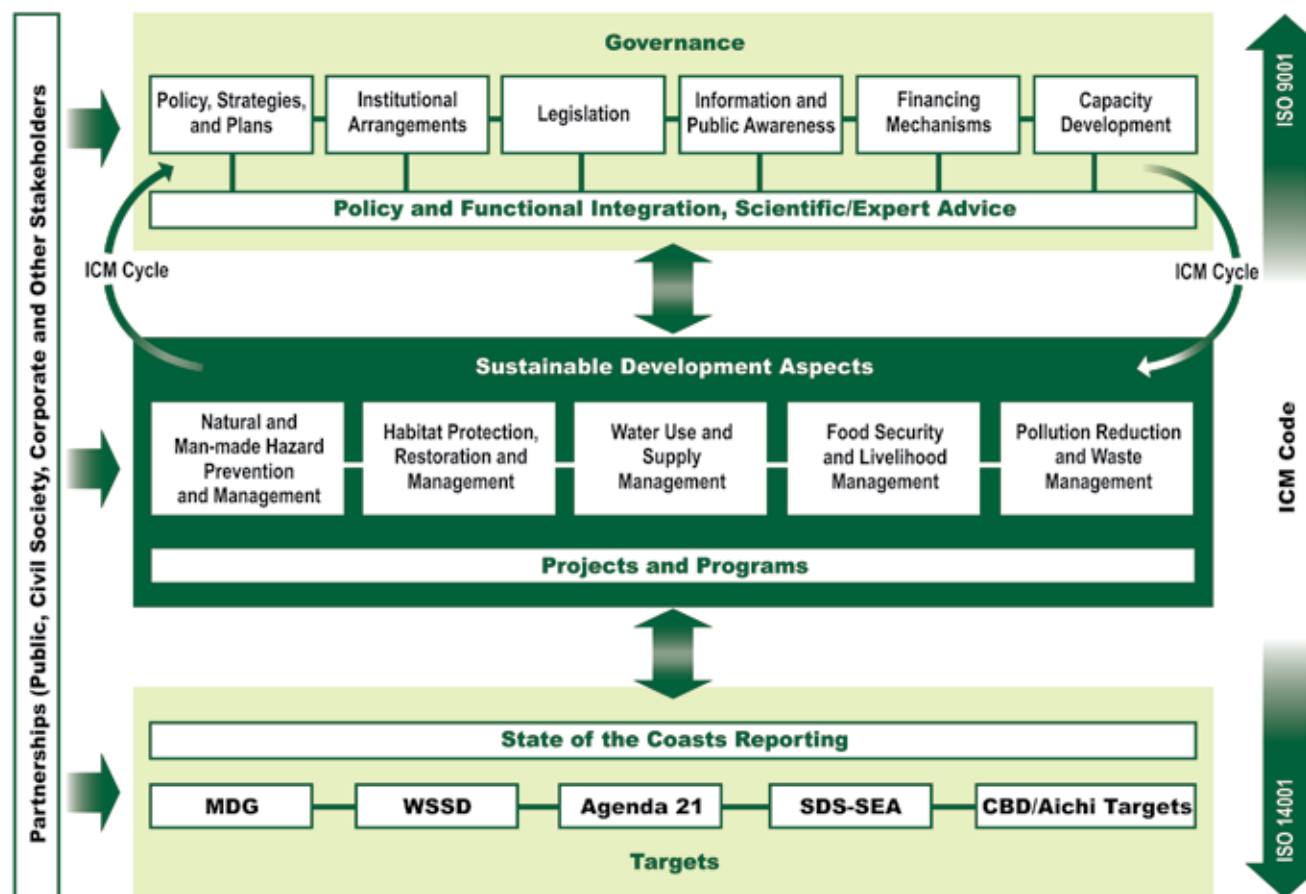
Linking governance and management components is the ICM cycle, a stepwise cyclical process putting in place the necessary basic information and data crucial for the development of strategies and action plans for adoption and implementation by following the critical stages of the cycle: preparing, initiating, developing, adopting, implementing, monitoring, evaluating and reporting. Each stage has a series of actions that needs to be followed and completed before moving to the next stage. The ICM process allows regular consultations with the stakeholders as well as monitoring of program performance.

The planning and execution of ICM program are found to meet the requirements for the ISO 14001 (environmental management) and ISO 9001 (governance) certifications. The ICM system not only increases the confidence of local governments implementing ICM but also makes it easy for other local governments to follow (**Figure 2**).

Coastal/Ocean Policy

Effective coastal and ocean governance at local or regional levels will be greatly enhanced through national coastal/ocean policy not only in terms of accessibility of human and budgetary resources for action programs implementation but also for promoting regional cooperation

Figure 2. The Framework for Sustainable Coastal Development.



across national boundaries. Over the last two decades, countries in the region have made significant progress in this direction. Several countries have already adopted ocean policy and laws such as Japan, RO Korea and Vietnam. Others have enacted legislation, strategies and action programs relevant to ocean and coastal governance and management, such as Cambodia, PR China, Indonesia, Philippines, Singapore and Thailand. Other countries, such as Brunei Darussalam and Malaysia, are still in the process of developing their national ocean policies. The achievements of these countries reflect a major paradigm shift from individual sector policies, such as those on fishery, security and marine transport, to a more holistic and integrative policy for the ocean or coasts.

The Marine Strategy

The development of the SDS-SEA and its subsequent endorsement and adoption as the regional marine strategy for the seas of East Asia by participating countries represent another unique paradigm shift in the governance and management of the seas of this region. Unlike other UNEP regional seas around the world, the East Asian Seas is one of the two remaining regional seas without a convention or protocol and also the only regional sea that has developed a voluntary collaborative marine program (SDS-SEA) based on Country and Non-Country Partnerships made possible through a regional ministerial declaration, the Putrajaya Declaration of 2003.





PEMSEA/R. Casia (bottom left), PEMSEA (top and bottom right)

The SDS-SEA implementation is expected to enhance national efforts and commitments to the United Nations Conference on the Environment and Development (UNCED), especially *Agenda 21*. Most of the action programs are closely linked to relevant UN and international conventions most countries in the region have ratified. As such, SDS-SEA implementation by countries is expected to enhance fulfillment of their international obligations. The 217 action programs reflect the major categories of sustainable development issues, such as disaster, pollution, livelihoods, biodiversity, overexploitation and freshwater depletion, which are being addressed through the ICM system at the local level. Thus, SDS-SEA implementation at the national level will certainly enhance the scaling up of ICM practices, reinforcing national coastal and ocean policy and legislation and thereby strengthening regional cooperation in addressing transboundary challenges. The recognition of PEMSEA's legal personality reflects a regional ownership of this international organization and commitment of the member countries for long-term implementation of the regional marine strategy.

Are We on the Right Track?

I have always pondered and asked myself whether our efforts to redefine coastal and ocean governance are able to lead the region in achieving its sustainable coastal and ocean development goals. I wonder whether our integrated management practices are effective enough to help people in the region to continuously benefit from the goods and services that our coastal and marine ecosystems have been providing and whether these management practices could effectively protect the functioning and delivery of coastal and marine ecosystems. In short, are we on the right track? I try to find the answers through assessing the following: (a) program performances; (b) visible changes and impacts; (c) effectiveness of institutional arrangements; (d) effectiveness of capacity development; (e) level of stakeholders' support and participation; (f) national policy and legislative support; (g)

cost effectiveness; (h) appropriateness of approach and methodology; (i) key beneficiaries; and (j) relevance.

Program Performances — The most comprehensive and objective assessments of the performance of the three phases of the GEF/UNDP Regional Programme (1993–1999, 2000–2007, 2008–present) were those undertaken by independent evaluators appointed by both the executing (IMO, UNOPS) and implementing agencies (UNDP). Each phase of the regional project was evaluated, including midterm and terminal evaluations. Over the three phases, the project had been evaluated five times by no less 15 independent international evaluators with different expertise and specialization. Each evaluation process was vigorous and time-consuming. Evaluators traveled to selected sites to undertake field verification and hold discussions with participating governments and concerned stakeholders. Their reports were all uploaded on PEMSEA's official website (www.pemsea.org). All evaluations conducted over the last 20 years highly commended the performance of the project execution and timely attainment of most, if not all, project's targets. The five evaluations were consistent in their observations and final conclusions which led to continued GEF support.

Although the three phases of the Regional Programme were executed by two different executing agencies — the IMO (1993–2007) and UNOPS (2008–present) respectively — financial management of each phase followed closely that of the standard financial management procedures including hiring, contract and procurement awards. Almost every year, the Regional Programme's accounts and expenditures were carefully evaluated by internal and external auditors of the concerned executing agency. The outcome of the internal and external auditors consistently rendered satisfactory rating of PEMSEA's financial records and compliance to the standard financial rules and procedures of the executing agencies during these years. All along, PEMSEA staff had been able to maintain a high degree of honesty and professional integrity in the discharge of their responsibilities.

Visible Changes and Impacts — Each phase of the Regional Programme made significant progress and impacts. Some examples of visible changes include:

- Increase in confidence and enthusiasm in ICM practices and scaling up as reflected by the increasing number of self-funded ICM programs by local governments of the 11 countries of the region and application of ICM approaches in Japan (five ICM sites) and Singapore (Integrated Urban Coastal Management or IUCM);
- Visible environmental improvements and, therefore, ecosystem changes are evident in some countries in terms of the following: (a) cleaning up of polluted bays, beaches and lagoons; (b) restored mangrove wetlands; (c) rehabilitation of mudflats; (d) cleaner and greener cities; (e) removal of pollutive industries; (f) reduction in fatalities due to natural disasters; and (g) protection of endangered species (such as turtles, egrets and white dolphins);
- Reduction of multiple use conflicts and greater interagency cooperation as a result of better control of land-sea utilization through implementation of functional zoning schemes or marine spatial planning (MSP);
- Stronger public perception on the value of ecosystems, greater involvement of business corporations and significant public participation; and
- Increased national efforts in the development of coastal/ocean policies or strategies and related legislations, such as scaling up of ICM practices to 14 coastal provinces in Vietnam, national strategy for ICM implementation in the Philippines, enactment of the sea-space utilization law of China, ICM laws of RO Korea and Indonesia and the Basic Ocean Law of Japan.

Institutional Arrangements — A significant achievement of PEMSEA is the ability to facilitate institutional arrangements for the governance and management of coastal and marine areas at various levels. At the local level, PEMSEA facilitated the establishment and functioning of interagency coordinating committees at all 33 ICM sites. At the national level, PEMSEA promoted and facilitated the development of national ocean/coastal policies, ICM legislations and strategies in most countries. At the regional level, PEMSEA was recognized as the implementing agency for coordinating the SDS-SEA implementation.

Capacity Development — PEMSEA had been able to build a critical mass of local and national multidisciplinary experts with technical and management capacity particularly in the implementation of the GIS, IIMS, integrated planning and management, risk assessment and risk management, Strategic Environmental Impacts Assessments, coastal zoning or MSP, etc. PEMSEA had also set up national and regional expert networks and national learning centers to provide the necessary expertise for developing nations in the region. The PNLG was another important regional network that promoted replications and scaling up of ICM practices. More than 4,200 nationals from the region have been trained.

Stakeholders Support and Participation — The support and participation from stakeholders at various levels has been very significant throughout the three phases of the Regional Programme. At the local level, stakeholders' consultation and participation were built into the process of ICM program development. Of particular significance was the active participation of business corporations in the development and implementation of ICM programs. In Batangas and Bataan provinces in the Philippines, business corporations formed the Coastal Management Foundation to support local government ICM initiatives. Active involvement of other stakeholders, such as the media, NGOs, educational and research institutions and coastal communities were also reported in many coastal management initiatives in the



PEMSEA (top and bottom left) and PEMSEA/E. Magpayo (bottom right)

region. The EAS Partnership Council, composed of 11 Country and 20 Non-Country Partners, is a vivid example of partnerships between government and nongovernment organizations in addressing common concerns.

Catalyzing Financing — Analysis of the cost benefits in the development and implementation of ICM program in Xiamen for the first phase showed a cost benefit of 1:6.4, illustrating the immense benefits local governments could derive from investing in ICM program. Since then, the total cost of the follow-on cycle of ICM programs has been totally funded by the municipal government. Such findings encouraged other local governments to adopt the ICM approach as benefits accrued far exceeded that of initial investments. As reported in my most recent paper in the *Journal of Coastal Management* (Vol. 41[2], 2013), the GEF/PEMSEA investments in ICM in 21 ICM parallel sites effectively catalyzed more than 95 percent of total investments in the development and implementation of the ICM programs. This illustrated a strong level of buy-in and ownership. The policy and management fundamentals that were put in place through ICM programs have, in fact, created the necessary policy environment conducive for investments in environmental improvement projects in all the ICM sites. The investments for constructing sewage treatment facilities in three ICM sites alone (Xiamen, Danang and Denpasar) had catalyzed a total of USD 299.1 million. In Manila Bay, over USD 84.5 million had been invested in pollution abatement with USD 500 million in the pipeline as cited in a report of the UNDP-GEF International Waters Programmes on *Catalysing Ocean Finance*, published in 2012.

Beneficiaries — The stakeholders of the East Asian Seas region are certainly the beneficiaries of the initiatives of the GEF/UNDP/PEMSEA Regional Programme. Stakeholders at the local level enjoy a healthy and safety environment, such as a cleaner city, sustainable livelihoods, effective protection of lives and properties, adequate supply of clean

drinking water and good quality aquatic products. For Xiamen alone, more than 5 million people living and working there benefited from such efforts. At the national level, appropriate national policy toward sustainable coastal and ocean development would certainly enhance local ICM initiatives. This would not only benefit a larger population of coastal inhabitants but also create new investment and employment opportunities. At the regional level, SDS-SEA implementation is expected to contribute in harmonizing transboundary competitions and territorial claims and promote regional cooperation for the best use of the ecosystem services provided by the six LMEs. In this way, people in the region and the world at large will benefit more from regional understanding and cooperation that the SDS-SEA strives to facilitate.

Approach and Methodology — The outputs and outcome derived from the application of the PEMSEA model in the seas of East Asia demonstrate that the current concept and methodology are not only appropriate but also effective. The comprehensive planning and strategic management at different levels of governance enable the application of integrated and adaptive management in addressing a host of complex sustainable development challenges. The challenge now is to apply these tools to expand and scale up governance and management measures throughout the coastline of the region.

Relevance — The PEMSEA model remains relevant to the region as demonstrated by its continued and increasing applications because of its inclusiveness and coverage. The PEMSEA model continues to be effective in coastal and ocean governance of the region through implementing Agenda 21 of the UNCED, the World Summit on Sustainable Development's (WSSD) Plan of Implementation and the recent Rio+20 outcome document, *The Future We Want*, in 2012.

From the aforementioned analysis, I am convinced that we are on the right track toward achieving the goals set up by the GEF/UNDP Regional Programme and the visions of the SDS-SEA. PEMSEA and the region have

walked through this long and winding path for the last two decades, and undoubtedly, will continue along the same path with much vigor and determination.

What Difficulties We Encountered and How We Overcame Them

It is appropriate at this juncture to also share the operational and sustainability challenges and frustrations PEMSEA encountered and how it was able to address them to make progress. Some of the main difficulties encountered include:

1. **Challenges in establishing and maintaining a small but competent regional core team** — The difficulty was that not many regional professionals had good knowledge and practical experience in regional coastal and ocean governance, especially in managing the complexities of the regional seas such as the seas of East Asia. It was also difficult to recruit suitable international experts with good knowledge of the region and sensitive to social, cultural and political conditions of the region with the limited budget. Fortunately, the Regional Programme was able to recruit three qualified regional experts with different specializations, as well as several young national experts from the Philippines with specialization in fisheries, pollution, economics, international law and IMO conventions to form a multidisciplinary core team. International consultants were brought in from time to time to fill in the technical gaps. Members of the team had the opportunity to be exposed to the problems in the field. With their dedication and ownership, a competent and credible regional team was finally established which led to the success of the follow-on phases. However, a new problem arose when some members had to leave for better job opportunities in other international organizations, such as the IMO, UNEP and the Convention on Biological Diversity (CBD) or the private

sector. Maintaining an efficient and credible regional core team has been a continuing challenge to PEMSEA.

2. **Securing trust and commitments** — In the past, many developing countries in the region were used for bilateral and multilateral aid, which provided most of the financial support and external expertise to assist in project implementation. Once the funding stopped, activities are often discontinued until the next funding source became available. As the region was one of the earlier target areas for international and bilateral aid after World War II, there was in fact more “money floating around.” Under this condition, it was not easy to convince governments, especially local governments, to accept a new mode of operation that required their heavy participation and substantial human resource and financial commitments.

PEMSEA had indeed made significant progress in changing the mentioned mental framework. However, it also met with many failures. The reason for ICM demonstration was a tactical move to demonstrate and convince national and local authorities and stakeholders of the enormous benefits they could derive from their participation and commitments. In fact, the snowballing effects of scaling up of ICM practices demonstrated a strong ownership and commitment of concerned governments.

However, one must admit that the political and social diversity and economic complexity of the region continued to slow down regional collaboration despite the noble objectives. For example, local politics, government bureaucracy, personality and corruption often contribute to derailing genuine efforts in setting up solid waste management, protection of wetlands from conversion and reduction/elimination of pollutive industries and practices. Gaining trust and cooperation from all countries in the region was, and still is, a difficult task. Despite having 13 of

the 15 nations in the region joining the Regional Programme, two discontinued after the second phase while another participated in the third phase of the Regional Programme but remained on observer status in the EAS Partnership Council. There is still more work to be done to secure trust, cooperation and joint efforts of all countries in the region.

3. **Operating within the complexity of the Regional Programme** —

The design of the three phases of the Regional Programme were necessarily complicated because of the management complexities that would require multidisciplinary efforts, involvement of a wide spectrum of stakeholders, support of political leaders and implementable action programs for their solutions. Unlike scientific or technological research, coastal and ocean governance and management primarily deals with people in terms of protecting their lives and properties in coastal and marine areas, ensuring supply of food, water and medicine as well as facilitating sustainable economic development. In short, coastal and ocean governance is geared toward changing people's behavior in reducing harm to ecosystems to ensure continued supply of ecosystem goods and services. The Regional Programme had to be aware of such complications, and the ability to overcome many of these difficulties was highly dependent on the skills, experiences and patience of the regional team.

4. **The absence of a working model** — Perhaps, the absence of an appropriate working model for implementing coastal and marine governance and management at the local, national and regional levels in this region was the most difficult challenge to the GEF/UNDP initiatives in the region. Despite more than 2,000 local coastal management initiatives in no less than 100 nations in the world, there was no adequately tested ICM working model

that could be applied in the region. As such, a considerable amount of time and resources were used to develop, test and verify a suitable ICM working model for the region. There was also no working model for scaling up of ICM practices across jurisdictions. At the regional level, there was no tested approach for sustainable coastal and ocean development for the regional seas, although there were environmental experiences in the Baltic and Mediterranean seas and some limited management experience concerning LMEs.

The challenge to PEMSEA was to develop the necessary ICM operational methodology, its geographical and functional scaling-up mechanism, as well as the necessary policy framework and processes for the development of national policies, strategies and legislation for coastal and marine areas. Although there were significant regional initiatives to foster national collaboration, most were sector-focused, such as fisheries, aquaculture and environment. A considerable amount of PEMSEA's resources were therefore devoted to develop the necessary working model and cooperative framework for sustainable development of the EAS region. PEMSEA had made considerable headway in this direction.

5. **Developing the necessary skills for coastal and ocean governance** —

The biggest challenge was to develop institutions and individuals with the necessary knowledge and skills for integrated planning and management, interagency/ interministerial, multisectoral coordination, policy and functional integration and implementation of area-based coastal and marine management programs at local and national levels. Unfortunately, such skills were normally not available through conventional university curricula although there were increasing efforts to establish Marine Affairs programs in some universities in the region.

PEMSEA's capacity development strategy therefore focused on the following:

- (a) including capacity development as part of the key element of governance framework of the ICM programs to build upon the existing pools of local officials, experts and local institutions already involved in coastal management activities;
- (b) developing technical skills through short-term specialized training courses;
- (c) promoting local exchange of knowledge and skills through regional networks;
- (d) organizing the triennial EAS Congress to provide an international and intellectual platform for exchange of knowledge and experiences in coastal and ocean governance; and
- (e) establishing national ICM Learning Centers in several countries to develop critical mass of national experts needed for expansion of ICM practices.

6. **Working with a thin budget but grand objectives** — Another major obstacle PEMSEA had to overcome was that it had to operate within a very thin budget under its control but with the expectation of achieving grand objectives and goals. For the last three phases, the GEF total allocation amounted to USD 34 million, of which 13 percent (IMO) and 8 percent (UNOPS) were deducted as overheads of the executing agency. After deducting the operating cost — which included travel, staff salary and office facilities — the amount available to the participating countries was extremely limited. For example, in the first phase, the GEF allocated USD 8 million; after deducting USD 1.04 million (13 percent) for the executing agency and the operation cost of the regional team, the amount left for implementing a variety of projects in eight countries over

a five-year cycle is extremely limited. The difficulty PEMSEA encountered was to ensure government counterpart commitments especially those from local governments. It was indeed difficult to convince concerned governments to do this when they were receiving several times more from bilateral and multilateral aids.

7. **Frequent changes of national counterpart leaderships** — The level of policy support and cooperation at the national level often depended on the good relationship between concerned leaders of focal agencies and that of the Regional Programme. One of the major challenges was to cope up with the frequent changes of leaders of national focal agencies and key national staff assigned to implement program activities to ensure timely delivery of program outputs. Equally challenging was the ability of the Regional Programme management to maintain mutual understanding and good working relationships with national program leaders and staff. Sometimes, the Regional Programme management had to make decisions that might displease their counterparts, such as auditing of expenses, not accepting unsuitable candidates for training, turning down requests for first-class airfare and other inappropriate requests. In a region where “friendship talks,” it was indeed impossible to maintain a so-called friendly relationship with such a diverse group of people at all times.
8. **Threading political and social sensitivity** — The East Asian Seas was, and still is, a region complicated by political and social sensitivities arising from differences in social, political, economic, religious and cultural practices as well as territorial and resource use conflicts. Although PEMSEA's activities were purely environmental in nature and deemed to be beneficial to all countries in the region, such sensitivity issues often

“Despite two decades of PEMSEA’s efforts in the region, threats to social, economic and environmental sustainability continued to exert tremendous pressures on the health of the ecosystems. Apparently, current efforts in the East Asian Seas region need to be strengthened further. PEMSEA’s strategy is to continue strengthening national implementation of the SDS-SEA with greater participation and involvement of all stakeholders.”

outweighed noble objectives and deterred or slowed down implementation and progress. The political sanctions on DPR Korea and Myanmar, conflicts between the two Koreas, China and Taiwan issues, Spratly Islands conflicts and several recent territorial claims in the EAS region certainly were a challenge to collaborative activities and posed threats to the partnership foundation that had contributed significantly to regional environmental management cooperation. It takes considerable wisdom, courage and determination on the part of PEMSEA to continue building the partnership foundation with the hope to overcome these conflicts in the future.

9. **The continued threats to sustainability** — Despite two decades of PEMSEA’s efforts in the region, threats to social, economic and environmental sustainability continued to exert tremendous pressures on the health of the ecosystems. Current efforts in the East Asian Seas region need to be enhanced further. PEMSEA’s strategy is to continue strengthening national implementation of the SDS-SEA with greater participation and involvement of all stakeholders. The recent Rio+20’s outcome document, *The Future We Want*, can add value to PEMSEA’s initiatives and vice versa, as the objectives are the same.

10. **The challenges from within** — In addition to resolving the obstacles to the planning, development and implementation of the regional programme, PEMSEA management and senior staff also were required to endure a number of challenges, concerns and criticisms directed at the organization, as early as the first phase of the Regional Programme. Whether considered founded or unfounded, as a developing international organization each criticism was reviewed, assessed and responded to. Each criticism addressed gave us renewed confidence that we were indeed on the right track, and strengthened our resolve.

Lessons Learned

Looking back over the 20 years of my association with PEMSEA, there are certainly more good and pleasant memories than negative ones. Arising from these memories are cognitive knowledge or lessons that certainly will be useful for those interested in governance and management of coastal and marine areas. These lessons also form the basis at which I perceive PEMSEA could build upon to chart its new destiny.

The following are some of the key lessons:

1. **Stakeholders' partnerships at all levels can be effective in achieving regional ownership and cooperation among governments, business, scientific and educational communities, nongovernment organizations and civil society.**

Partnership is the central theme in PEMSEA's activities. Partnerships have been at work whether at the local, national or regional level. In many PEMSEA ICM sites especially in Cambodia, Indonesia, Philippines and Thailand, local stakeholders — particularly media, NGOs, business communities, educational and research institutions and civil society — have been playing an important role in cooperating with local authorities in the following: (a) developing common vision, strategies and action plans; (b) creating public awareness; (c) co-financing environmental improvement projects as well as; and (d) participating in some project operations on the



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“The partnership arrangements at all levels provide a working platform for harmonizing views and opinions, complementing efforts from all sectors, as well as creating joint ownership. Effective use of stakeholders’ partnerships will enhance government efforts in achieving its sustainable development goals.”

ground level. At the national level, key stakeholder organizations took part in the consultative process in the development of national coastal and ocean policies and strategies. At the regional level, key stakeholders' organizations joined the EAS Partnership Council as Non-Country Partners in promoting the development and implementation of the SDS-SEA. These partners contributed significantly in co-chairing the Technical Session of the Council and co-implementing relevant project activities in the region, such as the subregional project *Oil Spill Response and Cooperation in the Gulf of Thailand*. The partnership arrangements at all levels provide a working platform for harmonizing views and opinions, complementing efforts from all sectors, as well as creating joint ownership. Effective use of stakeholders' partnerships will enhance government efforts in achieving its sustainable development goals.

2. ICM and SDS-SEA build local, national and regional efforts toward social, economic and environmental sustainability in the East Asian Seas region.

ICM has proven to be the appropriate tool in achieving sustainable coastal and marine development at the local level. However, achievements toward sustainability at different sites may vary according to the level of maturity of the ICM program implementation, but the direction and goals remain the same. With the increasing scaling up of ICM practices, more coastal and marine areas will be placed under a stronger coastal management regime. However, experience in ICM implementation shows that ICM operation at the local level is more focused within a limited geographical scope; therefore, visible outputs and impacts could be more readily realized than those with bigger geographical scope. The SDS-SEA, on the other hand, provides a regional framework that enables national implementation of specific action programs that will lead in

meeting specific objectives and goals of the regional marine strategy. Both ICM and SDS-SEA have and continue to play a complementing role. Expanding ICM practices and national implementation of SDS-SEA are two directions toward the same goals.

3. Building a competent regional mechanism is a fundamental requirement for achieving sustainable development of the regional sea.

One of the most difficult challenges in achieving sustainable use and development of the regional sea is the ability of countries and stakeholders to work together in partnerships as no country can resolve the transboundary environment and resource exploitation challenges on its own. Forging effective cooperation and collaboration in the EAS region is especially difficult not only because of territorial disputes, overlapping claims, resource exploitation issues and severity of the environmental degradation but also because of the complex, complicated and diversified social, cultural, political and economic conditions. Although there are several sector-oriented regional programs or secretariats such as those related to fisheries, disasters, environment and biodiversity — which are supported by corresponding UN technical agencies, such as the FAO, UNEP/GPA, UNEP/CBD, etc. — PEMSEA is the only regional mechanism with the general mandate to implement a comprehensive regional sustainable development strategy and action program for the seas of East Asia.

The role of PEMSEA is to facilitate, moderate, coordinate and induce regional cooperation of Country and Non-Country Partners and stakeholders for the implementation of the comprehensive projects and programs of the SDS-SEA. At the same time, it has to establish working relationships with other relevant regional

secretariats and international agencies to overcome institutional rivalry, professional prejudices and national bureaucracies.

As such, a great amount of time and effort have to be devoted to develop PEMSEA as a regional mechanism that not only has the professional competence to provide secretariat and technical services, but also one that is respected and owned by the region. Only then can PEMSEA be able to function effectively toward the goals of the SDS-SEA.

- 4. Local government is the driving force for achieving sustainable development at the local level as it has both the legal and moral responsibility and the resources to effect policy and management changes that could influence national policy and increase political opportunities in favor of the ICM approach.**

The success of many ICM practices by local governments in the region, irrespective of political system or level of economic development, clearly demonstrates that local governments are the key drivers for instituting policy and legislative reforms, improving coastal governance, administering management measures, as well as effecting environmental improvements. It has also proven that local governments are capable of implementing complex and complicated coastal management programs, such as those of ICM contrary to earlier arguments that local governments have no such capability, especially in countries where central agencies play the executing role. More importantly, these local ICM initiatives have generated working models for replication of ICM practices in other coastal areas and also catalyzed national coastal policy, ICM legislation and political opportunities in favor of the ICM approach and its scaling-up and replication. The scaling-up of local ICM efforts has a global implication with regard to sustainable development goals, thus reinforcing the UN Secretary-General's statement that "Local is global, global is local."

- 5. Integration, coordination and communication are effective ICM dynamics for management complexities in coastal and marine areas.**

The ICM practices have so far demonstrated that effective use of the dynamics of key ICM elements — particularly integration, coordination and communication — could address complex policy and management challenges effectively. Policy and functional integration reduces sector policy conflicts and harmonizes interagency functions. Adequate coordination facilitates interagency and sectoral cooperation and reduces duplication of efforts and resource wastage. Communication, on the other hand, reduces misinformation, increases public awareness and, more importantly, creates an informed public that influences national and local policy and increases stakeholders' participation and scrutiny of the ICM program implementation. As such, the operational dynamics of these three elements should be fully understood and effectively applied.

- 6. Scientific information is important for management decisions but is often not adequate to address many complex sustainable coastal management problems. Adaptive management continues to play an important role.**

While coastal management should be science-based, the frequent lack of adequate scientific information due to inaccessibility or scientific gaps has often given rise to management decisions based on political or short-term economic interests. This gave an opportunity for policymakers and economic planners in the region to focus only on gross domestic product-generated economic investments that might be harmful to the environment. Coastal management issues are often caused by a combination of many factors, including poor planning, policy and market failures, inefficient law enforcement and weak capacity to regulate



PEMSEA/S. Majumdar (top), PEMSEA/M. A. Solsoloy (bottom left and right) and PEMSEA/D. Ronan (bottom center)

human behavior. Scientific research might provide the necessary information on the root causes of the problems that provide the basis for management interventions. However, decisionmakers will need to consider the timing, implication and consequences of any administrative measures. In the absence of scientific information, application of precautionary principles in the interest of environment is the best option until further information becomes available. However, in most coastal management practices, the combination of science, intuitive knowledge and working experience often helps in decisionmaking. In this context, the ICM system provides a process of review, modification and adaptation of management practices. Adaptive management, therefore, continues to play an important role in coastal management.

7. Human and financial resources are not the limiting factors.

While human and financial resources are important and necessary, they are not the limiting factors to the implementation of ICM practices. Any coastal government that recognizes its role in sustainable development can mobilize the necessary human and financial resources to plan and implement activities that will protect lives and properties from natural and human-induced disasters, reduce pollution, protect ecosystems, sustain fish supply, provide adequate drinking water and develop an environment-friendly economy. These are what any local government would have to do. As such, by adopting the ICM approach, local governments can be more efficient and effective in addressing these common issues through a progressive operational process in accordance with its own capacity.

8. Monitoring, evaluation and reporting must be a continuous exercise.

The importance of monitoring the progress, evaluation of performance and reporting of outputs and outcome, unfortunately, are often

ignored or neglected in many coastal management programs. Such failures in accounting of progress and performance often impede continuation of coastal management initiatives. The ICM system has included these basic requirements as part of the ICM cycle and must be carried out before moving into the next cycle.

The Way Forward

The three phases of the GEF/UNDP Regional Programme (1993–2013), in collaboration with the participating Country and Non-Country Partners, have provided PEMSEA the following:

- An international legal personality that allows PEMSEA to develop and implement coastal and ocean governance programs independently within its own legal framework as an international organization;
- A sizable office building and basic maintenance facilities provided by the host country;
- A small but efficient professional team of dedicated international and national staff and a strong regional network of experts, institutions and local governments in the region with experience in ICM;
- A financial mechanism that allows voluntary contributions from participating Country and Non-Country Partners for maintaining the PRF;
- A well-designed regional framework, strategy and action plan for protecting, rehabilitating and sustaining ecosystem goods and services, the SDS-SEA;

East Asian Seas Region: ICM Sites and Major Conservation Areas

LEGEND

■ ICM Demonstration Sites	↗ Major Rivers	■ Ramsar Wetlands
● ICM Parallel Sites	◆ Coral Triangle	▲ World Heritage (Coastal/Marine) Sites
★ Pollution Hotspots	↔ Shorebird Migratory Route	● Megacities

Cambodia A Sihanoukville	Malaysia F Klang
China B Xiamen 1 Dongying 2 Fangchenggang 3 Haikou 4 Leting 5 Lianyungang 6 Panjin 7 Qingdao 8 Quanzhou 9 Wenchang 10 Yangjiang	Philippines C Batangas 15 Bataan 16 Cavite 17 Guimaras
DPR Korea C Nampho	RO Korea 18 Shihwa Lake
Indonesia D Bali 11 Buleleng 12 Jembrana 13 Sukabumi 14 Tabanan	Thailand H Chonburi
Lao PDR E Sedone	Timor-Leste I Liquica J Manatuto
	Vietnam K Danang 19 Quangnam 20 Thua Thien Hue
	★ Pollution Hotspots Bohai Sea Manila Bay Jakarta Bay Gulf of Thailand Malacca Straits

PEMSEA participating countries have committed to scaling up the implementation of ICM programs across the East Asian Seas region in support of sustainable development of coastal and marine areas and strengthening climate change adaptation measures. The target adopted by the countries is the development and implementation of ICM programs covering at least 20 percent of the region's coast by 2015.

The sites that are currently implementing ICM programs (2013) have an estimated total coastline coverage of 12 percent. Commitments to develop new ICM sites under the next phase of PEMSEA, which include several programs/projects that are being supported by GEF, UNDP, the World Bank, country and non-country partners, local governments, donors and other collaborators, are indicated in the table below. Successful implementation of ICM programs at the proposed new sites will result in the 20 percent target for coastline coverage and, more importantly, strengthening coastal and ocean governance and sustainable development capacities and benefits at the local, national and regional levels.

Proposed New ICM Programs / Sites

Cambodia

Koh Kong
Kep
Kampot

China

Yuhuan
Changyi
Wenzhou
Zhanjiang
Rudong
Zhaoan
Zhoushan
Sanya

Indonesia

Aceh
North Sumatra
Riau Islands
Jambi
South Sumatra
Bangka Belitung
Lampung
Banten
West Java
East Java
Gorontalo
North Sulawesi
Central Sulawesi
Jakarta
Riau
West Sumatera
Central Java
West Nusa Tenggara
South Sulawesi

Malaysia

Northern Selangor
Sabak Bernam
Kuala Selangor
Southern Selangor
Sepang

Philippines

Sarangani Bay
Maitum
Kiamba
Alabel
Malapatan
Maasim
General Santos City
Glan

Mindoro Oriental:
Calapan City
Puerto Galera
San Teodoro
Naujan
Baco
Pola
Pinamalayan

Mindoro Occidental:
Abra de Ilog
Paluan
Lubang
Looc

Marinduque:
Mogpog
Boac
Gasan
Buenavista

Aurora
Siargao Island
Del Carmen
Pilar
San Benito
San Isidro

Thailand

Inner Gulf of Thailand
Samut Sakorn
Chachoengsao
Samut Prakam
Bangkok
Samut Songkram
Petchaburi
Eastern Thailand
Rayong
Trat
Chanthaburi
Middle Gulf of Thailand:
Chumphon
Prachuap Khirikhan
Surat Thani
Lower GOT:
Songkhla
Nakhon Sithammarat

Timor-Leste

Dili District

Vietnam

Nghe An
Quang Ngai
Kien Giang
Khanh Hoa



- An improved and verified ICM working model, the ICM system, that provides the standard framework and process for developing and implementing ICM programs;
- A more conducive policy environment for coastal and ocean management in the seas of East Asia through increased enactments of national coastal and ocean policy and legislation;
- A partnership model for stakeholders' cooperation and collaboration at local, national and regional levels; and
- A critical mass of national and regional expertise available for the implementation of ICM programs and national implementation of the SDS-SEA, as well as the capability of facilitating interagency, multisectoral coordination and cooperation including the involvement of business communities and others.

