



# SEA Change

## THE PEMSEA STORY

**28** Years of Collaboration for the Seas of East Asia





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## SEA Change: The PEMSEA Story

June 2021

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PEMSEA Resource Facility  
P.O. Box 2502, Quezon City 1165, Philippines  
Tel: (+632) 8929-2992 Fax: (+632) 8926-9712  
Email: [info@pemsea.org](mailto:info@pemsea.org)  
[www.pemsea.org](http://www.pemsea.org)



# FOREWORD



**MS. KANNI WIGNARAJA**

Assistant Secretary General and  
Director of the Regional Bureau  
for Asia and the Pacific  
UNDP

As PEMSEA celebrates its 28th year of existence, we at UNDP are proud to be part of a dynamic organization supporting more than 30 percent of the world's coral reefs and 80 percent of global aquaculture. We share PEMSEA's conviction that the East Asian region's billion-strong population, especially its poorest and most vulnerable, deserves more inclusive development, including via the blue economy.

More than three billion people rely on the ocean for their livelihoods, the vast majority in developing countries. Globally, the coastal and oceanic environments are valued at USD 2.5 trillion, from which 60 percent of the world's total gross national product is derived. The contribution of the seas of East Asia cannot be overstated: the marine economy comprises 15-20 percent of the GDP of many East Asian countries.

PEMSEA is instrumental in safeguarding these precious commodities, and its work is only gaining in urgency and importance. According to the recently issued Second World Ocean Assessment, many of the benefits that the global ocean provides to humankind are being undermined by our own actions. Our seas are choking with plastic waste, from the remotest atolls to the deepest ocean trenches. Overfishing is causing an annual loss of almost \$90 billion in net benefits, deepening the vulnerability of women, who are vital to the survival of small-scale fishing businesses. Meanwhile, carbon emissions are driving ocean warming and acidification, destroying biodiversity and causing sea level rise that threatens heavily inhabited coastlines.

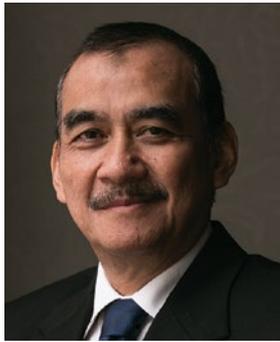
UNDP and PEMSEA are steadfast development partners in advancing shared visions in equitable and poverty-alleviating sustainable development and good governance. The shared prosperity resulting from equitably shared responsibilities and commitment produces lasting dividends and promotes peace.

As the world strives to build back better beyond the COVID-19 pandemic, the 14 countries in the East Asian Seas region can look to PEMSEA to support a green recovery by harnessing more innovative ways to sustainably co-manage the coastal and marine resources of the region.

UNDP looks forward to continued strong cooperation with PEMSEA in our joint commitment to safeguard sustainable development for the region.

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# FOREWORD



**MR. ARIEF YUWONO**

Chair, East Asian Seas  
Partnership Council  
PEMSEA

The PEMSEA Story: 28 years of collaboration for the Seas of East Asia chronicles the partnerships' journey of transformation which started as a fledgling pollution project in 1993 to become a regional coordination mechanism with an international legal personality.

PEMSEA works on a range of coastal and marine management programs such as biodiversity conservation, climate change and disaster risk reduction, marine pollution and solid waste management and cross cutting programs on ocean governance, capacity development and knowledge management and blue economy and sustainable financing under the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA).

This book provides an updated narrative on why strategic partnerships and integrated management solutions are important elements in establishing a regional partnership mechanism to manage large marine ecosystems. It focuses on the successes and lessons learned from PEMSEA's experience at the local, national and regional levels to protect, manage and restore coasts and ocean, aligned with international agreements and targets such the UN SDGs, the Aichi Biodiversity Agreement, the UN Framework Convention on Climate Change, among others.

The story was developed primarily by consolidating and updating information provided by the UNDP/GEF Scaling Up Implementation of SDS-SEA project's knowledge products and reports and supplemented by interviews with key partners, collaborators and stakeholders.

We are grateful for the continued support of the Global Environmental Facility (GEF), United Nations Development Programme (UNDP), the International Maritime Organization (IMO), country partners, non-country partners, local governments, learning centers, youth network and many other collaborating organizations and institutions to implement and institutionalize the programs and actions agreed in the SDS-SEA through the years.

However, the PEMSEA Story does not end here. As we acknowledge what has been done, we must plan what we still need to do. The need to promote sustainable coastal and marine development in the region is greater than ever, and compounded with uncertainty due to the global pandemic and persistent problem of climate change.

International development agencies and national governments should continue to give importance to coasts and ocean under their economic recovery programs. They should also motivate and support local governments and other stakeholders (business, coastal communities, NGOs, academe) to implement actions and solutions.

I hope that the book can serve as a reminder of the vision and commitment of the founders of PEMSEA as well as serve as an inspiration to the present and future champions to protect and sustain our coasts and ocean under the 'new' normal.

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# ACRONYMS AND ABBREVIATIONS

AIDS	–	acquired immunity deficiency syndrome
ASEAN	–	Association of Southeast Asian Nations
ATSEA-2	–	UNDP/GEF Arafura and Timor Seas Ecosystem Approach Phase II
BCRMF	–	Batangas Coastal Resources Management Foundation
BUU	–	Burapha University
CBD	–	Convention on Biological Diversity
CCMRS IPB	–	Center for Coastal and Marine Resources Studies of Institut Pertanian Bogor University-Indonesia
CMEMP	–	Coastal and Marine Ecosystems Management Program
COBSEA	–	Coordinating Body on the Seas of East Asia
COMI	–	Coastal and Ocean Management Institute (Xiamen University)
COVID-19	–	Coronavirus disease 2019
CRM	–	coastal resource management
CSR	–	corporate social responsibility
CSIP	–	Coastal Strategy Implementation Plan
DENR	–	Department of Environment and Natural Resources, Philippines
DCMR	–	Department of Marine and Coastal Resources, Thailand
DPRK	–	Democratic People's Republic of Korea
EAS	–	East Asian Seas
EC	–	Executive Committee
GEF	–	Global Environment Facility
GDP	–	gross domestic product
GPA	–	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
HOPE	–	Healthy Oceans, People, and Economies
ICM-MBT	–	International Conference on Coastal Management and Marine Biotechnology
ICLARM	–	International Center for Living Aquatic Resource Management
ICM	–	integrated coastal management
IGES	–	Institute for Global Environmental Strategies
IIMS	–	integrated information management system
IMMCC	–	Integrated Marine Management and Coordination Committee, Xiamen, China
IMO	–	International Maritime Organization
ISO	–	International Organization for Standardization
IUCN	–	International Union for the Conservation of Nature
IW	–	International Waters

LAO PDR	– Lao People’s Democratic Republic
LME	– large marine ecosystem
MAF	– Ministry of Agriculture and Fisheries, Timor-Leste
MARPOL	– International Convention for the Prevention of Pollution from Ships
MDG	– Millennium Development Goal
MoE	– Ministry of Environment, Cambodia
MOEF	– Ministry of Environment and Forestry, Indonesia
MERIT	– Center for Marine Environmental Research and Innovative Technology
MERS	– Middle East Respiratory Syndrome
METT	– Management Effectiveness Tracking Tool
MMAF	– Ministry of Marine Affairs and Fisheries, Indonesia
MONRE	– Ministry of Natural Resources and Environment, Viet Nam
MPA	– marine protected area
MPP-EAS	– Marine Pollution Prevention and Management for the East Asian Seas
NDC	– Nationally Determined Contributions
NGO	– non-governmental organization
NSOC	– National State of Ocean and Coasts
OHI	– Ocean Health Index
OPRI-SPF	– Ocean Policy Research Institute - Sasakawa Peace Foundation
PC	– Partnership Council
PEMSEA	– Partnerships in Environmental Management for the Seas of East Asia
PG-ENRO	– Provincial Government Environment and Natural Resources Office
PML	– Plymouth Marine Laboratory
PNLC	– PEMSEA Network of Learning Centers
PNLC-BUU	– PEMSEA Network Learning Center, Burapha University
PNLG	– PEMSEA Network of Local Governments for Sustainable Coastal Development
PNYL	– PEMSEA Network of Young Leaders
PRF	– PEMSEA Resource Facility
PSHEM	– Port Safety, Health, and Environmental Management
RCOE	– Regional Center of Excellence
RNLG	– Regional Network of Local Governments
ROK	– Republic of Korea
RUPP	– Royal University of Phnom Penh