PEMSEA should therefore build upon the above-mentioned gains to further strengthen its competency and professional leadership to benefit all countries of the region in the area of coastal and ocean governance. In particular, PEMSEA should:

- a) Make every effort to reach out to the remaining countries in the region that have not continued the partnerships, particularly Brunei Darussalam and Malaysia, for various reasons. However, PEMSEA should always remain a professional organization independent of political or country affiliation;
- b) Focus on the national implementation of the SDS-SEA to achieve national and regional targets and demonstrate its effectiveness in fulfilling national commitments to regional and global marine and environmental conventions and protocols and other

instruments especially in the implementation of the Rio+20 Summit decisions;

- c) Place concerted efforts in building up a strong local, national and regional capacity in coastal and ocean governance to speed up the process of sustainable development for the region. This will include further strengthening and expansion of the local government network (PNLG) and consolidation and expansion of national ICM Learning Centers;
- d) Continue to promote national coastal/ocean policy development in the remaining countries which have yet to develop or finalize concerned policies or legislation;
- e) Strengthen PEMSEA's partnership arrangement by increasing the involvement of the business community in promoting CSR in support of PEMSEA activities in the countries of the region;
- f) Build public awareness at all levels through effective communication programs to create public support and involvement; and
- g) Increase country ownership of PEMSEA through establishment of national and regional centers to focus on specific sustainable development concerns or PEMSEA-country center for coordinating coastal and ocean governance related to the implementation of the SDS-SEA.

PEMSEA has walked through a long and winding path to reach its current status, which is not easy. The ability to preserve and advance this organization to the next level of achievement will rest on the dedication, foresights and wisdom of the leaders and staff of the regional team that makes up the PEMSEA Resource Facility.



PEMSEA/Kyaw Thar (top and bottom left), PEMSEA/H. Pangalihan (bottom center) and Timor-Leste MAF (bottom right)



PEMSE/T. E. Long (top), PEMSE/E. Magpayo (bottom left), PEMSE/V. Noveno (bottom center) and PEMSEA (bottom right)

Acknowledgments

The PEMSEA story would not be complete without acknowledging all those who have helped the development of PEMSEA, in one way or another, during the last 20 years. The GEF has been, and still is, playing a critical and strategic role through collaboration with the UNDP in assisting the realization of a new paradigm in coastal and ocean governance in one of the world's most challenging regional seas — the seas of East Asia. Despite the initial challenge encountered, the IMO has given full technical and administrative support to the first two phases of the Regional Programme especially its trust on the project leadership. UNOPS continues to provide similar administrative support, which enables the Regional Programme to move strategically into an independent international organization.

The Regional Programme would not have continued and PEMSEA would not be able to transform into its current status without the full support, cooperation, understanding and involvement of the participating countries. Their belief in the objectives and the strategic activities of the Regional Programme have been very crucial. The voluntary participation from developed nations — such as Japan, RO Korea and Singapore — not only in terms of their financial contributions in cash or in kind but also of their active participation to the Regional Programme activities, has made PEMSEA different from other regional organizations. Unlike conventional regional seas organizations, Non-Country Partners and collaborators of PEMSEA contributed to the governance of this regional body as well as in being actively involved in specific program activities relevant to their own terms of reference.

Many individuals and institutions who have helped the growth of the organization in this long endeavor are too numerous to be acknowledged individually, but a few key individuals who are instrumental to PEMSEA's development need to be mentioned

especially those who have been working together with me in the early two phases. PEMSEA should always be indebted to them.

Dr. Alfred Duda of the GEF has nurtured PEMSEA throughout the long years until his recent retirement. Not only had he provided the much-needed technical advice and confidence in the Programme's leadership but also his vision and courage in convincing the GEF Council to provide unprecedented funding support to PEMSEA. He has always been an inspiration to me and the PEMSEA staff. Such confidence in PEMSEA continued to be provided by his successor, Mr. Ivan Zavadsky. The personal interest and encouragement provided by Dr. Nay Htun, then UNDP Director, UNDP Regional Bureau for Asia and the Pacific, and Mr. William O'Neil, then IMO Secretary-General, during the first phase had been an important catalyst in galvanizing UN support to the Regional Programme at all levels. Special acknowledgment is due to Ms. Joyce Yu and Mr. Sebastian Zacharia of the UNDP for coordinating the formulation of the Regional Programme in 1992. They were able to skillfully wade through the various UN interagency challenges.

Several UNDP Resident Representatives in Manila, notably Ms. Sarah Timpson, Mr. Kevin McGrath, Mr. Terence Jones, Ms. Deborah Landey and the local and international UNDP staff, particularly Mr. Jorge Reyes, Mr. Kyo Naka, Mr. Renaud Meyer, Mr. Toshihiro Tanaka, Ms. Amelia Dulce Supetran and Ms. Clarissa Arida, who personally participated in various stages of PEMSEA activities, had promoted a strong working relationship between the Regional Programme, the UNDP and the host country. The unwavering support from Dr. Andrew Hudson (UNDP New York), Dr. Tim Clairs (UNDP Kuala Lumpur), Dr. Randall Purcell and Dr. Jose Padilla (UNDP Bangkok) had been instrumental in sharpening program activities in meeting GEF International Waters objectives. The trust, understanding, administrative support as well as the flexibility given to the Regional Programme were indispensable in the timely delivery of outputs and outcome. These were made possible through Mr. Oleg Khalimonov,

Mr. Koji Sekimizu, Mr. David Edwards, Mr. Jean-Claude Sainlos, Mr. Zhu Jianxin and Ms. Patricia Richards of the IMO.

The participating countries and partners have been able to work very closely with PEMSEA in the execution of activities during the last three phases. Over the years, PEMSEA received high-level political support and blessings reflected by the participation in past EAS Congresses by former President Fidel V. Ramos and former President Gloria Macapagal-Arroyo of the Philippines, former Prime Minister Chuan Leekpai of Thailand as well as key ministers, deputies and vice ministers of the participating countries. Of special mention was the continued involvement of Minister Mok Mareth of Cambodia, who has been with us since the pilot phase. The late Secretary Angelo Reyes of the Department of Environment and Natural Resources (DENR) of the Philippines should be remembered for his contribution in the construction of the current PEMSEA building. The unwavering assistance of the following key persons were critical in lending strong political support to this regional initiative: former Minister Tan Sri Law Hieng Ding of Malaysia's Ministry of Natural Resources and Environment; former DENR Secretary Fulgencio Factoran Jr. of the Philippines; former Minister Emil Salim of Indonesia's Ministry of Environment; and current Administrator of China's State Oceanic Administration (SOA), Liew XiQui and former administrators, Mr. Wang Shuguang and Mr. Sun Zhihui.

Representatives of concerned agencies from different participating countries have shown a high degree of cooperation through the three phases, not only in complying with timely delivery of outputs but also in delivery of co-financing. Such cooperation extended to various levels of meetings, workshops and conferences among participating countries, thus creating a harmonious environment for regional cooperation. Making these possible are members of the national focal agencies, local governments and collaborating institutions. A sizable number of policymakers at the national and local levels, senior experts and members of the business and educational communities made

substantial contributions in the building of PEMSEA, especially those in the early phases. This group includes:

- Mr. Long Rithirak and Vice Governor Prak Sihara of Cambodia;
- Mr. Mao Bin, Mr. Li Wenhai, Mr. Chen Lianzheng, Dr. Zhou Lumin, Dr. Chen Guoqiang, Dr. Zhang Zhanhai, Prof. Hong Huasheng, former Mayor Zhu Yayan and former Vice Mayor Pan Shijian of PR China;
- Mr. Kim Jae Won and Mr. Ri Jun Ho of DPR Korea;
- Ms. Ni Wayan Sudji, Dr. Tommy Purwaka, Dr. Aprilani Soegiarto, former Minister Nabial Makarim, former Minister Dr. Rokhmin Dahuri, Deputy Minister Ms. Masnellyarti Hilman and former Deputy Minister Effendy A. Sumardja of Indonesia;
- Mr. Yoshio Kon, Mr. Akira Kotaki, Mr. Tadashi Shimura and Mr. Masahiro Akiyama of Japan;
- Dr. B. A. Hamzah, Dato Abu Bakar Jafaar, Dato Hajah Rosnani Ibarahim and Capt. Raja Malik Kamaruzaman of Malaysia;
- Prof. Ed Gomez, Prof. Gil Jacinto, Prof. Merlin Magallona, Dr. Cielito Habito, Dr. Antonio La Viña, the late Dr. Rogelio Juliano, Governor Enrique Garcia Jr., former Chief Justice Reynato Puno, former governors Felipe Nava, Rolando Mandanas and Leonardo Roman, former DENR Undersecretary Dr. Delfin Ganapin, former DENR secretaries Dr. Angel Alcala, Mr. Victor Ramos, Mr. Heherson Alvarez and Ms. Elisea Gozun and current Secretary Ramon Paje of the Philippines;
- Dr. Hong Seong Yong, Dr. Kim Jong-Deog and Mr. Bang Tae-Jin of RO Korea;
- Dr. Chou Loke Ming, Dr. Chia Lin Sien, Dr. Robert Beckman, Dr. Wong Poh Poh, Prof. Tommy Koh, Mr. Zafrul Alam, Mr. Fong Peng Keong, Mr. Nigel Goh and Mr. Declan O'Driscoll of Singapore;

- Prof. Sanit Aksornkoae, Dr. Piamsak Manasveta, Dr. Pakit Kiravanich, Dr. Maitree Dungsawadi, the late Mr. Arthorn Suphapodok, Mr. Chalernsak Wanichsombat, Dr. Cherdsak Virapat, Mr. Pakorn Prasertwong, Ms. Kannegar Boontanon, Mayor Chatchai Thimkrajang and Vice Governor Veerasuk Pompibul of Thailand; and
- Dr. Nguyen Ngoc Sinh, Dr. Phan Van Ninh, Dr. Tran Hong Ha, Dr. Nguyen Cho Hoi, Dr. Nguyen Tac An, Mr. Hua Chien Thang, Dr. Nong Thi Ngoc Minh and Mayor Hoang Tuan Anh of Vietnam.

PEMSEA's partnerships with its stakeholders will not be complete without the trust and commitments of PEMSEA's Non-Country Partners. They include the ASEAN Centre for Biodiversity (ACB), Coastal Management Center (CMC), Conservation International (CI) Philippines, International Environmental Management of Enclosed Coastal Seas (EMECS), International Ocean Institute (IOI), International Union for Conservation of Nature and Natural Resources (IUCN) – Asia Regional Office, Korea Environment Institute (KEI), Korea Institute of Ocean Science and Technology (KIOST), Korea Marine Environment Management Corporation (KOEM), Korea Maritime Institute (KMI), Northwest Pacific Action Plan (NOWPAP), Ocean Policy and Research Foundation (OPRF), Oil Spill Response Limited (OSRL), Plymouth Marine Laboratory, PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG), Swedish Environmental Secretariat for Asia (SENSA), UNDP/GEF Small Grants Programme (SGP), UNDP/GEF Yellow Sea LME Project (YSLME), UNEP Global Programme of Action for the Protection of the Marine Environments from Land-based Activities (UNEP/GPA) and UNESCO-IOC Regional Secretariat for Western Pacific (IOC/WESTPAC).

Many friends of PEMSEA outside the region had been lending support in one way or another over the long years. They include Dr. Gunnar Kullenberg, Dr. Anders Grundlund, Dr. Olof Linden, Prof. Steven Olsen, Prof. Kem Lowry, Dr. Clives Wilkinson, Prof. Biliiana Cicin-Sains, Prof. Arthur Hansen, Dr. Jack Mathias, Dr. Yves Henocque, Dr. Larry Hildebrand, Dr. Awni Behnam, Dr. Oliouine Iouri and many others.

Two extraordinary personalities, who had been with me since the beginning of the PEMSEA initiatives and became the core members of the Executive Committee of PEMSEA, had made significant contributions to the growth of this organization. Mr. Hiroshi Terashima of Japan was instrumental in the participation of Japan in 2006, while Dr. Li Haiqing was instrumental in the development of ICM sites in China. Both served as chairs of the Technical and Intergovernmental Sessions of the EAS Partnership Council. Amb. Mary Seet Cheng of Singapore, who knew PEMSEA since the first phase, took over the chairmanship of the Council; while Undersecretary Analiza Rebuelta-Teh of the Philippines, who had been providing unwavering support in motivating national implementation and the hosting of the PEMSEA office, served as the Co-Chair for Intergovernmental Session. Renowned ecologist, Prof. Chul Hwan Koh of RO Korea, served as Co-Chair for Technical Session, thus completing the change of leadership of the Council.

Last but not the least, PEMSEA would not have been able to go this long way without the dedication, loyalty and sacrifices of a competent regional team with approximately 30 members composed of both international and national staff. Special thanks are due to my former colleagues who had spent much of their valuable career time in building the much-needed regional partnerships: Dr. Huming Yu, Dr. Jihyun Lee, Mr. James Paw, Ms. Cory Guerrero, Ms. Stella Regina Bernad, Ms. Diane Factuar, Ms. Nancy Bermas-Atrigenio, Mr. Dan Bonga, Ms. Ma. Corazon Ebarvia, Ms. Bresilda Gervacio, Ms. Cristine Ingrid Narcise, Ms. Belyn Rafael, Ms. Carol Velasquez, Ms. Kathrine Rose Gallardo, Ms. Anna Rita Cano and many others. My successor, Prof. Raphael Lotilla, who spent more than four years with PEMSEA, had made a significant contribution in the negotiation of the Headquarters Agreement. Finally, Mr. Adrian Ross, who has been with PEMSEA since the first phase, is perhaps one of the longest-serving staff whose dedication, hard work and professional competence have continued to make much of the difference.



Dr. Alfred M. Duda

Dr. Alfred M. Duda spent a 20-year career in water resources management for the World Bank Group, working specifically with the Global Environment Facility. He served as the Senior Advisor for the GEF International Waters Focal Area as well as Regional Manager for Natural Resources. Prior to that, he was the Director and Chief of Diplomatic Mission of the Great Lakes Office of the International Joint Commission (Canada and U.S.). Dr. Duda has a bachelor's degree in biology/chemistry from Boston College and a doctorate degree in hydrology from Duke University.

The PEMSEA Investment: GEF Investment in PEMSEA and the Large Marine Ecosystems of East Asia

The world-leading rapid economic growth fostered in East Asia in the past decades has been accompanied by deterioration in air and water quality, depletion of coasts and oceans, and loss of habitats and endemic species. Habitat and resource degradation and loss of biodiversity reduce the productive capacity and intrinsic resilience to climate change and devastating storms, which in turn affect food security, livelihoods and incomes and natural shoreline protection. This pattern of economic growth is short-lived due to the high cost of socioeconomic impact which will soon limit long-term growth. One-fourth of the world's marine fish production is contributed by East Asia with 50 million people dependent on declining catches of fisheries for a major portion of their livelihood. Over the last 30 years, 11 percent of coral reefs collapsed, while 48 percent are in critical condition. Recent findings show over 80 percent face risks. Mangroves have lost 70 percent of their cover while the loss in seagrass beds ranged from 20 to 60 percent across countries. Unless managed, the current rate of loss will result in the removal of all mangroves by 2030, while reefs face collapse within 20 years.

Countries of the region recognized the unsustainable pattern of growth affecting its seas and oceans in the 1990s and requested assistance from the newly created Global Environment Facility (GEF) 20 years ago. This section outlines the GEF investment in the seven large marine ecosystems (LMEs)

of East Asia and the PEMSEA program created with hope for addressing the concerns. While the GEF is based on country-driven requests, the seriousness of the situation led the GEF staff to program investments in an innovative way through programmatic approaches offered at different scales to improve impact and effectiveness. Total investments by the GEF exceed USD 237 million with a total co-financing of over USD 2 billion over 20 years and were purposely focused on coastal East Asia in the International Waters (IW) Focal Area as a test by the GEF Secretariat.

This section details some of the strategic considerations that led to the investments. Post-project evaluations find the countries have made on-the-ground progress and real impact in restoring habitat, biodiversity and water quality. The approach utilized by PEMSEA, coupled with the GEF working at different scales with different GEF agencies, partners and programs, shows great value for global application if modest GEF funding is increased by rich countries. The progress has warranted continued support from the GEF with a new final grant approved in 2013 for replication and accountability roles to be played by PEMSEA in the next five or six years. Additional public-private partnerships (PPPs) are needed in this last project for scaling-up impact, and enhanced accountability and impact reporting is needed from PEMSEA to illustrate cost-effectiveness.

About the GEF International Waters Focal Area

Since the early 1990s, developing countries have approached the GEF for assistance in improving the management of their coastal

oceans. LMEs serve as place-based, ecologically-defined areas where stakeholder support for integrating national and multi-country reforms and international agencies can be mobilized into a collective cost-effective response to an array of conventions and programs. Site-specific ocean concerns, those of adjacent coastal areas and linked freshwater basins are being addressed in seven LMEs in the PEMSEA region with the GEF. While some call this marine spatial planning (MSP), the approach toward integrated coastal management (ICM) in the field and political cooperation among countries at the larger scale of the region are at the heart of the GEF's IW strategy. The only new funding source to emerge from the 1992 Earth Summit, the GEF has allocated USD 11.4 billion in its first two decades, supplemented by more than USD 48 billion in co-financing, for more than 2,800 projects in more than 165 developing countries and countries with economies in transition. As a global grant fund, GEF also funds areas like biodiversity and climate change. The IW Focal Area has funded 230 transboundary water projects with 149 different cooperating countries on shared waters totaling over USD 9.2 billion in total cost and USD 1.4 billion in GEF grants. The GEF is clearly the leading global funding source for transboundary water systems, especially marine ecosystems. The GEF Council-approved Operational Strategy in 1995 recognized the sensitive international political dimensions of assisting states in collective management of transboundary water systems for its IW Focal Area and the use of LMEs (GEF, 1995). The GEF Council included the concept of LMEs in its operational strategy as a vehicle to foster ecosystem-based management of coastal and marine resources (or marine spatial planning) in the IW Focal Area but also allowed approaches that work at scales smaller than the LMEs as described in detail by Duda and Sherman (2003).



Table 1. Spatially Varying Scales of GEF IW Projects for the LMEs of East Asia.

Scale	Type of Project	GEF Agency
Global	Ballast water	UNDP/IMO
Regional	PEMSEA	UNDP
LME	South China Sea	UNEP
Linked river basin	Mekong River Basin	World Bank
National	China livestock pollution reduction	World Bank/FAO
Province/City	PEMSEA (e.g., Xiamen or Danang)	UNDP
Local habitat	Phu Quoc, Vietnam	UNEP

Table 1 illustrates different scales used in the PEMSEA area by listing a few projects. By using a multi-scaled approach and progressive funding tied to progressive commitments to joint action through GEF-recommended processes, the achievement of a succession of milestones underpins the GEF's IW strategy and UNDP/PEMSEA countries are making progress utilizing this strategy.

GEF Investments in PEMSEA and the LMEs of East Asia

As of Spring 2013, the GEF has funded about three dozen projects in over 20 years requested by countries in the PEMSEA region for more than a quarter billion dollars for investments in improved ocean and coastal governance in several LMEs. This includes the Yellow Sea LME, South China Sea LME (UNEP), Sulu-Celebes LME and Arafura-Timor Seas and at the regional level through PEMSEA and in national/local projects. The projects were approved consistent with the GEF Operational Strategy (GEF, 1995), globally (Duda, 2005a) and for the PEMSEA region (Duda, 2006). Progressive results were rewarded with progressive funding and a joint political commitment by the countries in the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA), which, for the GEF, constituted a strategic action program of commitments to reforms and a shared vision for action. The institutionalization of PEMSEA provided an opportunity to establish a country-owned regional collaborative

mechanism to negotiate political commitments, along with coordination and monitoring of programs and projects on coastal and ocean management reforms at the regional level. These commitments and reporting of impact resulted in additional GEF funding, not only through the UNDP and PEMSEA, but at different scales through GEF agencies with specific comparative advantages. Even more significant globally is that countries continue to make national progress and sit at the same table despite the highly publicized political disputes over the South China Sea LME. The political commitments, action delivered on the ground and continued dialogue in the face of key disputes warranted continued GEF investments.

Additionally, over the years, the GEF requested several stocktaking meetings of all countries to discuss their interest in scaling up the demonstration projects into programs with more potential impact. The countries responded that they wanted to request such programs of multiple projects at multiple scales to meet the targets on coastal and ocean improvements and institutions they established in the SDS-SEA and the action programs at the LME scale. The GEF's decision to target funding to the PEMSEA region was described elsewhere by Duda (2005b) and Duda (2006) for more detail than can be provided in this limited space. The positive outcome, impact and broader implementation of results in national and local government reforms were recently assembled in a GEF evaluation available online (GEF, 2013).

From Projects to Programs — Contributions and Value of PEMSEA

The 14 East Asian countries and 20 Non-Country Partners of PEMSEA have documented that the 1995 GEF Operational Strategy for IW approved by the GEF Council is a valuable global instrument flexible enough to respect national sovereignty of governments while producing on-the-ground impact and local/national/transboundary policy and legal and institutional governance reforms. The recently published GEF Overall Performance Evaluation for the GEF-6 Replenishment highlights the impact and wider adoption of reforms catalyzed by GEF finance in IW in the PEMSEA region (GEF, 2013). As the GEF strategy expects, country-driven work under PEMSEA and associated projects has built trust and confidence in East Asian countries working together on their shared coasts and LMEs even in the face of the South China Sea LME disputes. This approach has a global application for improving peace and security among countries with the UNDP in the lead.

The GEF has learned that only country-endorsed programmatic approaches can generate the long-term political and financial support required to address the barriers related to governance of shared coastal and marine resources at the geographic regional scale of multiple LMEs and their coasts. The GEF IW Strategy of fostering country commitments to programmatic approaches (and not just individual isolated projects), and then providing incentives to link them together at different scales with different GEF institutions with different comparative advantages, provides a model for the GEF in all its Focal Areas to make real impact. Countries tend to guard their funding in other GEF Focal Areas when indeed the IW PEMSEA experience shows integrated programs are needed to turn the tide against the serious degradation being experienced.

“The commitments at various scales are unprecedented in East Asia with the commitment to targets for ICM, funding of the PEMSEA mechanism by participating countries, adoption of action programs through LMEs and use of subsidiary bodies and intergovernmental procedures that provide transparency through nongovernment organization and civil society participation.”

Through the adoption of the SDS-SEA by 14 of the riparian (developed and developing) countries and the collaborating countries' recognition of PEMSEA as an institution with its own legal personality in 2009, an overarching policy and institutional framework has been established for the sustainable management of the LMEs and their coasts and linked river basins. The commitments at various scales are unprecedented in East Asia with the commitment to targets for ICM, funding of the PEMSEA mechanism by participating countries, adoption of action programs through LMEs and use of subsidiary bodies and intergovernmental procedures that provide transparency through nongovernment organization and civil society participation. The joint institutions adopted by these countries without a legally-binding environmental treaty is more impressive than many coastal/marine environmental treaties elsewhere on our blue planet. In many aspects, the country-driven approaches for these LMEs and coasts represent models for the rest of the world.

Future PEMSEA Role in GEF Programs

While PEMSEA got its start 20 years ago in port cities, the GEF encouraged more emphasis on the coasts and linked rivers through ICM. The countries have agreed and made great progress. Now the warming of marine waters poses serious implications for countries that wish to sustain benefits from LMEs and their coasts. Security and social unrest will soon become serious issues if management institutions at different scales from LME-wide collective management to the ICM scale do not accelerate the transition to sustainability through stronger adaptive management institutions. An increased PEMSEA effort and scaling-up is essential if these nascent PEMSEA ICM and LME initiatives are to be transformed into adaptive management institutions capable

of incorporating new stresses from ocean warming, sea-level rise, coastal storm vulnerability and saline water intrusion into coastal drinking water supplies into existing conflicts and challenges.

Consistent with the SDS-SEA, the GEF was to fund two UNDP/PEMSEA projects of five-year duration for the 15-year set of commitments, with the last five years funded by the countries. With the first implementation project coming to a close, the GEF fulfilled its commitment to the countries by the recent approval of a PEMSEA concept in 2013 for its last increment of regional funding consistent with its GEF-5 IW funding program.



PEMSEA



PEMSEA/R. Razon

With the many investments in the last 20 years, the GEF as an institution now needs the countries to address several priorities in the last project. Sustaining adaptive management institutions at all scales needs to be secured with PEMSEA's technical assistance to fully incorporate the risks from climatic variability. Additional country commitments to national funding are needed to sustain the regional institutions once GEF-PEMSEA funding ends. More emphasis on PPPs advocated by PEMSEA for years needs to be taken seriously. Wider incorporation of reforms at national and local levels needs to be accelerated and anchored in national budgets, and more comprehensive documentation and on-the-ground impact reporting/transparency are needed to show GEF donors that countries are serious about PEMSEA support and implementation success. Moreover, the success of PEMSEA with the GEF IW strategy needs to serve as a global model through sharing experiences and learning with other GEF projects through GEF International Waters Learning Exchange and Resource Network (IW:LEARN) activities.



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References

Duda, A. M. 2005a. "Contributing to ocean security: Global Environment Facility support for integrated management of land-sea interactions." *Journal of International Affairs*, 59:179–201.

Duda, A. M. 2005b. "Targeting development assistance to meet WSSD goals for large marine ecosystems and small island states." *Oceans and Coastal Management*, 48:1–14.

Duda, A. M. 2006. "Policy, legal and institutional reforms for public-private partnerships needed to sustain large marine ecosystems of East Asia." *Oceans and Coastal Management*, 49:649–661.

Duda, A. M. and K. Sherman. 2003. "A new imperative for improving management of large marine ecosystems." *Oceans and Coastal Management*, 45:797–833.

Global Environment Facility (GEF). 1995. GEF Operational Strategy. Global Environment Facility, Washington DC: www.thegef.org.

GEF. 2013. Fifth Overall Performance Study of the GEF. First Report: Cumulative Evidence on the Challenging Pathways to Impact. GEF/R.6/04 Rev 01. Evaluation Office, GEF, Washington DC: www.thegef.org.



Mr. Koji Sekimizu

Mr. Koji Sekimizu is the current Secretary-General of the International Maritime Organization. He served in the Ministry of Transport (MOT) of Japan in the following divisions: Kyushu District Maritime Bureau, Safety Planning Section of the Ship Bureau and the Environment Division. He briefly worked for the Second International Organizations Division of the Economic Affairs Bureau of the Ministry of Foreign Affairs. Upon his return to the MOT, he served in the Safety Standards Division of the Maritime Technology and Safety Bureau. He then joined the IMO, first serving in the Sub-Division for Technology of the Maritime Safety Division, the Technology Section and eventually for the Marine Environment Division. Mr. Sekimizu has bachelor's and master's degrees in engineering from Osaka University.

From Global Agreements to Local Actions

The world's seas and coastal areas provide valuable resources that support society in many different ways. They supply food, energy, employment, raw materials, a place to live, a place to relax and the means to transport about 90 percent of global trade.

It is difficult to precisely measure the worldwide economic value of ocean-based goods and services, but all estimates place the figure in the trillions of dollars. Ocean-based industries are already large, and they are still expanding despite current difficult economic climate.

But the success and growth of these industries is actually threatening the integrity of the very elements that sustain, support and give them life. It has been widely documented that the global marine environment and its resources are being degraded and overexploited. Species, critical habitats and the health of the marine ecosystem are all becoming endangered to the extent where this is adversely affecting people who live in coastal regions and communities worldwide that depend on marine areas for food and livelihood.

The sea and coastal areas, in particular, are becoming increasingly crowded. Conflicts in the use of these spaces and resources among various stakeholders are increasing, all of which means that the sea and coastal areas need to be actively managed and protected. The varied and sometimes conflicting stakeholders all have a legitimate interest in the process. At the same time, there is now a clear understanding that future growth must be sustainable — which means it must fulfill the legitimate aspirations of the current generation without jeopardizing the ability of future generations to meet theirs.

Sometimes, problems such as this seem too large or too global to be tackled effectively. The key lies in the environmentalists' mantra of "think globally, act locally." But no one can do this alone. The way forward lies in establishing effective and inclusive partnerships: collaborative multisectoral arrangements in which everyone concerned can bring their own skills, resources and expertise to bear on problems that need solving for the greater good of all. And few better examples of this approach in action can be found in PEMSEA, which celebrates its 20th anniversary this year.

Its roots go back to the first International Waters project, launched under the auspices of the Global Environment Facility (GEF) in December 1993. Considerable focus was placed on the prevention and management of marine pollution by setting up integrated coastal management (ICM) pilot sites in Xiamen (PR China) and Batangas Bay (Philippines), mobilizing subregional efforts (in Indonesia, Malaysia and Singapore) to address marine pollution problems in the Straits of Malacca and Straits of Singapore and strengthening capacity development, especially in developing countries, such as Cambodia, PR China, DPR Korea, Indonesia, Philippines, Thailand and Vietnam. The project, known then as the *Prevention and Management of Marine Pollution in the East Asian Seas*, was implemented by the United Nations Development Programme (UNDP) and executed by the International Maritime Organization (IMO), while the Government of the Philippines hosted the regional project office within its Department of Environment and Natural Resources (DENR).

Following the successful completion of this project in September 1999, it was clear that something very worthwhile had been started. The recognition of the need to develop stakeholder partnerships to address increasing environmental challenges in the seas of East Asia was coupled with a new confidence that such an approach really could pay dividends. It led to a second project, focusing on building intergovernmental, interagency and multisectoral partnerships in

“The way forward lies in establishing effective and inclusive partnerships: collaborative multisectoral arrangements in which everyone concerned can bring their own skills, resources and expertise to bear on problems that need solving for the greater good of all.”



PEMSEA/J. Castillo

environmental management. It was again supported by the GEF and its implementation began in October 1999. The main thrust of this new project was to build partnerships and from this, the acronym PEMSEA was derived.

As part of the process to establish a sustainable regional organization in East Asia, the PEMSEA office was partly organized with two functions. Not only does it facilitate the UNDP-GEF project, but it also acts as regional coordinating mechanism for the implementation of the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA). PEMSEA is governed by a regional partnership mechanism, the East Asian Seas (EAS) Partnership Council, composed of Country Partners from the region as well as Non-Country Partners from different sectors.

PEMSEA now has a legal status as a regional organization in East Asia signed in November 2009. The project component will be completed this year, and this will pave the way for a full-fledged regional organization with its own funding and staff. To a considerable extent, the organizational structure of PEMSEA mirrors that of the IMO, which provided the blueprint for PEMSEA's organizational structure when it established the PEMSEA Resource Facility, the EAS Partnership Council and the Executive Committee — the organs of PEMSEA.

Environmental stewardship has been an increasingly significant part of the IMO's developing role, and today it is truly one of the pillars on which the organization stands. The development and adoption of international conventions has been a central part of the organization's work in this regard but, in many ways, that is only a beginning. Equally important is the effective implementation of the measures adopted. In this, PEMSEA has been, and continues to be, an important ally for the IMO. The organization of workshops, seminars and trainings on the ratification and implementation of the IMO's environmental conventions has been a key component of PEMSEA's activities. The advantages of a coordinated

regional approach have been clear and perhaps most apparent in the specialized regional expertise that PEMSEA has consistently been able to muster to deliver training and workshops through its roster of consultants and experts.

The IMO, for its part, has provided PEMSEA with a great deal of support and resource, whether legal, in-kind, technical or administrative. Indeed, the IMO continued to be the executing agency of the project until the end of the second phase in 2007, even though some of its activities were not strictly within IMO's remit. Today, the IMO continues to participate very actively in PEMSEA's activities, such as the Project Steering Committee meetings and the EAS Congress.

Estimates suggest that about 40 percent of the world's population lives within 100 km of the coast, and this is increasing both in number and proportion. As population density and economic activity in coastal zones increase, pressures on coastal ecosystems also increase. The high concentration of people in coastal regions has produced many economic benefits, including improved transportation links, food production, revenue from tourism and industrial and urban development. But the combined effects of a booming population and economic and technological development are threatening the ecosystems that provide these economic benefits.

Our development in the future must be sustainable. Not only will the maritime and coastal sectors be central to sustainable growth in the wider context, it is also essential that their own growth and development is, itself, sustainable. ICM, under partnership arrangements such as that embodied by PEMSEA, will be increasingly important as we move forward into a new era with new expectations. Sustainability cannot be achieved without discussion, agreement, planning and action from stakeholders across a wide variety of sectors and disciplines.





PEMSEA

A perfect example of how effective such a collaborative approach toward the management of coastal and maritime areas can be is the Marine Electronic Highway (MEH) project for the Straits of Singapore and Malacca. The concept of the MEH for this strait was first discussed in a conference organized by PEMSEA in 1996 in Manila, Philippines, and subsequently elaborated in a regional workshop held in Singapore in 1998, jointly organized by IMO/PEMSEA and the Maritime and Port Authority of Singapore. Indeed, the initial proposal following the meeting in Singapore was drafted by PEMSEA.

The MEH is a bold conceptual step aimed at harnessing the ever-increasing sophistication and accessibility of information technology to provide a comprehensive decisionmaking support system. It will integrate and display information from a variety of sources — such as radar, electronic charts, weather stations, automatic identification system (AIS), wind and tide sensors and so on — to offer previously unimagined levels of functionality, accuracy, resolution and quality to those responsible for vessel navigation.

At the same time, the MEH will also incorporate data on local ecological conditions, such as the extent of coral reefs and mangrove forests, which, together with hydrodynamic and oil spill models, will also create an invaluable resource for those on shore whose job is to deal with the consequences of any accident that might occur.

The MEH provides a wonderful opportunity to help usher shipping into a new era of safety, efficiency and environmental sensitivity. The development of the maritime infrastructure and the move toward new and improved ways of achieving enhanced navigation and traffic control are among the pillars of sustainable maritime development.



PEMSEA

The scheme can provide a blueprint for similar schemes in other parts of the world and, collectively, they can have a massive and beneficial effect on our global society which depends so much on safe, secure, efficient and green carriage of trade by sea. It is, in fact, a perfect example of how local actions can collectively help implement a global vision.

Looking ahead, the IMO maintains a strong commitment to East Asia, with a strong technical cooperation program, and fully recognizes the important role played by PEMSEA in the region. It will continue to support and engage PEMSEA in many of its activities,

such as participation in the EAS Congress and the implementation of major projects like the Yeosu Project on Environmental Sensitivity Index in the Gulf of Thailand, as well as considering new activities, such as the Global Initiative for Southeast Asia relating to Oil Pollution Preparedness, Response and Co-operation (OPRC) and the Norwegian Agency for Development Cooperation (NORAD) Project on Assistance to East Asian countries in ratifying and implementing IMO instruments for the protection of the marine environment.

Ours has been a strong and worthwhile partnership, and I can only see it flourishing still more in the years to come.



Dr. Antonio G.M. La Viña

Dr. Antonio G.M. La Viña currently serves as the Intergovernmental Session Co-chair of the East Asian Seas Partnership Council. He is also the current Dean of the Ateneo School of Government and a former Undersecretary for Legal and Legislative Affairs of the Department of Environment and Natural Resources of the Philippines. He teaches at the Ateneo School of Law, Ateneo Loyola Schools, De La Salle College of Law and Philippine Judicial Academy. Dr. La Viña has a bachelor's degree in philosophy from Ateneo de Manila University, a law degree from the University of the Philippines and master's and doctorate degrees in law from Yale Law School.

The Future We Want (And How to Get There)*

Setting the Stage: Stewarding the World's Marine Resources

The 20th century was marred by serious threats to the world's oceans and coasts. World War II just ended and the world was trying to get back on its feet. Nations began delineating their territories and economic activities were starting to regain momentum but with very little regard to the limits of countries' natural resources. Explorations became prevalent. Extractive activities took place, venturing out into unexplored territories. Nations began digging deeper into bedrocks for oil, boring into mountains for metals, sailing into deep seas for larger catch, until the last frontier, the seabed, was put in danger. In turn, governments began responding to these new challenges, starting with the *United Nations Convention on the Law of the Sea* (UNCLOS), a treaty that, among others, reminded nations that oceans are shared resources and that negative consequences exist and that we are all accountable to the world's oceans.

This set the stage for regional environmental organizations like PEMSEA. PEMSEA reflects and is guided by the signs of the times. It has committed itself to achieve global environmental targets by working on the seas of the East Asia. Just a year after the landmark United Nations Conference on Sustainable Development or the Rio Earth Summit of 1992 convened — where the *United Nations Framework Convention on Climate Change* (UNFCCC) and the *United Nations Convention on Biological Diversity* (CBD) were signed — the *Project on Marine Pollution Prevention Project in the East Asian Seas* (MPP-EAS) was established

to promote regional collaboration in the field of coastal and ocean management. This project would later evolve into what we know today as PEMSEA. PEMSEA's evolution in the past four decades reflects the significant growth in collective action and collaborative mechanisms toward sustainable coastal and ocean management.

The Earth Summit of 1992, as manifested in its implementation action plan, the *Agenda 21*, highlighted the need to consider the technological and financial capacities of developing countries in reaching global environmental objectives. This is precisely the reason why PEMSEA has chosen to undertake the partnership model — that is, to take into consideration that the disparities among countries result in the failure of the principle of equal accountability. This is also the reason why it has decided to instead build on the skills and expertise of its Country Partners, share in the risks in the process and place the stakeholders in the center of its activities. From 1993 to 1999, PEMSEA made significant progress in pushing for pollution prevention and management efforts through the effective use of a governance framework that balances the multiple uses of oceans — integrated coastal management or ICM. This led countries to initiate activities to locally manage environmental problems through ICM.

Roughly a decade after, in 2000, hundreds of heads of state met at the United Nations and ratified the *UN Millennium Declaration*. It emphasized how strategies at all levels of governance must be put in place to ensure the sustainable management of water resources and the related coastal and marine environments. Two years after, the 2002 World Summit on Sustainable Development (WSSD) convened in Johannesburg, marking the shift of approaches to more holistic and integrated approaches. The WSSD provided and adopted concrete measures and better targets for better implementation of sustainable development action plans. Its counterpart document, the *Johannesburg Plan of Implementation*, called for the employment of an ecosystem approach and integrated coastal and ocean management. Most importantly, it was during this time

that the word “sustainable development” became a buzzword. Both the needs of the humankind and the limits of the natural environment were placed on equal footing. Additionally, sustainable development as a concept was established as an approach to combat poverty.

For PEMSEA, the years 1999 to 2008 were about achieving the following: building partnerships for environmental management and developing intergovernmental, interagency and intersectoral partnerships. Consequently, due to the increase of members and partners in the PEMSEA network, an increase in knowledge-sharing activities also took place in the form of consultations and consensus-building.

PEMSEA's Unwavering Commitment to the Ocean and Its Inhabitants

The experiences in the decade that followed the 1992 Rio Summit acknowledge that utilizing integrated approaches to attain significant changes in sustainable development was the way to go. In the years 2008 to 2013, PEMSEA became an active partner in protecting life-support systems and enabling the sustainable use and management of marine resources. It also developed methodologies, techniques, standards and working models to strengthen practical efforts in the field of marine-related concerns. Additionally, it facilitated the dissemination of information related to marine agreements and conventions, such as environmental conventions by the International Maritime Organization (IMO). Such conventions include the International Convention for the Prevention of Pollution from Ships (MARPOL), International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), International Convention on the Control of Harmful Antifouling Systems on Ships (AFS) and the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM), thus, increasing the number of countries acceding or ratifying these instruments.

In 2003, the First EAS Ministerial Forum was convened in Malaysia. Twelve governments signed the *Putrajaya Declaration* adopting the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA). The countries included were Brunei Darussalam, Cambodia, China, DPR Korea, Indonesia, Japan, Malaysia, Philippines, RO Korea, Singapore, Thailand and Vietnam.

The SDS-SEA is a collaborative platform for implementing the WSSD Declaration and Plan of Implementation, UN Millennium Development Goals, Agenda 21 and other multilateral environmental agreements, such as the UNFCCC and CBD. It is a nonbinding mechanism that builds on the tenets set forth by the principles of partnership found in the Rio Declaration. It contains principles, agreements, instruments, action programs and frameworks for implementation in order to achieve sustainable development goals for the seas of East Asia.

The ultimate goal of the SDS-SEA is the improvement in the quality of life in East Asia. It seeks changes in the institutional, operational, socioeconomic and environment and resources outcomes of the region. Its strategies are divided into six categories: sustain, preserve, protect, develop, implement and communicate. These strategies tackle the region's greatest challenges including: (1) climate change adaptation and mitigation; (2) biodiversity and marine protected areas (MPAs); (3) pollution reduction and waste management; (4) sustainable fisheries and aquaculture; (5) food, water, energy, security and sustainability; (6) governance of marine and coastal resources; and (7) economic development and poverty alleviation. It also paved the way for addressing the scaling-up of ICM initiatives and anticipation of more complex environmental problems. The SDS-SEA recognizes the diversity of the region's socioeconomic and geopolitical condition. It also requires a mechanism whose scope not only focuses on individual sectors, but rather purposely adopts a comprehensive and integrated approach involving national governments, civil society and regional agencies.

“The SDS-SEA is a collaborative platform for implementing the WSSD Declaration and Plan of Implementation, UN Millennium Development Goals, Agenda 21 and other multilateral environmental agreements, such as the UNFCCC and CBD. It is a nonbinding mechanism that builds on the tenets set forth by the principles of partnership found in the Rio Declaration. It contains principles, agreements, instruments, action programs and frameworks for implementation in order to achieve sustainable development goals for the seas of East Asia.”

In 2006, at the Second EAS Ministerial Forum held in China, countries agreed to formally establish PEMSEA, together with Country and Non-Country Partners, as the regional mechanism tasked with guiding and coordinating the SDS-SEA implementation.

In 2009, the Third EAS Ministerial Forum took place in the Philippines, where the international legal personality of PEMSEA was formally recognized. This forum acknowledged that in the *Manila Declaration*, the need to strengthen cooperation was imperative. This stated that ICM, its strategy statement, was critical in addressing priorities, such as coastal pollution, overexploitation of fish stocks and adapting to the effects of climate variability and change, including flooding, storm surges, increased storm intensity and warming and acidification of seas and sea-level rise in coastal areas. All of these constitute major challenges for disaster risk management and food security.



PEMSEA/R. Wong

Along with the thrust of acknowledging the diversity of the regions' geography and inhabitants, PEMSEA has imbued the philosophy of learning by doing. It has established ICM demonstration sites that provide a platform to address coastal concerns in a manner that allows for experience-based learning. For the past years, PEMSEA has been assisting national and/or local governments in the region in planning and managing the coastal environment and resources by building local capacities at national demonstration sites, as well as providing a stepwise framework and processes of developing and implementing ICM. The demonstration sites that pioneered the ICM approach provide opportunities for capacity-building, make lessons available for other sites, and are used to convince the respective countries to adopt ICM as a management approach.

Scaling-up the region's ICM efforts from demonstration toward replication and expanding local practices require a new level of partnership and alliance among concerned local governments. In addition, scaling-up depends on strong local leadership, continuous capacity-building and effective resource mobilization. The crucial role played by local partnerships among various stakeholder groups — including communities, the academe, the private sector and local and national government agencies — in mobilizing necessary resources and expertise for ICM replication are also emphasized in this arrangement.



The Road Ahead – Challenges and Meeting New Targets

The decades' worth of experience of PEMSEA is a testament to its commitment in responding to the ever-changing needs and demands of the population. However, there is a need to hasten the implementation of international agreements. The world's oceans face new threats including increased nutrient over-enrichment contributing to habitat degradation, lack of ocean-based renewable energy use, continuing threats to coral reefs, the existence of vast areas of marine debris particularly in the form of plastics and a lack of systematic data exchange across nations. Despite the success reaped by the region in economic growth and regional collaboration over the last years, it is now faced with new challenges: how to provide for a burgeoning population, the growth of megacities, as well as adapting to global environmental change without undermining the targets set forth to address sustainable development.

It has been 20 years since goals were set in the 1992 Earth Summit. It is time to redefine our path in achieving sustainable development. The Rio+20 serves as a follow-up to the Earth Summit. It is primarily aimed toward reconciling the economic and environmental goals of the global community toward sustainable development. Its product document, *The Future We Want*, largely reaffirms previous action plans and serves as a means for a renewed political commitment to a sustainable future. A few of the most important outcomes from Rio+20 include: (a) supporting the development of Sustainable Development Goals (SDGs), a set of measurable targets aimed at promoting sustainable development globally; (b) recognition that fundamental changes in the way societies consume and produce are indispensable for achieving global sustainable development; and (c) the need to return ocean stocks to "urgent" sustainable levels and call on countries to develop and implement science-based management plans.

The SDS-SEA continues to serve as a platform for achieving sustainable development goals for the seas of East Asia. The SDS-SEA for 2012–2016 serves as the region's response to Rio+20 and provides the opportunity to strengthen the global-regional and national-local complementation in the work of PEMSEA and partners for our common heritage. Its Implementation Plan for the years 2012 to 2016 sets time-bound targets. Specifically, the plan aims to: (1) complete the transformation of PEMSEA into a self-sustained regional partnership mechanism for SDS-SEA implementation; (2) achieve national coastal and ocean policies and supporting institutional arrangements and integration of SDS-SEA objectives and targets into the medium-term development and investment plans; and (3) maximize local government capacity to effectively contribute to SDS-SEA implementation. Finally, this plan will focus on five components, namely governance; ICM scaling-up; monitoring, evaluation and reporting; capacity development/knowledge management; and sustainable financing.

The good practices and successes of PEMSEA, exemplified by the strong buy-in and support to PEMSEA activities particularly in the implementation of the SDS-SEA through ICM in various countries in the region, will continue to be a key factor in encouraging new partners, collaborators and sponsors. As PEMSEA marches toward the future, it hopes that its achievements are further scaled up through a more cohesive and dynamic implementation of ICM throughout the region. PEMSEA is now in the process of transforming into a self-reliant and dynamic international organization that is responsive to regional and national priorities and needs. It continues to grow and develop based on its learning and experience from the ground and strives to achieve global environmental targets through its management of the East Asian Seas.

* With acknowledgment to Danilo Bonga, Maria Monica Edralin and Humprey Garces.



Prof. Raphael P.M. Lotilla

Prof. Raphael P.M. Lotilla was PEMSEA's Executive Director from 2008 to 2012. He served in the Philippine government as Secretary of the Department of Energy (2005–2007) and Deputy Director-General of the National Economic Development Authority (1996–2004). He was also the supervising official of the Secretariat of the Legislative-Executive Development Advisory Council (LEDAC) and President and Chief Executive Officer of the Power Sector Assets and Liabilities Management Corporation (PSALM). Prof. Lotilla has bachelor's degrees in psychology and history and a law degree from the University of the Philippines, as well as a master's degree in law from the University of Michigan.

The Road to Recognition*

The Evolution of PEMSEA

During its early years as a GEF-funded project on prevention and management of marine pollution in the seas of East Asia, PEMSEA quickly built cooperation and goodwill among the participating countries and other regional stakeholders. The number of participating countries expanded from 11 to 12 to 14, while the functional scope evolved from marine pollution prevention and management to environmental management to sustainable development. Consensus emerged within less than ten years on a shared vision for the seas of East Asia. A common environmental strategy, which evolved into the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA), was developed through discussion and consultation over a period of three years. The SDS-SEA was adopted in 2003 through the Putrajaya Declaration, signed by 12 of the participating countries. Among the many strategies and action programs contained in the SDS-SEA was an action program for the establishment of a functional framework for regional cooperation.

The PEMSEA participating countries had opted for a nonbinding approach, a preference they expressed several times in various PEMSEA meetings when presented with the option of a regional convention on the marine environment, as with other regions. Thus, the substantive agreements were expressed in the form of a regional sustainable development strategy (SDS-SEA) to serve as a platform for regional cooperation and collaboration, and it was decided that the regional implementing mechanism should be in the form of a strategic partnership composed of Country and Non-Country Partners. As the region is highly diverse in many ways (size, population, economic development, type of government), this approach was found to afford flexibility and allow each country to implement the SDS-SEA in

accordance with the individual country's capacity to do so. It also avoided the long and complex negotiation and ratification process necessary for a binding instrument.

After the adoption of the SDS-SEA, the next question was how to establish the regional implementing mechanism. What form should it take and what mode should be used to institutionalize the partnership and its implementation of the SDS-SEA?

With the *Haikou Partnership Agreement (2006)*, the Country Partners designated PEMSEA as the regional coordinating mechanism for the implementation of the SDS-SEA, providing it with a structure. The partnership would have the East Asian Seas (EAS) Partnership Council as the policymaking body, with its officers forming the Executive Committee, to be supported by the PEMSEA Resource Facility (PRF) as the Secretariat and the Regional Partnership Fund.

This Agreement also established regional targets for completion by 2015. Thus, PEMSEA became a de facto international entity with the specific mandate of overseeing the implementation of the SDS-SEA.

At this point, PR China, Japan and RO Korea committed to provide funds for the operation of the PRF for Secretariat Services, while the Philippines committed to continue hosting the PEMSEA Headquarters. These commitments constituted a significant core for the recognition of PEMSEA as a distinct international organization. At the same time, the GEF continued to provide funds for the technical services component of PEMSEA.

Securing PEMSEA's International Legal Personality

The arrangement, while bringing recognition to PEMSEA as the regional coordinating mechanism for SDS-SEA implementation, had limitations, as the Haikou Partnership Agreement was silent as to the

legal capacity of PEMSEA. Thus, PEMSEA had no legal capacity to contract, own property, pursue remedial measures and directly receive funds (donations or grants), including the proceeds of its own trust fund. PEMSEA could not directly receive donations. The voluntary contributions from PR China, Japan and RO Korea had to be channeled through Third-Party Cost-Sharing Agreements with the United Nations Development Programme (UNDP). The aim from the beginning was for the regional coordinating mechanism to be self-sustaining. The EAS Partnership Council resolved to pursue the means by which PEMSEA could contract and operate directly in its own name and, ultimately, facilitate the implementation of the SDS-SEA.

That resolve was translated into a decision and an effort by PEMSEA Country Partners — Cambodia, PR China, DPR Korea, Indonesia, Japan, Lao PDR, Philippines, RO Korea, Singapore, Timor-Leste and Vietnam — to formalize the international legal personality of PEMSEA. In order to do so, PEMSEA had to show that it had a degree of permanency and that it had its own personality distinct from its state and non-state partners in terms of legal powers and purposes. Finally, its legal powers should be exercisable on the international plane and not solely within the national systems of one or more states.

Studying the available approaches for doing so, the PRF, upon request of the Executive Council, identified four possibilities. In studying these options, the PRF was guided by the need to retain the intergovernmental, multisectoral partnership arrangement of PEMSEA and by the criteria of, flexibility, sustainability and cost-effectiveness. The following approaches were considered:

- **Operating within the United Nations (UN) Framework.** This would mean continuing under the umbrella of UN agencies such as the UNDP and the United Nations Office for Project Services (UNOPS), which would diminish the objective of PEMSEA becoming a fully independent regional entity.

- **Organizing as a nongovernment organization (NGO).** This would be the least difficult path, but not advisable, as several Country Partners' governments prohibited donations to NGOs. It would also put PEMSEA under the supervision of the regulatory agencies of the host country.
- **Entering into a formal convention.** This path had already been rejected by the Country Partners.
- **A multilateral agreement recognizing legal personality, to be entered into by the Country Partners, which would not impose any other obligation on them.**

By the identified considerations, the last option was adjudged the most suitable for PEMSEA. This approach would also pave the way for PEMSEA to negotiate a host country agreement with the Philippines, including the conferment of immunities and privileges to PEMSEA. This arrangement was not without legal precedent in the host country, the Philippines, as there were several international organizations located in the country with such an arrangement. At the suggestion of the Philippine Government, the PRF looked at several models of these international organizations, namely Asian Development Bank (ADB), International Rice Research Institute (IRRI), Southeast Asian Ministers of Education Organization (SEAMEO), Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) and the ASEAN Centre for Biodiversity (ACB), which was still in the process of being formalized. The PRF also looked into the challenges that the International Center for Living Aquatic Resource Management (ICLARM), now known as WorldFish Center, faced before it transferred to Malaysia. The experiences of some of these organizations convinced the PRF and the Executive Council that an agreement among the Country Partners to recognize the international legal personality of PEMSEA would be the most practical instrument for the purpose. A draft was completed and circulated among the Country Partners. Some of the concerns

raised among them and resolved included the question of whether the Country Partners could continue to use the cost-sharing agreement with the UNDP if they chose to do so (Yes), and whether they would be obliged to grant immunities and privileges to PEMSEA in their own countries (No).

Individual countries had different internal/national requirements that had to be discussed with them. The efforts had to involve the Foreign Affairs ministries and interagency bodies in each of the countries concerned.

Due to internal priorities and parliamentary approvals, which in some cases had to be obtained, not all countries were in a position to move quickly in obtaining the necessary national approvals for the signing of the agreement. It was decided by consensus to push ahead with several countries signing the legal personality agreement which would then allow PEMSEA to negotiate for privileges and immunities with each government, and not to wait for all countries to sign the agreement on legal personality.

For countries that were unable to sign, they nevertheless indicated their full support for the others to proceed with the signing.

While experiencing some difficulties and delays in the necessary national approvals, the spirit of cooperation and goodwill remained strong (as it still does now), and a collective desire to pursue the means to strengthen the institution prevailed.

The signing took place on 26 November 2009, on the occasion of the EAS Congress at the Philippine International Convention Center in Manila, Philippines, by the representatives of eight Country Partners — Environment Senior Minister Dr. Mok Mareth of Cambodia; State Oceanic Administrator Sun Zihui of PR China; Foreign Trade Vice Minister Choe Yon of DPR Korea; Environment Deputy Minister Masnellyarti Hilman of Indonesia; Water Resource and Environmental



PEMSEA/C. Claudio (top), PEMSEA/Kyaw Thar (bottom left), PEMSEA/R. Wong (bottom center) and PEMSEA/N. Cabanilla (bottom right)



Administration Deputy Head Sisavath Vithaxay of Lao PDR; Environment and Natural Resources Secretary Jose L. Atienza Jr. of the Philippines; Land, Transport, and Maritime Affairs Vice Minister Choi Jang-Hyun of RO Korea; and Agriculture and Fisheries Secretary of State Eduardo De Carvalho of Timor-Leste — with the prior clearance of their respective Foreign Affairs ministries.

Thereafter, a *Headquarters Agreement* was negotiated and entered into by PEMSEA and its host country, the Philippines, which was signed by the two parties, with Foreign Affairs Secretary Albert del Rosario signing on behalf of the Philippine government, on 31 July 2012. This Agreement provides for the Headquarters Seat of PEMSEA inside the compound of the Department of Environment and Natural Resources (DENR) in Quezon City, and for privileges and immunities of the organization and its officers and staff. In accordance with Philippine laws, the agreement has to be ratified by the President and the Senate, and it is now undergoing that process.

Impact of the Recognition of PEMSEA's Legal Personality

Spinning off from the UN system indicates maturity, and the flexibility and ease in addressing the needs of its constituents that this afforded is being put to good use. By being able to manage its own funds, PEMSEA has better chances of cost efficiency and sustainability.

No changes were needed in the organizational setup of PEMSEA. But a shift to a more formal process of decisionmaking was made necessary by gradual transformation into a self-sustaining regional entity.

“The seas of East Asia is one of the few marine regions in the world without a regional convention. However, a regional arrangement did evolve to suit the complex history, culture, politics and economy of the region, embracing a multi-stakeholder, multisectoral and inclusive character. Certainly, a lot more work is required to ensure its effectiveness but there is common recognition that the region needs to move forward, aided by this institution.”

PEMSEA is now undergoing measures to strengthen the organization and live up to its status as an international organization with legal personality. These measures include the adoption of a Financial Sustainability Plan and a PRF Re-engineering Plan, and take into account the strengthening of fiduciary requirements and adoption of standardized rules for hiring and employment.

Uniqueness of PEMSEA's Situation

The seas of East Asia is one of the few marine regions in the world without a regional convention. However, a regional arrangement did evolve to suit the complex history, culture, politics and economy of the region, embracing a multi-stakeholder, multisectoral and inclusive character. Certainly, a lot more work is required to ensure its effectiveness but there is common recognition that the region is moving forward, aided by this institution.

* With acknowledgment to Stella Regina Bernad.



Dr. Li Haiqing

Dr. Li Haiqing is the current Deputy Administrator of the China Geological Survey since 2011. He was Director-General of the Department of International Cooperation, as well as of the General Affairs and Finance departments of the State Oceanic Administration of China. He also worked in the Secretariat of the Intergovernmental Oceanic Commission of UNESCO Paris. Thereafter, he served as Deputy Chairman of the IOC Subcommission for the Western Pacific, National Focal Point for GEF programmes on the Yellow Sea Large Marine Ecosystem, Biodiversity Management in the Coastal Area of China's South Sea Project and PEMSEA. He also served as Intergovernmental Chair of the EAS Partnership Council. Dr. Li has a master's degree in marine affairs from the University of Rhode Island and a doctorate degree in marine law from the China Ocean University.

Pioneering Partnerships*

China is one of the major littoral states in the world. It has a continental coastline of 18,000 km and island coastline of 14,000 km, stretching over nearly 7,000 islands larger than 500 m². The economic development in the coastal areas is of strategic importance to China's national economic development. As of 2010, the gross domestic product (GDP) of coastal provinces accounted for 60 percent of the national GDP, increasing at an average rate of 8–10 percent in recent years. Coastal areas are the most productive and also the most fragile areas subject to human impact. Nearly 40 percent of China's population lives in 11 coastal provinces, municipalities and autonomous regions. While the fast economic development and the large and increasing population in coastal areas contribute to the degradation of coastal and marine environment and ecological conditions, the experiences in implementing integrated coastal management (ICM) in Xiamen and other sites in China prove that among the factors that determine the level of sustainability of economies in coastal areas, ICM application is the solution that addresses the root causes of threats to sustainable development in coastal areas.

Pioneering Partnerships

China's partnership with PEMSEA dates back to as early as 1993 when Xiamen, together with Batangas Bay of the Philippines and Malacca Straits, joined the *GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas* for the first phase of the PEMSEA project. Over the last two decades, the PEMSEA Regional Programme has built up the capacity of participating nations on ocean management using the ICM methodology. The

experiences of Xiamen as an ICM demonstration site has provided valuable lessons and best practices in ICM implementation, particularly in mitigating coastal pollution and resolving sea use conflicts.

The knowledge generated in Xiamen has been replicated in Bohai Sea, which was chosen as a pollution hotspot in the *Regional Project on Building Partnerships for the Environmental Protection and Management of the East Asian Seas* or Phase II of the PEMSEA project in 2000.

The third phase of PEMSEA started in 2008. In China, the third phase focused on the following: (a) development and implementation of a national policy and plan for an integrated coastal and ocean management; (b) development and implementation of coastal environmental management on the basis of watershed ecosystems of three provinces and one municipality bordering the Bohai Sea; and (c) development and dissemination of the lessons learned and best practices of ICM in the 10 parallel ICM sites in the coastal cities of Panjin, Haikou, Laoting, Qingdao, Dongying, Quanzhou, Wenchang, Yangjiang, Lianyungang and Fangchenggang.

Benefits of Partnership with PEMSEA through the Implementation of the Sustainable Development Strategy for the Seas of East Asia

Setting in place ecosystem-based coastal and marine development policies and plans

Recognizing the value of the SDS-SEA, China has mainstreamed the implementation of the SDS-SEA in the country's marine development policy. In line with the principles of the SDS-SEA and policies developed related to ICM implementation, China began to operationalize the *China Ocean Agenda 21* and *White Paper on China's Marine*

Development in full scale from 2003. The Outline of National Marine Development Program, which serves as the national coastal strategy from 2008 to 2020, has mainstreamed ecosystem-based management and ICM as the first and foremost principle of sustainable ocean development in China. Integration of land and sea, as well as integration of river and ocean, is also highlighted in the program, which requires that the level of total pollution loading from rivers be determined by the carrying capacity of marine environment. Mainstreaming of the two programs was achieved through the release of the Outline of Marine Economic Development Program in 2003 and 2008, strategically developed well ahead of China's five-year planning (FYP) cycle, implemented through the successful integration into the 11th FYP (2005–2010) and 12th FYP (2010–2015).

The Law on the Administration of the Use of Sea Areas, promulgated in 2002, provides a legal basis for integrated management of coastal areas by establishing three basic mechanisms: sea user right, payment for sea use and marine functional zoning. To regulate marine functional zoning, the State Oceanic Administration (SOA) issued the Marine Functional Zoning Regulations and, based on revision of the national criteria set out in the Technical Guidelines for Marine Functional Zoning, developed technical specifications for marine functional zoning at the city and county levels. As of 2008, the State Council approved 10 provincial-level marine functional zones and zoning of more than 70 percent of the city- and county-level marine function zones was completed.

The Law on Sea Island Protection enacted in 2009 institutes a sea island protection planning system, allowing integration of different objectives of island protection and development under a single plan.

In addition, government agencies at the national level have also integrated ocean management into sectoral programs and plans, including science and technology, river pollution control, etc.

Though several sectoral agencies have not participated in the implementation of SDS-SEA projects (i.e., the Ministry of Science and Technology), the participation of policymakers and chief scientists provided advisory services to SDS-SEA implementation in China and contributed to the mainstreaming of the concept of integrated ocean management, sectoral policies and programs and coordination of land and sea and river and ocean into the 12th FYP.

Application of ecosystem-based management in four river basins

Through its partnership with PEMSEA, China carried out the cross-boundary environmental risk assessment to the waters of the Bohai Sea and developed partnerships among relevant agencies. Key results include the signing of the *Declaration of Environmental Management in the Bohai Sea* in 2002, through which SOA was able to contribute in resolving land-based environmental problems with the participation of the provinces of Hebei, Liaoning and Shandong and the Municipality of Tianjin surrounding the Bohai Sea.

The third phase of the PEMSEA project assisted in the development, adoption and initiation of pollution reduction investment plans in the adjacent watershed and coastal areas of the Hai, Luan, Daling and Guangli rivers in accordance with the Bohai Sea Sustainable Development Strategy in collaboration with concerned local governments. To date, the four river basins have completed baseline assessments, pre-feasibility studies, pollution investment plans and review of options and approaches to pollution reduction with participation of local research institutes, ocean and fishery bureaus and environmental protection bureaus. Scenarios for progressing toward desired water quality using a total allowable pollutant load model were conducted and reports of the four river basins have been produced. Total pollution loading, as demonstrated in four river basins of Bohai Bay, has

also been replicated to the ICM parallel sites of Quanzhou and Fangchenggang.

Implementation of the pollution mitigation investment plans continues. With project support, total pollutant loading control reports, including investment plans, have been produced for the four river basins. There are 163 mitigation projects planned in three river basins with a total investment of 16.4 billion Chinese renminbi (RMB) (about USD 2.6 billion), focusing on mitigation from aquaculture, urban sewage, industrial pollution, ecosystem degradation and partly agriculture runoff. In Guangli River, the implementation of 1,086 projects since 2007 with a cost of RMB 3.4 billion (about USD 540 million) resulted in the reduction of chemical oxygen demand (COD) and ammonia nitrogen by 74 percent and 89 percent, respectively, from the baseline year of 2007.

Scaling up ICM implementation

In the past 20 years, the scope of ICM implementation in China has expanded. In Xiamen, the scope of activities and focus scaled



Panjin Ocean and Fishery Bureau





up from coastal pollution and sea use conflicts in Xiamen Bay to a Xiamen Bay–Jiulong River ecosystem-based management approach to economic development initiatives of the City Alliance among Xiamen, Zhangzhou, Longyan and Quanzhou. Through the iterative ICM planning process and implementation of Strategic Environment Management Plan, the people of Xiamen felt concrete on-the-ground changes. The support of PEMSEA and strong commitment of the Xiamen municipal government and other collaborators catalyzed the development of innovative legislation and institutional arrangements and increased scientific support, public participation and joint law enforcement.

On-the-ground benefits and changes were specifically noted in the *State of the Coasts* (SOC) report of Xiamen, which was prepared based on the PEMSEA SOC Guidebook in 2011. In particular, values of COD, dissolved oxygen, inorganic nitrogen and reactive phosphate generally remained stable since 2003, the baseline year, relative to the 10 percent increase in GDP, 75 percent increase in tourist arrivals and 100 percent increase in container throughput in Xiamen Port.

The ICM scaling up in China expanded during PEMSEA's third phase (2008–2013), wherein a total of 10 cities signed agreements with PEMSEA and SOA to implement the SDS-SEA through the use of ICM.

These ICM parallel sites have different characteristics and focus. In Dongying, for instance, the focus areas include integrated land and sea planning, development of a blue economy in a coordinated manner and protection of both coastal and river basin environments through ecosystem-based management.

“The support of PEMSEA and strong commitment of the Xiamen municipal government and other collaborators catalyzed the development of innovative legislation and institutional arrangements and increased scientific support, public participation and joint law enforcement.”

Capacity development through national and regional training courses and workshops of managerial personnel from all ICM parallel sites in China and Bohai Sea project implementing institutions contributed significantly to the replication and scaling up of SDS-SEA and ICM in China. To facilitate the capacity development process in China, the National Task Force (NTF) for ICM, consisting of ten young scientists from various institutions, has been established. The NTF members continue to provide support in the implementation of the ICM program in China, and have played significant roles in assisting Xiamen and the 10 parallel sites in the development of their SOC reports and coastal strategies through training workshops and technical support.

China's Contribution to PEMSEA as the Regional Coordinating Mechanism for the Implementation of the SDS-SEA

China has contributed financially to the transformation of PEMSEA into a long-term, sustainable mechanism for SDS-SEA implementation.

In 2007, China began to provide financial support to the operation of PEMSEA as a regional coordinating mechanism for



SDS-SEA implementation. In particular, China, through a Cost-Sharing Agreement with the UNDP Philippines, provided annual financial support to the PEMSEA Resource Facility Secretariat Services.

International cooperation continues to be a key principle in sustainable coastal development. It is unequivocal that China's support to PEMSEA continues.

Promoting capacity development and knowledge sharing among PEMSEA community through in-kind contributions to secretariat services and co-hosting of ICM forums and workshops.



In addition to financial support, China also proactively promoted the vision and mission of the SDS-SEA by facilitating knowledge and experience sharing under the regional mechanism.

In 2005, the World Ocean Week in Xiamen (XWOW) was held as an annual event to bring together academics, government officials, international organizations and PEMSEA parallel site representatives to share experiences in marine development and ocean-based blue economy. The XWOW serves as a platform for joint advocacy of ICM among members of the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) to implement the SDS-SEA.



In 2006, China hosted the Second EAS Congress in the city of Haikou, where the *Haikou Partnership Agreement*, establishing PEMSEA as the coordinating and operating mechanism for the implementation of SDS-SEA, was adopted.

Since 2006, China, through the Xiamen municipal government and with the support of SOA, has continued to host and provide staff support to the PNLG Secretariat — a network of local governments implementing ICM in the EAS region. The Xiamen municipal

government has committed to continue providing the same secretariat services beyond 2012.

In July 2011, the SOA and the Government of Dongying City of Shandong Province hosted the annual meeting of the PNLG and the Leadership Forum under the theme, "Implementing Integrated Ocean Management in Support of Blue Economy," as a contribution to the SDS-SEA implementation. The forum adopted the *Dongying Declaration* expressing the commitment of local governments in PEMSEA sites to develop an ocean-based blue economy consistent with sustainable development through the implementation of the PNLG Strategic Action Plan.

In the EAS Congress held in July 2012, three institutes from China co-convened 3 of the 17 workshops. Four parallel sites exhibited their achievements in SDS-SEA implementation and a total of 21 Chinese officials and experts served as chairs, panelists, speakers and resource persons during the international conference. Ocean policies, coastal use zoning, economic studies in ICM, application of ICM in coastal development at local levels, the experiences in China's development of ocean-based blue economy and safeguarding food security through low carbon aquaculture development were well received by participants at the conference.

The Way Forward: ICM Is Key to Materializing Blue Economy Development

In retrospect, I am proud to say that the partnership pioneered by China with PEMSEA told the story of the successful application of bottom-up and top-down approaches in catalyzing policy reforms in ocean governance in a recipient country with the GEF resources. The development of Xiamen's sea use management legislation in

the resolution of sea use conflicts and improvement of sea use efficiency in 1997 bestowed an orderly sea to Xiamen. At the same time, the adoption of the national sea use management law in 2002 was able to implement coastal use zoning scheme across all coastal provinces and municipalities of China.

While the ownership of the results stays with Xiamen and China, the ICM journey and subsequent transformation of coastal and ocean governance would not have been possible without the visionary leadership of Dr. Chua Thia-Eng, former Regional Programme Director of PEMSEA; the consistent nurturing by former GEF Chief Executive Officers Dr. Mohamed El-Ashry, Mr. Leonard Good and Ms. Monique Barbut, who witnessed the miracle-making process in their visits to China; as well as the persistent support from the various Operational Focal Points of the GEF in the Ministry of Finance and National Focal Points of PEMSEA in SOA of China.

The EAS region is at a critical moment. It enjoys the fast and steady economic growth since the economic recession in 2009. Emerging challenges for its coastal and marine ecosystems exist for its growth to be sustainable. The ocean-based blue economy concept advocated by PEMSEA at the Ministerial Forum in 2012 is a timely reminder to policymakers, decisionmakers, local chief executives and other stakeholders to be mindful of the importance of the trade-off between economic development and the maintenance of social and environmental sustainability. Under these circumstances, I am keen to see a scaling up in the partnership of China with PEMSEA in jointly transforming the stereotyped development concept into a new paradigm of blue economy development concept both in China and among the growing economies in the EAS region. I am confident, as firmly as before, that ICM is the key to materializing the concept of an ocean-based blue economy.

* With acknowledgment to Guo Yinfeng.



Sec. Ramon Jesus P. Paje

Sec. Ramon Jesus P. Paje is the Secretary of the Department of Environment and Natural Resources of the Philippines. He has 30 years of public service experience in the environment and natural resources sector. He has a bachelor's degree in forestry from the University of the Philippines Los Baños and a master's degree in urban and regional planning and a doctorate degree in public administration from the University of the Philippines Diliman. He also has a Certificate on Environmental Economics and Policy Analysis from Harvard University and a Diploma on Human Resources Development and Management from the Australian National University.

Establishing a Strong Home Base*

The Philippines has been a proud partner of PEMSEA since it was launched 20 years ago.

When the first phase of the Regional Programme was initiated in 1993, its primary aim was to prevent and manage marine pollution and to pilot-test the Integrated Coastal Management (ICM) methodology in the East Asian Seas (EAS) region. With the help of the Global Environment Facility (GEF), United Nations Development Programme (UNDP) and International Maritime Organization (IMO), ICM pilot sites were set up in Xiamen Municipality, PR China, and Batangas Bay, Philippines.

Over the years, with the Philippines as its base camp, PEMSEA's operation expanded its scope and reach, covering several other countries in the region and responding to much broader ecological issues, such as biodiversity loss, habitat protection, overexploitation of fisheries resources, disaster risk reduction, and so on.

The partnership between PEMSEA and the Philippines continues to flourish since the majority of the country's 93-million population still rely on vital resources and ecosystems services provided by the surrounding bodies of water. In fact, 64 out of 79 provinces share the country's 36,289-km coastline.

Key Achievements through the Sustainable Development Strategy for the Seas of East Asia

Experiencing the benefits of ICM implementation, PEMSEA's second phase focused on developing a regional marine strategy that would guide countries in formulating national policies and legislation on sustainable ocean and coastal development.