RVA	– risk and vulnerability assessment
SAP	– Strategic Action Plan
SDCA	– Sustainable Development of Coastal Areas
SDG	– Sustainable Development Goal
SDS-SEA	– Sustainable Development Strategy for the Seas of East Asia
SEAFDEC	– Southeast Asian Fisheries Development Centre
SOC	– State of the Coasts (local); State of Oceans and Coasts (national and regional)
UN	– United Nations
UNCED	– United Nations Conference on Environment and Development
UNCLOS	– United Nations Convention on the Law of the Sea
UNDP	– United Nations Development Programme
UNEP	– United Nations Environment Programme
UNESCO	– United Nations Educational, Scientific, and Cultural Organization
UNFCCC	– United Nations Framework Convention on Climate Change
UNOPS	– United Nations Office for Project Services
UP-MSI	– University of the Philippines–Marine Science Institute
USAID	– United States Agency for International Development
WHO	– World Health Organization
WSSD	– World Summit on Sustainable Development
XIFCC	– Xiamen International Forum for Coastal Cities

# PREFACE: CROSSROADS

# 1

EAST Asia is one of the world's most populous and economically dynamic regions. The countries of East Asia bring together a diversity of complex, ancient cultures, many of them inextricably tied to the sea. Many East Asian peoples share beliefs and traditions relating to their surrounding waters, and their ancestors pioneered in the establishment of early ocean trade and migration routes.

Comprised of 14 countries—Brunei Darussalam, Cambodia, the People's Republic of China (China), the Democratic People's Republic of Korea (DPR Korea), Indonesia, Japan, Lao People's Democratic Republic (Lao PDR), Malaysia, Philippines, Republic of Korea (RO Korea), Singapore, Thailand, Timor-Leste, and Viet Nam—with a combined and growing population of almost 2 billion of the Earth's total population, this region harbors some of the most important and biodiverse bodies of water on the planet, covering a large range of ecosystems, and priceless in both economic and sociocultural value.

The East Asian Seas (EAS) have an area of 7 million km<sup>2</sup>, stretching from the Yellow Sea in the north to the Indonesian Sea in the South. The total coastline measures around 234,000 km, with 75 percent of the region's inhabitants—about 1.5 billion people—living within 100 km of this coastline.

The seas of East Asia support 30 percent of the world's coral reefs, supply 40 million tons of annual marine capture fisheries, produce more than 80 percent of the world's aquaculture output, and are home to nine of the world's 10 busiest seaports.

There are also tidal flats, salt marshes, and seamounts. These blue habitats provide an extensive range of natural assets and resources from which humans derive a wide variety of ecosystem services that make life possible, and upon which human activities rely.

The Seas of East Asia



The region is also where one finds six of the world's identified large marine ecosystems (LMEs). LMEs are relatively large regions of the world's ocean with a minimum area of 200,000 km<sup>2</sup> or greater, encompassing coastal areas, river basins and estuaries to the seaward boundaries of continental shelves and the outer margins of major ocean currents. They are characterized by their unique undersea topography, current, marine productivity, and food chain interactions. Productivity in LME protected areas is generally higher than in the open ocean. They harbor biodiversity and provide important ecosystem services and tangible benefits, including livelihoods, food security, carbon sequestration and storage, navigation and trade routes, and recreational opportunities ([https:// www.lmehub.net/](https://www.lmehub.net/)).

Because of its bottom topography and seawater temperature, the East China Sea LME is an important spawning ground for many commercial marine species, including squid, tuna, sardines, and mackerel. The richness of the fishing grounds in the Yellow Sea LME is due to constantly flowing water and air currents that run from north to south, thus benefiting the countries that surround it: China, DPR Korea, and RO Korea. The South China Sea LME, long acknowledged as the global center of marine tropical biodiversity, is bordered by Brunei Darussalam, Cambodia, China, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. The Sulu-Celebes Sea LME, bordered by Indonesia, Malaysia, and the Philippines, is also noted for its rich biodiversity. The Indonesian Sea LME (ISLME) situated at the confluence of the Pacific and Indian Oceans, and bordered by Indonesia and Timor Leste, is known for its rich ecosystem and as a migratory route for marine species. Finally, the Gulf of Thailand LME, bordered by Cambodia, Malaysia, Thailand, and Viet Nam, is home to coral reefs and major estuaries, and is an important fishing ground for the region.

The tremendous economic development in East Asia comes at a price, however, given the negative effects on the environment, further compounded by the growing population and climate change. The region's population in 2021 has doubled to 1.68 billion since 1960, and is projected to increase to 1.70 billion by 2030 ([www.worldometers.info](http://www.worldometers.info)). Climate change continues to affect both weather and sea levels, rendering some coastal areas unsafe for human settlement.

By the early 1970s, ocean fish stocks had begun to plummet due to a combination of overfishing, destructive fishing methods, and illegal, unregulated, and unreported fishing. Mangroves and wetland areas were also being cleared to make way for lucrative fish and shrimp farms.

Mainly because of urbanization and industrial development, environmental quality deteriorated, with pollution from land- and sea-based sources leading to severe ecological damage. Polluted waters meant fish and other seafood were exposed to toxins and chemical pollutants, posing hazards to human health. The issue was a transboundary one, as it affected several neighboring countries sharing the same waters.

The challenge was to find a truly sustainable middle ground that incorporates both development and priorities in what Dr. Chua Thia-Eng, former Regional Programme Director of PEMSEA, has called "a region of cultural, political, ecological, and socioeconomic diversity complicated by transboundary and resource use conflicts and mistrust."

Water and coastal governance—specifically, efforts to address ocean and coastal pollution—led to what would eventually become Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). What began as a regional

marine pollution program in 1993, funded by the Global Environment Facility (GEF), implemented by the United Nations Development Programme (UNDP), and executed by the International Maritime Organization (IMO), evolved into a regional coordination mechanism for coastal and ocean governance in the East Asian Seas through the years.

Unlike other regional bodies, PEMSEA was created by countries in the region and not through a regional or standard international agreement or convention. It is a unique regional coordinating mechanism that operates at the local, national and regional levels. Its mission is to foster and sustain healthy and resilient coasts and oceans, communities, and economies across the Seas of East Asia through integrated management solutions and working partnerships among countries and various entities with stakes in sustainable coastal development. It pioneered the discourse on and the application of the integrated coastal management (ICM) approach in East Asia, which has since been incorporated in the legislation and coastal management systems of several countries.

PEMSEA is also the regional coordinating mechanism for the implementation of the Sustainable Development Strategy

for the Seas of East Asia (SDS-SEA), through which countries work together, with a shared objective and framework, towards sustainably managing the coasts and oceans of the region.

The evolution of PEMSEA continues as it marks its 28th year of existence in 2021. As PEMSEA works to achieve self-sufficiency, while providing advisory, monitoring, project management, knowledge management, and certification services to its partners, it strives to lead action in its key areas of focus: integrated management approaches to promote healthy habitats and biodiversity, climate change and disaster risk reduction, and clean water. It also endeavors to promote a sustainable, inclusive, and resilient blue economy as an alternative, more sustainable route to economic growth and the achievement of the goals of the SDS-SEA and the United Nations (UN) Sustainable Development Goals (SDGs), especially in this time of a global health pandemic.

Today, as with the entire planet, East Asia continues to reel from the effects of COVID-19. The crisis has provided challenges as well as opportunities, for PEMSEA to reset its course for the future of sustainable management of East Asia's oceans and coasts.

## The first movers

The **GEF** was established in 1991, a year before the 1992 United Nations Conference on Environment and Development (UNCED), also known as the Rio Earth Summit. GEF's mission is to provide support for developing countries to address environmental issues, allocating some US\$17.4 billion in funding to date, and boosting projects in 165 nations in partnership with local and global organizations. Such funds are replenished every four years by donor countries.

GEF adheres to a list of Focal Area Strategies, which includes International Waters (IW). "With 70 percent of the Earth being ocean and 60 percent of the land lying in cross-border surface and groundwater basins, most water systems on Earth are transboundary—and thus are at the heart of the GEF International Waters [IW] mandate" (<https://www.thegef.org/topics/international-waters>).

Its involvement in East Asia's LMEs was further underscored by two of the organization's objectives under its IW strategy under Objective Two of the 5th replenishment cycle of GEF funds, "Catalyze multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and LMEs while considering climatic variability and change," and Objective Three, "Support foundational capacity building, portfolio learning, and targeted research needs for ecosystem-based, joint management of transboundary water systems." GEF's very first partners in project implementation were the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), and the World Bank.



**Mr. Christian Holde SEVERIN**

Senior Environmental Specialist  
and Lead for GEF's IW Focal Area

"Bringing a regional entity and ... perspective has been pretty central of what PEMSEA has accomplished," says Christian Holde Severin, Lead for GEF's IW Focal Area. "Being able to stimulate a conversation among countries around ICM is still one of the pillars of cooperation for PEMSEA."

Severin believes that GEF will be around for the long-term beyond its current cycle of support for the region. I honestly believe that if you want an environmental status changed in the region, GEF and international partners, along with countries in the region, will need to invest in human, technical, and financial resources for 25-30 years." Beyond these cycles, however, looms the long-term goal of self-sufficiency. "We're pushing very hard on getting higher participant payment. That's not something that happens overnight; it's a long process, but we need to find activities that are so important to countries that they find value in them. Countries and partners always look for the value proposition: what do we get by being part of it?"

More fundamentally, Severin is looking to recast the way the environment is seen. "We have to change the narrative and see the ocean as an area where we can keep expanding economic opportunities, and not just as something pretty. But it's mind-boggling that we do not maintain the ocean; if

we don't take care of it, those opportunities disappear. Very few nations have formulated an ocean strategy, and that's what PEMSEA is doing—working with nations from a regional perspective.”

In mechanism such as ICM and tools like marine spatial planning (MSP) and marine protected areas (MPAs), Severin says, “There's an opportunity for PEMSEA to assist countries in formulating blue economy plans, for more informed decisions.”

Further, in the hoped-for aftermath of COVID-19, and in the light of scientific evidence that links human health with the ocean, it becomes essential to situate PEMSEA's work beyond “purely” environmental efforts—and create greater awareness of such efforts. “How do we raise awareness of initiatives through the managerial chain of the private sector? If we can tie them to economic development, job creation, and human health, we might have a chance.” Thus, looking forward, Severin says, it's not about turning away from PEMSEA's core of ICM and its unique brand of “conservation, and not total protection.” “We need to translate that into as much political buy-in as we can, and find out what associated services PEMSEA can provide, and how we can finance them. What do countries need? Because we eventually want countries to take this, and to run with it.”

Founded in 1965, the **UNDP**, is the UN's global development arm of the United Nations, promotes global technical and economic cooperation, with the goals of fostering universal equality, eliminating poverty, and building resilience. It works closely with the poorest of the world's nations to pursue the UN SDGs.

“The original GEF/UNDP project that evolved into what is now PEMSEA was called Marine Pollution Prevention and Management in the East Asian Seas (MPP-EAS). The project had a strong focus on marine pollution, but also worked on

other areas, such as helping countries advance ratification and implementation of relevant international conventions,” says Dr. Andrew Hudson, Head of the Water and Ocean Governance Programme of UNDP. Hudson oversees a large part of UNDP's programming in water and ocean management and governance, an active portfolio of about US\$400 million, much of it financed by GEF and includes “sizeable commitments” in East Asia and the Pacific, Hudson notes. “UNDP has other marine and coastal work in East Asia through its Ecosystems and Biodiversity portfolio, such as on creating and strengthening the effectiveness of MPAs and ‘mainstreaming’ biodiversity into marine sectors.”

UNDP was the GEF implementing agency for the program. “Over time, as PEMSEA evolved, subsequent GEF-financed UNDP projects were prepared, approved, and implemented, first under the United Nations Office for Project Services (UNOPS), and then most recently via direct implementation by PEMSEA itself,” says Hudson. This was realized in the successive phases of the project: Building Partnerships in Environmental Management for the Seas of East Asia (1999-2007), Implementation of the SDS-SEA (2008-2013), and Scaling up the Implementation of the SDS-SEA (2014-2020).

In 2012, according to Hudson, UNDP identified GEF's work with PEMSEA, which began in the early 1990s, as one of six “transformational” GEF-financed initiatives in the UNDP portfolio. “Beyond its instrumental role in establishing a high-level regional ocean governance mechanism via the SDS-SEA, the EAS Partnership Council and other mechanisms, PEMSEA, of course, continues to be transformational in terms of the



**Dr. Andrew HUDSON**  
Head, Water and Ocean  
Governance Programme,  
UNDP

replication and scaling up of ICM in the EAS region, from an early '90s baseline that was nearly zero. Going forward, with its increasing focus on helping East Asian countries realize their 'sustainable blue economies,' I can envision PEMSEA continuing to be a major force for advancing continued progress in East Asia on implementing SDG 14."

The **IMO** was established in response to the call for a body to oversee global maritime safety, under the auspices of the UN. This was in acknowledgment of the fact that 80 percent of global trade was carried out through shipping, the favored way to get both people and commodities to their destinations. IMO was formally established in 1948, but was empowered only in 1958. Its mission as a "UN specialized

agency" was "to promote safe, secure, environmentally sound, efficient, and sustainable shipping through cooperation," with special mention of the "prevention and control of pollution from ships."

The International Convention for the Prevention of Pollution from Ships (MARPOL) was adopted in 1973, covering pollution from sewage, chemicals, garbage, and oil, and was expanded in 1997 to cover air pollution and gas emissions from sea vessels. With this, IMO addressed pollution, and was the executing agency for the regional program on Marine Pollution Prevention and Management for the East Asian Seas, which GEF funded and UNDP implemented.

The transition from the first marine pollution project to the follow-up project was guided by the new GEF Operational Strategy adopted by the world community in the October 1995 Restructuring of the GEF. Dr Alfred Duda, the GEF Team Leader for Operations and Head of the International Waters focal area at that time, explains that the key elements of the Operational Strategy that provided the GEF Council-approved vision for projects funded by the GEF International Waters focal area, included the need for participating countries to agree on making changes in each country to protect its waters and the economies that depended on them as well as expressing those commitments in a joint Strategy or Plan approved at high levels of government. For the sustainability and effective use of finance, an intergovernmental mechanism for cooperation around water-bodies needed to be adopted in a second GEF project; and to show benefits to local communities, local demonstration projects should be undertaken. For marine ecosystems and coasts, ICM was the critical intervention for local change. Additionally, the world community needed to see success over time, so measurable indicators of progress were critical to report in order to receive more GEF funding. Over time, the PEMSEA programme has met all these elements—from the approved joint strategy (SDS-SEA), to local commitments for action in ICM plans, the PEMSEA intergovernmental mechanism, and on-the-ground progress that can be measured.

***"The countries in the PEMSEA programme, their partners, and staff have exceeded the expectations we originally had way back in the 1990s at GEF. You should all be proud of the results you have delivered for coastal communities and their waters over these 25 years. We are proud of your work that serves as a great example of the GEF Council's vision of the International Waters focal area and its world-class examples of ICM benefits."***



**Dr. Alfred M. DUDA**  
GEF Senior Advisor, Retired



# The PEMSEA Story

# 2

## A. Taking on marine pollution

As land- and sea-based pollution has been identified as one of the biggest perceived threats to the future of the EAS, MPP-EAS became an anchor project needing urgent action in the region. In the early '90s, the global environmental community was particularly concerned with the kinds of marine pollution affecting LMEs:

nutrient over-enrichment from land-based sources; marine debris; pollution from the discarded ballast water of ships, which unleashes invasive aquatic species into the water; and carbon dioxide from the burning of fossil fuels, leading to ocean acidification, which is lethal to marine life.