In 2003, the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA) was adopted, embodying the region's shared vision for the sustainable development of its coasts and oceans. It provided a clear framework in addressing marine governance issues in the region through specific strategies and action programs.

To this end, the Philippines reached a major milestone in 2006 when the Office of the President launched *Executive Order No. 533*, adopting ICM as a national strategy for the sustainable development of the country's coastal and marine areas and supporting the regional SDS-SEA implementation. EO 533 set forth improved coastal management in the country with the participation of relevant national agencies, local governments, nongovernment organizations and corporate and private sectors.

With the Department of Environment and Natural Resources (DENR) leading the interagency efforts, a national ICM program was launched. The key elements of the national ICM program include:

- a) an interagency, multisectoral coordinating mechanism to coordinate the efforts of different agencies, sectors and administrative levels;
- b) a fixed program of actions for addressing priority concerns;
- c) public awareness programs to increase the level of understanding and appreciation for the coastal marine resources and promote

“This is PEMSEA’s greatest contribution not just to the Philippines but all throughout the region. PEMSEA empowers local governments and coastal communities in taking action to protect and preserve their seas, coasts and river systems.”



Guimaras PMO

a shared responsibility among stakeholders in the planning and implementation of ICM initiatives;

- d) mainstreaming the ICM programs into the national and local governments' planning and socioeconomic development programs and allocating adequate financial and human resources for implementation;
- e) capacity-building program and enforcement mechanisms to ensure compliance with adopted rules and regulations;
- f) integrated environmental monitoring; and
- g) investment opportunities and sustainable financing mechanisms for environmental protection.

The DENR aims to adopt the *National ICM Law* to provide a legal backbone to ICM initiatives throughout the country. At present, the National ICM Law is being reviewed by the Congress and the Senate.

Good Practices in ICM in the Philippines

To date, the national ICM program has covered 8,265.2 km of coastline, about 22.78 percent of the country's total coastline. Moreover, ICM activities are implemented in over 479 local communities around the Philippines. Over the years, ICM programs were established in various locations in the Philippines including Manila Bay and the provinces of Bataan, Batangas and Guimaras. This is PEMSEA's greatest contribution not just to the Philippines but throughout the region. PEMSEA helps in empowering local governments and coastal communities in taking action to protect and preserve their seas, coasts and river systems.

One of PEMSEA's pilot sites for ICM was Batangas Bay, and we're proud that up until today, our partnership with PEMSEA stands strong. As proof of the continuous collaboration, the Provincial Government adopted ICM not only for Batangas Bay but also with its other surrounding bays. It has also allotted regular funding within its annual budget. At present, the Provincial Government of Batangas is working toward the implementation of the *Calumpang River Rehabilitation and Sustainable Development Plan* and in updating the *State of the Coasts* report for Batangas, which was first launched in 2007.

In 2006, an oil tanker carrying more than 2 million L of bunker fuel sank off the coast of the island province of Guimaras. Considered as one of the worst oil spills in the Philippines, the incident pushed Guimaras Province to work with PEMSEA and consider adopting ICM as a feasible response. Through the Provincial Government's active involvement, ICM initiatives continued to be strengthened including the publication of the *State of the Coasts* report of Guimaras in 2012 and the development of the *Guimaras Coastal Strategy and Implementation Plan*.



PEMSEA



In Bataan province, the country's partnership with PEMSEA proved that the private sector plays a very crucial role in the sustainable management of the province's coastal waters. This vibrant public-private partnership, led by Petron Corporation, resulted in the formation of the Bataan Coastal Care Foundation, which has been very helpful in the implementation of the province's ICM program.

There are also ongoing ICM initiatives being implemented in other provinces, such as Bulacan, Cavite and Pampanga.

As a demonstration of support to PEMSEA, the Philippines hosted the EAS Congress 2009, which was attended by 1,480 local and international participants. Carrying the theme, "Partnerships at Work: Local Implementation and Good Practices," it drew attention to good practices on ICM-related initiatives on sustainable coastal and ocean management particularly at the local level. The Congress highlighted locally-initiated actions and innovations that essentially contribute in achieving regional and global environmental targets and commitments. The EAS Congress 2009 was concluded with the signing

of the *Agreement Recognizing the Legal Personality of PEMSEA* by eight East Asian nations. This transformed PEMSEA into a full-fledged international body to work for sustainable development of the region's coastal and marine areas. Furthermore, 11 Ministers and high-level delegates also signed the *Manila Declaration on Strengthening the Implementation of Integrated Coastal Management for Sustainable Development and Climate Change Adaptation in the Seas of East Asia*.

In 2010, PEMSEA and the Philippines, through the DENR and Asian Development Bank, organized the first EAS Regional Stocktaking Meeting for all GEF-funded International Waters projects in the East Asian Seas. The meeting assessed the status and identified the constraints to sustainable management of the regional seas, and concluded that PEMSEA and the SDS-SEA respectively can provide a regional governance framework and scope for integrated and collaborative planning, coordination and monitoring, and reporting of outputs and impacts of national, regional and subregional projects for sustainable management of the seas of East Asia, as well as to promote knowledge management and associated good practices.



PEMSEA/R. Casia



PEMSEA/T. Pelaez

Role of the Philippines in PEMSEA's Transformation

The Philippines has hosted the PEMSEA Resource Facility (PRF) over the last 20 years and still continuously provides financial support for the PRF's office building, upkeep and maintenance. From what started as a single-room office in Quezon City, the PRF has found a new home in a two-storey building within the DENR Compound, thanks in part to the countries that signed the *Haikou Partnership Agreement* in 2006, which established PEMSEA as the implementing arm for the SDS-SEA.

In 2009, the Philippines also heralded the signing and ratification of the Agreement Recognizing the Legal Personality of PEMSEA, a

key achievement of PEMSEA's transformation into a self-sustaining international organization.

In 2012, PEMSEA and the Government of the Philippines, through the Department of Foreign Affairs, signed the *Headquarters Agreement*, establishing the PEMSEA headquarters in the Philippines. This agreement, which grants the necessary diplomatic status, immunities and facilities to PEMSEA, reflects the country's vow to continue supporting PEMSEA's regional initiatives. Currently, the Headquarters Agreement is being reviewed for ratification by the Office of the President and the Congress and Senate, which is expected to be completed by the end of the year or early 2014.

* With acknowledgment to Atty. Analiza Rebueta-Teh, Lindy Gorospe and Dwight Ronan.



Mr. Hiroshi Terashima

Mr. Hiroshi Terashima joined the Japanese Ministry of Transport in 1965, retiring as Assistant Vice Minister in 1994. He was the Technical Session Chair of the EAS Partnership Council until July 2013 and served as Executive Director of the Nippon Foundation from 1994 to 2002. He has long been engaged in developing various proposals related to ocean policy, one result of which was the enactment of Japan's Basic Act on Ocean Policy. He is currently the Executive Director of the Ocean Policy Research Foundation, a member of the World Maritime University Board of Governors and engaged in human resources development for ocean governance.

The Tale of the Missing Flag

The Story behind Japan's Move toward Collaboration with PEMSEA

It was in November 2000 when I visited Dr. Chua Thia-Eng at the PEMSEA office on the grounds of the Department of Environment and Natural Resources (DENR) in Manila, Philippines. At that time, I was in charge of ocean affairs at the Nippon Foundation, researching on new policy fields of comprehensive ocean management and sustainable development, with the goal of establishing a private sector non-profit think tank to make ocean policy proposals both in Japan and internationally. It was toward this end that I had been surveying various ocean think tanks, visiting leading universities and research institutes in Europe and the United States before visiting Dr. Chua in Manila.

The *United Nations Convention on the Law of the Sea* (UNCLOS) came into effect in 1994 as a single convention reexamining almost all ocean issues in light of current use conditions, and *Agenda 21* had been adopted as a program of action for sustainable development at the Rio Earth Summit in 1992. As a result of these milestones, countries and regions began to look for approaches to address ocean problems under the new legal order and policy framework. This set the stage to increased focus on ocean concerns on the global scene.

Dr. Chua kindly welcomed me to his office. After hearing my research objectives, he gave me a detailed presentation on the activities of PEMSEA, the GEF/UNDP/IMO project initiated in 1993. He also showed how the participating countries were undertaking comprehensive management of their coastal zones. After the interview, Dr. Chua escorted me to the entrance, where he pointed out that among the 12 poles displaying the flags of the participating countries, one pole bore no flag.

"This one has been reserved for Japan, but they still haven't decided to join us. Why do you think that might be?" he asked. Somewhat surprised, I asked him what he meant and he said that when he invited all countries in the East Asian Seas (EAS) region to participate in PEMSEA, Japan attended meetings for some time in an observer capacity but, for some reason, remained the only country in the region that had not committed to becoming a member. As a country that had undertaken advanced initiatives toward ocean and coastal problems, he wanted, by all means, for Japan to participate and share its rich knowledge, technologies and experience with other countries.

"In order to manage and sustainably develop the ocean areas of East Asia, all countries in the region need to work together as one. As a man of the region, I definitely want the participation of Japan." This was Dr. Chua's passionate appeal, and I couldn't help but agree with him. As we parted, I promised that on my return home, I would try and encourage the Japanese government to participate.

Looking back, I think this was when PEMSEA, Dr. Chua and I forged a strong bond through ocean policy and regional thinking. That bond became stronger two years later when I moved to the Ocean Policy Research Foundation (OPRF), which was just beginning its think tank activities. When I returned to Japan, my first priority was to pay a visit to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) to urge them to consider Japan's participation in PEMSEA, as the MLIT was the focal point in Japan for the IMO, PEMSEA's executing agency at the time. This resulted in the MLIT actively coordinating with other government ministries and agencies involved with the ocean, and eventually led to the decision in 2001 for Japan to participate in PEMSEA with the MLIT as the focal point. Happily, my efforts were effective in getting the Japanese government to participate, thus bringing all EAS countries into PEMSEA. The significance of this for Japan, for PEMSEA itself and for the other participating countries has been eloquently attested to by the subsequent growth in PEMSEA's activities.

I would again like to express my appreciation to the MLIT officials of that time for their forward-looking approach to the new conditions on the ocean and their active role in promoting participation in PEMSEA.

Value of PEMSEA to Japan

While the Preamble to the UNCLOS proclaims that we should be "conscious that the problems of ocean space are closely interrelated and need to be considered as a whole" and Chapter 17 of Agenda 21 calls for individual states to establish "appropriate coordinating mechanisms for integrated management and sustainable development of coastal and marine areas and their resources," these aims were not necessarily easy to accomplish since states approached ocean problems through vertically and functionally separate administrative organizations. The delay in Japan's decision to participate in PEMSEA was also related to the difficulties involved in the new call for a comprehensive approach to ocean problems.

In Japan, responsibility for ocean affairs is divided among the MLIT, the Fisheries Agency, the Ministry of the Environment (MOE), the Ministry of Economy, Trade and Industry (METI), the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and others. While the MLIT and MOE are heavily involved in the integrated coastal zone management and ecosystem management activities of PEMSEA, no one ministry could adequately respond to all problems of ocean space. These circumstances were an obstacle at the time, preventing individual ministries or agencies from actively seeking out the role of focal point thus, for a long time, leaving the problem of participation in PEMSEA unresolved.

When I visited Dr. Chua at the PEMSEA office in 2000, the idea of one ministry or agency serving as a focal point and obtaining inter-ministry consensus to carry out work on a collaborative basis was not yet a popular one, resulting in ministries tending to avoid projects that would

require responsibility to undertake inter-ministry coordination. In the field of ocean affairs, such collaboration did not become common until after the Basic Act on Ocean Policy of 2007, which created a framework for addressing ocean problems in a comprehensive fashion.

“The Basic Act on Ocean Policy adopts founding principles for ocean governance, stipulates 12 basic measures, requests the government to form a Basic Plan on Ocean Policy and establishes a headquarters for Ocean Policy in the Cabinet.”

As a result of its participation in PEMSEA's initiatives on sustainable development in the seas and coastal zones of East Asia, Japan gained a perspective in which interested parties coordinate and cooperate in formulating policy to address domestic ocean and coastal zone problems in a comprehensive and cross-disciplinary way. It was this new perspective that provided Japan the opportunity to consider how it might best put to use, both domestically and internationally, the rich knowledge, technologies and experience on the ocean and coastal zone that it had built up. This shift in perspective is by no means of small significance.

In 2007, Japan passed its *Basic Act on Ocean Policy*, prompted by a policy proposal put forth by the OPRF and as a result of the full cooperation by Diet Members with a deep interest in the ocean and experts in the various ocean fields. The Act adopts founding principle for ocean governance, stipulates 12 basic measures, requests the government to form a Basic Plan on Ocean Policy and establishes a headquarters for Ocean Policy in the Cabinet.



PEMSEA

To take concrete action on comprehensive management and sustainable development of the oceans, which cover 70 percent of the earth's surface, each country must work hard to address ocean issues under the global legal regime and policy frameworks that are the products of cooperation from countries around the world. As stated in the outcome document from Rio+20, *The Future We Want*, regional initiatives play an extremely important role in focusing and promoting the concrete initiatives of individual countries. It is no exaggeration to say that PEMSEA's activities in East Asia are prime examples of this kind of regional initiative.

PEMSEA is becoming increasingly important in the region as it makes the transition into an international regional institution to facilitate its role in implementing the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA). Its importance can also be seen in its success at providing a medium within which Japan, through its *Basic Act on Ocean Policy* and within international cooperation frameworks, can coordinate and cooperate with individual countries in East Asia on comprehensive ocean management and sustainable development.

Role of the Ocean Policy Research Foundation

The Ocean Policy Research Foundation (OPRF) was established in 1975 as a nongovernment ocean research institute for shipbuilding promotion. In 2000, it broadened its research focus to include all aspects of the ocean.

The oceans are so vast and as they were not, until now, considered an object to be managed, they represent unknown territory for mankind's managerial skills. The reality is well summed up in the old adage, "It's easier said than done." To do things properly, we must increase scientific knowledge about the ocean, develop marine technologies enabling ocean use, development and conservation, share the philosophy incorporated into the UNCLOS that regards the ocean as the "common heritage of mankind" and carry out research on formulating a comprehensive ocean policy based on these needs.

Toward accomplishing these goals, the OPRF carries out dialogues with international institutions, ocean experts from around the world and officials of individual states involved in ocean issues. At the same time, it conducts research into comprehensive ocean management and sustainable development and makes public its findings both in Japan and abroad. Our status as a nongovernmental organization allows us to speak freely, based on the principles embodied in our statutes, and to take prompt action as needed.

Under the leadership of Dr. Chua, PEMSEA has implemented integrated coastal management (ICM) in model sites tailored to local conditions in countries around East Asia, thus succeeding in bringing ICM from an abstract concept to a concrete working model. Recognizing the significance of its initiatives for the EAS region, we at the OPRF are happy to participate in PEMSEA.

The enactment of the *Basic Act on Ocean Policy* and the promotion of ocean measures based on that has allowed the OPRF to accumulate know-how on many aspects of comprehensive ocean management and sustainable development, which we believe would be of use in PEMSEA's activities. At present, we are concentrating our efforts on the promotion of ICM, which is still not being adequately undertaken in Japan, by providing support for local governments' ICM initiatives, promoting coastal management education in universities around Japan and conducting research on how ICM systems might be designed to promote regional development. These initiatives might also be of interest to other PEMSEA members.



PEMSEA/R. Casia

Reflecting on the important role the ocean plays in improving our standard of living and developing our economy, we are also promoting ocean education at the primary and junior high school levels, as well as cross-disciplinary education in universities to develop human resources capable of carrying out the use, development and conservation of the ocean.

We would be most pleased if the fruits of our research in these areas could be of use in Japan, of course, but also through PEMSEA's various

activities, to the comprehensive management and sustainable development of the oceans and coastal zones of East Asia.

As PEMSEA begins full-scale sustainable development activities in the seas of East Asia as a regional international organization owned by the countries of the region, we at the OPRF hope to make further contributions along these lines. I would also like to emphasize, however, that we also benefit from PEMSEA's success, as the OPRF has much to learn from the initiatives being undertaken in countries around the region through PEMSEA's various activities.





PEMSEA

Conclusion

My own participation in PEMSEA, which began from seeing a lone pole missing a flag, expanded in 2007 when I began serving as Technical Session Chair of the EAS Partnership Council, which was established to facilitate PEMSEA's transition to a regional international organization. The role of the Technical Session, in which both government and non-government partners participate, is to discuss problems in the seas of East Asia and draft recommendations toward their solution. The respect shown by PEMSEA for the Technical Session, a venue for discussion by a variety of stakeholders participating and cooperating on a voluntary basis, is a good reflection of its character.

I have been able to fulfill my role as Technical Session Chair thanks to the generous cooperation of all the partners. Also, while the Technical

Session Chair serves ultimately in a private capacity, the OPRF — being a relatively free nongovernment ocean think tank — made my task somewhat easier, as did my work experience both in and outside of government. My term as Chair ended in July 2013 and, in all confidence, passed on the chairmanship to the previous Co-Chair, Professor Chul-Hwan Koh. To step down after seeing PEMSEA successfully make the ambitious transition from a United Nations project to a regional international organization is a moving experience.

In the future, from my position at the OPRF and from the perspective of an ocean think tank, I look forward to seeing PEMSEA develop as a regional international organization owned by the countries of the region and hope to continue to cooperate in its many valuable activities.



Dr. Mok Mareth

Dr. Mok Mareth is a Senior Minister and the Minister of Environment of Cambodia. He has been the PEMSEA National Focal Point for Cambodia since 2001. He previously served as Vice Governor of Phnom Penh, Deputy Minister of Agriculture and a Member of the Parliament for Takeo province. Dr. Mok has a doctorate degree in animal and aquatic biology from Paul Sabatier University.

Moving with the Times: Coastal Management and Leadership in Cambodia*

I am deeply honored to be part of this publication and a partner of PEMSEA in its work in protecting the resources and beauty of Cambodia's coastlines. Through its noble work, PEMSEA, along with the government of Cambodia and other stakeholders, has given communities a taste of success and a longing for more solidarity. Our country's complicated history and hopeful future is, I think, the most suitable example of what a group of committed people can do.

In 1993, Cambodia was on the cusp of an economic resurgence. Human development indices shot up and the economy was in an upswing. However, many observers were uncertain whether the improvements would prove sustainable given the challenges of major governance reforms. Cambodians were still reeling from grinding poverty and were directly affected by limitations in structure and proper economic planning.

As the new millennium rolled around, the need for a more strategic approach to development became more evident. The Cambodian government and its partners began to identify focus areas that would yield results, especially from the grassroots level. We struck gold when we zeroed in on the main source of income for millions of Cambodians — the sea. At that time, while Cambodia's coastal population was barely a million, we felt that this would rapidly increase due to the presence of the port and the increasing demand for beachfront properties.

By 2001, we chose Sihanoukville as the demonstration site for integrated coastal management (ICM). As one of Cambodia's three major economic centers, we saw ICM as an opportunity to improve the sustainable management of the municipality's coastal areas and marine resources amid urbanization. At that time, Sihanoukville seemed to be a viable demonstration site. While daytime population was only around 170,000, the site was starting to be challenged with uncontrolled development and the influx of tourists. The municipality of Sihanoukville is the site of the only deepwater port in Cambodia, which attracts more development activities than other areas in the country, raising more potential for employment for people emigrating to the area. The challenges of overfishing, lack of waste management practices and the squander of coastal areas' tourism potential were glaring and needed to be addressed. It soon became obvious that an integrated approach to coastal management — one that included social and economic components — was needed.

Our country's commitment to the *Sustainable Development Strategy of the Seas of East Asia* (SDS-SEA) is reflected in the *Putrajaya Declaration*. This is important to our country as we move forward the implementation of Cambodia's Rectangular Strategy for Growth, Employment, Equity and Efficiency. It is our collective commitment to sustainable development. The SDS-SEA implementation in Cambodia must therefore be an integral part of national and local planning and implementation, not only by the Ministry of Environment but all concerned agencies and stakeholders.

To get us started, the Sihanoukville Project Management Office was established to oversee ICM activities. The Project Coordinating Committee, an interagency policy coordinating body with representatives of various local government agencies and stakeholders as members, was formed to implement the ICM program. Among the key issues we wanted to address were water use and supply, solid and liquid waste management, coastal and marine habitat deterioration

“The Sihanoukville experience and its example have led to the examination of how we can engage different partners to achieve a common goal in Cambodia. Most importantly, it is the best example of how to elevate the role of communities to the role of a partner. After all, it is the people who benefit in the end and therefore the people themselves should maintain the program’s integrity and effectiveness through continuous hard work and vigilance.”



and livelihood through tourism development, among others. While these seemed to be trivial for other countries, it was a huge task for us, particularly because of the limited capacities, infrastructure and resources at the start of the project.

Helping People Help Themselves

The SDS-SEA implementation in our country is locally-driven. For more than a decade, we have concentrated our initiatives in demonstrating how a local government can engage various stakeholders to address their coastal management concerns. Our efforts in Sihanoukville started in 2001 and by 2003, after several consultations, we were able to work out the Sihanoukville Coastal Strategy, which expresses this collective vision for the coastal area in the municipality. Following the Coastal Strategy, several projects were initiated to address issues of waste management, habitat destruction, water supply and use, and sustainable livelihoods and fisheries management. As with any endeavor, the very beginning proved to be the most difficult. An integrated approach to management sounded easy but breaking down old attitudes and replacing them with untested ones was expectedly met with skepticism. We had to train the local government staff with basic skills for several months before the project could even take off.

Capacity had to be built from the ground up to develop a more environmentally-conscious economy in the province. The limited capacities for integrated management within the country prompted us to seek assistance with PEMSEA to mobilize regional experts who understand our people, respect sociocultural traditions and value working with local communities where much of the intervention is needed. But capacity development needed to start with a fundamental change. We needed to move away the old ways of doing things. We encouraged the communities in Sihanoukville to be

active participants in the process, since coastal management issues are not the only problems to be solved by local officials. In the same manner, local officials have to be reoriented to be more inclusive and participatory.

Despite several limitations, significant progress has been made. For one, our partners at the national and local levels recognize that PEMSEA's support is aimed primarily at catalyzing action and therefore we need to learn to stand on our own, over time. Self-reliance is normally a difficult concept to promote when people are used to receiving development support.

Second, we have learned that building staff confidence through skills training will only be effective if we are able to cultivate a deeper sense of commitment and appreciation of the opportunity given to us by the PEMSEA program. With this appreciation and confidence comes a stronger sense of volunteerism and belonging toward a common aspiration — all of which are necessary to promote action. We have worked in difficult communities, where simple water problems can be solved by overcoming community fragmentation and promoting improved communication and ingenuity among people.

In Stung Hav District, for example, small businesses were spending around USD 34 per month for potable water. But through collaboration with the community, local leaders and small-scale businesses, a water reservoir was rehabilitated. Local leaders needed to convince the community of the long-term benefits of a water reservoir, as people only saw this as a cost and a sacrifice at the start of the project. They had to be convinced that such sacrifices would be all worth it in the end. Today, people in the community benefit from the availability and accessibility of groundwater in local wells, which serves both households and small businesses. This has resulted in monthly savings to both groups.



“Leadership does not just fall on the shoulders of government officials and others with perceived authority. It must be developed in each and every member of the community. It is imperative that national leaders possess extraordinary will and intuitiveness that will carry a project from conception to completion.”



Third, the vision must be translated into action. Tourist arrivals increased from 144,000 in 2004 to 712,023 in 2011. Another opportunity that we needed to seize was to improve livelihoods among communities. A management plan was originally developed for Occheauteal Beach in 2005 but the realization of this plan came a bit later, in 2007, with increased awareness among national officials on the importance of beach management and the promotion of sustainable tourism. A partnership between the government and the private sector provided the necessary financing for implementation of the beach management plan. This resulted in a situation wherein (a) tourists feel safe and know where the swimming areas are; (b) boats have a pier for docking and unloading tourists; (c) vendors are given specific areas to sell their wares; and (d) the community is committed to protecting the natural environment and is made to understand the direct long- and short-term impacts that neglect would bring. There is prosperity and a sense of accomplishment that cannot be matched by any handout or band-aid solution. A recent survey conducted in Occheauteal Beach indicated an average daily revenue increase of USD 50 per day for stall owners, as well as an increase in the number of employed workers along the beach.

These are only among the few examples of local efforts in Sihanoukville. Several others, including waste management, climate change adaptation, port safety and fishery management areas are also being undertaken with indications of positive changes. The Sihanoukville experience and its example have led to the examination of how we can engage different partners to achieve a common goal in Cambodia. Most importantly, it is the best example of how to elevate the role of communities to the role of a partner. After all, it is the people who benefit in the end and therefore the people themselves should maintain the program's integrity and effectiveness through continuous hard work and vigilance.

A lot of work still needs to be undertaken but the demonstration program in Sihanoukville showed encouraging positive economic indicators. For example, poverty incidence in Sihanoukville went from 30 percent of the total population in 2004 to 21.5 percent in 2008. While this cannot be solely attributed to the ICM program, to some extent, the increased awareness among local officials on better governance, and increased engagement of communities contributed to this positive change.

Leadership and Scaling Up

At the national level, our partnership with PEMSEA has shown what effective planning, management and implementation can achieve. It is my hope that an approach similar to the one we employed in this partnership would be the blueprint for more socioeconomic initiatives involving extensive and open collaboration among stakeholders. Recognizing the positive outcomes of efforts in Preah Sihanouk, the three coastal provinces of Kampot, Kep and Koh Kong solicited our support to be part of the national ICM initiatives. Since 2008, we have made a conscious effort to involve the three provinces in various capacity-development activities at the national and regional levels. The Ministry, PEMSEA, collaborating partners and the communities themselves have a lot to be proud of.

The expansion of the ICM program to three more sites, with Preah Sihanouk as the demonstration site, proves that with success comes more responsibility. The integrated approach to coastal management will have to be replicated. We would again have to change the psychological composition and structure of the new target communities. We have to create supplemental income sources for people who are largely dependent on fishing for their livelihood. All of this is doable, all of this is not easy and all of this is worth the effort.

This is where visionary leadership comes in. Leadership does not just fall on the shoulders of government officials and others with perceived authority. It must be developed in each and every member of the community. It is imperative that national leaders possess extraordinary will and intuitiveness that will carry a project from conception to completion. In addition, however, the leaders we want and need must be respectful of people's needs, sensitive to cultural matters and effective conflict negotiators, as disagreements are surely to arise with many personalities and as interests get meshed together. The coastal area is a battleground for a lot of local and international investors. But our role as part of the government is to balance these interests with those of local communities, particularly the marginalized sectors to ensure that development activities are in the interest of the local communities. This is not always easy.

On the government level, we have to make ICM an integral part of governance and policymaking. Coastal management should be included in all socioeconomic development initiatives. We should have a forward-looking approach in protecting our marine resources and that should start at the very top. This must be done with the express cooperation of coordination within concerned government agencies. The government has to fund and support increased technical expertise and forge partnerships with international as well as local government agencies. People depend on our seas so much that future generations must be able to benefit from what we do today. Long-term planning and consistent implementation must be matched with more practical programs for communities. There are a lot of lessons learned through time, by nongovernment organizations, people's organizations and government sectors that must be used to guide more effective program planning and implementation. Our current initiative to implement the SDS-SEA Five-Year Plan for Cambodia includes

“A leader must foster a collaborative atmosphere, one that is inclusive and participative. In endeavors where people’s livelihoods and, therefore, their lives are on the line, no one knows the situation better than the people themselves. We must get them involved not only in the implementation of programs but in the design and management of these initiatives. We must ask them what they need and listen, really listen, when they respond. At the same time, we need to get them to work with us, build ownership to what we’re all doing and to learn together from any successes and failures.”



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the integration of efforts to reduce redundancy of initiatives and maximize resources from all other partners.

Leaders, from the national level down to the community level, must therefore be inspirational. They must lead by example and try to be their best selves even in the face of opposition. They must possess uncanny self-possession without arrogance, confidence without cockiness and equanimity in the face of adversity. A leader must be more like bamboo, swaying and adapting to the wind during a storm, sturdy and upright during the lull. An oak may seem strong and unbendable but that very rigidity will cause it to tumble down if the winds are too strong. In our country, one must know the right combination of persuasion and stronger action. While a firm hand is needed in law enforcement, we must be aware that the absolute implementation of the law cannot be done when people are poorly informed and when their families are hungry. Political change must be integrated with economic and social pragmatism.

Consultation with community members, development partners and other parties is therefore essential for success. A leader must foster a collaborative atmosphere, one that is inclusive and participative. In endeavors where people’s livelihoods and, therefore, their lives are on the line, no one knows the situation better than the people themselves. We must get them involved not only in the implementation of programs but in the design and management of these initiatives. We must ask them what they need and listen, really listen, when they respond. At the same time, we need to get them to work with us, build ownership to what we’re all doing and to learn together from any successes and failures.

Cambodia’s real development challenge is in effectively designing and implementing donor-funded projects. Often,

development actors come into a community, poke around, make their own conclusions, present these conclusions to their organizations and then design the program. In our partnership with PEMSEA, we have proven that a participatory approach may be the longer and more complicated route, but it is also the most rewarding. When people know that they had a hand in the betterment of their lives, they retain ownership of the program long after the funders and outsiders have gone. This is the kind of leadership and programming we deserve. This is the kind of programming we must propagate.

The ICM implementation in Preah Sihanouk also taught us that leaders must be optimistic. If the person at the helm sees the glass as half-empty, then we have already half-failed. A leader should be able to see the community's ability to rise above its present circumstances and help it get to where it wants to be. In many instances, people lose interest and hope that things can change. Our local leaders have shown that change takes time, but it happens with good leadership.

With PEMSEA, we also learned the value of hard work and patience. It seems obvious to say this, but it must be reiterated. Making people value their surroundings and get them to preserve it is hard when these people do not know where to get the next meal and have other concerns besides the short-term income. Organizers and program staff kept talking to them, training them, and changing their minds about their current circumstances. This was not easy but our personnel were more than capable of handling the tasks.

As time goes by, various issues are starting to emerge. New settlers from all over Cambodia and other countries are flocking the coastal provinces, as these are fast becoming economic zones and scenes of stark contrasts between big businesses and ordinary fisherfolks. With more enterprises competing for catch and coastal space, this cycle leads to a race between fishers who are sometimes prompted

to use illegal gears to be able to provide food for their families and the developers who are scrambling for a piece of land near the coastal area. As a result, those who could not compete had to deal with lower fishcatch, indebtedness and, eventually, poverty. We need to face these issues with better planning a more concerted effort on implementation. With our experience in Preah Sihanouk, I am confident that we can face these challenges in the years ahead. I would like to believe that we are better equipped now than when we started in 2001. We have better local leaders and stronger champions who are willing and able to make things happen. We have communities who are more than willing to work for their future.

ICM has become an integral component of the country's socioeconomic development initiatives because of our partnership with PEMSEA. The Preah Sihanouk ICM Program is now being scaled up in all coastal provinces — a proof that the best public information campaigns are from the visible gains of ICM in Sihanoukville. We are glad that through the Preah Sihanouk ICM program, we are able to work with various key ministries such as the Ministry of Tourism, Ministry of Fisheries and Agriculture, Ministry of Interior, among others.

My message to the national and local leaders and partners in ICM is to keep up the good work because there's more to be done. As we congratulate ourselves and the community for what has been achieved in two decades of toil, we must look forward to what lies ahead. As ICM increasingly becomes embedded in national discourse and policy, our work is stretched out before us. Let us use everything we have learned and apply it to our partnership and the next chapter of sustainable development.

* With acknowledgment to Belyn Rafael and Louie-An Pilapil.



Dr. Hong Huasheng

Dr. Hong Huasheng was the Dean of the College of Oceanography and Environmental Science at Xiamen University, the Vice Chair of the International Scientific Committee on Oceanic Research (SCOR) and Chair of China SCOR. She started teaching at Xiamen University in 1992, where she is currently the chief professor of the Coastal and Ocean Management Institute and honorary director of the State Key Laboratory of Marine Environmental Science. Dr. Hong has a doctorate degree in oceanography from the Graduate School of Oceanography at the University of Rhode Island.

The Making of ICM Professionals*

ICM Professionals' Essential Role in Scaling Up ICM Implementation

The strengthening of capacity-building initiatives and embarking on knowledge management at the local, national and regional levels are critical factors for successful integrated coastal management (ICM) program implementation, convincingly demonstrated in Xiamen as well as in the other ICM demonstration and parallel sites in the East Asian Seas (EAS) region.

The making of ICM professionals entails:

1. *Establishment of a core team of ICM trainers with expertise and practical experience in coastal and marine management and implementation.* ICM trainers can be a pool of experts from academic and research institutions who have been engaged in research activities related to coastal and marine resources management, as well as government officials and personnel who are familiar or have prior knowledge concerning ICM through their direct involvement in ICM activities. Obviously, trainers should also possess teaching skills and experience.

2. *Designing and strengthening of course programs.* ICM training and education curriculum include the following features:

- a. For formal education, the focus of the curriculum is on the development of knowledge in natural and social sciences, including chemistry, biology, economics, marine science, etc., as well as technical skills in ocean and coastal management.
- b. For professional training activities, the focus is on attitudes and operational skills that are required for effective ICM implementation and management, with case studies and field observations of ICM projects incorporated into the curriculum.

The Role of Universities in Building Knowledge Platform and Providing Technical Services Related to ICM

The successful implementation of the Xiamen ICM demonstration project for nearly two decades is greatly attributed to the efforts on local human and institutional capacity development. It also demonstrated that the types and level of knowledge and skills required in the development and implementation of an ICM program cover wide areas of natural, social and interdisciplinary sciences. Xiamen University (XMU) has the advantage of having interdisciplinary sciences and strong coastal and marine environmental studies program. The Coastal and Ocean Management Institute (COMI) of the XMU, established in 2005, aims to create a platform to encourage interdisciplinary programs by taking advantage of the multidiscipline resources within the university and collaborating with other highly respected national, regional and global institutions.

The COMI has been actively involved in ICM capacity development and has contributed to promoting interdisciplinary research and

capacity-building in coastal and ocean management in both China and the EAS region. COMI has strengthened the core ICM teaching staff and teams of multidisciplinary experts in the fields of marine science, economics, law, public policy, information and management and so on by promoting cross-disciplinary research within the XMU as well as cooperation with other institutions in the country and across the region. Such cooperation has focused on marine economics, sustainable development of islands, human resource development, coastal and ocean policy and legislation, resource valuation and environmental accounting and integrated watershed to near shore and transboundary pollution management.

The COMI's considerable efforts in ICM capacity development include the implementation of academic education programs and professional training activities. The International Master Program for Marine Affairs (MMA), initiated by COMI, is the first MMA program in China. As a two-year interdisciplinary thesis education program, it exemplifies the partnerships among colleges from different disciplines (**Table 1**). Academic cooperation and students' exchange are also conducted with the other famous universities within and outside PR China, such as the University of Inha (RO Korea), University of Delaware and University of Rhode Island (USA).

Beginning in 2007, the MMA program has enrolled 87 students in total, including 28 overseas students from Bangladesh, Cambodia, England, Eritrea, Indonesia, Oman, RO Korea, Rwanda, Sweden, Ukraine and the United States. Furthermore, COMI has just initiated the doctorate degree program for Marine Affairs, a new upgrading for the ICM degree education. Through the implementation of the MMA Program, COMI contributes to the human resources development, especially for creating a new ICM generation, thereby, benefitting ICM scaling up across the country and the region.

Table 1. Curriculum List for International MMA Programs (Teaching in English).