### Box 2

## The GEF project cycles

Through the IW strategy, GEF and UNDP have provided four cycles of support for coastal and marine efforts in the East Asian region.

The first cycle from 1994 to 1998, entitled Marine Pollution Prevention and Management for the East Asian Seas (MPP-EAS) project, pilot-tested ICM as a framework for pollution prevention and management, in two initial sites: Xiamen, China and Batangas, Philippines. The success of the pilot

phase created confidence in the program, and further highlighted the need for stakeholder partnerships in environmental work.

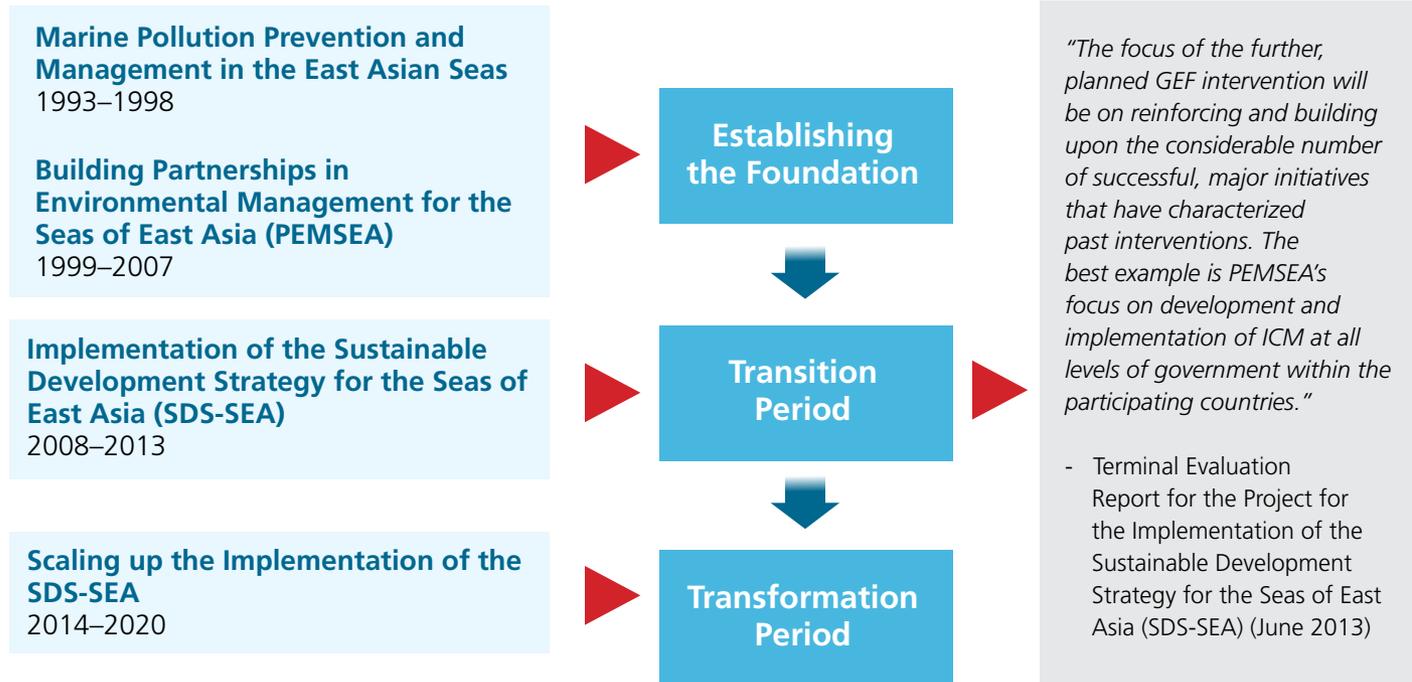
GEF support continued for a second cycle from 1999 to 2007 through the project entitled "Building PEMSEA," which expanded the initial project focus from pollution prevention to sustainable development, as well as building inter-agency, intergovernmental, and multisectoral partnerships.

Under the second cycle, efforts in the two initial pilot ICM sites were replicated in six more areas. Together, these two cycles were considered the period for establishing the foundation for establishing the foundation for PEMSEA to become a regional mechanism.

The third cycle in 2008 to 2013, which is considered the transition period, facilitated the expansion of ICM and the evolution of PEMSEA into a regional mechanism with a recognized international legal personality, to implement the SDS-SEA.

Transformation towards greater sustainability was the focus of the fourth cycle from 2014 to 2020, which scaled up the implementation of the SDS-SEA as a regional framework via national action programs, while drawing from successful ICM experiences and establishing a stronger link between the management of river basins and coastal and marine areas, and local, national, and regional investment processes in pursuit of blue economy.

## GEF Intervention





The first meeting of the UNDP/IMO regional marine pollution management program that would be the foundation of PEMSEA

MPP-EAS involved 11 countries: Brunei Darussalam, Cambodia, China, DPR Korea, Indonesia, Malaysia, the Philippines, RO Korea, Singapore, Thailand, and Viet Nam.

The program had four components: applying ICM to two pilot sites in Xiamen Municipality, China, and Batangas Bay, Philippines; capacity building; sustainable financing; and the application of a risk assessment and management process in the Malacca Straits to prevent and manage transboundary marine pollution.

The decision behind the selection of the pilot sites was informed by an earlier similar experience. A United States Agency for International Development (USAID)-aided coastal resource management (CRM) Project for the Association of Southeast Asian Nations (ASEAN) region was designed and



implemented from 1986 to 1990, led by Dr. Chua Thia-Eng under the International Center for Living Aquatic Resources Management (ICLARM). Environmental degradation and resource use conflict in the region due to improper use of coastal resources prompted the ASEAN to establish a Coastal

Resources Management Project under its Committee on Science and Technology. ICLARM, a non-profit, non-government research organization, which is now known as WorldFish Center, was tasked to oversee the project alongside ASEAN countries Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, and Thailand, for the institutionalization of coastal resource management—a precursor of the ICM approach used for the MPP-EAS.

In Batangas, the MPP-EAS helped to address problems in water quality, as Batangas was a busy port as well as the site of several oil refineries and factories. The MPP-EAS helped design a five-year Integrated Environmental Monitoring Program (IEMP), which led to the opening of the Batangas Environment Laboratory to monitor the quality of water in the area. The project also produced the first ever environmental profile of Batangas Bay, a strategic environmental management plan, and institutional arrangements for the management of the bay.

The Batangas Coastal Resources Management Foundation (BCRMF) had been established earlier, in 1991, through the efforts of the provincial governor and five large corporations operating in the province: Pilipinas Shell, Caltex Philippines, Chemphil Albright Philippines, Atlantic Gulf & Pacific Company (AG&P) Inc., and General Milling Corporation. BCRMF initially worked solely on awareness-raising for the coastal and marine environment, but gained more focus with the selection of Batangas Bay as an ICM demonstration site in 1994, helping channel private sector investment in ICM.

In 1996, the Batangas Provincial Government established an environment and natural resources office (PG-ENRO) and issued a provincial ordinance creating the Batangas

Bay Environmental Protection Council, a multi-sectoral governing body for ICM. It was composed of representatives of provincial and local government units, industries, and non-governmental organizations (NGOs), whose first task was to formulate a strategic management and action plan for integrated waste management in the province.

Meanwhile, in Xiamen, the MPP-EAS helped stakeholders establish a coordinating mechanism for coastal and marine management, leading to the creation of the Integrated Marine Management and Coordination Committee (IMMCC). The MPP-EAS provided technical assistance to the committee in drafting, enacting, and enforcing various legislations; implementing a sea-use zoning scheme; enacting local coastal and marine regulations, enforcing these regulations; and monitoring activities that rely on coastal resources. Since mariculture farmers also had to be relocated, the MPP-EAS assisted in crafting solutions and compensation schemes for this vulnerable community. By 1997, a sea use zoning plan had been adopted by the municipal government of Xiamen.

The Batangas and Xiamen sites had measurable success. Meanwhile, the Malacca Straits Demonstration Project focused on compiling the Malacca Straits Environmental Profile, developing an integrated database, and evaluating management options that provided the three littoral states of the Malacca Straits (Indonesia, Malaysia, and Singapore) with a better understanding of the values of the natural resources and the types and level of risks associated with transboundary marine pollution. The risk assessment and the natural resource and damage assessment methodologies, which were developed and refined for the Straits of Malacca, were packaged into training manuals and used for training of national staff from other countries.

## XIAMEN: A success story

by **MR. PAN SHIJIAN**

Vice Mayor of the Xiamen Municipal People's Government from 2000 to 2012, and Chair Emeritus of the PNLG since 2013

China is a major maritime country. While vigorously developing its maritime economy, it faced major challenges, such as marine pollution. In the 1990s, PEMSEA introduced the concept of integrated coastal management (ICM) in China to carry out integrated marine pollution prevention initiatives under the purview of MPP-EAS and chose Xiamen as one of the pilot ICM sites. At that time, Xiamen was in a transitional period when it urgently needed to improve the marine environment and strengthen the management of sea use.

Oceans and coasts are Xiamen's most important economic and biological resources and lifelines. However, in the past few decades, due to rapid urbanization, continuous land reclamation, and direct pollution discharge, the marine ecosystem has continued to deteriorate.

With the support of the MPP-EAS, Xiamen began to implement ICM, and after 20 years of exploration and practice, an ICM template known as the Xiamen model gradually evolved, recognized at home and abroad, and shared and promoted regionally and globally.

The Xiamen ICM model was a comprehensive and integrated approach to identifying and prioritizing the issues and providing solutions with a long-term vision and plan. The



first issue was the reclaiming of land from the sea. Since the 1950s, in order to ensure people's livelihood, Xiamen has carried out bay and land reclamation to develop fisheries and salt industries. This played a role in promoting economic development, but gradually weakened the water exchange of the sea area.

The second issue was pollution of sea areas. Xiamen built seven causeways, including Gaoji, Jixing, Maluan, Yundang, Zhongzhai, Dongkeng, and Dadeng. The construction had its positive effects, but also led to sedimentation and deteriorating seawater quality.

Third was land-sourced pollutants. The Jiulong River, which feeds the people of Longyan, Zhangzhou, and Xiamen in Fujian Province, often brought pollutants from pig farms and urban sewage into Xiamen's seas. The large amount of sediment along the river also affected the ports and waterways.

Fourth was aquafarming pollution. The dominant functions of the ocean are ports, shipping, and coastal tourism, but

aquaculture had severely restricted the performance of these functions. The pollution caused by aquafarming had become increasingly serious.

Fifth, the legal system was not fully established. In addition to the disappearance of beaches and mangroves, the destruction of tidal flats, the disappearance of mangroves, the loss of bird habitats and other environmental problems caused by marine pollution, Xiamen encountered inadequate legal systems, and lack of coordinating agencies for marine pollution prevention and control. The marine management and law enforcement agencies suffered overlapping functions and conflicts.

In response to these issues, the Xiamen municipal government carried out some important measures.

**Marine functional zoning.** The Xiamen municipal government suggested delineating marine functional zones based on the recommendations of an expert panel and administrative departments. As a low-cost and effective means to deal with conflicts in the use of marine resources, marine functional zoning can avoid disorderly marine development activities, help apply scientific decisions on the development of marine resources, and promote their sustainable use.

**Causeway opening and renovation.** Seven causeways were transformed, with four turned into bridges. The other three that could not be demolished were partially renovated by building water gates for flood prevention, and increasing capacity for water exchange of the Xiamen sea area.

**Sea dredging.** To solve the problems of the greatly reduced coastline and tidal volume, long mud flats, and deteriorating beaches and landscape, Xiamen carried out a large-scale

sea dredging project to remove the silt on both sides of the causeways. The total amount of dredged sea area reached 170 million cubic meters.

**Aquafarming withdrawal.** Xiamen carried out a large-scale aquaculture withdrawal and rehabilitation project, providing fishermen with adequate compensation and training to improve their employability. Aquaculture has been zeroed out and the silt on the beaches was cleared, leading to improved condition of the marine environment.

**Beach protection and restoration.** After the conduct of a scientific study, the beach restoration plan was formulated, with the beaches divided into conservation, restoration, landscape, and reconstruction areas. The restoration projects of Guanyinshan Beach and the Exhibition Center have been implemented. The result was a long artificial beach with a total area of more than 1 million m<sup>2</sup>. These projects effectively maintained the health of the beach system, and guaranteed the sustainable use of beaches and coastal waters. The restored shoreline also provided people and tourists a place for living, sightseeing, and exercise.

**Important wetlands protection and restoration.** The first restoration project of Xiatanwei Mangrove Park was carried out by planting mangroves and gradually restoring the ecological wetland system. After the project is completed, there will be 850,000 m<sup>2</sup> of artificially planted mangroves, which will protect and maintain the diversity of marine creatures, improve water quality, and enhance the ecological environment. At present, the mangroves are growing well, and the diversity of birds has been quickly restored.

The second is the restoration project of Wuyuanwan Wetland Park. Wuyuan Bay blocked the exchange of seawater due to excessive breeding and dumping of garbage. After dredging

land and comprehensive management of the environment, the original “unlivable place” has become the “new urban living area” in Xiamen today; a charming bay has been welcomed by the people.

The third is the construction of the Yuanboyuan Expo Garden. Great efforts were made not to destroy the original ecological balance and water system. The construction of the Garden Expo solved the problems of flood, drainage, and other environmental issues in the Xinglin Bay area, formed a natural environment, and promoted economic development.

With the great attention of the Xiamen Municipal Government to coastal development, Xiamen was able to create a beautiful coastline, which has become one of the famous case studies of ocean governance for coastal cities all over the world. After years of hard work

and commitment, Xiamen developed a comprehensive coastal management framework of “legislation, integrated coordination, scientific and technological support, comprehensive law enforcement, and public participation.”

**Adopt legislation on marine protection.** Xiamen attaches great importance to the fundamental role of law in marine protection, ensuring that the law will not change, despite inevitable changes in political leadership. The government has formulated more than 10 marine laws such as the Provisions on the Use of Sea Areas in Xiamen, Provisions on Marine Environmental Protection of Xiamen, and Provisions on the Protection of Chinese White Dolphins of Xiamen. At the same time, the government formulated a series of marine projects, such as Xiamen Marine Functional Zoning and the Marine Economic Development Plan of Xiamen, which laid a solid legal and administrative basis for scientific ICM.



Wuyuan Bay in Xiamen, China (Photo by China-PEMSEA Sustainable Coastal Management Cooperation Center [CPC])

**Establish coordination mechanism.** In order to deal with the functional overlap and conflict among law enforcement agencies, the Xiamen Municipal Government established an ICM coordination mechanism and set up a Leading Group for Integrated Coastal Management to deal with all major issues. With the coordination and support of the Fujian Provincial Bureau of Oceans and Fisheries, Xiamen worked with neighboring cities and organized regular meetings between marine departments to facilitate the resolution of issues in ocean governance.

**Secure scientific and technological support.** As the birthplace of oceanography in southern China, Xiamen is home to many prominent marine scientists and research institutions, such as Xiamen University, the Third Institute of Oceanography of the State Oceanic Administration (now under the Ministry of Natural Resources), Jimei University, and Fujian Institute of Oceanography. With the support of the State Oceanic Administration (SOA), China, Xiamen makes full use of its scientific and technological strengths, while actively expanding domestic and international exchange and cooperation. The Xiamen Municipal Government set up the Marine Expert Panel for consultation on coastal planning, development, and ecological protection, which provided the scientific basis for decision-making of administrative departments.