No.	Course	Type	Credits
1	Marine Science and Ocean Uses	Core course	3
2	Ocean and Coastal Management	Core course	3
3	Economics of Marine Resources and Environment	Core course	3
4	International Ocean Law	Core course	3
5	Marine Policy	Required	2
6	Public Policies Analysis	Required	2
7	Literature Review	Required	2
8	Geo-informatics Technology and Its Application on Coastal Management	Elective	2
9	Regional Ocean Governance	Elective	2
10	Marine Spatial Planning	Elective	2
11	Seminars for Presentation Practices	Elective	2
12	Marine Ecosystem Management	Elective	2
13	Introduction to Marine Affairs	Core course	3

The Xiamen International Training Center for Coastal Sustainable Development (ITC-CSD) under COMI was established in 2001 with the joint efforts of the XMU, the Xiamen municipal government and State Oceanic Administration (SOA) of China. It is also designated as a PEMSEA Regional Learning Center for ICM with the expanded role in undertaking ICM professional trainings for coastal managers and practitioners in China and the EAS region. The faculty of the XMU in marine and environmental sciences leads in curricula developing and knowledge training for the ITC-CSD (**Table 2**). The successful practices of Xiamen ICM and experiences from PEMSEA demonstrations sites serve as a “training laboratory” for the ITC-CSD to facilitate the dissemination of practical experiences and expertise of ICM at different levels. Government officials, as well as personnel from research institutes, also serve as the external resource persons for ICM training.

Since its establishment, the ITC-CSD has conducted 46 training programs including national and regional ICM trainings, study seminars and tours. More than 1,200 people were trained, among them are

scholars, researchers and senior officials coming from nearly 20 countries in Africa, America, Middle East, Southeast Asia, Australia and Oceania. The center has maintained an effective cooperative network for ICM scaling-up programs with PEMSEA, the Korea Maritime Institute, the Ministry of Marine Affairs and Fisheries of Indonesia, the Fisheries Department of Thailand, the Ministry of Natural Resources and Environment of Vietnam, as well as the SOA and the Ministry of Environmental Protection of PR China.

Table 2. List of Curricula and Field Studies.

No.	Title for Modules
1	Concepts and Practices of Coastal Management
2	Economics of Marine Resources and Environment
3	Marine Policy and Law
4	Integrated Watershed Management
5	Technologies and Tools Applied in Ocean and Coastal Management

No.	Title for Field Studies
1	Coastal Landscaping and Beach Protection for Xiamen Round Island Road
2	Wastewater Treatment of Xiamen Municipality
3	Integrated Treatments of Yundang Lake
4	Seawater Use Zoning Scheme and Protection of Marine Habitat in the Western Sea of Xiamen
5	Gulangyu Island and Its Ecotourism Development
6	Maluan Bay Restoration Project and Environmental Investment through PPP Approaches
7	Economic Contribution and Environmental Management of Xiamen Port
8	Construction of Man-made Beach in Xiamen and Its Significance to Improve the Coastal Tourism Resource and Restore the Ecological Landscape
9	Development and Utilization of Wetland in Urban Area: Construction of Wetland Park in Wuyuan Cove
10	Development and Utilization of Wetland in Newly Developed Area: Construction of Xiamen International Garden and Flower Exposition Park (Yuanboyuan Park)
11	Integrated Aquaculture Treatment of Jimei Coastal Line
12	Ecological Rehabilitation through Seawall Uncorking



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PEMSEA has conducted extensive cooperation with COMI in capacity-building, scientific research, information sharing, workshops and seminars, ICM curriculum development, and others, through regional ICM trainings, study tours and joint workshops during the EAS Congress, World Ocean Week in Xiamen (XWOW) and PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) meetings. Through the *Memorandum of Agreement on Capacity Building for ICM* between the XMU and PEMSEA, signed in early 2011, PEMSEA has

provided support in facilitating COMI's establishment of an international learning network of ICM and marine affairs. PEMSEA has provided many opportunities for mutual academic exchange of faculty by promoting the involvement of COMI faculty in PEMSEA's training programs and also the support of PEMSEA resource person in COMI's education program and training activities. PEMSEA also provides model ICM training courses, reference materials, case studies for the ICM curricula of MMA and professional trainings of the ITC-CSD.

“Through the Memorandum of Agreement on Capacity Building for ICM between the XMU and PEMSEA, signed in early 2011, PEMSEA has provided great support in facilitating COMI’s establishment of an international learning network of ICM and marine affairs.”



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Future Prospects in Training and Education in ICM

As mentioned in PEMSEA’s SDS-SEA Implementation Plan (2012–2016), capacity development and knowledge management are key enabling targets, with the urgency of developing more innovative tools for knowledge capture, knowledge sharing and transfer to scale up SDS-SEA implementation across the region. In response to this urgency, the international capacity development platforms need to upgrade the competencies of their ICM professionals in order to keep pace with current needs in ICM development and implementation.

First, the ICM training and education knowledge-sharing programs need to include resources and skills that address new and emerging issues identified in the SDS-SEA Implementation Plan, including adaptation to climate change, early warning information systems and disaster risk reduction and management, integrated riverbasin and coastal management, ecosystem rehabilitation, biodiversity conservation and marine protected areas (MPAs) and environmental monitoring, evaluation and reporting.

Second, there is a need to strengthen the curricula and promote the streamlining of training courses by adopting model training courses, such as PEMSEA ICM model course, the IMO’s OPRC model courses and the train-sea-coast program. ICM training needs to incorporate more case studies generated from the regional and national ICM pilot projects in order to put more emphasis on ICM practices on-the-ground, in addition to the broad knowledge and interdisciplinary sciences. The academic education program, such as the MMA, can also be better integrated into the professional ICM training program to develop degree trainings for on-the-job ICM practitioners, coastal managers and planners to effectively upgrade the local capacity.

Third, it is necessary to create collaborative strategies and mechanisms for networking of universities and research institutions in order to develop more competent teams of multidisciplinary experts that can be mobilized to participate in national, regional and international activities, and help build a new breed of ICM leaders, managers and scientific professionals. Furthermore, building up a regional knowledge management and information sharing mechanism and encouraging the systematic creation, sharing, learning, enhancement and dissemination of knowledge is essential to facilitate meaningful participation and transforming available data into useful products for planning, decisionmaking and policy development in ICM.

In conclusion, by successfully implementing the academic education program of the MMA and professional training activities conducted by the ITC-CSD, COMI has made considerable progress in human resource development and institutional capacity-building, through continuous capacity strengthening of ICM leaders, managers and technical and scientific professionals. Under the SDS-SEA Implementation Plan, and with the continuous support of PEMSEA, COMI is dedicated to enhance its efforts and leadership as a national and regional ICM Learning Center, and to provide strong scientific and technical services for wise decisionmaking and effective management toward sustainable development of the coastal and oceans in the EAS region.

* With acknowledgment to Xue Xiongzhi and Xu Xiaochun.

References

Chua, T. E. 2008. GEF/UNDP International Waters Program 2012.

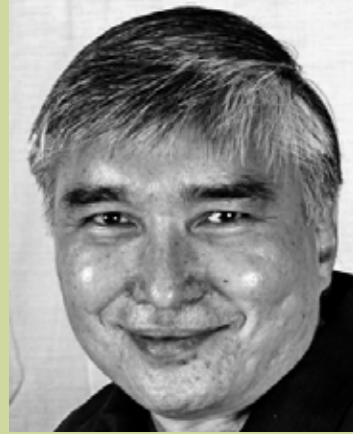
Chua, T. E. 2010. Terminal Report of Chua Thia-Eng to COMI, Xiamen University During the Period of His Tenureship (2008–2010).

Chua, T. E. 2013. "Coastal and ocean governance in the seas of East Asia: PEMSEA's experience." *Coastal Management*, 41:2, 99–119.

Hong, H. S. and X. Z. Xue. 2002. How Scientific and Technical Support Has Contributed to the Achievements of ICM Program in Xiamen, RNLG Meeting on Sharing Lessons Learned in Sustainable Coastal Development.

Hong, H. S. and X. Z. Xue. 2006. "Building up a training base for integrated coastal management through partnerships in Xiamen." *Ocean and Coastal Management*, 49 (2006): 685–695.

PEMSEA. 2012. Proceedings of the Workshop on Transforming Human Resources into Resourceful Humans, EAS Congress 2012.



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The Role of Scientists in Coastal Management

For the past two decades, the *GEF/UNDP/IMO Programme on Building Partnerships in Environmental Management for the Seas of East Asia* (PEMSEA) and its predecessor, the *Programme for the Prevention and Management of Marine Pollution in the East Asian Seas* (MPP-EAS), have been addressing the sustainable management of East Asia's coastal and marine environment. The program is guided by the *Sustainable Development Strategy of the Seas of East Asia* (SDS-SEA), a visionary road map focusing on the long-term sustainability of coastal areas. The challenges of managing East Asia's coastal zone are numerous and complex, considering the diversity and intensity of human pressure and the present worrying state of the environment. The integrated coastal management (ICM) framework, which has been introduced and widely promoted, presents a more efficient and holistic platform for identifying action that addresses the multitude of use conflicts and provides a clearer direction toward sustainable development. Traditionally an open-access environment, the region's coastal zone has been extensively exploited and rapidly degraded. This situation, if not adequately addressed, will soon lead to permanent loss of ecosystem services to the detriment of coastal states and their people. The plethora of problems stem mostly from economically driven overuse that gives little consideration to environmental integrity.

Long-term sustainability policies require equal attention to environmental quality, societal well-being and effective governance, and science has a large role as it provides an objective basis for formulating effective management policies that contribute to sustainable development. The entire ICM cycle is dependent on science, right from the initial

preparatory phase where scientific involvement is identified, to the final refining and consolidating phase, which requires synthesis of new data and problem-solving experiences. The science involved in supporting the ICM framework has to be interdisciplinary (biophysical and socioeconomic) as managing the coastal and marine environment in the East Asian Seas (EAS) requires addressing complex, serious and urgent challenges. Strong science-based management policies can help reduce the level of coastal zone perplexity. PEMSEA has fully engaged the region's scientific community and two initiatives (one in the Philippines, and the other in Singapore) that demonstrate the highlights of the involvement of science are described.

The Manila Bay Story

Back in the 1990s, Dr. Chua Thia-Eng had a mantra: "Science-based integrated coastal management!" Intuitively, that made sense to those of us trained in the natural sciences, but it was admittedly less clear how this was to be realized in a highly complex and urbanized developing country. How, indeed, will scientific facts and findings find their way to policymakers and decisionmakers charged with managing coastal areas so that such input would matter? Soon after, Manila Bay, considered a pollution hotspot in East Asia, would provide glimpses of integrated management of a large and complex coastal area anchored on and benefited by science-based activities and information. As may be typical of coastal semi-enclosed bodies of water adjacent to a megacity, Manila Bay has been constantly confronted with rapid coastal development, a high population growth rate, increasing habitat degradation, land- and sea-based pollution and overextraction of marine resources.

In the late '90s, PEMSEA started implementing the *Manila Bay Environmental Management Project*. Multifaceted in thrust and scope, the management of Manila Bay was to be anchored on science

and the best available knowledge and information. Thus, many aspects of the program required current and validated information and sought the help of scientists as well. This included the Oil Spill Contingency Plan, which needed an appreciation of the physical oceanographic and meteorological processes in Manila Bay; an Integrated Environmental Monitoring Program, which required the review and validation of previous sectoral monitoring programs; and the Refined Risk Assessment of the Bay, which helped identify the most important pollution issues that would impact the human population (e.g., extremely high coliform counts in certain coastal areas and trace metals). The Integrated Information Management System (IIMS) offered a structure and form to bring information together to provide spatial and temporal perspective on the state of the bay as a function of activities and inhabitants. The IIMS became the basis for the Manila Bay Area Environmental Atlas — the integration, distillation and visualization of the many facets of Manila Bay — that was both informative and engaging.

It was around the initiation and pursuit of the *Manila Bay Environmental Management Project* that a parallel initiative took place. In 1999, a group of individuals, led by Atty. Antonio Oposa Jr., sued 12 government agencies in the Philippines. The complainants asserted the agencies were liable because Manila Bay had deteriorated to a state of pollution and these agencies were therefore responsible for its cleanup. Interestingly enough, the complainants cited, among others, the very high coliform counts in the bay obtained by the Department of Environment and Natural Resources (DENR) through regular monitoring activities. The bacteria levels exceeded the water quality criteria for seawater meant for contact recreation and swimming (Class SB). While the case was decided initially in favor of the complainants, appeals for reconsidering the decision were made with the higher courts and meant almost 10 years of litigation before the final decision by the Supreme Court was rendered.

As the years passed, the interagency technical working group (TWG) gathered more information through the PEMSEA initiative. By 2005, a Manila Bay Coastal Strategy and an operational plan were completed, detailing the vision, mission, objectives, strategies, activities and tentative costs to address the pollution issues of Manila Bay. Thus, while the court case against the government was making its way up the judicial mill, there was already a plan of action available for Manila Bay to be implemented by government agencies and partners in the private and academic sectors. When the Supreme Court finally decided on the Manila Bay case in 2009, upholding the decisions of the lower courts and ordering the named government agencies to clean up Manila Bay and bring it back to Class SB waters, it had access to the actions expected of various agencies and partners in the Manila Bay Coastal Strategy. In fact, the government agencies were tasked by the Supreme Court to update this document, particularly the targets of each responsible entity.

At the start of this millennium, PEMSEA's decision to apply the approaches and tools of ICM in Manila Bay rooted on scientific grounds and the best-available validated information must have helped in providing details to the Supreme Court decision. Today, almost 10 percent of Metro Manila's sewage is treated, and the expectation is that in 20 years, 100 percent of sewage will have been treated. Efforts are underway to relocate informal settlers along major rivers that empty into Manila Bay. Meanwhile, the Manila Bay Coordinating Office (MBCO) was created under the Office of the Secretary of the DENR and has been tasked by the Supreme Court with the responsibility of coordinating the activities and outputs of the DENR and other government agency respondents. Interagency working groups have been working to consider their agencies' targets and progress, while the IIMS is also being revived.

Even if the pace toward a much cleaner Manila Bay is slow and the positive developments are limited, there is hope. A much cleaner

Manila Bay surrounded by a developing country megacity is within reach, hopefully within one generation.

From ICM to IUCM (Integrated Urban Coastal Management) in Singapore

With a limited land area of 714.3 km², the entire island state of Singapore is considered to be within the coastal zone. Highly urbanized with infrastructure to support the population of 5.3 million, most of its 182.4-km coastline has been developed or modified. Its similarly limited sea space of 744 km² supports one of the world's busiest ports as well as major oil refineries and other marine-based industries. The coast and sea are intensively used for diverse activities and necessitated massive land reclamation that replaced the natural coastal habitats with human-modified ones. With continued economic growth and development, utilization of the coastal space will intensify further and rationalization of coastal use requires a more holistic approach.

The first attempt at introducing ICM to Singapore was through the regional *ASEAN-USAID Coastal Resources Management Project* initiated in 1987. The project was aimed directly at addressing coastal use conflicts and managing the huge challenges through an ICM framework. The first activity was the preparation of a coastal profile that assesses the environmental status, examines the legislative and administrative arrangements, identifies the coastal use conflicts and management challenges and provides an analysis on how an ICM framework can reduce the economy-environment conflict. The emphasis on science was apparent because of Dr. Chua Thia-Eng, who was the project's director. The *Coastal Environmental Profile of Singapore*, published in 1988, was prepared by a team of academics — a geographer, a biologist and an economist. The publication could be considered as a purely academic exercise but contained important, relevant and reliable data relating to the coastal environment for the first



PEMSEA/J. Castillo (top) and UP-MSI/G. Jacinto (bottom)



OSRL (top) and PEMSEA (bottom)

time. It provided the basis of a follow-up document, *Singapore's Urban Coastal Area: Strategies for Management*, that today still serves as a useful reference of the social, economic and environmental situation during the late 1980s. There was already recognition that the country's coastal area is collectively urbanized.

The rapid and extensive development of the coastal area continued unabated, and concerns started to be raised more loudly about the loss of ecological integrity. Environmentalists and scientists could only watch and lament on the increasing degradation and loss of coastal habitats. From the mid-1990s, a surprising turn of events became apparent. Mitigation of impacts from large coastal development projects were not only considered but implemented. Mangrove transplantation and sediment screens to protect coral reefs were activated with the Semakau Landfill development. Many projects since have included coral transplantation and other measures to minimize loss of coastal and marine habitats, and most are accompanied by Environmental Monitoring and Management Plans to provide real-time measures and immediate responses.

The reorganization of relevant government agencies signalled the stronger commitment to sustainable development with the formation of the Inter-Ministerial Committee on Sustainable Development in 2008. An interagency Technical Committee on the Coastal and Marine Environment (TCCME) has been formed to address the multitude of activities and plans and provide scientific information to policymakers. It would ultimately look into the adoption of ICM for Singapore. The Biodiversity Centre of the National Parks Board became the National Biodiversity Centre in 2008 with a Coastal and Marine Environment Programme Office that facilitated research and dialogue with other agencies. It commissioned an updated coastal profile in 2010 and a review of legislative arrangements on the marine environment. The strategy being adopted is for an IUCM framework that takes into account the extensively developed and urban conditions that signify

“The entire journey from ICM to IUCM has been supported consistently by science. Research over the last three decades has strengthened a better understanding of the coastal and marine environment that will support the formulation of effective IUCM policies.”



PEMSEA/D. Ronan

the coastal state of Singapore. The entire journey from ICM to IUCM has been supported consistently by science. Research over the last three decades has strengthened a better understanding of the coastal and marine environment that will support the formulation of effective IUCM policies.

PEMSEA as a Regional Platform for Cooperation in Multidisciplinary Science

Tertiary education is available throughout the EAS region, and many of the universities have ICM-related academic programs. While degree courses in ICM itself are not common, there is adequate expertise in the different fields of science that can be tapped to support ICM initiatives. There is a demand for ICM-specific degree courses as ICM implementation scaled up and universities could take note and respond to that need, and participate in providing ICM practitioners with the required skill and expertise. This entails development of a multidisciplinary education and cooperation between different faculties, as most universities are structured along different disciplines with minimal interaction between them. Until such time when multidisciplinary courses become more possible within the current discipline-based structure of universities, expertise will have to be sought from the various faculties and research institutions.

PEMSEA can facilitate the cooperation in multidisciplinary science between the region's institutions of higher learning. Some institutions have specific strengths and expertise, which can be shared through collaborative efforts. They can contribute to capacity exchange and enhancement and play a major role in training and capacity-building. PEMSEA can and has helped to facilitate scientific capacity improvement throughout the region and has actively encouraged the engagement of the scientific community in participatory as well

as advisory roles. Recognizing Regional Centers of Excellence (RCoE) is one of the activities that acknowledge institutions with specific research strengths. To date, the first PEMSEA RCoE to be recognized is the Centre for Marine Environmental Research and Innovative Technology (MERIT), a conglomerate of research institutions in Hong Kong that is creating cutting-edge research in marine pollution. The Marine Science Institute of the University of the Philippines (UP-MSI) has just been designated as the second RCoE in the area of coral reef research and marine protected areas. Recognition of more RCoEs is under consideration.

Many of the region's scientists have been involved with the activities of PEMSEA from full involvement with ICM implementation to regular training and capacity-building through workshops and seminars. Scientists have also played a positive role in raising public awareness into action to safeguard the region's coastal heritage and explaining the scientific rationale of environmental sustainability to policymakers and coastal managers. PEMSEA established the Multidisciplinary Expert Group (MEG) to help it promote a strong science-based management for the region's seas. The triennial EAS Congress offers a useful forum for scientists, practitioners and policymakers to discuss coastal environment issues in ocean and coastal governance within the framework of the SDS-SEA. Scientists from different disciplines were also invited to participate in specialized workshops to address emergent issues, such as ecosystem carrying capacity and risk assessment.

The partnership between the region's scientists and PEMSEA is valuable to the mission of the SDS-SEA. Scientists have played a strong role in contributing to PEMSEA's achievement in the management of the East Asian Seas, while scientists and scientific institutions have benefited from the recognition and further potential contribution to the sustainable development of the region's coastal zone.



PEMSEA/A. M. Harjo



Mr. Pan Shijian

Mr. Pan Shijian is the Secretary-General of the PEMSEA Network of Local Governments for Sustainable Coastal Development and the Vice Chair of the Chinese People's Political Consultative Conference of Xiamen. He was the principal investigator of many major infrastructure projects, including Xiamen Bridge, Haicang Bridge and the Ring Road of Xiamen Island. He was the Vice Mayor of Xiamen from 2000 to 2011, during which he led a series of marine environmental restoration projects, such as beach rehabilitation, integrated sea area management and comprehensive bay development such as Wuyuan Bay and Xinglin Bay. Mr. Pan has a bachelor's degree in ship design and manufacture.

The Xiamen Experiment*

The Seas of Xiamen: How Important Is It?

Xiamen (*Amoy*), meaning "the gate of China" in Chinese, is usually called a "garden city" because of its beautiful and peaceful environment. The 390 km² sea area is surrounded by 226 km coastline and 1,699 km² land, on which 3.67 million people (at the end of 2012) enjoy their lives. Beyond these data, the four-word Chinese sentence, "Cheng zai hai shang, hai zai cheng zhong" meaning "the city is on the sea and the sea is in the city," best describes how close Xiamen is with its sea. Aside from this, the seas are also home to wildlife, such as egrets, amphioxus, Chinese horseshoe crab and Chinese white dolphins, as well as mangroves.

As a natural asset for its people, the Xiamen seas provide 27-km deepwater waterfront, which makes Xiamen Port one of the largest ports in the world with 7.29 million twenty-foot equivalent unit (TEU) container throughputs in 2012. In the same year, the city also attracted over 40 million visitors from home and abroad. Its marine economy contributed up to 12.02 percent of the gross domestic product (GDP) of Xiamen in 2010. The sea is therefore crucial to Xiamen's sustainable socioeconomic development. The people of Xiamen and its municipal government have realized that sea areas should be well managed, marine resources be sustainably utilized and marine environment be strictly protected.

The Introduction of ICM to Xiamen: Why?

Following a period of high-rate economic growth, Xiamen was severely affected by pollution. In the Yuandang Lagoon, untreated wastewater from more than 300 industries and domestic sewage from a population of several thousands were directly discharged to the lagoon. The situation became more worrisome due to poor urban infrastructure, shortage of financial capacity, low environmental awareness and lack of scientific knowledge of the ocean environment. In addition to the pollution, we also found that the sea use became so congested that the further development of major marine industries was being hampered by sea use conflicts. For example, in the West Sea where major ports were located, cages for marine aquaculture were even occupying the shipping lanes.

How can we restore the environment and bring back the “garden city” to its people? How can we manage the sea in an orderly fashion? These questions tested the determination and wisdom of the Xiamen municipal government at that time.

The wisdom came from the ancient Chinese civilization. People realized that we needed *he*. *He* in Chinese pinyin means “harmony between human and nature as well as human and human.” The challenge was to find a win-win solution to achieve economic development while protecting the environment. On the other hand, we were also open to learn from the experiences of the international community. Therefore, when Dr. Chua Thia-Eng visited Xiamen with the concept of the integrated coastal management (ICM) in 1993, Xiamen accepted the concept without question. Coincidentally, *he* in Chinese pinyin can also be referred to as “integration.” And so, the Xiamen ICM story began.

Developing ICM Practices in Xiamen

In 1994, Xiamen became PEMSEA's pilot ICM demonstration site as part of the GEF/UNDP/IMO Project on *Marine Pollution Prevention in the East Asian Seas* (MPP-EAS). During this phase, Xiamen focused on pollution reduction and water quality improvement. Wastewater treatment plants were built, and more than .7 km² of water area was added to Yuandang Lagoon through dredging. People began to realize the mutual benefits of environmental protection and economic development in the long run. According to an environmental and socioeconomic benefits and costs analysis study of Xiamen ICM, every 1 Chinese yuan invested was rewarded 14.9 times.

At the same time, Marine Functional Zoning Scheme was developed in Xiamen in 1997 as a tool to address multiple sea use conflicts. This innovative practice has contributed to the enactment of the Law on the Administration of the Use of Sea Areas in 2001, which establishes three sea use management mechanisms, i.e., sea user rights, marine functional zoning and payment for sea use.



Xiamen Ocean and Fisheries Bureau

Impact on the Ground: Measuring Benefits in Xiamen

The successful experience of Xiamen has been widely recognized by international organizations. In the Second East Asian Seas (EAS) Congress, Xiamen was awarded the PEMSEA Gold Award for Outstanding Performance in Coastal Governance. The key features of the Xiamen ICM model include public participation, innovative legislation, institutional arrangements, science-informed decisionmaking and joint law enforcement across agencies.

However, the most important achievement of Xiamen ICM is the institutionalization of the concept of integration. The principles of ICM have been deeply embedded in Xiamen's decisionmaking process and have stimulated the local government's innovation in marine management.

In the succeeding phases of PEMSEA, Xiamen continued to serve as an ICM demonstration site and slowly scaled up ICM practices broadly to include biodiversity conservation, comprehensive bay development, beach and mangrove rehabilitation, payment for ecosystem services to the upstream of the Jiulong River, etc. Many of these were pilot projects in China and the East Asian Seas region.

Wuyuan Bay development is one of the best practices showcasing how the idea of integration has changed the orientation of decisionmaking from a single and sectoral objective to balancing multiple interests. As part of the ring road of Xiamen island, the original plan was simply to construct the road along the dike at the mouth of the bay, which used to be aquacultural ponds. This approach would entail low construction costs and large reclaimed land thereby resulting in high return on investment in a short period of time. However, the Xiamen

“The principles of ICM have been deeply embedded in Xiamen’s decisionmaking process and have stimulated the local government’s innovation in marine management.”

local government recognized that this approach would bring about far greater “invisible costs” including the loss of ecosystem services of the bay, particularly the wetland for the birds and the marine waters for dolphins. It was therefore decided to build a bridge instead, the bay was dredged up to enlarge the water area, the coastline was restored for a constructed beach, and yacht berths and a freshwater wetland were declared as reserved areas as paradise for many rare and endangered bird species. Now the original 12.57 km² area muddy flat in Wuyuan Bay has been transformed into an area for leisure and other activities, a venue for most promising industries (including a constructed beach, perfect water area for sailing-boat racing, 22 museums of culture, history and art exhibitions and 500 yacht berths), and a home to rich biodiversity (Chinese white dolphins in the sea and many birds in the wetland park). At the same time, the once barely livable place has become a high-class residential area.



Egrets



Amphioxus



Chinese White dolphins



Wu Yuan Bay before and after.

Xiamen Municipal Government

Looking Forward

Building on its experiences in ICM, Xiamen is now ready to embrace the blue economy in the new era. Xiamen has just been selected as one of the State Oceanic Administration's (SOA) first demonstration sites on marine ecological civilization development. As a result, the Xiamen seas have started to hold various sailing events, many yacht berths are being built, a home port for cruises is being planned and newly emerging industries are expected to be prominent.

More importantly, the ocean development will be shared and enjoyed by its people and the ocean will be more accessible to the public in the future. In the coming years, several key public service infrastructures, including an ocean-themed museum and a national-level marine cultural park, will be constructed and more important habitats will be restored along the coast. More ocean-related opera and other cultural events will also be developed.

I feel blessed to be born in this beautiful coastal city of Xiamen. Moreover, it is my honor to be elected and to serve the people as a vice mayor and to have witnessed the great process of marine development in Xiamen. The success of ICM implementation in Xiamen is attributed to the strong collaboration of various entities, partners and stakeholders. In particular, the wise leadership of the higher level governments of China and its departments including the SOA, the continuous support from the people of Xiamen and the strong commitment and long-term efforts of the Xiamen municipal government have made these developments possible. Lastly, I would like to acknowledge the guidance from PEMSEA and its distinguished leader, Dr. Chua Thia-Eng, in making Xiamen into an ICM model for the East Asian Seas region.



Xiamen Ocean and Fisheries Bureau



Xiamen Ocean and Fisheries Bureau

Indeed, Xiamen has greatly benefited from this international cooperation. In return, Xiamen would like to share its experience with the world by hosting the World Ocean Week in Xiamen (XWOW) and the Secretariat of PEMSEA's Network of Local Governments for Sustainable Coastal Development (PNLG). Since 2007, more than 2,000 participants from around the world have participated in the XWOW every November and 35 local governments have subscribed to the vision, mission, goals and objectives of the PNLG. I hope that through our efforts together, more and more people will benefit from the platform and network for coastal sustainable development.

People's dreams are closely linked to the vast ocean. Xiamen has flourished and grown because of its seas in the past decades. I sincerely believe that the stories of developing, managing and protecting the oceans will continue in Xiamen and elsewhere.

Taking this opportunity, I would like to wish PEMSEA's new success in the next 20 years by gathering more people from seas of East Asia together for their sustainable development!

* With acknowledgment to Fang Qinhu.



Ms. Marilou G. Erni

Ms. Marilou G. Erni is the General Manager of the Petron Foundation and a lead convener of Petron's Sustainability Council. She is also the President of the Bataan Coastal Care Foundation, Chair of the Corporate Network for Disaster Response and former Chair and President of the League of Corporate Foundations. She was a six-year member of the Global Reporting Initiative Stakeholder Council and a Senior Fellow of the Synergos Institute. She received the 2011 Global CSR Gold Award for CSR Leadership for her active CSR and sustainability advocacy. Her efforts have resulted in 100-percent employee engagement and in various local and international recognitions for Petron.

Building on a Solid Foundation*

The Early Initiatives of Petron Foundation in Bataan

Petron Corporation is among the thousands of stakeholders in Bataan, a peninsular province in the Central Luzon region of the Philippines. Bataan juts out of the mouth of Manila Bay, the gateway to the country's social, political and economic center. It serves as the industrial heartland of Central Luzon and is at the forefront of socioeconomic growth in the 21st Century.

As a province, Bataan teems with natural, physical and cultural values that create a positive living environment. These same values are threatened by resource degradation, destructive fishing, land and sea pollution, multiple resource use conflicts and other issues that cross physical and political boundaries.

Seen in a larger context, Bataan serves as a microcosm of what is happening in the seas of East Asia. Manila Bay, where Bataan is a major part of, is unfortunately considered as one of the major marine pollution hotspots in this region, along with the Jakarta Bay, Malacca Straits, Bohai Sea and Gulf of Thailand. The actions in Manila Bay are inextricably linked with these bodies of water and the countries enveloped by them.

In the case of Petron, there are significant stakes at hand in Bataan. As the country's largest oil refining and marketing company, the core of the business is in the refinery in Limay, Bataan. This 180,000 barrels per day (rated capacity) Integrated Management Systems-certified facility produces diverse petroleum products that fuel nearly 40 percent of the country's energy requirements. The refinery has been a stakeholder of the province since 1962.

Petron's commitment to corporate social responsibility (CSR) and sustainability in the province is evidenced in the refinery's vision of being the community's partner in sustainable development and a steward for the environment. In broader terms, we see our involvement as contributing to the sustainable development of Bataan and the rehabilitation of Manila Bay by revitalizing ecosystems and generating alternative livelihood opportunities, all while partnering with UNDP, people's organizations and Bataan provincial and local governments and exercising leadership in the Bataan Coastal Care Foundation (BBCF).

Given these concerns, the private sector made a collective decision to work together with the provincial and local government of Bataan to come up with a strategic solution. In 10 February 2000, the Provincial Government of Bataan and its business community, led by Petron Foundation, with the guidance of GEF/IMO/UNDP, signed a public-private partnership (PPP) agreement toward the sustainable management of the province's natural resources and development. This made Bataan the first integrated coastal management (ICM) parallel site of PEMSEA. As a parallel site, Bataan would implement an ICM program using its local resources through the partnership that combines the strengths and resources of the local government and the private sector, as well as the participation of the civil society.

In establishing the Bataan ICM Program (BICMP), Petron took the lead role in concretizing *Executive Order (EO) No. 533*, establishing and adopting ICM as a *National Strategy to Ensure the Sustainable Development of the Country's Coastal and Marine Environment and Resources*. This national directive aligned perfectly with the BICMP's objectives: (1) developing and institutionalizing a strategic coastal management framework; (2) engaging the public and private sectors in a long-term collaboration; (3) increasing stakeholder awareness about the environment and their role in its care; and (4) being catalysts in the rehabilitation of Manila Bay.

“Through their active involvement, Petron was able to establish the institutional mechanisms, provide incentives to the immediate and long-term projects and promote and enforce the frameworks that guide the BICMP: the Sustainable Development Strategy and the Bataan Coastal Land and Sea Use Zoning Plan.”

Central to the success of this program was engaging every stakeholder of the province; all had key roles in ensuring the success of the BICMP. Through their active involvement, Petron was able to establish the institutional mechanisms, provide incentives to the immediate and long-term projects and promote and enforce the frameworks that guide the BICMP: the Sustainable Development Strategy and the Bataan Coastal Land and Sea Use Zoning Plan.

One specific stakeholder that played a vital role in supporting the BICMP and embodies the definition of CSR was the business community. The private sector's participation in implementing the BICMP is a unique experience among the countries of the East Asian region. Here exists a vibrant CSR practice, and part of this has translated to sustainability through ICM.

The Bataan business community acknowledged the issues and concerns of the province as its own, and Petron encouraged its business colleagues to share in the idea of environmental stewardship. The result was the formation of the BCCF. Petron's role has been to act as a catalyst and provide counterpart funding for the BICMP to increase awareness, build better coastal governance, promote community participation in coastal resources management and explore ways for dynamic and sustainable public-private partnerships (PPPs) in environmental management.



PEMSEA

The BCCF's involvement in the BICMP also meant active involvement and exercising leadership in the Project Coordinating Council, including participation in consultations that contribute to policy reforms. The BCCF also provides resources that support the establishment of community-based projects and sustain an information, education and communications (IEC) campaign within and outside the province.

To date, the BCCF is composed of 18 organizations based in or doing business in Bataan. Hand in hand with the provincial government, the BCCF aligns its programs with and allocates resources to attaining the BICMP's goals.

On the side of government, the province of Bataan contributed its share to ensuring the longevity of the BICMP. In 2005, Bataan Governor Enrique T. Garcia Jr. issued EO No. AD 05, S. 2005, institutionalizing the

BICMP and establishing the Project Management Office (PMO) within the Provincial Planning and Development Office. The PMO serves as the program's Secretariat and lead implementer of the various ICM-related activities in the province. Gov. Garcia also issued EO No. AD 06, S. 2005, establishing the Technical Working Group (TWG) for the Coastal Use Zoning Plan.

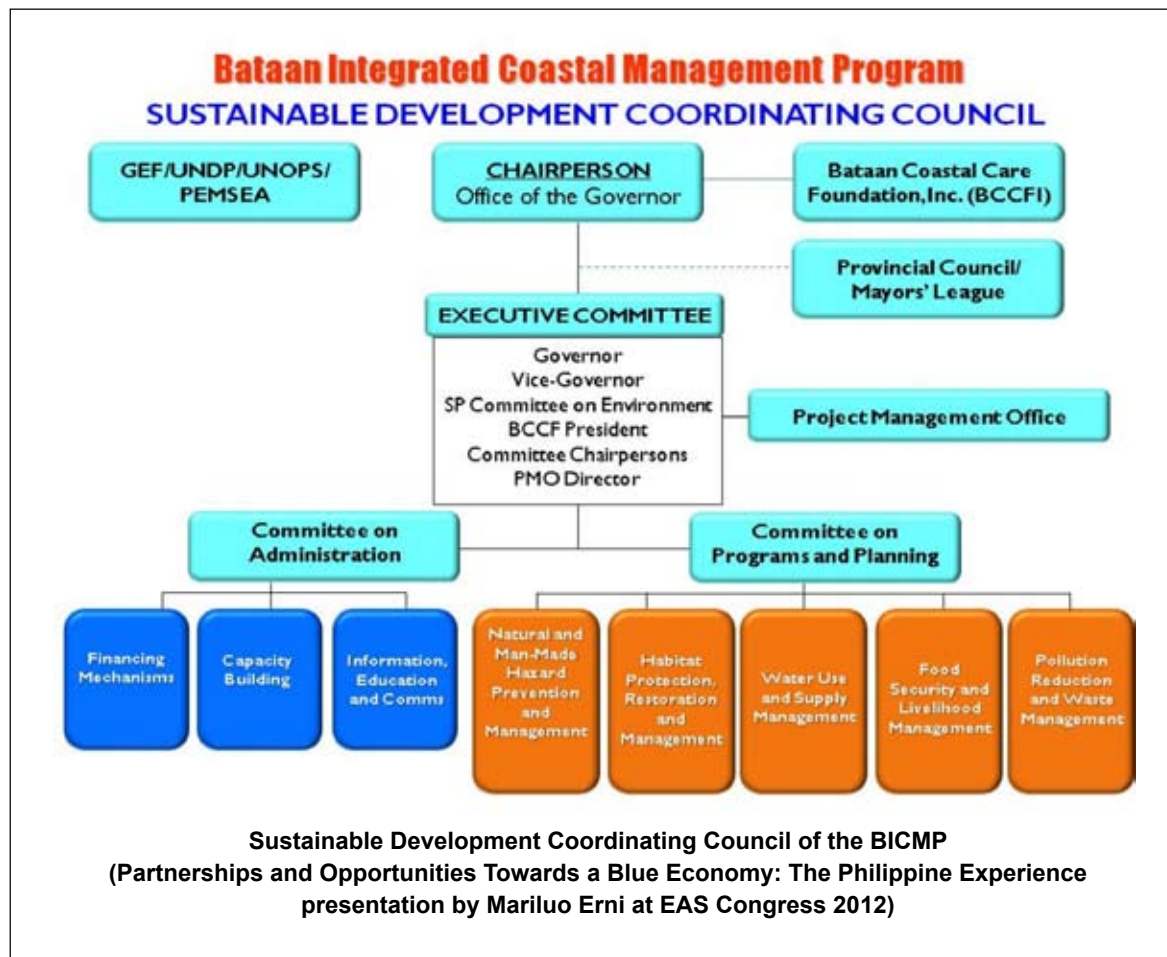
These EOs effectively made the ICM program a mandate of the province by establishing the critical project management mechanism for the program, which included provisions for training of the PMO staff, project monitoring and evaluation, developing annual work plans and budget and enabling human and financial resource arrangements.