**Implement comprehensive law enforcement system.** An integrated marine administration law enforcement detachment was formed to organize joint marine law enforcement. The government explored ways to promote regional cooperation, resulting in the establishment of the Marine Law Enforcement City Alliance, which coordinates marine enforcement in Xiamen and its neighboring cities and solves coastal management problems across

administrative areas. Comprehensive law enforcement is not only about maritime law enforcement, but also involves professional cooperation in science and technology.

Safeguarding the marine environment requires public involvement and support. The Xiamen Municipal Party Committee and the municipal government publicized marine laws and regulations and answered questions about issues of public concern by making full use of television, newspapers, radio, and other news media to improve public awareness of marine environmental protection. During the annual World Ocean Week in Xiamen, many experts from domestic and international marine research institutions and the public are invited to share experiences, practices, and innovations in coastal management.

The ICM project has effectively promoted Xiamen's coastal development. From 1998 to 2008, major projects have been completed. More than 283 km<sup>2</sup> of aquaculture seas were withdrawn, and the renovated sea area reached 161 km<sup>2</sup>, with an investment of tens of billions of yuan. Through integrated management, the exchange capacity of water bodies in Xiamen sea area has increased by 30 percent.

Sea dredging and rehabilitation and the causeway opening have improved the marine environment, expanded the sea area for Chinese white dolphins, maintained the port's shipping function, and improved Xiamen shoreline landscape.

Such improvement has led to emerging industries such as yacht building and coastal tourism. Xiamen is now one of the world's' top cargo and home ports for cruise ships. In 2020, Xiamen's home port received 136 cruise

ships, and the passenger throughput exceeded 410,000. This helped improve the economic development of Xiamen and neighboring cities leading to more employment opportunities and improved living standards.

The suitable climate and beautiful environment have attracted more people from within China and abroad. People from other Chinese cities and even other countries have chosen Xiamen as their permanent residence and economic base.



Xiamen cityscape at night (Photo by SOA China)



The accomplishments in Batangas, Xiamen and other sites reached national attention and led to the ICM approach being incorporated in country-wide plans. In Batangas, for instance, the work of the PG-ENRO has outlived political terms. Ultimately, the ICM model sites

pioneered by PEMSEA in the region strengthened institutional capacity, and consequently, local initiatives in coastal and marine development, which underscored the potential of ICM as a working model for marine pollution management.



Ang Pulo Mangrove Sanctuary in Calatagan, Batangas, Philippines (Photo by PEMSEA/J. Castillo)

## 'The ICM concept has been incorporated into national policies'

### DR. CHUA THIA-ENG

was the first Regional Programme Director of PEMSEA from 1993 to 2007, and also served as first Chair of the East Asian Seas Partnership Council. Currently, he holds the distinguished title of PEMSEA Chair Emeritus.



### ***PEMSEA had its beginnings in a regional project on Marine Pollution Prevention and Management. How do you think you were identified as the man for the job?***

In 1992, I was working as the Director of Coastal Management and the National Support Division of ICLARM in Manila, Philippines. I was contracted by UNDP New York to lead an international team of experts from the United States, the United Kingdom, Australia, ASEAN, and IMO to develop a GEF regional project on the prevention and management of marine pollution for East Asia.

I was again approached by UNDP and IMO in 1993 to take on the post of Regional Project Manager to implement the project. I was tapped for the job for two reasons: first, I was deeply involved in the framing and development of the regional project, and therefore had full knowledge of its requirements and challenges; and second, I was already familiar with the region and had earlier experience implementing a regional project in ASEAN.

### ***Was the project already envisioned, even at the onset, to become a regional mechanism, and eventually, a truly global organization?***

It was clear from the design of the project that a long-term approach was necessary to ensure visible results. For example,

the demonstration sites were designed for replication and extension to cover wider coastal areas in the countries and the region. However, there was no consideration yet for setting up a global organization. GEF was in its first phase of operation, and its funding strategies were in the early stage of development, so the thinking at that time was that the project might be able to justify continuation with GEF or other donor support if it performed well.

The idea of establishing a regional mechanism came during the process of developing the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) at the end of Phase I. It was felt that a regional mechanism, composed of government representatives and other stakeholders, would ensure the inclusion of stakeholders in the implementation of SDS-SEA and other environmental management activities at the local and national levels.

### ***Was the choice of integrated coastal management (ICM) as methodology an obvious one at the time? Was ICM a difficult mindset to propagate in the early years?***

Through five years of project implementation at the first two sites in Batangas and Xiamen, we could really appreciate the



Dr. Chua Thia-Eng and Stephen Adrian Ross during a site visit to Batangas, one of the first ICM sites in the Philippines (Photo by PEMSEA)

importance of involving local leaderships and stakeholders and fostering multi-sector cooperation and community involvement.

Based on the lessons of Batangas and Xiamen, the ICM approach was reinforced and further refined into a working model that could be implemented in other coastal areas. The term “ICM” was then adopted as a working methodology for coastal area management in future endeavors.

It took almost three decades of refinement, through the persistent efforts of those involved in project implementation before we arrived at a tested, auditable ICM system that can be used to achieve SDGs.

***PEMSEA remains, to this day, an organization not specifically covered by any international convention. How has this been an advantage and a disadvantage at the same time?***

PEMSEA was established in consideration of a regional mechanism to implement coastal management practices in achieving sustainable development objectives at the local and national levels in line with Agenda 21 and other related international conventions. The goal was to take a more permanent approach to mobilizing partners to implement the regional strategy under different political, social, and economic conditions.

PEMSEA was envisioned as a regional intergovernmental organization with a bottom-up approach and as such avoided the conventional practice of linking it with a specific convention or UN organization.

There are funding challenges, however; we have to compete for funding support with those that have direct affiliation with conventions or UN organizations. There were also challenges in receiving recognition in the early phase; national support may change or weaken with the change of national governments or in most cases, with changes in priorities of concerned national agencies. Thus, it is important for PEMSEA to remain efficient and effective in program delivery so as to ensure increasing recognition, not only by participating governments but also international and UN organizations.

***What do you think PEMSEA has contributed to the awareness and practice of ICM in the region?***

I must say that an increasing number of countries in and outside the region have recognized the usefulness of the integrated management approach to address sustainable development challenges at the ground level. In fact, ICM was internationally accepted during the Rio Earth Summit in 1992. The ICM concept and methodology have been increasingly applied throughout numerous sites in the region.

More significantly, the ICM concept has been incorporated into national policies and government planning. Several countries have even established ICM divisions in their local or national government structures.

The organization has been able to continue after my retirement in 2007 and has secured significant progress. The fact that ICM is now applied at 40.4 percent of the region's coastline as of 2020 is the best testimony to the work of PEMSEA and the acceptance of ICM in resolving sustainable development challenges. Certainly, there is room for improvement, and I am sure that subsequent leaderships will be able to keep the flag flying.

***As a parting word for a general readership: Why is sustainable coastal development critical to the future of humanity?***

Current and future threats to our natural ecosystems, including those caused by climate change, could wipe out our future and that of coming generations. Over half of the world's population is residing in coastal areas that are most susceptible to the impacts of sea-level rise, natural disasters, coastal degradation, and the impacts of increasing unsustainable economic development.

The purpose of promoting and implementing sustainable coastal development is not only to ensure that coastal populations are protected from natural and man-made disasters. It is also to ensure that we have a steady supply of ecosystem goods and services for present and future generations.



Replanting and protecting a mangrove forest (Photo by PEMSEA/B. Recirido II)





## B. The Sustainable Development Strategy for the Seas of East Asia (SDS-SEA)

It was in the year 2000 at the Seventh Programme Steering Committee Meeting of the GEF/UNDP/IMO phase on Building PEMSEA that delegates from 11 countries—Brunei Darussalam, Cambodia, China, DPR Korea, Indonesia, Malaysia, Philippines, RO Korea, Singapore, Thailand, and Viet Nam—first resolved to come up with the SDS-SEA. In developing the SDS-SEA, PEMSEA reviewed region-wide national efforts related to Agenda 21, the sustainable development action plan from the 1992 Rio Earth Summit. The experiences of global organizations on ocean management were also studied.

Then in 2002, at the intergovernmental meeting of PEMSEA, the same countries, joined by Japan, endorsed the regional strategy. A year later, at the very first EAS Ministerial Forum in Putrajaya, Malaysia, the SDS-SEA was adopted. Lao PDR and Timor-Leste followed in 2009, bringing the total number of countries that adopted the strategy to 14.

PEMSEA went strong on building awareness of SDS-SEA and capacity building for environmental data gathering and analysis at the local and regional levels. It organized technical studies, workshops, meetings, and outreach programs.

The Putrajaya Declaration adopting the SDS-SEA was proof of the commitment of PEMSEA member countries to work together in coastal and marine management for all of East Asia. GEF, UNDP, and IMO remained partners as the thrust evolved from pollution management to the bigger picture of sustainable coastal and ocean development.

The healthy underwater ecosystem of Indonesia (Photo by MOEF)

The Putrajaya Declaration also helped emphasize that despite regional agreements on specific issues like habitat destruction, biodiversity loss, coastal pollution, invasive species, and fisheries deterioration, East Asian countries still had hugely varying capacities for addressing these problems and adhering to international conventions. The single-issue approach to dealing with these concerns made no allowance for interconnectivity between various ecosystems and socioeconomic sectors. It was for this reason that PEMSEA member states endorsed a common framework for addressing all issues through the Putrajaya Declaration.

PEMSEA's status as the regional coordinating mechanism for the SDS-SEA was formalized when the Haikou Partnership Agreement on the Implementation of SDS-SEA was signed by 11 countries—Cambodia, China, DPR Korea, Indonesia, Japan, Lao-PDR, the Philippines, RO Korea, Singapore, Timor-Leste, and Viet Nam—in Haikou, China during the Ministerial Forum of the 2006 EAS Congress. Together with PEMSEA Non-Country Partners, these countries also approved the Partnership Operating Arrangements as formal institutional guidelines.

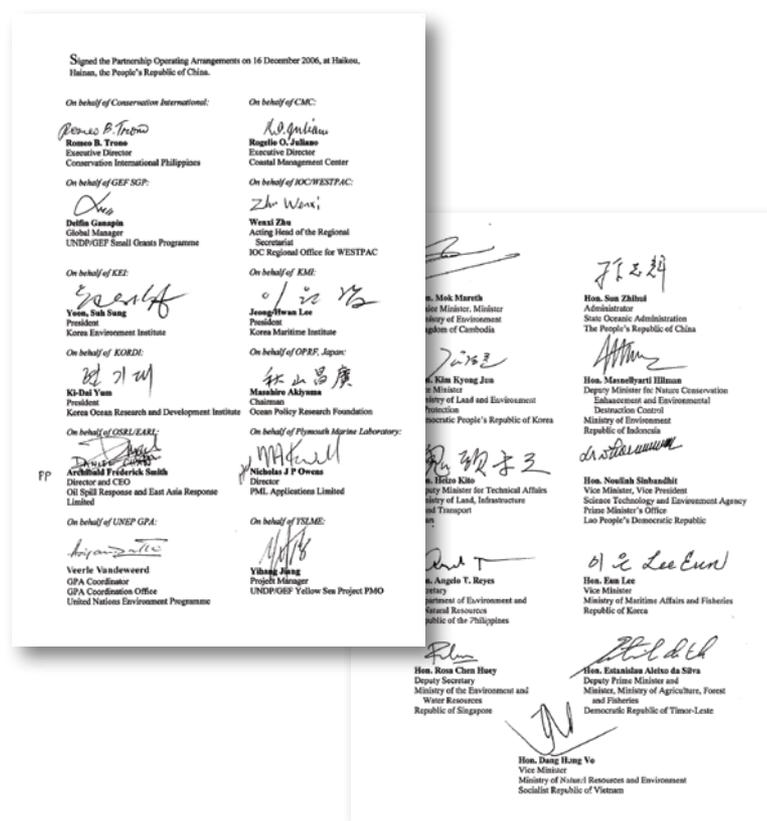
“We recognize the importance and urgency of putting into effect the SDS-SEA in order to sustain the resources provided by our seas,” reads the agreement. “In this regard, we consider our cooperation for the SDS-SEA implementation as an essential part of the regional economic cooperation and integration ... We ... resolve to transform PEMSEA from the existing project-based arrangement to a regional collaborative mechanism with a mandate to pursue the implementation of the SDS-SEA.”

Priority targets for SDS-SEA implementation were: first, to mobilize resources, services, capacities, legal procedures,

and economic arrangements; second, to put in place policies and plans for sustainable coastal development in 70 percent of Country Partners by 2015; and third, to have ICM programs rolled out in 20 percent of coastal areas by the same year.

The SDS-SEA does not focus on individual countries, sectors, or organizations; rather, it takes a regional perspective, taking off from a consensus to address stakeholders’ needs. International conventions and action programs, partnerships, self-reliance and sustainability, and synergy are the four pillars upon which the strategy was built.

### Signatories of the Haikou Partnership Agreement



The SDS-SEA identified six strategies, each with its own objectives, for East Asian countries.

**Strategy 1, to SUSTAIN,** means to conserve and remedy threatened biodiversity, maintain and improve coastal water health, and establish sustainable fisheries and conserve fish stocks.

**Strategy 2, to PRESERVE,** includes putting in place a universally accepted management system for transboundary marine protected areas (MPAs); protecting rare and endangered species; and conserving transboundary areas of historical, cultural, or geological importance.

**Strategy 3, to PROTECT,** entails instituting subregional mechanisms to combat transboundary environmental threats to regional seas, including LMEs; putting a halt to coastal and marine degradation due to land-based human activities; controlling the impacts of sea-based human activities; and recovering clean-up costs and compensation for human damages.

**Strategy 4, to DEVELOP,** includes pushing for sustainable economic development in coastal and marine areas and promoting ICM as an effective management framework to achieve sustainable coastal development; establishing subregional growth areas covered by transboundary environmental management programs; and encouraging partnerships in sustainable financing and environmental investment.

**Strategy 5, to IMPLEMENT,** and aims for government compliance with international conventions; regional cooperation for the implementation of these international instruments; and execution of obligations under such conventions even at the local government level.

**Strategy 6, to COMMUNICATE,** aims to increase public awareness of coastal and marine environmental issues, using both science and traditional knowledge in decision-making, and using effective communication methods to link government and the private sector.

Several programs and declarations have already resulted from these strategies. For example, Manila Bay, considered the main water gateway to the Philippines' capital city and an area of significant historical, ecological, tourism, and economic value, had been consistently deteriorating because of pollution from several rivers and sea vessels, overexploitation of resources, siltation, habitat degradation, and sea level rise. With the Manila Bay Declaration of 2001, stakeholders committed to implement the Manila Bay Coastal Strategy, a comprehensive environmental management framework listing programs for protecting the historic coastal and watershed area. Seven years later, the Supreme Court of the Philippines ordered 14 agencies in the Philippines to implement the strategy's operational plan.

In 2005, to promote learning partnerships between Xiamen and other coastal cities, the UNEP Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA), together with the Xiamen Municipal Government, the State Environmental Protection Administration (SEPA) of China (now known as the Ministry of Ecology and Environment [MEE]), and PEMSEA, organized the Xiamen International Forum for Coastal Cities (XIFCC), where the Xiamen Declaration on Coastal Cities - Global Cooperation for Sustainable Development was adopted.

In 2007, after joining PEMSEA as Non-Country Partners, the International Ocean Institute (IOI), the International Union for Conservation of Nature - Asia Regional Office (IUCN-ARO), the Northwest Pacific Action Plan (NOWPAP), and the Swedish Environmental Secretariat for Asia (SENSA) signed an agreement supporting the implementation of the SDS-SEA.