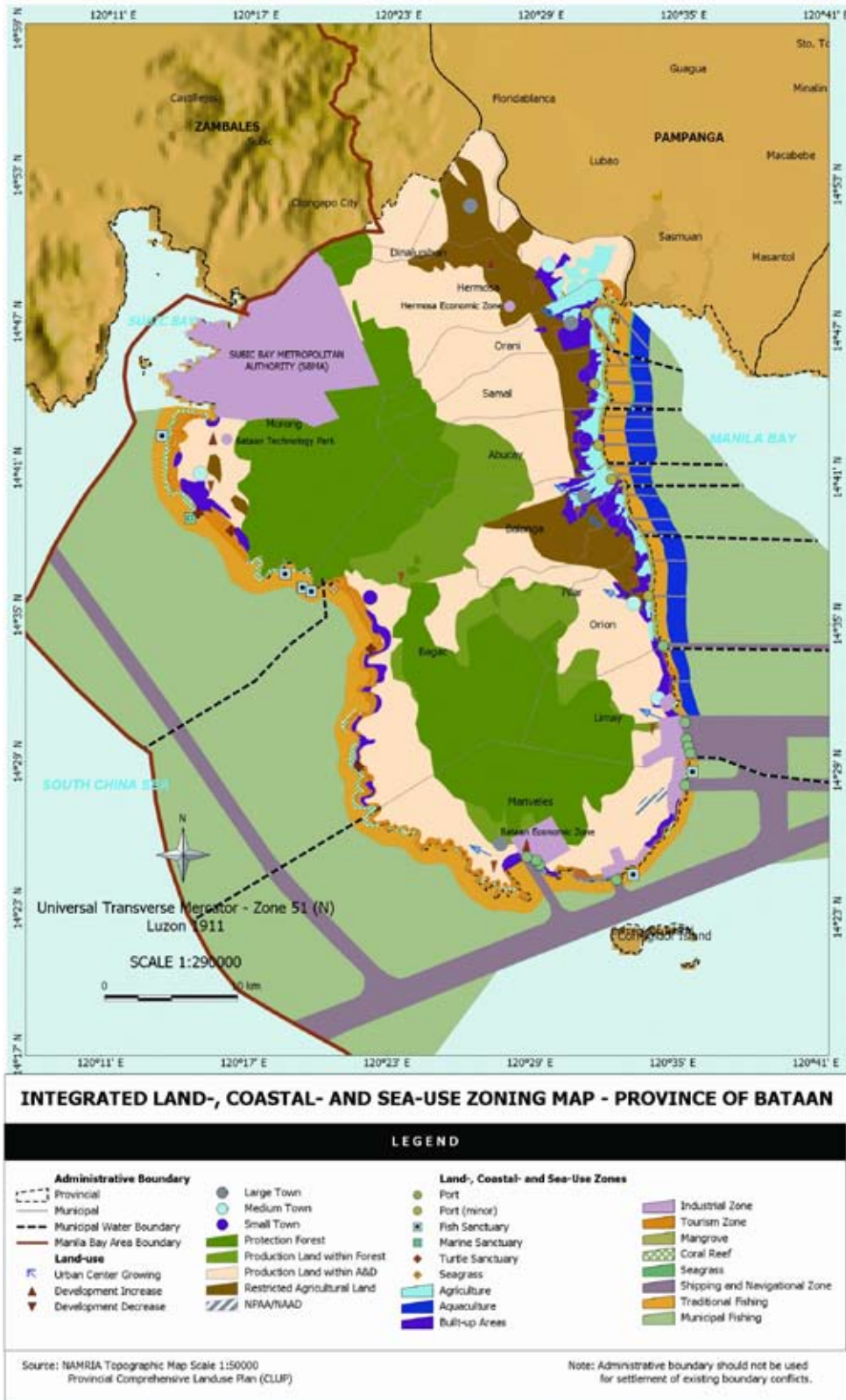
As part of the institutionalization process and stakeholder inclusion, the Sustainable Development Coordinating Council, chaired by the

governor of Bataan, was set up to manage the implementation of the BICMP. This also clarified the roles of each stakeholder, from friends in PEMSEA, to the BCCF, to the Provincial Council and Mayors' League to all the other concerned stakeholders. The composition of the executive and line committees shows how the PPP is realized, mobilizing support from communities and other key groups in resolving problems in coastal management.

Twelve years after first coming together, Petron has several noteworthy achievements to share and further learn from. In September 1999, the roots of the ICM program were planted with Petron's participation in the 13th International Coastal Cleanup Day. The goal was simple: to drumbeat awareness of the dirty waters off the coast of Bataan with the battle cry, "Water cleans people; it's time people clean the water." From there, Petron put up the BICMP with the help of PEMSEA and in the same year, established the BCCF to formalize the private sector support.

In 2006, the *Bataan Sustainable Development Strategy* was published. This is a proclamation of the vision and mission of the people of Bataan to chart a course for the preservation and maintenance of its rich natural endowments. It also serves as a comprehensive framework to provide directions in achieving target outcomes and formulate





specific action plans and programs involving active participation of stakeholders from the government, private sector and civil society groups.

In 2007, the *Bataan Coastal Land and Sea Use Zoning Plan* was published. This, in fact, is the first of its kind in the Philippines. This zoning plan serves to protect the designated use of coastal zones and reduce adverse environmental impacts of certain coastal activities. The result of an extensive series of consultations with the people of Bataan, the zoning plan was adopted by the BICMP Sustainable Development Coordinating Council on 5 October 2006, by the Manila Bay Project Coordinating Committee on 13 November 2006, and by the Bataan Provincial Council through Resolution No. 155 on 4 December 2006.

In 2009, Bataan hosted the Eighth PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) Forum in the province. It was an added honor to the province because Gov. Garcia was the incumbent PNLG Vice President at the time. Following the PNLG Forum, the BCCF, led by the Petron Foundation, initiated the holding of a CSR Forum titled "Public-Private Partnerships for the Rehabilitation of Manila Bay." This was one of the learning sessions in the EAS Congress held in Manila in 2009.

In March 2012, Petron received the Integral CSR Award at the Second Management Association of the Philippines (MAP) CSR Leadership Challenge for its "Growing, Greening, Giving Back: Making CSR and Sustainability a Way of Life in Petron" strategy along with the Best in Environment and Sustainable Development Special Award for its "Measuring,



23-27 November • Manila, Philippines

PUBLIC-PRIVATE PARTNERSHIPS IN THE REHABILITATION OF MANILA BAY

A CORPORATE SOCIAL RESPONSIBILITY (CSR) FORUM

November 25, 2009, Wednesday • 10:00 AM to 12:30 PM
Summit Hall F • Philippine International Convention Center

CHAIRPERSON : Ms. Marilou G. Erni, President, Bataan Coastal Care Foundation, Inc.
and Executive Director, Petron Foundation, Inc.
CO-CHAIR : Mr. Rogelio L. Singson, President, Maynilad

OBJECTIVES:

The CSR Forum aims to attain the following objectives:

- To showcase innovative partnership arrangements among national agencies, local governments, communities and the Corporate Sector that enhance marine and coastal governance within the Manila Bay Area;
- To identify the current initiatives and outcomes with respect to CSR implementation in support of sustainable development of the Manila Bay Area, within the framework of the Manila Bay Coastal Strategy;
- To demonstrate the Corporate Sector's commitment to the rehabilitation of Manila Bay Area through the adoption of an action agenda with identified roles and responsibilities, targets and timeframes.

MAIN TOPICS:

Progress in Rehabilitation of Manila Bay: Government Action on the Operational Plan for the Manila Bay Coastal Strategy (OPMBCS)

Case Studies: Partnerships and Governance: Facilitating 100% ICM coverage of the coastline through Public Private Partnerships (PPP) • Water Pollution Reduction: Targeting 50% reduction in untreated or inadequately treated wastewaters by 2015 • Habitat and Resources: Accomplishing Food Security and Alternative Livelihoods through Habitat Rehabilitation and Management

Scaling Up Integrated Coastal Management (ICM) in Manila Bay

CSR Opportunities

Partnerships Through ICM: Open Forum



RESOURCE TEAM

Usec Demetrio Ignacio, DENR
Roderick de Castro, Team Energy
Marilou Erni, Petron Foundation
Robert Jara, PEMSEA
Mark Mulingbayan, Manila Water
Roland Peña, TIPCO
Rogelio Singson, Maynilad

To register for **FREE**,
please contact Rainier Requinala at 9292992
(requinala@pemsea.org) or Sherly Viñas
at 8863142 (spvinas@petron.com)

The East Asian Seas Congress 2009



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Managing and Minimizing our Environment Footprint in Bataan” program. MAP recognized Petron’s initiatives to preserve and protect the environment and promote sustainable development in the province of Bataan, particularly in effectively managing its waste generation, water use and consumption, greenhouse gas accounting and air emissions inventory, as well as its leadership in implementing the BICMP.

Alongside these accomplishments, the impact of Petron’s 13-year engagement in the BICMP is seen. Slowly, the demonstrable improvement in environmental conditions is perceptible. At the same time, the partnership is allowing local government units (LGUs) and other stakeholders the opportunity to learn corporate experiences and best practices in managing the program. Finally, long-term solutions toward sustainable development are established.

Expanding Corporate Sector Participation in ICM Scaling-Up

Meanwhile, the challenges remain. While we take pride in the Sustainable Development Strategy and in the pioneering Coastal Land and Sea Use Zoning Plan, these will all remain plans unless we are able to implement them throughout the entire province. Thus, stakeholder participation remains critical, particularly among the business community. We need to constantly reassess our efforts within the BCCF to provide greater opportunities for their involvement. One such new venue is the proposed PEMSEA Corporate Network, seen as a private sector counterpart to support the PNLG.

The PEMSEA Corporate Network is as a multisector partnership and strategic alliance with the business community committing to collaborate with communities, civil society and national/local governments on ICM initiatives to pursue sustainable development goals, with all partners contributing from their core competencies, sharing risks and benefiting by adding value beyond the next best alternative.

As Colin LeGarde Hubo, Vice Director of the University of Asia and the Pacific's Center for Social Responsibility, highlighted in the PEMSEA Corporate Network: Aide-Mémoire: "The PEMSEA Corporate Network is a response to institutional and organizational weaknesses in overcoming the persistent challenges to business being seen to contribute to sustainable development, in this instance, to marine and coastal management. Through the network, business can be recognized as (a) contributing to sustainable economic growth at the regional, national and local level; (b) contributing to social inclusion and poverty reduction, particularly in protected, remote locations;

and (c) business finding acceptable solutions to environmental management and protection, such as marine and coastal restoration and rehabilitation, among others."

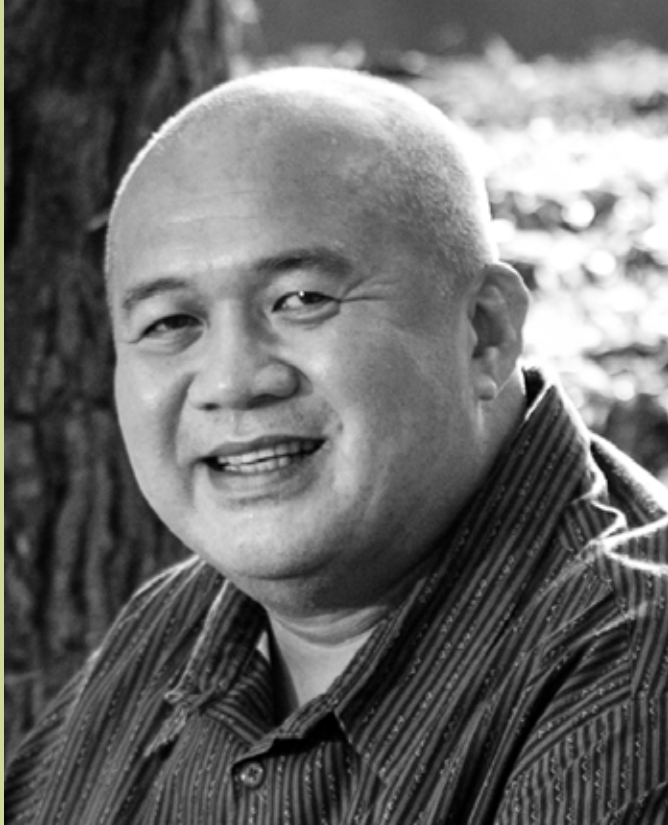
The proposed network offers several business cases to encourage active private sector participation in ICM, including risk management, environmental impacts mitigation, enhancement of positive economic impacts and consensus building among stakeholders.

PEMSEA has invited Petron to drive the formation of a corporate network in the Philippines and inspire a regional model, something that is to be accomplished soon together with other concerned business organizations.

ISO 26000's Essentials of Social Responsibility state that, "sustainable business for corporations and the private sector means not only providing products and services that satisfy the customer and doing so without jeopardizing the environment, but also operating in a socially responsible manner.... The challenge is how to put the principles into practice and how to implement it effectively and efficiently." ICM can give corporations the bigger picture of sustainability, have a glimpse of the roots of many problems for coastal regions and highlight opportunities through which they can take part.

We share the belief that oceans and coasts support the global economy, and that nations can derive optimal economic and social benefits from protecting the environment. This belief has made us relentless in our support to the principles of ICM, as showcased in the province of Bataan.

* With acknowledgment to Ronald Allan Victorino.



Dr. Felipe Hilan A. Nava

Dr. Felipe Hilan A. Nava is the former Governor of Guimaras Province, Philippines (2007–2012), and former President of the PEMSEA Network of Local Governments for Sustainable Coastal Development. He previously served as Mayor of Jordan, Guimaras, for three consecutive terms (1998–2007) and was elected President of the League of Municipalities in the Philippines–Guimaras Chapter (2004–2007). Dr. Nava is an orthopedic surgeon by training. He earned his medical degree from the West Visayas State University and his four-year orthopedic training from the Philippine Orthopedic Center.

Championing Local Government's Advocacy for Ocean and Coastal Governance*

Good Politics, Good Governance

I started my career in politics when I was elected as Mayor of the Municipality of Jordan, one of the municipalities of the Province of Guimaras in central Philippines. I served for three consecutive terms, from 1998 to 2007, and dedicated my time in providing full service to my constituents. With a strong desire to better serve the Guimarasnons, I assumed greater responsibility when I was elected as Governor of Guimaras Province from 2007 to 2012. The province reaped several recognitions during this period, resulting from exemplary performance in several sectors ranging from health to environment and disaster risk reduction and management (**Box 1**).

Being an island province known for its pristine beaches, islets and coves, extensive fishing areas, as well as its world-famous mangoes, the agriculture, fishery and tourism industries serve as the major economic drivers of the province. Protecting the resource base is therefore paramount for the province to achieve its vision of transforming into an agritourism capital of central Philippines. As an island, however, the province is also confronted with various challenges and threats. While a land use plan was already in place for the management of the upland, the municipal waters, which are larger in area than the mainland, are not well-managed. This has resulted in loss of coastal habitats, pollution from land- and sea-based sources and overfishing, among a host of issues that threaten the sustainability of the island ecosystem.

A significant event happened in 11 August 2006, which highlighted not only the province's vulnerability to disasters arising from marine and coastal pollution, but also the inadequate sectoral coordination and integration. A tanker carrying 2 million L of bunker fuel sank in the vicinity of the province. The resulting oil spill caused a significant environmental and economic disaster as more than half of the province's population living along the 409-km coastline that depend on the coastal and marine resources for their livelihood were seriously affected. Results of the rapid damage assessment showed the magnitude of impact on the ecosystems and populations, which were manifested in the loss of

Box 1. Recognitions and awards received by Guimaras Province from 2007 to 2011.

- Green Banner Awardee for 2007 and 2008 in Nutrition Congress
- Trailblazer Awardee in Healthy Lifestyle in 2008
- Best Provincial Peace and Order Council, National Awardee in 2008
- Best Tourism-Oriented Local Government Unit (LGU) Province in Region VI in 2009
- Regional Search for Excellence in Local Governance 2010: 1st Runner-up in Excellence in Economic Development and Local Legislation; 2nd Runner-up in Excellence in Social Services and Environmental Management
- Crown Awardee in Exemplary Health Practices in Nutrition in 2009 and 2010
- Awardee for the 5Ps program (*Panibagong Pamamaraan ng Pamahalaang Panglokal ng Pilipinas*)
- Best Provincial Disaster Risk Reduction and Management Council in Gawad Kalasag in 2010 (Regional)
- Best Medical Institution Advocating Disaster Risk Management in 2010
- Nominated as top three in the national validation for *Gawad Kalasag* in 2011
- Best Performing Province in 2011



livelihood, health problems and degradation of important coastal habitats, including mangroves, seagrass and coral reefs.

The province was struggling to clean up and rehabilitate the affected areas when I assumed the position of Governor in 2007. We were then searching for answers on how best we can address the need to rehabilitate the affected ecosystems and regain our economic drivers. We realized that achieving sustainable development of our coastal areas requires determination and external support since a number of influences affecting our province are beyond our control. The oil spill incident provided a window of opportunity for my administration to evaluate the province's environmental programs and institute the necessary reforms to address the problem. When the concept of integrated coastal management (ICM) was introduced to Guimaras, I saw its potential in providing the necessary framework and approach to facilitate integration of relevant initiatives of the province and municipalities to ensure the holistic management of the island.

My initial exposure to ICM was facilitated by PEMSEA through my participation in a series of events where the Guimaras experience was shared. After my participation in the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) Forum held in Danang, Vietnam in 2007, I led the advocacy for the designation of Guimaras as an ICM parallel site of PEMSEA, which was essential for Guimaras' subsequent membership to the PNLG. I gained the support of the legislative branch, which granted me the authority to enter into a Memorandum of Agreement (MOA) with the Department of Environment and Natural Resources (DENR) and PEMSEA to develop and implement an ICM program. The MOA was signed during the launching of the ICM program on 18 August 2008, two years after the environmental catastrophe.



PEMSEA/Guimaras

Local Government's Advocacy for Better Governance of the Coasts and Oceans

In any given program, political will and commitment to implement changes in structures and mind-set are crucial for its success and sustainability. I kept this premise in mind and drew inspiration from the PNLG, which advocates ICM in addressing the challenges and emerging issues with regard to sustainable growth and development of the coastal areas. Guimaras definitely has a lot to learn and share in this regional network of local governments implementing ICM, which is represented by similar-minded local chief executives and decisionmakers from various ICM sites across the East Asian region.

In my capacity as Governor of the province, I spearheaded the process of establishing a full-blown ICM program in Guimaras in consideration of the benchmarks that are required for an ICM program. I issued enabling legislations to establish the necessary coordinating mechanisms (e.g., Project Coordinating Committee, Project Management Office, Scientific

Advisory Group) for the ICM program including the provision of necessary budget and staff. Strengthening local capacity for ICM was undertaken through the support of PEMSEA and other partners including the Korea International Cooperation Agency (KOICA), Philippine Business for Social Progress (PBSP) and others. This enabled the local personnel to improve their capacities in better performing their functions related to environmental and coastal management. A long-term management framework, the Coastal Strategy, which takes into consideration the vision and strategic direction of the province, has been prepared. A monitoring, evaluation and reporting system through the State of the Coasts has also been established. Mobilization of the coastal communities to participate in the ICM program and other environmental initiatives was readily facilitated as a consequence of the oil spill, which brought heightened awareness on the value of the coastal resources and environment to the people who live with and benefit from the sea.

As a medical doctor by training, I am always inclined to base my decisions on science. As a result of the oil spill, I led the implementation of scientific studies and researches to determine the impacts involving a team of experts from the University of the Philippines. The results of the scientific studies are presented to the stakeholders of Guimaras every August of each year to commemorate the oil spill incident. The results provided important inputs to planning and management of the coastal and marine areas of the province, particularly in the identification of appropriate management interventions. Word spread about my advocacy for ICM. I received invitations on a number of occasions to serve as resource speaker and share my experiences in coastal governance. Guimaras is also beginning to receive requests from other local governments in the Philippines and other countries for study tours and cross visits.

“We realized that achieving sustainable development of our coastal areas requires determination and external support since a number of influences affecting our province are beyond our control. The oil spill incident provided a window of opportunity for my administration to evaluate the province’s environmental programs and institute the necessary reforms to address the problem.”



PEMSEA/Guimaras



Strength in Numbers

Five years of ICM implementation has provided Guimaras the opportunity to strengthen its management programs and governance mechanisms. More importantly, it has provided Guimaras the opportunity to become visible not only at the national level but also at the regional level. Guimaras formally joined the PNLG in 2008. Since then, Guimaras has actively participated in the annual PNLG Forum and has committed to work hand-in-hand with fellow PNLG members to implement the PNLG Strategic Action Plan and commitments made in the *Dongying Declaration on Building a Blue Economy through ICM*.

As a strong regional network of local governments implementing ICM, the PNLG plays a crucial role in ICM scaling-up, which involves placing more coastal areas under integrated planning and management to achieve the target of 20 percent coverage of the regional coastline by 2015. And having been given the great responsibility of leading the PNLG as its President in 2012, promoting synergy among local governments as well as its benefits to coastal communities are essential. We aim to expand the circle of local governments working for sustainable development in their areas of jurisdiction and establish in the process a critical mass that can influence national and international policies on sustainable coastal development. By serving as exemplary examples of ICM implementation, other local governments can replicate the good practices in their respective coastal areas and reap the same benefits. An exponential increase in ICM implementation through time is thus anticipated through this process.

In my own small way, I can proudly say that I have done my part in contributing to a more sustainable East Asian Seas. The quest for sustainable development definitely starts at the local level.

Local governments play a crucial role in coastal management and governance, being the primary government unit tasked to oversee their jurisdictions and ensure the general welfare of their constituents. Owing to the emerging threats facing our coastal and marine environment, the challenges we face are certainly daunting. I am however optimistic that through the PNLG, the partnerships created can help us achieve meaningful gains. Taken collectively, the PNLG's contribution to sustainable development certainly makes a difference in achieving national, regional and global targets on sustainable development.

* With acknowledgment to Nancy Bermas-Atrigenio.



PEMSEA/Guimaras



Amb. Mary Seet-Cheng

Amb. Mary Seet-Cheng is the current Chair of the East Asian Seas Partnership Council. She is also a Senior Specialist Adviser in the Ministry of Foreign Affairs of Singapore and non-resident Ambassador of Singapore to Panama and Cuba. She was the Policy Director of the Maritime and Port Authority of Singapore from 1997 to 2006, where she regularly represented Singapore at IMO meetings in London. Amb. Seet-Cheng has a bachelor's degree in business administration from the University of Singapore and master's degree in international relations from the Fletcher School of Law and Diplomacy at Tufts University.

The Road to Sustainability*

In a span of 20 years, PEMSEA has steadily established its niche as the only international organization specializing in sustainable development of coasts and oceans through integrated coastal and ocean management, with a special focus on the East Asian Seas (EAS) region. Reaching this status was not an easy feat, and I therefore congratulate all the PEMSEA Country and Non-Country Partners, sponsoring organizations, as well as all the individuals and institutions that have worked with PEMSEA and have made this possible.

The experiences and stories shared in the previous sections of this anniversary publication have shown the uniqueness of PEMSEA, not only within the region but possibly even globally. I recall in several PEMSEA meetings how the growth of PEMSEA is often compared to the development of a child from birth to adulthood, and who is now ready and able to stand on its own. Indeed, PEMSEA's historical development from a donor-led project to a regional mechanism for the implementation of the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA) is unprecedented.

I am pleased to have become a member of PEMSEA's Executive Committee at a time when PEMSEA is developing its strategies and transformation plans toward an independent, self-reliant organization. Working with the prime movers of PEMSEA and its Partners in laying down the road maps and best possible options for its future entailed serious work, but it was definitely fulfilling. As of this writing, the process for transformation is still on its way, but building on the impressive work that has been done, I am confident that PEMSEA is definitely fit and ready to face bigger challenges and reach more crucial targets.

Building Blocks to Establishing a Full-fledged, Self-sustaining PEMSEA

The signing of the agreement recognizing the international legal personality of PEMSEA in 2009 was an important turning point for the organization as it provided the first big step toward PEMSEA's transformation.

Through a stepwise process, PEMSEA identified and worked on the prerequisites which included the development, adoption and initiation of the following directives and adaptations that are important to its evolutionary success: the PEMSEA Rules of Governance and By-laws; the PEMSEA Transformation Plans and Road Maps (PRF Re-Engineering Plan, PEMSEA Sustainable Financing Plan and PEMSEA Advocacy and Communication Plan), and the medium-term Regional Implementation Plan for the SDS-SEA (2012-2014).

Parallel to this initiative, PEMSEA also initiated discussions with the Government of the Philippines on a Headquarters Agreement that would provide the necessary diplomatic status and immunity to PEMSEA as an international organization. This process often takes several years. Fortunately, in the case of PEMSEA, the strong commitment and support particularly from the Department of Environment and Natural Resources (DENR) of the Philippines, have helped speed up the process. With the signing of the Headquarters Agreement by the Department of Foreign Affairs in July 2012 and the completion of Certificates of Concurrence from nine relevant government agencies of the Philippines in April 2013, the Headquarters Agreement is expected to be adopted by the President of the Philippines and ratified by the Philippine Senate by the first quarter of 2014.

In accordance with the approved transformation plans and road maps, PEMSEA has proceeded with the restructuring of the PEMSEA Resource Facility (PRF). As the operating arm of the organization,

the PRF is expected to operate in accordance with international standards regarding legal, administrative, technical/scientific and financial management processes and controls in order to achieve the objectives and expectations of Partners, sponsors and other collaborators. This restructuring required the establishment of a compact core group that will be supported by and accountable to the countries of the EAS region. The PRF Core Group will consist of five highly competent individuals whose primary functions are to provide secretariat services to the Governing Body and to manage, coordinate, develop, disseminate, advocate, network and raise funds on behalf of PEMSEA Partners for SDS-SEA Implementation. The PRF Executive Director leads the Core Group.

Since 2007, voluntary funding contributions coming from the Governments of China, Japan and RO Korea have supported the staffing and operations of the PRF Secretariat Services. The Government of the Philippines, as host of the PEMSEA office since 1993, has provided a building and other amenities to PEMSEA. Starting in 2010, Timor-Leste has been providing annual contributions in support of capacity-building and knowledge-sharing activities related to SDS-SEA implementation. Countries have also taken turns in hosting PEMSEA meetings and events, including the EAS Partnership Council meetings, the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) Forum, the triennial EAS Congress, and numerous training workshops and other knowledge sharing forums. The Non-Country Partners of PEMSEA have also contributed support, mainly through technical assistance to on-the-ground projects in support of SDS-SEA implementation, as well as co-convenors to the EAS Congress international conference.

Voluntary contributions from PEMSEA's Partners will continue for the next five years, as the PRF rolls out and implements the approved Sustainable Financing Plan and Road Map. Recent discussions during sessions of the EAS Partnership Council have re-affirmed the

commitments of Country Partners to the full ownership of PEMSEA as a regional organization, including achieving financial sustainability of the PRF Core group by the end of 2013.

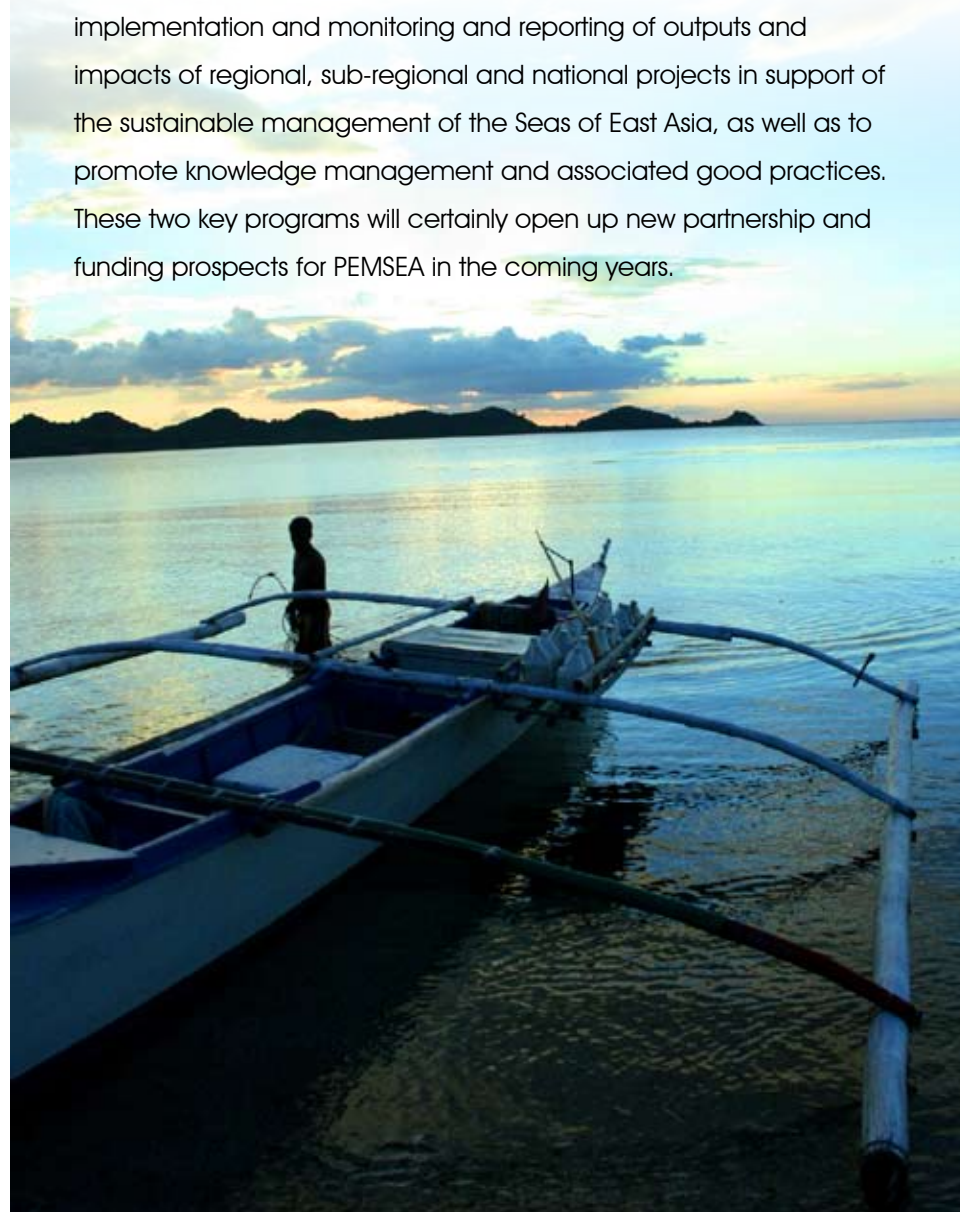
As part of the transformation, it is also important to increase PEMSEA's visibility and build up its brand name from local to national, regional and global levels. Through the Advocacy and Communication Plan, PEMSEA aims to become the Regional Knowledge Center for Coastal and Ocean Governance in East Asia. PEMSEA will strengthen its internal and external communications and tap various channels to reach a wider audience. As a knowledge platform, PEMSEA can contribute in sharing coastal management data, practices, experiences, information and materials that can support policy planning and development, decision-making, research and learning in the region.

New Projects, New Opportunities

The EAS Stocktaking Meeting in October 2010 supported the need for increased programmatic investments in the region and recognized the viability of PEMSEA and the SDS-SEA in providing a mechanism and framework for: (1) integrated and collaborative planning; (2) coordination and monitoring and reporting of outputs and impacts of regional, sub-regional and national projects for sustainable management; and (3) facilitation of knowledge management and transfer of associated good practices. This conclusion provided a strong boost to PEMSEA as an organization.

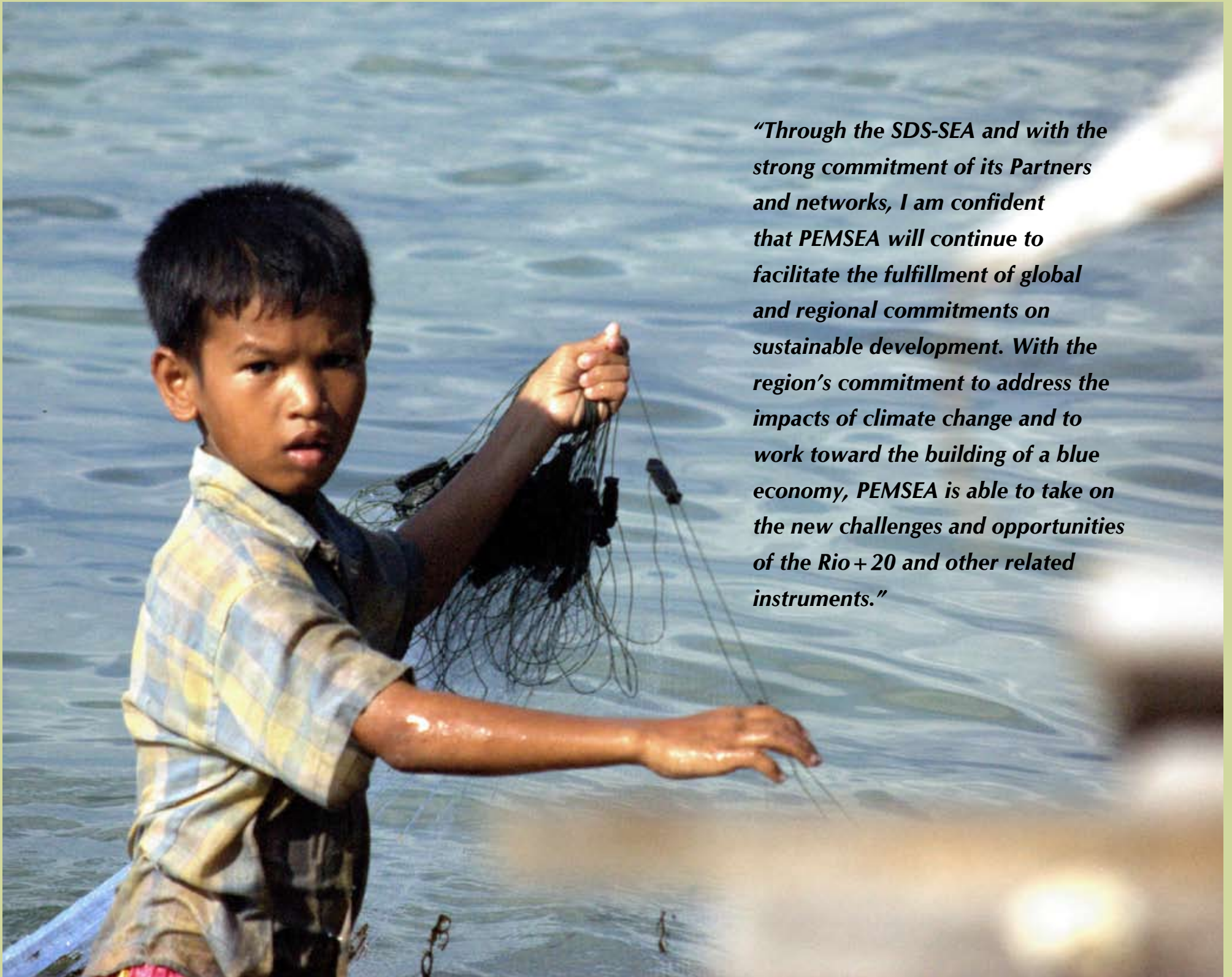
This was further emphasized in the World Bank and the United Nations Development Programme (UNDP) GEF-supported Program Framework Documents. The GEF-World Bank Project on Scaling up Partnership Investments for Sustainable Development of the Large Marine Ecosystems of East Asia and their Coasts will support investments in the brown and blue agenda, knowledge sharing and targeted research to address the priorities identified in the SDS-SEA at the

regional and national levels. The GEF-UNDP platform program on the other hand, entitled Reducing Pollution and Rebuilding Degraded Marine Resources in the East Asian Seas through Implementation of Intergovernmental Agreements and Catalyzed Investments, includes three projects that are focused on the implementation of regional strategic action plans (SAPs), including the PEMSEA regional project on Scaling Up the Implementation of the SDS-SEA. PEMSEA and the SDS-SEA, respectively, have been identified as the overarching governance mechanism and framework for collaborative planning, implementation and monitoring and reporting of outputs and impacts of regional, sub-regional and national projects in support of the sustainable management of the Seas of East Asia, as well as to promote knowledge management and associated good practices. These two key programs will certainly open up new partnership and funding prospects for PEMSEA in the coming years.



PEMSEA/J. Castillo





“Through the SDS-SEA and with the strong commitment of its Partners and networks, I am confident that PEMSEA will continue to facilitate the fulfillment of global and regional commitments on sustainable development. With the region’s commitment to address the impacts of climate change and to work toward the building of a blue economy, PEMSEA is able to take on the new challenges and opportunities of the Rio + 20 and other related instruments.”

PEMSEA

The Road Ahead

Building Stronger Regional Ownership

To achieve self-sustainability is a tall order, but it is not impossible. Unlike other treaty-based organizations where contributions from participating members are mandatory, PEMSEA's sustainability, or financial sustainability in particular, depends on the commitment and voluntary support of its Partners and from donors and projects generated by the organization in support of the implementation of the SDS-SEA. The strong support and commitment expressed by the PEMSEA Country Partners to sustain the PEMSEA operations signifies deeper appreciation and growing regional ownership by countries on PEMSEA. With the completion of full financing for the PRF Core Group, PEMSEA will be fully owned by the countries of the region and the PRF Core Group will be directly accountable to the countries.

But this is only the first step towards PEMSEA's ultimate goal. With the necessary funding in place for the next five years, PEMSEA plans to move forward by implementing a set of strategies and actions aimed at gradually reducing its dependence on country contributions. My personal challenge as the Chair of the EAS Partnership Council is to guide PEMSEA's evolution to a fully independent, country-owned, service-oriented regional organization, that is renowned regionally and globally for its quality products and services in support of sustainable development and management of coasts and oceans.

With the vast scope of the SDS-SEA, the support from both Country and Non-Country Partners, whether in-kind or in cash, will definitely be significant in bringing the region closer to its vision. By tapping on the expertise and matching the needs and different initiatives/capacities of Country and Non-Country Partners as well as by other supporting

organizations/institutions through the SDS-SEA framework, PEMSEA will help minimize duplication of efforts and continue to make valuable changes on coastal and ocean development in the region.

Taking on Bigger Challenges

While staying true to its vision and mandate to implement the SDS-SEA, PEMSEA's scope continues to expand in order to address the growing demands or needs of the region as well as to address emerging issues and concerns.

Through the SDS-SEA and with the strong commitment of its Partners and networks, I am confident that PEMSEA will continue to facilitate the fulfillment of global and regional commitments on sustainable development. With the region's commitment to address the impacts of climate change and to work toward the building of a blue economy, PEMSEA is able to take on the new challenges and opportunities of the Rio+20 and other related instruments.

I am proud to say that the value of PEMSEA and the quality service that it has provided to the region have also been recognized not only within the region but even globally. The recent document on the GEF-6 Programming Direction for the International Waters Focal Area reinforces this recognition, and states that, "Over nearly 20 years, the GEF's investments have demonstrated the utility of ICM as a tool to promote national, provincial and local governance reform for improved management of coastal and ocean resources (e.g., in the East Asian Seas region)... GEF will invest in innovative practical application of spatial planning and management of coastal areas and in some cases adjacent freshwater basins through ICM principles and in coastal habitat protection and/or conservation and mangrove restoration." This sends a strong signal on the potential for PEMSEA to be tapped in the coming years to deliver its services and share

its experience and expertise on ICM to other regions in the world. The opportunities that this may bring to the organization are highly recognized by the countries of the region, and procedures for outreach services are already being studied to ensure that PEMSEA can respond to such requests without compromising its key mandate and priorities.

I have observed PEMSEA's growth with much interest, and when I became part of the PEMSEA family, I became all the more convinced that this organization is definitely one of a kind. Indeed, there is still a lot of work to be done, but I am confident that the organization has established strong foundations that would enable it to face bigger and more complex challenges.

As PEMSEA moves toward self-sustainability, and as it scales up the implementation of the SDS-SEA and ICM programs, the partnership that it has established will be further tested. It is therefore crucial for the organization to nurture this partnership and maintain stronger communications and cooperation. The PEMSEA Partners are crucial to the organization's survival and success, as such political will, commitment and ownership should be further strengthened for PEMSEA to be sustained. Guided by a common vision and framework, I am confident that PEMSEA will continue to live up to its good reputation, and that is to continue to demonstrate that real success lies not on mere commitments but on concrete actions and changes that help bring the people of the East Asia closer to their vision of a sustainable East Asian Seas region.

* With acknowledgment to Kathrine Rose Gallardo.



PEMSEA/R. E. Abala



Experiences with PEMSEA

Dr. Gunnar Kullenberg

Ms. Pham Thi Chin

Mr. Chanthanet Boulapha

Mr. Long Rithirak

Ms. Maeve Nightingale

Dr. Michael Pido

Mr. Choe Rim

Mr. Mohd Khairi bin Selamat

Dr. Nguyen Minh Son

Ms. Kazumi Wakita

Ms. Nisakorn Wiwekwin

Dr. Huming Yu

Mr. Prak Visal

Dr. Won-Tae Shin

Dr. Giselle Samonte-Tan

Mr. James N. Paw

Ms. Maria Cecilia San-Reario

Mr. Joselito Guevarra



Dr. Gunnar Kullenberg

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Following the development of PEMSEA has, for me, been parallel to the understanding of the significance of the *United Nations Convention on the Law of the Sea* (UNCLOS). The initiation of PEMSEA in 1993, a decade after the conclusion of the Laws of the Seas negotiations and at the same time of its entering into force in 1994, signifies the understanding of the role of globalization

for regional development demonstrated by the driving force behind PEMSEA, Dr. Chua Thia-Eng. The need for seeking enhanced integration and solidarity among nations in addressing common concerns about our life-supporting system was understood. This was also triggered by the dilution of boundaries through globalization and the need for advocacy and education about sustainable development. The courage to take the responsibility of making sacrifices to achieve the greater good in the future was part of the whole operation. This can serve as a model for others. The mechanism to achieve the collective governance involving governments, industries, regional bodies, local communities, nongovernment organizations and other stakeholders through partnerships on the basis of international and national laws, policies, customs, traditions, culture, together with related institutions and processes was specified from the start. This vision responded to the pillars of UNCLOS that “the problems of ocean space are closely interrelated and should be considered as a whole,” and that the ocean space should be used for peaceful purposes only to the benefit of mankind as a whole. The vision interpreted the definition of ocean governance in practical terms.

This was a transboundary effort spiritually, structurally, geographically and subject-wise. It dared to challenge the existing national and international institutional structures. No wonder then that my initial contact with PEMSEA in 1993/94, as Executive Secretary of the Intergovernmental Oceanic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), was through critical voices suggesting that it would not work. It was argued that integrated coastal management (ICM) should primarily be implemented through scientific institutions. However, my experiences from working with several national and international institutions suggested that the institutional structure was a basic problem in the efforts to put proper ocean governance, including ICM, in place. Thus, the approach of PEMSEA, a new paradigm, seemed very appropriate — a regionally generated programme with the collective efforts of all stakeholders. It was also clearly stated that research is an integral part of ICM, but should be addressing the needs and not

be driven only by science. Many ICM problems can be solved by indigenous expertise and local managers and practitioners, as stressed by Dr. Chua in his presentation to the International Conference on Oceanography in Lisbon in 1994. The time for seeking to address structural and institutional problems of the whole region also seemed right in a period of economic growth. In 1994, I got a chance to discuss some of these points with Dr. Chua.

However, it was only after my departure from the IOC that I became more acquainted with the PEMSEA Secretariat operations. This included chairing some workshops, making presentations and participating in the first three East Asian Seas (EAS) Congress. The support from the PEMSEA Secretariat was always exemplary, efficient and pleasant. The navigation from Putrajaya to Manila via Haikou successfully avoided any serious grounding, and the whole process was quite transparent. Dr. Chua pointed out to me that he wanted his people to learn to think for themselves. I took note and, on the basis of my experiences, it appears that he succeeded well in that effort. It implied learning to solve problems and getting others involved by asking for their views and how they would deal with the problem.

My understanding of what PEMSEA represents was of great help during the final evaluation of the GEF-supported project. We were three in the team — an economist, an oceanographer and an urban planner and ICM expert — with no duplication of expertise. Our interaction with the Secretariat was very illuminating, involving broad and, sometimes, heated discussions. The field visits highlighted the importance of local leadership and involvement of people. Project participants realized the need to plan, think and involve local expertise and knowledge. The importance of sound scientific studies, the role of science and the need to involve scientific institutions were also recognized. The financial backing and underwriting was a critical concern. Mechanisms to further develop funding alternatives were under development. The problem pointed at the need for a market-oriented approach with public-private partnerships, following the stimulation received from the GEF, donors and governments. The job-creating potential of ICM was brought out. Discussions also highlighted concerns for replication and enlargements of ICM activities from demonstration sites to achieve a stipulated regional coverage. This demonstrates the intellectual and practical challenges of the PEMSEA project, highlighted through the *Sustainable Development Strategy for the Seas of East Asia* (SDS-SEA).

Our cooperation with the PEMSEA Secretariat was stimulating in many ways. It included lunch breaks in the office and some tours, with education and

awareness creation, generating enhanced understanding for conditions in the Philippines. One of my favorite memories is a lunch invitation by the charming ladies in the Secretariat. It was only through this combination of professional provision of all documentation and information, together with a human touch, that the evaluation team managed to conclude its work in time. PEMSEA was a large and very productive project.

My education from work with PEMSEA continued through the preparation of the book, *Securing the Oceans*, which involved several of the PEMSEA staff. This was a global effort in cooperation with the Nippon Foundation. It brought out the importance of personal networking, among other things. The enthusiasm for the project was very large at one planning workshop, with many offers for contributions. However, this, as is often the case, was “sickled over with the pale cast of thought.” Through persistence and hard editorial work, the book was produced and published in 2008. Its broad, interdisciplinary, global subject area coverage fits well with the PEMSEA philosophy and approach. The preparation also stimulated my association with the initiative of the United Nations Institute for Training and Research (UNITAR) Hiroshima Office to address the issue of comprehensive human security and the ocean, through a series of training workshops, to which Dr. Chua and PEMSEA also contributed. For me, the whole process seems an appropriate representation of the widening oceanic circle keeping the individual in the center, as visualized by Elisabeth Mann Borgese in her book, *The Oceanic Circle*.

Dr. Gunnar Kullenberg was a physical oceanography professor at the universities of Copenhagen and Gothenburg, Executive Secretary of the IOC of UNESCO and Executive Director of the International Ocean Institute. He chaired several committees including GESAMP's Working Group on the Health of the Ocean, Scientific Committee on Ocean Research-International Council for the Exploration of the Seas (SCOR-ICES), Working Group on the Study of Pollution in the Baltic and the Committee on Marine Pollution of the ICES. He was an associate of UNITAR and a visiting scientist at the Canada Centre for Inland Waters, Bigelow Laboratory on Ocean Sciences (USA), and Ocean Policy Research Foundation (Japan). Currently, Dr. Kullenberg is a member of the Royal Danish Academy of Sciences and Letters, Danish Academy on Technical Sciences and Russian Academy on Natural Sciences.



Ms. Pham Thi Chin

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I will always remember the day when I was first assigned to work for the National ICM Demonstration Site in Danang, Vietnam. It marked the day when significant changes started to occur in my professional life.

ICM was a new concept in Vietnam way back in 2000. I was extremely lucky to be given the opportunity to learn and practice ICM, with no less than PEMSEA providing the necessary guidance. My “free time” started to become rare due to the demands of the work. What kept me going was that I found the activities interesting and challenging since they were quite different from what I used to do. I also had to work both in Vietnamese and English and interact with various groups of people — from communities to managers at all levels, staff from different sectors, experts, academicians and colleagues at PEMSEA and from other countries in the region who are also practicing ICM.

Twelve years of on-the-ground implementation improved my English, expanded my network and strengthened my confidence in working with various groups. More importantly, the knowledge and practical experiences that I have accumulated through the years have taught me to appreciate the value of integration and coordination. In fact, I found the learning-by-doing approach that ICM promotes to have practical applications in my daily life.

Perhaps the most tangible outcome from my involvement with PEMSEA and the ICM program is the ability to convey and convince the people of Danang to appreciate the value of the coastal areas and resources and to do their share in ensuring its protection and sustainability. I hope to continue sharing my knowledge and experiences to other areas in Vietnam to help disseminate the message that ICM is definitely the way forward in achieving sustainable development.

Ms. Pham Thi Chin is the Vice Director of the Danang Agency of Sea and Island, Department of Natural Resources and Environment for Danang City. She has participated in training courses organized by PEMSEA on ICM, such as environmental management and environmental impact assessment.



Mr. Chanthanet Boulapha

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On behalf of the Government of Lao People's Democratic Republic, the Department of Water Resources (DWR) of the Ministry of Natural Resources and Environment (MONRE) would like to take this opportunity to express our pleasure and sincere congratulations to PEMSEA on its 20th anniversary.

My first engagement with PEMSEA was in 2007, on an eight-hour trip to Sedone from Vientiane. Our team went on an initial mission to consult with the provinces on the existing condition and management mechanisms in Sedone and identify the type of needed support to effectively manage water resources. We are grateful that PEMSEA has extended its support to a landlocked country such as Lao PDR. We believe that issues in the coastal areas are almost similar to our concerns. The only big difference is that these are happening in river basins and watersheds.

Our partnership with PEMSEA marks Lao PDR's commitment to promote integrated water resources management as part of its commitment to the SDS-SEA. This is localized through the implementation of the Sedone Integrated River Basin Project and building the capacity of the DWR and three provincial natural resources and environment departments of Champasak, Saravan and Sekong.

Since 2006, PEMSEA and Lao PDR have improved water resource and environmental management in line with socioeconomic development through the implementation of the Integrated Water Resources Management in Sedone. Joint efforts in the implementation of the Sedone Integrated River Basin Management Project guided us in sustainably managing the river basin through more effective management measures. This includes the development

of the *Sedone River Basin Sustainable Development Strategy and State of Sedone River Basin Report*, which was finished in 2010. The Sedone Strategy is being implemented to sustain water and other related resources in the basin while improving local livelihoods well-coordinated among the water sectors. In parallel, the pilot project on waste management was also finished in three different sites within the basin. PEMSEA has also contributed in developing the National Water Resources, Strategy and Action Plan, which is the basis of local-level efforts in Sedone.

Further cooperation with PEMSEA is considered a priority, particularly in promoting and developing an implementation plan for the Sedone Strategy and initiating on-the-ground implementation to address priority concerns. We hope that we can further strengthen the implementation and document experiences so that these can be shared to other river basins.

Once again, on behalf of the DWR-MONRE of Lao PDR, we would like to thank PEMSEA's cooperation and support. We are looking forward to strengthening the smooth cooperation and partnership with PEMSEA and its Country and Non-Country Partners.

Mr. Chanthanet Boulapha is the current Director General of the Department of Water Resources of Lao PDR's Ministry of Natural Resources and Environment. He has experiences working and cooperating with PEMSEA since the *Sedone Integrated River Basin Management Project* first started in 2007.



Mr. Long Rithirak

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PEMSEA is like family to me. As one of the most dynamic organizations in the world, I learned a lot working with the organization, from office work to many others things. Being a son of PEMSEA, there are three main reasons why I decided to join the boat with Dr. Chua Thia-Eng 20 years ago.

First, I chose to be a member of the organization because Dr. Chua's leadership is such a powerful one. He is a smart leader, and his flexibility makes him the right person for the position. Moreover, the high quality of work he demands from his employees and the critical decisions he makes persuaded me to join PEMSEA. Additionally, his noble knowledge on marine environment and determination to overcome any obstacle to achieve the goal of the work make him a respectful person.

Second, the work I have had with the organization have entrusted me with a great deal of knowledge not just about the marine environment but also on some other issues that I would not have known if I had not grasped the great opportunity to be part of PEMSEA. It also has been serving me well since the issues addressed by PEMSEA are also relevant to my work with the Cambodian government. These have expanded my horizon of understanding about the undersea world, and made me wonder what is actually happening down there.

Last but not the least, Cambodia is absolutely different now from what it was two decades ago. Back then, only a few people have a deep understanding of the marine environment and the government did not care as much, as the country was just waking up from its history's worst nightmare. Since its involvement with PEMSEA's activities, majestic changes have been made in the country,

including improvements on the standard of beaches and the cleanliness of the sea, as well as maintenance of coastal zones as a public area instead of being a private-sector location. The description above is just a small fraction of how PEMSEA have helped Cambodia. Initially, the government did not have sufficient funds to power up these projects but through PEMSEA's support, Cambodia now has one of the most beautiful beaches in the world. Twenty years went by just like a blink of an eye, but I have gained countless experiences working with PEMSEA. Through collaboration and teamwork, the goals we all pursued with our hard work have been giving us such a delicious fruit — the opportunity to save the world's marine environment. Although our forefathers would retire soon, the greatness of their work and accomplishments are going to be remembered and marked down in PEMSEA's history.

Mr. Long Rithirak is the Deputy Director-General of Cambodia's Ministry of Environment and the PEMSEA's National Focal Point for Cambodia. He previously served in the Department of Construction of the Ministry of Public Works and Transport as Chief Officer of Technical Management and Control. He was an intern for PEMSEA from 1995 to 1996. Mr. Long has a bachelor's degree in civil construction and a master's degree in civil engineering.



Ms. Maeve Nightingale

My story with PEMSEA began some time in 1999 and, quite honestly, it continues until today. It has been an honor to witness and be a part of the “movement.” Perhaps the highlight for me was going out to set up the Project Management Office (PMO) for the ICM demonstration site in Sihanoukville, Cambodia, in the early 2000s. This is memorable not least for the fact that I was

carrying a significant portion of our startup funds and four enormous boxes of office stationery — all that we would need to start the new office. Day one began literally by sweeping out our space in the provincial government office and moving in a table. From there on, with the dedicated work of Mr. Prak Visal and the elegant Ms. Kalyani, we gathered our small team and step-by-step started piecing together what would form the ICM implementation for Sihanoukville. Fourteen years on, a little older and maybe a little wiser, we continue to watch and learn from the developments in Sihanoukville with our friends. But it is not only the Sihanoukville story that we continue to learn from. It is the stories from all the different ICM sites across the PEMSEA region that, in Dr. Chua’s words, show us all that “ICM is [indeed] a dynamic process.” Thank you, Dr. Chua, for inviting me to be a part of this wonderful and continuing journey.

The last two decades have been a time of phenomenal and rapid change affecting coastal areas all over Asia. Despite this, we have witnessed in the ICM demonstration sites that with long-term vision and sustained strategic effort, these socioecological systems are coping and often able to adapt to change — to become resilient. PEMSEA has provided the foundation of knowledge that we shall continue to harness, put into practice and influence policy with. It has been an honor to have been part of the PEMSEA team and to still be a part of the ICM movement.

Ms. Maeve Nightingale is currently the Manager of Capacity Development for Mangroves for the Future Initiative, a nine-country regional coastal program co-chaired by the International Union for Conservation of Nature and Natural Resources (IUCN) Asia and the UNDP. Prior to that, she was head of the IUCN’s Coastal and Marine Programme under the Ecosystems and Livelihood Group since 2007, managing a number of regional projects. Ms. Nightingale has a bachelor’s degree in marine and freshwater ecology from the University of London, Queen Mary and Westfield College and a master’s degree in fisheries management and aquaculture from the University of Bangor, North Wales.



Dr. Michael Pido

My stint with PEMSEA may be described in two interrelated phases. The first phase was as the National Officer for ICM from 2000 to 2002. After submitting my doctorate thesis at James Cook University in Queensland, Australia, I flew straight back to the Philippines to report on 3 April 2000.

My role as the ICM officer was unique and intellectually stimulating. The ICM theory and practice has evolved tremendously since the 1990s. Hence, it was a challenging chore with its operational grinds, particularly when dealing with the ICM demonstration sites. I had duty travels to quite interesting places like Sihanoukville, Cambodia; Bali, Indonesia; Nampho, DPR Korea; and Danang, Vietnam. Dr. Chua Thia-Eng, then Regional Programme Director, introduced me to professional contacts and networks that I would not have made on my own. To pursue a career in the academe, I left PEMSEA in April 2002 with a heavy heart but have maintained the friendship and professional ties.

The second phase is as a member of PEMSEA’s Regional Task Force, which I continue to fulfill. Since 2007, I have been involved in equally noteworthy and challenging professional chores. Dr. Hurning Yu (former ICM senior officer) and I went to the Red Sea State in Sudan to spearhead its ICM program. I also assisted in the integrated river basin development of Champasak in Lao PDR. Aside from writing ICM modules and training materials, I served as workshop coordinator for the EAS Congress in 2009 (Manila, Philippines) and 2012 (Changwon City, RO Korea).

I could proudly say that without my association with PEMSEA, I would not be in a professional stature that I am today.

Dr. Michael Pido is the Vice President for Research and Extension of Palawan State University, concurrent Regional Coordinator for Southeast Asia Socioeconomic Monitoring Initiative for Coastal Management and member of the Asian Fisheries Society and IUCN Commission on Environmental, Economic and Social Policy. He previously worked for the Palawan Council for Sustainable Development Staff. Dr. Pido has a master’s degree in rural resources and environmental policy and a doctorate degree in environmental science.



Mr. Choe Rim

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The ICM process can be supported in the public through public awareness because it earnestly needs the general participation and support of all stakeholders including the marine, social, economic and environment sectors. Thus, public awareness is the top priority for ICM program in DPR Korea.

It might be a common understanding that it is hard to convince people that ICM is an efficient tool for environmental management. If stakeholders are aware of the benefits of ICM, they will actively support the ICM program in managing the environment. Because of this, public awareness is the top priority for the ICM program in DPR Korea.

In 2004, the National ICM Training Center was established at Kim Il Sung University. Since then, activities, such as meetings, workshops and capacity-building activities, are conducted yearly.

All activities are designed to increase public awareness of the ICM issues with differentiated approaches and manuals toward many stakeholders of various interests including scientists, government officers and enterprise managers. The translated ICM Manual was successfully utilized for the ICM training of trainers and ICM experts. The brochures on ICM published by the PMO of the Nampho ICM Demonstration project were fully used for public awareness. These capacity-building activities play a vital role in public awareness of ICM program implementation.

ICM stories were advertised and offered for public reading in press and mass media. The people attribute the increased public awareness and participation of the stakeholders in the ICM process to the reinforced public functions of the press and mass media on ICM program. The increased public awareness also continued to draw favorable acclaim from the public, which derived the support from the public authorities. Thanks to the increased public awareness, the Nampho ICM project was implemented with the strong support of stakeholders.

Mr. Choe Rim is currently the Senior Programme Officer for Energy and Environment of the Greater Tumen Initiative (GTI) Secretariat, a unique subregional intergovernmental mechanism in Northeast Asia under the support of the UNDP in China. Prior to joining the GTI, he worked with PEMSEA as a senior fellow. He was the Senior Programme Officer for Energy and Environment in the UNDP Office in Pyongyang, DPR Korea. Mr. Rim has a master's degree in economics from the Kim Il Sung University.



Mr. Mohd Khairi bin Selamat

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Over the last 10 years, Malaysia's Selangor Waters Management Authority (SWMA or LUAS) has been working on a variety of coastal and marine environment issues along the state coastlines. In line with that, in 2001, Port Klang was chosen as one of the demonstration sites for Sustainable Development of Coastal Area (SDCA) through ICM project. The project was officially launched with

the signing of the Memorandum of Agreement between the Selangor State Government and GEF/UNDP/IMO on 19 July 2001. Many organizations, as well as private and public individuals, have contributed to the development of the ICM framework in Port Klang. PEMSEA is a major contributor toward the success of ICM implementation in Selangor and has facilitated and contributed a lot, especially the PMO, in implementing ICM.

When I joined LUAS in 2007, the Port Klang ICM Project was nearly completed. By 2008, the Port Klang ICM has been adopted by the state government. Over the years since I joined LUAS, I had the opportunity to attend a series of PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) Forums and the EAS Congress in Manila, Philippines, and Changwon City, RO Korea. During the difficult times of implementation and replication of ICM, PEMSEA has endeavored to give us its support through training workshops and consultations. Personally, I really appreciate all the contributions made by PEMSEA whether in time, effort and ideas, throughout my service in LUAS, particularly in coastal management through the implementation of ICM. I wish for the success of PEMSEA in the coming years, particularly in the implementation of the SDS-SEA throughout the region.

Mr. Mohd Khairi bin Selamat's first service in the government was in 1982 as a Technical Assistant for the Drainage and Irrigation Department before working as a civil engineer in 1987. He served LUAS as Chief Assistant Director in 2007 before being appointed as Director in 2011. He has been a public servant for 30 years and an expert in research and planning development especially in Integrated River Basin Management. Mr. Selamat has a degree in civil engineering from Malaysia University of Technology and University of Glasgow. He also has a master's degree in construction management from the University of Loughbrough.



Dr. Nguyen Minh Son

ICM has positively transformed my professional life. I am a scientist who used to conduct researches on modeling of coastal processes. My participation in a regional training on ICM in 1995 through PEMSEA inspired me to delve into ICM in much greater details. That opportunity came when I participated in the internship program of PEMSEA from 1996 to 1997 where I learned the basics and the how-to's of

ICM from no less than Dr. Chua Thia-Eng and Dr. Hurning Yu. I also learned from my interaction with colleagues at PEMSEA and other experts and practitioners from the East Asian region. As national coordinator for the Danang National ICM Demonstration Project in 2000–2001, I acquired the necessary on-the-ground training and practical experiences in ICM implementation.

My field of specialization has expanded to include coastal planning and management. My research on modeling of coastal processes continued and has provided the science behind my work on ICM. These developments in my career have facilitated my involvement in various local, national, regional, international and donor-funded programs and projects in coastal and environmental management, as well as researches in coastal processes.

In all my endeavors, I considered and applied the ICM approach and methodologies carefully. I worked with a positive attitude despite some challenges in the implementation process. I conveyed the principles and concepts of ICM that I learned from PEMSEA, showed the linkages between science, policy and management and between theory and practice and helped localize applicable international knowledge to enhance local performance.

PEMSEA's ICM framework and process have significantly influenced ICM practices in Vietnam. As Vietnam is set to scale up ICM across the country, this provides the impetus for me to consolidate my experiences and help promote ICM scaling up. In this way, I can contribute in transforming Vietnam into one of the key players of ICM implementation in the region.

Dr. Nguyen Minh Son is the Deputy Director of the Institute of Environmental Technology at Vietnam Academy of Science and Technology. In 1996, he interned for PEMSEA. Since then, he has been involved in various PEMSEA activities in Vietnam, especially in Danang. Dr. Nguyen has a bachelor's degree in fluid mechanics from Tashkent University and a doctorate degree in hydrodynamics and water quality from the Institute of Water Resources Research at the Russian Academy of Sciences.



Ms. Kazumi Wakita

“Is it okay with you to eat hamburgers here while we keep on with our discussion?” That was the lunch offered by Dr. Chua on my first visit to the PEMSEA Resource Facility (PRF) in Manila after an interview for the Programme Officer position. Dr. Chua, two other candidates and I kept on talking about the work of PEMSEA while eating our McDonald's hamburgers

for more than two hours. That was a good indicator of how hard he and his staff at the PRF work. I already knew how my PEMSEA days will be after this — work and more work. But we also did have breaks. Even during busy days, I was able to enjoy eating with colleagues. Do you know *merienda*? It is a custom in the Philippines to eat snacks between meals. I often enjoyed chatting with colleagues over fruits and snacks in the pantry.

The first big event for me as Programme Officer was the opening ceremony for the new PRF building. In my previous experience, such ceremonies would normally be held inside the building with speeches by many guests in a solemn atmosphere. The ceremony for the PRF building, however, was beyond anything I could imagine. Waiting areas were prepared outside with a steady stream of colorful music, and food was also served *al fresco*. Do you know that Filipinos are good at singing and dancing? I came to know that several months later when we had an event at the office. Working time at the PRF office is very serious, no doubt, yet when it comes to events at night, we wholeheartedly enjoy eating together and singing songs. Music is inseparable from the memories of my PEMSEA days.

The biggest gift which I was bestowed by PEMSEA was the exposure to various cultures, ways of thinking and the diverse people of the seas of East Asia. PEMSEA work offered me a window into the international arena concerning coastal management and sustainable development. Thanks to colleagues, friends, my elders and betters, my PEMSEA work experience has made my life a fuller one.

One last thing: if you ever get the opportunity to join PEMSEA, don't hesitate to step aboard. You will add a different flavor to your life.

Ms. Kazumi Wakita joined PEMSEA in 2007 where she served as Programme Officer for three years. Before joining PEMSEA, she worked in Japan on the research and project management of ICM and continues to do so today at the OPRF. Ms. Wakita is pursuing interdisciplinary research related to ICM, from policy implementation analysis to the valuation of marine ecosystem services using a social science approach. She is also a project member of the Ocean Alliance of the University of Tokyo.



Ms. Nisakorn Wiwekwin

Through the years, PEMSEA has provided catalytic support and encouraged Thailand to meet the goals of the SDS-SEA, which the country adopted in 2003 through the signing of the *Putrajaya Declaration*. The SDS-SEA is the right approach in meeting economic growth while enhancing local government capacities related to improving service delivery, institutional capacity-building and

integrating the right approach to development and environmental protection — which Chonburi learned while implementing ICM.

My “journey” with PEMSEA and the ICM Program in Chonburi started in 2001 with the development of the Chonburi Coastal Strategy and Public Awareness Participation Plan during the first phase of the *Chonburi National ICM Demonstration Project*.

In 2006, I took part in the internship program at the PRF in the Philippines to enhance my capability to support ICM implementation in Chonburi. I helped prepare the Coastal Strategy Implementation Plan (CSIP) for Sriracha and supported its initiation. I was then assigned as the coordinator of the ICM program based in Sriracha Municipality from 2006 to 2012, where I coordinated the preparation and initial implementation of the CSIP/ICM Action Plan for five municipalities and the subsequent updating in line with government planning cycle and ICM scaling up to other areas, in collaboration with the local governments and partners from various sectors.

ICM implementation in Chonburi has advanced steadily following the adoption of the Chonburi Coastal Strategy by the provincial and local governments in 2004 as a common framework for interagency and cross-sectoral collaborations for sustainable coastal development of the province. ICM implementation in Chonburi has since then grown from 5 to 99 local government units.

Ms. Nisakorn Wiwekwin is currently a sanitation researcher for the Division of Public Health and Environment of Saensuk Municipality. Prior to that, she worked as sanitary researcher and ICM coordinator for Sriracha Municipality from 2005 to 2012. In 2006, she worked with the PRF in the Philippines as an intern. Ms. Wiwekwin has a bachelor’s degree in science education and a master’s degree in biological sciences from Burapha University. She also has a bachelor’s degree in occupational health from Sukhothai Tammarirat Open University.



Dr. Huming Yu

ICM is the soul of PEMSEA. PEMSEA’s early life focused on marine pollution. Its pioneers have the foresight that marine pollution management involves many sectors, thus a cross-sector and interdisciplinary approach was needed. Demonstration sites on local and subregional levels were put in place to demonstrate the ICM approach, and the results were replicated across

the East Asian Seas region. With proven success, ICM in the region turned from a myth to a reality.

With the implementation of the SDS-SEA over the last decade, PEMSEA is emerging from a GEF project to a regional collaborative mechanism and an international organization with legal personality, due to the success of its innovative approach and persistent efforts. However, progress made in securing natural resource sustainability still pales in comparison with adverse impacts of large-scale urbanization and resource use conflicts.

The East Asian Seas is the only region in the world without a treaty to promote ecosystem health and natural resource sustainability. This region is a hotspot of serious multinational conflicts for ownership over these resources with no prospect of short-term solutions, but serious consequences on our shared ecosystems. How long can we afford to keep up such conflicts, while helplessly watching the deterioration of the health of our shared ecosystems because we lack courage and necessary commitments to conserve them by joint action?

I have a dream that stakeholder governments could shelve their claims and work on a treaty of stewardship over their shared ecosystems and resources for the benefit of the region’s peace, development and prosperity. All concerned governments of the region could sign up with PEMSEA as their instrument to implement this treaty.

Dr. Huming Yu’s professional career started in the 1970s at an oceanography institute in Xiamen, PR China. He has been extensively involved in the development of on-the-ground ICM and promotion of national coastal and marine policy development in various East Asian countries since the mid-1990s, and also in projects on coastal environment, living resources and biodiversity for the Asian Development Bank and the World Bank. His previous work experiences included stints as a senior government official, Technical Advisor and Senior Programme Officer for PEMSEA and senior research fellow for the China Institute for Marine Affairs. Dr. Huming has a doctorate degree in marine policy from the University of Delaware.



Mr. Prak Visal

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Before I worked with PEMSEA, I felt that I did not understand what environment and coastal management meant. But in 2001, after being trained on ICM in Manila, Philippines, my knowledge of the environment and coastal management improved. Since then, I have worked as project administration staff for the PMO for the ICM implementation in Sihanoukville, Cambodia.

Using the learning-by-doing approach and under the full technical support of PEMSEA's Regional Task Force, I became a technical staff and coordinated with the concerned agencies to develop the Sihanoukville Coastal Strategy, Coastal Use Zoning Plan and Coastal Strategy Implementation Plan in Sihanoukville, among others.

The past 10 years of lessons learned and experience made me realize that ICM implementation cannot be done by a single sector alone. The success of ICM requires coordination and cooperation among all sectors of society — the national and local government, local communities, the business sector, the civil society and all others — should be INVOLVED. It not only involves thinking or making the action plan, but also considers the allocated budget for implementation and a prime environmental investment opportunity in need of sustainable financing. Most importantly, it is about managing people — getting them to work together and creating a better relationship for them to work together.

Mr. Prak Visal is the Technical Officer of the PMO for the ICM Program in Preah Sihanouk Province, Cambodia, for 10 years. During the project's implementation, he worked as technical staff and coordinator and participated in several national, regional and international capacity-building activities to support the ICM program implementation. Mr. Prak was involved in implementing various projects such as the formulation and implementation of the Sihanoukville Coastal Strategy, which covers livelihood management, coastal use zoning, solid waste management, fishery resources rehabilitation and sustainable beach tourism development and management.



Dr. Won-Tae Shin

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To me, PEMSEA was a good and harsh training ground for my future professional career. I have learned essential skills on how to behave and maintain composure in an extreme working environment with a myriad of urgent tasks. I see PEMSEA as an unusually complex organization for a scale of 20 to 30 staff with a unique history of metamorphosis: from a project into

an international organization. I consider myself lucky to be part of such a dynamic organization as a senior staff and to witness the transformation from a chrysalis into a young butterfly of an international organization. As PEMSEA, in 2013, is still in its nascent state, drying its wings to be ready to fly, I wish to see a full-fledged flight as an independent international organization soon.

I still remember the utter exhaustion after the 2009 EAS Congress in Manila as if it was only yesterday. A five-day international and presidential event with 1,500 participants was simply overwhelming for the PRF. The almost two months of working late into midnight was pain, agony and, at the same time, joy permanently engraved in my memory. The bliss of achievements that followed was sweet and gave me a hint of what my future career would be about. I am eternally grateful to my colleagues in PEMSEA for sharing with me all those memorable moments. I congratulate PEMSEA on its 20th anniversary and wish its safe and successful journey toward the raging seas of East Asia.

Dr. Won-Tae Shin worked for the Ministry of Oceans and Fisheries of RO Korea for three years before joining PEMSEA in October 2007. During his time at PEMSEA, he worked as a Senior Officer for the PRF. In October 2010, He started working as a Technical Advisor for the Korea International Cooperation Agency (KOICA) projects in Indonesia, Philippines and Vietnam. Currently, Dr. Shin is the CEO of Global Ocean Inc., a consulting company based in his hometown, Busan, as well as project management consultant of the Yellow Sea Large Marine Ecosystem (YSLME) Project based in Ansan, RO Korea, since June 2012.



Dr. Giselle Samonte-Tan

After eleven years have gone by, I felt that it is sensible to reflect now (being PEMSEA's 20th anniversary) on a concern that I asked myself when I was the issue editor for *Tropical Coasts* in 2002: catastrophe or cornucopia? Increasing demands on coastal and marine resources have been felt, and it is recognized that the capacity of coastal ecosystems to provide bountiful

goods and services is decreasing. I am glad that the answer is definitely not catastrophe! Of essence is the evidence of social and economic benefits derived from ICM implementation. These benefits include productivity, employment, human health, environmental quality, reduced conflict and social enhancement. As PEMSEA's technical officer for monitoring and evaluation, it was challenging to highlight the ten program components of ICM, hotspots, investments, networks, science, capacity-building, data management, civil society, policy and international conventions. Each component was crucial in bringing together countries in the region to work toward sustainable fisheries and livelihood. PEMSEA continues to make a difference in East Asia and globally, thus, effectively benefitting coastal communities in the region today and for generations to come.

Dr. Giselle Samonte-Tan is an economist for the U.S. National Oceanic and Atmospheric Administration's Fisheries Office of Habitat Conservation. Her 15-year expertise on leading economic valuations of ecosystem services and socioeconomic assessments contributed in efforts to understand the linkages of marine ecosystems and human well-being. Her accomplishments, while at the Southeast Asian Fisheries Development Center and as affiliate faculty of the University of the Philippines, reflect her passion to work in the region. Dr. Samonte-Tan has a bachelor's degree (cum laude) from the University of the Philippines and a doctorate degree from Texas A&M University under a World Bank scholarship.



Mr. James N. Paw

It is certainly wonderful to know that one of the projects you have worked with had become, after several years, an established and internationally renowned institution, which is what PEMSEA is today.

Reminiscing those early years during the implementation of the antecedent project to the PEMSEA Regional Programme (i.e., Prevention and

Management of Marine Pollution in the East Asian Seas) — which was then constrained by the process of building a team, a workplace and the initiation of activities — it is hard to believe what has become of PEMSEA. Surely, it was an honor to be working with Dr. Chua Thia-Eng and Mr. Adrian Ross, who were visionaries with indomitable spirits, stirring the Regional Programme to its present state. For me, the experiences gained in those formative years of the Regional Programme eased my move to the IMO in late 1998, in particular, carrying out assignments for the organization, including being tasked to backstop the Regional Programme for more than nine years.

I have fond memories of being part of PEMSEA's evolution, especially the interactions with staff through good and not-so-good times over the years and across the world. It was indeed a privilege to be in the pioneering helm to establish a regional mechanism that came to be PEMSEA.

Mr. James N. Paw is the Co-Secretary of the IMO's Subcommittee on Flag State Implementation based in London. As Program Coordination Officer, he oversees the planning and implementation of the Integrated Technical Cooperation Programme within the Marine Environment Division. Mr. Paw coordinated the implementation of the GEF/IBRD/IMO Marine Electronic Highway Demonstration Project (2001–2012) and provided backstopping to the Regional Programme on PEMSEA from 1998 to 2008.



Ms. Maria Cecilia San-Reario

I joined PEMSEA shortly after graduate school, full of hopes to make the world a better place. I could not have come to the Regional Programme at a more exciting and inspiring time, with the office abuzz with the work on the SDS-SEA and preparations for the first-ever EAS Congress.

Although I was a junior member of the team and a relative newcomer to the organization, I was entrusted with the responsibility of coordinating the 2003 EAS Congress, co-editing an edition of the *Tropical Coasts* and organizing the Nippon Foundation Research Task Force on the Dynamics of Regional Cooperation. The opportunity to manage these workstreams honed the program management and coordination skills and the analytical abilities that I use to this day. I learned so much in my time in PEMSEA — lessons about teamwork, diplomacy, dedication to a common cause and perseverance in the face of challenges. I do not think I would not be where I am now if not for my four years in PEMSEA and the guidance provided by the former Regional Programme Director, Dr. Chua Thia-Eng. For everything, I will always be truly grateful.

Ms. Maria Cecilia San-Reario worked as Senior Technical Assistant for Policy and Legal Analysis with PEMSEA from 2002 to 2006. She moved on to the Office of the UN Resident Coordinator in the Philippines, handling a number of development-related portfolios from 2006 to 2010, and is now based in Geneva, Switzerland, working with the United Nations Office for Disaster Risk Reduction. Ms. San-Reario has a bachelor's degree in social sciences from the Ateneo de Manila University and a master's degree in international studies from the University of the Philippines.



Mr. Joselito Guevarra

In 2004, as NASA's rover, *Spirit*, landed in Mars, I found myself in PEMSEA. Not very comparable, I know, but it felt the same to me. PEMSEA was like Mars in a way — inhospitable and cold, and I'm not talking about the air-conditioning. Okay, it wasn't that bad. PEMSEA was the first big international organization that I have worked

for. As a technical officer, I was neck-deep and hands-on with the Gulf of Thailand Project, dealing with governments and other stakeholders and soaking up all the experience I can. This more than made up for the fact that I was underpaid. Fine, fine, I wasn't underpaid. I was overworked. No, that can't be right because I still had time for naps in my workstation. Well, Dr. Chua did say that was fine as long as you do your job. I personally felt that was a great work-life balance policy. At least that's what I remember. Well, whatever. You see, life [in PEMSEA] is beautiful. It was a fun and learning time for me. Stressed? Not once. That's the only way to survive Mars.

Mr. Joselito Guevarra joined PEMSEA in 2004 as a Technical Officer for the Subregional Programme on the Gulf of Thailand and has been involved in oil spill response and preparedness ever since. Subsequently, he worked as senior consultant for Oil Spill Response Limited (OSRL), delivering numerous preparedness projects, such as exercises, trainings, contingency planning and capability reviews. After his stint in OSRL, he managed the Global Initiative for South East Asia Programme for IPIECA. Mr. Guevarra has a master's degree in environmental management from the National University of Singapore.

PEMSEA Country Partners

Cambodia	Philippines
PR China	RO Korea
DPR Korea	Singapore
Indonesia	Thailand (observer)
Japan	Timor-Leste
Lao PDR	Vietnam

PEMSEA Non-Country Partners

ASEAN Centre for Biodiversity (ACB)
Coastal Management Center (CMC)
Conservation International (CI) Philippines
International Environmental Management of Enclosed Coastal Seas (EMECS)
International Ocean Institute (IOI)
International Union for Conservation of Nature and Natural Resources (IUCN) –
Asia Regional Office
Korea Environment Institute (KEI)
Korea Institute of Ocean Science and Technology (KIOST)
Korea Marine Environment Management Corporation (KOEM)
Korea Maritime Institute (KMI)
Northwest Pacific Action Plan (NOWPAP)
Ocean Policy and Research Foundation (OPRF)
Oil Spill Response Limited (OSRL)
Plymouth Marine Laboratory (PML)
PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG)
Swedish Environmental Secretariat for Asia (SENSA)
UNDP/GEF Small Grants Programme (SGP)
UNDP/GEF Yellow Sea LME Project (YSLME)
UNEP Global Programme of Action for the Protection of the Marine Environments from
Land-based Activities (UNEP/GPA)
UNESCO-IOC Regional Secretariat for Western Pacific (IOC/WESTPAC)

East Asian Seas Partnership Council Executive Committee

Former Council Chair:	Dr. Chua Thia-Eng
Former Technical Session Chair:	Mr. Hiroshi Terashima
Former Intergovernmental Session Chair:	Dr. Li Haiqing
Council Chair:	Amb. Mary Seet-Cheng
Council Co-Chair:	Dr. Antonio La Viña
Intergovernmental Session Chair:	Atty. Analiza Rebuelta-Teh
Intergovernmental Session Co-Chair:	Dr. Zhang Zhanhai
Technical Session Chair:	Prof. Chul-Hwan Koh
Technical Session Co-Chair:	Mr. Makoto Harunari

PEMSEA National Focal Agencies

Cambodia:	Ministry of Environment
PR China:	State Oceanic Administration
DPR Korea:	General Bureau for Cooperation with International Organizations, Ministry of Foreign Trade
Indonesia:	Ministry of Environment
Japan:	Ministry of Land, Infrastructure, Transport and Tourism
Lao PDR:	Ministry of Natural Resources and Environment
Philippines:	Department of Environment and Natural Resources
RO Korea:	Ministry of Oceans and Fisheries
Singapore:	Ministry of the Environment and Water Resources
Thailand:	Ministry of Natural Resources and Environment
Timor-Leste:	Ministry of Agriculture and Fisheries
Vietnam:	Vietnam Administration of Seas and Islands

ICM Learning Centers

Royal University of Phnom Penh (Cambodia)
Xiamen University (PR China)
Bogor Agricultural University (Indonesia)
Kim Il Sung University (DPR Korea)
De la Salle University-Lipa (Philippines)
University of the Philippines Visayas (Philippines)
Xavier University-Ateneo de Cagayan (Philippines)
University of Danang (Vietnam)

Regional Centers of Excellence (RCoEs)

Centre for Marine Environmental Research and Innovative
Technology (MERIT)
University of the Philippines-Marine Science Institute (UP-MSI)

PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) Members

Regular Members

Preah Sihanouk, Cambodia
Changyi, PR China
Dongying, PR China
Fangchenggang, PR China
Haikou, PR China
Haiyang, PR China
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Qinzhou, PR China
Quanzhou, PR China
Xiamen, PR China
Badung Regency, Indonesia
Bali Province, Indonesia
Buleleng Regency, Indonesia
Denpasar City, Indonesia
Gianyar Regency, Indonesia
Jakarta Province, Indonesia
Jembrana Regency, Indonesia
Karangasem Regency, Indonesia
Klungklung Regency, Indonesia
Sukabumi Regency, Indonesia
Tabanan Regency, Indonesia
Shima, Japan
Northern Selangor, Malaysia
Port Klang, Malaysia
Bataan, Philippines
Batangas, Philippines
Cavite, Philippines
Guimaras, Philippines
Changwon, RO Korea
Shihwa, RO Korea
Chonburi, Thailand
Danang, Vietnam
Quang Nam, Vietnam
Thua Thien Hue, Vietnam

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Acting Executive Director and Chief Technical Officer
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Senior Country Programme Manager
Country Programme Assistant
Editor
IT Specialist
Communications Associate
Programme Manager for Partnership Applications
Graphic Artist
Programme Assistant I
Senior Accountant
Senior Artist
Researcher
IIMS Assistant
Webmaster
Project Coordinator – ESI Mapping in the Gulf of Thailand
Secretariat Coordinator
Researcher
Driver
Programme Specialist (seconded)
Senior Administrative Assistant
Programme Assistant II
Programme Assistant
Country Programme Manager
Office Attendant
Technical Assistant for Project Development
Country Programme Manager
Capacity-building and Communications Assistant
Editor/Communications Assistant
Finance Assistant
Executive Assistant
Library Assistant

PEMSEA Resource Facility Former Staff

Name	Designation	Duration
Chua, Thia-Eng	Regional Programme Director and Executive Director	1994–2007
Lotilla, Raphael P. M.	Executive Director	2008–2012
Abansi, Corazon	Officer – Batangas Bay Demonstration Project	1995–1999
Aca, Elson	Programmer	2000–2001
Afable, Nicole Marie	Research Assistant	2012–2013
Agsaoay, Eunice	Technical Assistant	1998
Aguinaldo, Maida	Training Assistant	2008–2012
Almira, Francis	Computer Programmer	1997
Aloria, Maribel	Environmental Monitoring Specialist, ENRO	1996–1998
Amuan, Rommel	Technical Assistant (GIS)	1997
Amurao, Ma. Victoria	Finance Assistant	2011–2012
Andal, Jane Desiree	Research Assistant	2011–2013
Aragon, Ana Marie	Administrative Assistant	2000–2002
Araza, William	Clerk	1997
Arevalo, Jeremy	Library Assistant	2005–2006
Artienda, Cornelio	Training Officer	1996–1998
Aseron, Ma. Victoria Grace	Artist	1996–1998
Atanacio, Rachel	Artist	1994–1995
Azucena, Carlos William	Technical Assistant – HRD	2005
Baculanta, Patricia	Documentations Clerk	2003–2004
Banzon, Cesar	Technical Officer – Environmental Investment	2004–2005
Basilio, Gina	Technical Assistant	1997–1998
Bautista, Vanessa	Library Assistant	2007–2010
Bernad, Stella Regina	Legal Officer – International Conventions	1995–2007
Bigal, Maricel	Editorial Assistant	1997–1999
Bonto, Edgardo Celso	Project Assistant	1996

Name	Designation	Duration
Cada, Roberto	Artist	1996
Calderon, Edmond Titus	Technician/Administrative Clerk	1997–2005
Carada, Florisa Norina	Editorial Assistant	1999
Cargamento, Agnes	Technical Reviewer	1998
Cariño, Albert	IIMS Programmer	2002–2004
Carlos, Azenith	Library Assistant	2002–2005
Castillo, Ronald	Environmental Monitoring Assistant	1997
Catalan, Jose Alvin	Technical Assistant – Research	2004–2005
Cataytay, Alma	Communications Assistant	2003
Cayaban, Leo Rex	Senior Editorial Assistant	1997–2006
Cheevaporn, Voravit	Research Associate	1995
Colocado, Marie Sol	Information Officer	2001–2002
Corpuz, Catherine Frances	Technical Officer – Public-Private Partnership	2000–2004
Cruz, Melissa	Corporate Social Responsibility Specialist	2010–2012
Cuanang, Liligrace	Secretary	1994–1995
Cuevas, Arleen	Senior Communications Assistant	2001–2003
Custodio, Khristine	Senior Communications Assistant – Webmaster	2002–2010
David, Felicisimo Jr.	Technical Officer – Monitoring and Evaluation	2000
De Guzman, Eugene	Computer Technician	1999
Dela Paz, Catalino	Computer Programmer	1996–1997
Delos Reyes, Mario	Programme Officer	1997–1998
Diamante, Dolores Ariadne	Research Associate	1994–1995
Diaz, Raul	Layout Artist	1996
Dizon, Leticia	Information Officer	1997–1999
Ebarvia-Bautista, Maria Corazon	Technical Officer – Environmental Investments	1999–2007
Escolano, Augusto	Training Officer	1996–1998
Espino, Pythias	Technical Assistant – Environmental Chemistry	1995
Fabunan, Alexis	Technical Assistant, GIS Specialist	1995–1998; 2003
Fornoles, Olivia	Secretary	1996–1997
Garcia, Benjamin	Assistant Congress Coordinator – Events Management	2005–2006

Name	Designation	Duration
Genilo, Jude William	Information Officer	2001
Gervacio, Bresilda	Technical Officer – IIMS and Coastal Use Zoning	1994–1995; 1997–2007
Gonzales, Antonio	Layout Artist	1998
Gorre, Ingrid Rosalie	Technical Officer – Community Network	1999–2000
Guerrero, Socorro	Senior Administrative Officer	1994–2005
Guevarra, Joselito	Technical Officer – Subregional Seas	2004–2005
Guinto, Alexander	Technical Assistant – Risk Assessment/Risk Management	2000–2005
Hernandez, Antonio Jr.	Senior Accounting Clerk	1994–2003
Hidalgo, Mary Ann	Training Officer	2002
Inciong, Olivia Sylvia	Information Officer	2003
Irisari, Milani	Legal Assistant – Marine Affairs Policy	2001
Isla, Emmanuel	Artist	2000–2002
Israel, Danilo	Site Manager – Batangas	1994–1997
Javier, Tricia	Information Officer	2000
Javillonar, Joyce	Training Assistant	2000–2004
Kalaw, Ma. Theresa	Research Assistant	1997
Kang, Katherine	Webmaster	2000–2002
Kho, James	Research Associate/Writer	1998
Lacerna, Ma. Teresita	Legal Officer – Law, Policy and Institutional Development	2002–2011
Lee, Jihyun	Senior Programme Officer	2000–2007
Librodo, Lisa Aines	Training Officer	2001
Licuanan, Ferdinand	Library Assistant	2001–2002
Lontoc, Vir Angelo	Data Encoder	1996
Lopez, Jocelyn	Accounting Clerk	2002–2006
Lopez, Joselito	Senior Programme Officer	2000
Luoping, Zhang	Research Assistant	1997
Maaliw, Alex	Technical Officer – Monitoring and Evaluation	2002–2003
Macabeo, Yolwinda	Receptionist/Clerk	2004–2005
Madriaga, Efren	Senior Office Assistant	1999–2002
Malto, Abigail	Communications Assistant	2002–2003
Mandac, Eden	Secretary	1995–2003
Mangahas, Juan Paolo	Communications Assistant	2003–2005

Name	Designation	Duration
Manguiat, Ma. Socorro	Legal Research Associate – International Conventions	1999–2001
Marfil, Lilian	Publications Coordinator	1996–1997
Matanguihan, Josefina	Environmental Management Specialist	1996–1997
Molo, Carmela Ann	Receptionist	2000–2003
Morales, Jane	Secretary	1996
Naeg, Erdito	Copyeditor	1996–1997
Natarajan, Ramanathan	Research Assistant	1996–1997
Nathan, Ari	Senior Programme Officer	2000
Navarro, Enrique	Conference Coordinator	2003
Nuñez, Enrique Antonio	Project Coordinator – Public-Private Partnership	2000
Ordoñez, Muriel	Chief Editor	1999
Padilla, Delilah	Research Assistant	1997–1998
Pascual, Ferdinand	Office Assistant	1998
Paw, James	Technical Programme Officer	1994–1998
Payumo, Annechielli	Accounting Clerk	2000–2002
Pido, Michael	Technical Officer – ICM	2000–2002
Poblete, Angelita	Programme Management Assistant	1996
Rafanan, Gary	IT Specialist	2000
Requinala, Rainer Allan	Senior Technical Assistant – Project Monitoring and Evaluation	2002–2010; 2012–2013
Reyes, Michael	Research Associate	1995–1997
Reyes, Rommel	Project Assistant	1996
Robles, Noel	Senior GIS Technician	1995–2002
Ronquillo, Jaime	Publications Coordinator	1996
Rosales, Rina	Research Associate	1996–1997
Rosales, Vilma	Secretary	1995–1996
Ruiz, Bernard Fortunato	Library Assistant	2001
Saet, John Eric Dylan	Webmaster	2008–2009
Samarasekara, Vidhisha	Assistant Technical Programme Officer	1998
San, Maria Cecilia	Senior Technical Assistant – Legal/Policy Analysis	2002–2006
Sanohan, Aida	Environmental Monitoring Assistant	1997–1998
Shin, Won-Tae	Programme Specialist	2007–2011
Silan, Ma. Margarita	Receptionist	2003–2004

Name	Designation	Duration
Solito, Kristine Joy	Secretary	2006
Soriano, Elizabeth	Copyeditor	1996
Sujarae, Apiradee	Project Technical Coordinator – Chonburi ICM	2001–2004
Tan, Giselle	Technical Officer – Monitoring and Evaluation	2000–2003
Tejam, Catalina	Resource Economist	1995–1997
Torres, Susan	Accountant	2000
Urbano, Ramil	Driver	2005–2007
Uy, Magnolia	Technical Officer – Communications	2008–2009
Uychiaoco, Andre Jon	Technical Officer – Project Development	2008–2011
Valeriano, Arsenio Jr.	Accounts Assistant	2001–2011
Villa, Deborah	Technical Editorial Assistant	1996–1997
Villamor, Jose	Driver	2004–2007
Villarosa, Casimiro Jr.	Senior Communications Assistant	2000–2001
Viyar, Nogel	Communications Assistant – Video	2003–2007
Wakita, Kazumi	Programme Officer for Partnership Programmes	2007–2011
Yu, Huming	Senior Programme Officer	1995–2000; 2002–2007
Zafra, Alfie	Senior Communications Assistant	2000

PEMSEA Key Events

East Asian Seas Congress

East Asian Seas Congress 2003 (8–12 December 2003 in Putrajaya, Malaysia)

East Asian Seas Congress 2006 (12–16 December 2006 in Haikou, PR China)

East Asian Seas Congress 2009 (23–27 November 2009 in Manila, Philippines)

East Asian Seas Congress 2012 (9–13 July 2012 in Changwon, RO Korea)

Programme Steering Committee Meeting

First Programme Steering Committee Meeting (1–4 June 1994 in Quezon City, Philippines)

Second Programme Steering Committee Meeting (11–13 December 1995 in Phuket, Thailand)

Third Programme Steering Committee Meeting (10–12 December 1996 in Kuala Lumpur, Malaysia)

Fourth Programme Steering Committee Meeting (15–18 December 1997 in Hanoi, Vietnam)

Fifth Programme Steering Committee Meeting (2–5 December 1998 in Bali, Indonesia)

Sixth Programme Steering Committee Meeting (25 March 1999 in Manila, Philippines)

Seventh Programme Steering Committee Meeting (26–29 July 2000 in Dalian, PR China)

Eighth Programme Steering Committee Meeting (19–22 March 2002 in Busan, RO Korea)

Ninth Programme Steering Committee Meeting (6–9 August 2003 in Pattaya, Thailand)

Tenth Programme Steering Committee Meeting (25–29 October 2004 in Xiamen, PR China)

Eleventh Programme Steering Committee Meeting (1–4 August 2005 in Siem Reap, Cambodia)

Twelfth Programme Steering Committee Meeting (1–4 August 2006 in Davao City, Philippines)

East Asian Seas (EAS) Partnership Council Meeting

First EAS Partnership Council Meeting (17–20 July 2007 in Manado City, Indonesia)

Second EAS Partnership Council Meeting (14–17 July 2008 in Tokyo, Japan)

Third EAS Partnership Council Meeting (26–29 July 2010 in Dandong, PR China)

Fourth EAS Partnership Council Meeting (11–14 July 2011 in Busan, RO Korea)

Fifth EAS Partnership Council Meeting (9–11 July 2013 in Manila, Philippines)

Executive Committee Meeting

First Executive Committee Meeting (14–15 September 2007 in Quezon City, Philippines)

Second Executive Committee Meeting (14–15 March 2008 in Quezon City, Philippines)

Third Executive Committee Meeting (13 July 2008 in Tokyo, Japan)

Fourth Executive Committee Meeting (20 December 2008 in Beijing, PR China)

Fifth Executive Committee Meeting (24–25 July 2009 in Manila, Philippines)

Sixth Executive Committee Meeting (12–13 March 2010 in Beijing, PR China)

Seventh Executive Committee Meeting (26–27 October 2010 in Manila, Philippines)

Eighth Executive Committee Meeting (11–12 March 2011 in Beijing, PR China)

Ninth Executive Committee Meeting (24–25 October 2011 in Manila, Philippines)

Tenth Executive Committee Meeting (20–21 April 2012 in Manila, Philippines)

Eleventh Executive Committee Meeting (27–28 October 2012 in Beijing, PR China)

Twelfth Executive Committee Meeting (3–4 April 2013 in Manila, Philippines)

PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) Forum

First Regional Network of Local Governments Implementing ICM Forum (15–16 March 2001 in Shihwa, RO Korea)

Second Regional Network of Local Governments Implementing ICM Forum (20–23 September 2002 in Xiamen, PR China)

Third Regional Network of Local Governments Implementing ICM Forum (9 December 2003 in Putrajaya, Malaysia)

Fourth Regional Network of Local Governments Implementing ICM Forum (20–25 April 2006 in Bali, Indonesia)

Inaugural Meeting of the PEMSEA Network of Local Governments for Sustainable Coastal Development

(13 December 2006 in Haikou, PR China)

2007 PNLG Forum (5–7 September 2007 in Danang, Vietnam)

2008 PNLG Forum (19–21 November 2008 in Sihanoukville, Cambodia)

2009 PNLG Forum (21 November 2009 in Bataan, Philippines)

2010 PNLG Forum (21–24 November 2010 in Chonburi, Thailand)

2011 PNLG Forum (25–27 July 2011 in Dongying, PR China)

2012 PNLG Forum (8 July 2012 in Changwon, RO Korea)

First Ministerial Forum (Putrajaya, Malaysia, 2003)



Second Ministerial Forum (Haikou, PR China, 2006)



Third Ministerial Forum (Manila, Philippines, 2009)



Fourth Ministerial Forum (Changwon City, RO Korea, 2012)



East Asian Seas Congress 2003 (Putrajaya, Malaysia)



East Asian Seas Congress 2006 (Haikou, PR China)



East Asian Seas Congress 2009 (Manila, Philippines)



East Asian Seas Congress 2012 (Changwon City, RO Korea)



EAS Congress 2003 Exhibits



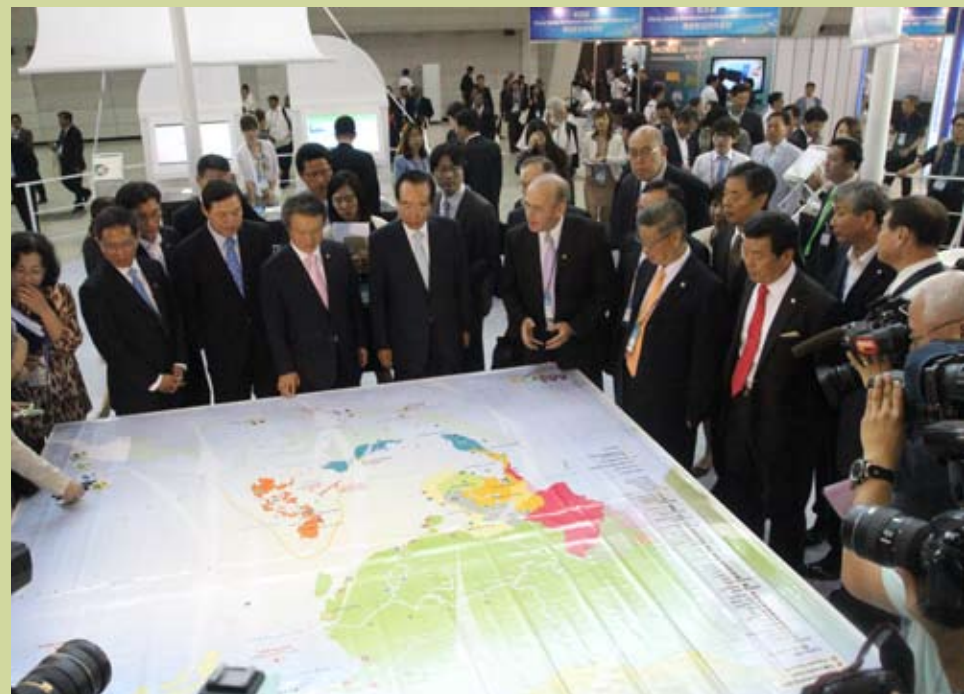
EAS Congress 2006 Exhibits



EAS Congress 2009 Exhibits



EAS Congress 2012 Exhibits



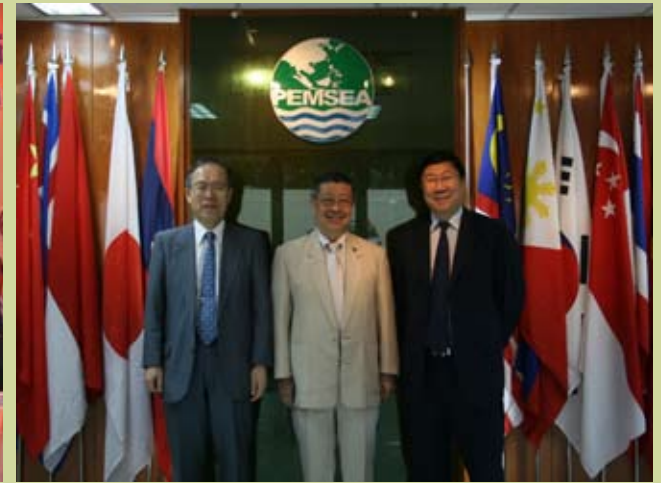
Key Events



1st Ministerial Forum (Putrajaya, 2003)



Declaration of ICM Scaling Up (Chonburi, 2006)



2nd EC Meeting (Manila, 2008)



CSR Forum (Manila, 2009)



3rd PC Meeting (Manila, 2009)



PNLG Forum (Bataan, 2009)



Declaration of ICM Scaling Up (Danang, 2009)



Senior Government Officials' Meeting (Changwon, 2012)



12th Executive Committee Meeting (Manila, 2012)

List of Acronyms and Abbreviations

ACB	–	ASEAN Centre for Biodiversity	ICLARM	–	International Center for Living Aquatic Resource Management
ADB	–	Asian Development Bank	ICM	–	integrated coastal management
AFS	–	International Convention on the Control of Harmful Antifouling Systems on Ships	IEC	–	information, education and communications
AIS	–	Automatic Identification System	IIMS	–	Integrated Information Management Systems
ASEAN	–	Association of Southeast Asian Nations	IMO	–	International Maritime Organization
ASEAN/COST	–	ASEAN Committee on Science and Technology	IOC	–	Intergovernmental Oceanic Commission
BCCF	–	Bataan Coastal Care Foundation	IOC-WESTPAC	–	Intergovernmental Oceanic Commission's Subcommission for the Western Pacific
BICMP	–	Bataan Integrated Coastal Management Program	IOI	–	International Ocean Institute
BOT	–	build, operate and transfer	ITC-CSD	–	International Training Center for Coastal Sustainable Development
BOOT	–	build, own, operate and transfer	IUCM	–	Integrated Urban Coastal Management
BWM	–	International Convention for the Control and Management of Ships' Ballast Water and Sediments	IUCN	–	International Union for Conservation of Nature and Natural Resources
CBD	–	Convention on Biological Diversity	IW	–	International Waters
CCA	–	Common Country Assessment	IW:LEARN	–	International Waters Learning Exchange and Resource Network
CIMA	–	China Institute for Marine Affairs	KEI	–	Korea Environment Institute
CI Philippines	–	Conservation International Philippines	KIOST	–	Korea Institute for Ocean Science and Technology
CMC	–	Coastal Management Center	KM	–	knowledge management
COBSEA	–	Coordinating Body of the Seas of East Asia	km	–	kilometer
COD	–	chemical oxygen demand	km ²	–	square kilometer
COMI	–	Coastal and Ocean Management Institute of Xiamen University	KMI	–	Korea Maritime Institute
CSIP	–	Coastal Strategy Implementation Plan	KOEM	–	Korea Marine Environment Management Corporation
CSR	–	corporate social responsibility	KOICA	–	Korea International Cooperation Agency
DENR	–	Department of Environment and Natural Resources (Philippines)	L	–	liters
DWR	–	Department of Water Resources (Lao PDR)	LGU	–	local government unit
EC	–	Executive Committee	LME	–	large marine ecosystem
EMECS	–	International Environmental Management of Enclosed Coastal Seas	MAP	–	Management Association of the Philippines
EO	–	Executive Order	MARPOL	–	International Convention for the Prevention of Pollution from Ships
FAO	–	Food and Agriculture Organization	MBCO	–	Manila Bay Coordinating Office
FYP	–	Five-Year Planning	MDG	–	Millennium Development Goal
GDP	–	gross domestic product	MEG	–	Multidisciplinary Expert Group
GEF	–	Global Environment Facility	MEH	–	Marine Electronic Highway
GIS	–	Geographical Information System			
GTI	–	Greater Tumen Initiative			

MERIT	–	Centre for Marine Environmental Research and Innovative Technology	RMB	–	renminbi
METI	–	Ministry of Economy, Trade and Industry (Japan)	RNLG	–	Regional Network of Local Government
MEXT	–	Ministry of Education, Culture, Sports, Science and Technology (Japan)	SCCBD	–	Biodiversity Management in the Coastal Area of China's South Sea Project
MFA	–	Ministry of Foreign Affairs (Singapore)	SCOR-ICES	–	Scientific Committee on Ocean Research-International Council for the Exploration of the Seas
MLIT	–	Ministry of Land, Infrastructure and Transport (Japan)	SEAFDEC	–	Southeast Asian Fisheries Development Center
MMA	–	International Master Program for Marine Affairs	SENSA	–	Swedish Environmental Secretariat for Asia
MOE	–	Ministry of the Environment (Japan)	SDCA	–	Sustainable Development of Coastal Area
MONRE	–	Ministry of Natural Resources and Environment (Lao PDR)	SDG	–	Sustainable Development Goal
MPA	–	marine protected area	SDS-SEA	–	Sustainable Development Strategy for the Seas of East Asia
MPA	–	Maritime and Port Authority (Singapore)	SOA	–	State Oceanic Administration (PR China)
MPP-EAS	–	Marine Pollution Prevention and Management in the East Asian Seas	SOC	–	State of the Coasts
MSP	–	marine spatial planning	SWMA	–	Selangor Waters Management Authority
NACA	–	Network of Aquaculture Centers in Asia	TCCME	–	Technical Committee on the Coastal and Marine Environment
NEDA	–	National Economic and Development Agency (Philippines)	TEU	–	twenty-foot equivalent unit
NGO	–	nongovernment organization	TWG	–	Technical Working Group
NOAA	–	National Oceanic and Atmospheric Administration	UNCED	–	United Nations Conference on the Environment and Development
NOWPAP	–	Northwest Pacific Action Plan	UNCLOS	–	United Nations Convention on the Law of the Sea
NTF	–	National Task Force	UNDP	–	United Nations Development Programme
OPRC	–	International Convention on Oil Pollution Preparedness, Response and Co-operation	UNEP	–	United Nations Environment Programme
OPRF	–	Ocean Policy Research Foundation	UNEP/GPA	–	United Nations Environment Programme-Global Programme of Action for the Protection of the Marine Environments from Land-based Activities
OSRL	–	Oil Spill Response Limited	UNESCO	–	United Nations Educational, Scientific and Cultural Organization
PDP	–	Philippine Development Plan	UNFCCC	–	United Nations Framework Convention on Climate Change
PEMSEA	–	Partnerships in Environmental Management for the Seas of East Asia	UNITAR	–	United Nations Institute for Training and Research
PML	–	Plymouth Marine Laboratory	UNOPS	–	United Nations Office for Project Services
PMO	–	Project Management Office	UP-MSI	–	University of the Philippines' Marine Science Institute
PNLG	–	PEMSEA Network of Local Governments for Sustainable Coastal Development	USD	–	U.S. dollar
PPP	–	public-private partnership	WMU	–	World Maritime University
PRF	–	PEMSEA Resource Facility	WSSD	–	World Summit on Sustainable Development
PSC	–	Programme Steering Committee	XMU	–	Xiamen University
PSSA	–	particularly sensitive sea area	XWOW	–	World Ocean Week in Xiamen
RCoE	–	Regional Centers of Excellence	YSLME	–	Yellow Sea Large Marine Ecosystem

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