## Foundation conventions of the SDS-SEA

The framework for the SDS-SEA reads as: “Chapter 17 of Agenda 21 and the World Summit on Sustainable Development (WSSD) Plan of Implementation concerning oceans, seas, islands, and coastal areas can only be implemented effectively through the integrated approach, and effective coordination and cooperation at all levels, for coastal and ocean management.”

Agenda 21 is the action plan for sustainable development; this was the outcome of the Rio Earth Summit in 1992. It calls on global organizations and governments to come up with actions at the local, national, and global levels. Chapter 17 of the document mentions “Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-Enclosed Seas, and Coastal Areas and the Protection, Rational Use and Development of Their Living Resources.”

The WSSD in Johannesburg, South Africa, also known as the Earth Summit 2002 or Rio + 10, came a decade after the first Rio conference. Paragraph 30 of the WSSD Plan of Implementation from the WSSD states, “Oceans, seas, islands, and coastal areas form an integrated and essential component of the Earth’s ecosystem and are critical for global food security and for sustaining economic prosperity and the well-being of many national economies, particularly in developing countries.”

Agenda 21 and the WSSD Plan of Implementation are plans of action that participating countries committed to after UN-led international conventions on the environment.



The SDS-SEA strategies and the SDGs

These conventions served as foundation for the SDS-SEA. Other conventions include:

The **United Nations Convention on the Law of the Sea (UNCLOS)** was signed in December 1982 and came into force in November 1994. It outlines the responsibilities of nations in the use and management of the world’s marine environment and resources.

Also opened for signing at the 1992 Rio Earth Summit were the **United Nations Framework Convention on Climate Change (UNFCCC)** and the **United Nations Convention on**

**Biological Diversity (CBD).** The UNFCCC has been ratified by 197 countries and is focused on stabilizing greenhouse gas levels in the Earth's atmosphere to battle global warming. The role of the oceans in stabilizing global temperatures has been repeatedly underscored. The CBD, on the other hand, is the international legal instrument for the conservation of biodiversity at all levels: ecosystems, species, and genetic resources. It has been ratified by 196 countries and aims to encourage action for a sustainable future.

The GPA, adopted at a conference in Washington, D.C. in 1995, is an inter-governmental mechanism focused on land-based pollution and its impacts on the marine environment.

In 2000, leaders met at the United Nations Headquarters in New York for the Millennium Declaration, committing to eight time-bound Millennium Development Goals (MDGs), covering issues ranging from poverty to acquired immunity deficiency syndrome (AIDS). MDG 7 resonated most with the SDS-SEA: to ensure environmental sustainability. The goals were envisioned to be achieved by 2015.

In June 2012, Brazil was again the venue for the UN Conference on Sustainable Development or Rio+20, where concrete measures for attaining true sustainable development were first proposed.

Building upon the MDGs, the SDGs are a set of 17 connected global goals envisioned as a "blueprint to achieve a better and more sustainable future for all." The SDGs were set in 2015 by the UN General Assembly, and are hoped to be achieved by 2030.

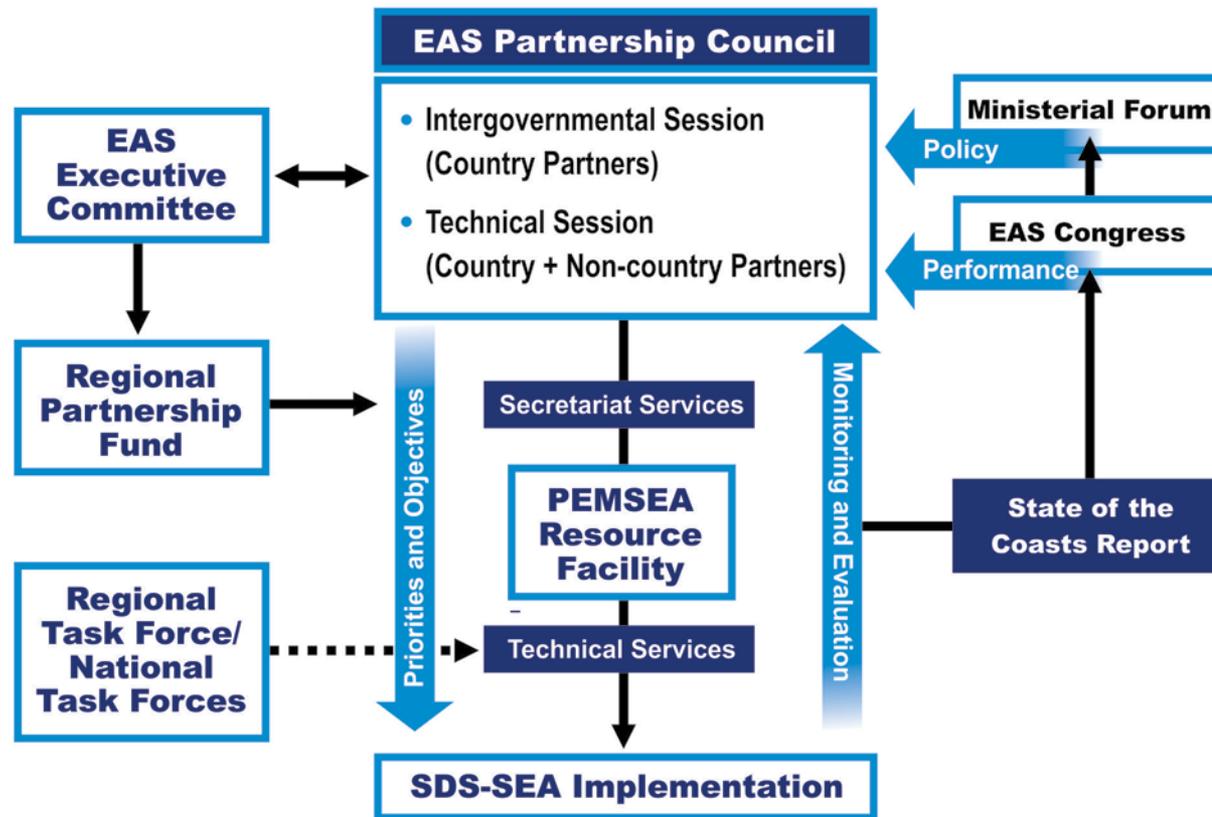
The implementation of the SDS-SEA contributes to the achievement of numerous targets of the SDGs, such as SDG 6 (Clean Water and Sanitation), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Change), SDG 14 (Life Below Water), and SDG 17 (Partnerships). In particular, its implementation helps reduce marine pollution, strengthen the resilience of coastal and marine ecosystems, take restorative action to ensure healthy and productive oceans, and increase scientific knowledge and resource capacity of resource-dependent communities and other stakeholders.



A sea turtle on a coral reef (Photo by PEMSEA/J. Cabiles)



## C. A regional partnership mechanism



The Haikou Partnership Operating Arrangements also discussed the partnership itself, the partners and their rights and roles, but most significantly, the regional governance mechanisms such as the EAS Congress, a triennial information-sharing and reporting mechanism on SDS-SEA implementation; the EAS Partnership Council, the guiding body for implementation of the SDS-SEA; the PEMSEA Resource Facility, which provides secretariat and technical services for SDS-SEA implementation; and the Regional Partnership Fund, set up by the Council to fund programs and activities.

The EAS Partnership Council sits on top of the entire regional partnership mechanism as the governing body, an assembly of PEMSEA Country and Non-Country Partners. The Council formulates policies in support of SDS-SEA implementation based on the directions, recommendations, and commitments of the EAS Congress, the Ministerial Forum, and council deliberations.

The Council meets yearly and holds two sessions: a Technical Session for the fine points of SDS-SEA implementation, involving all Council members and other invited

stakeholders and an Intergovernmental Session involving only Country Partners, who provide policy direction based on the recommendations of the Technical Session.

An Executive Committee (EC), comprised of the Council Chair and the Chairs of the Technical and Intergovernmental Sessions, guides and oversees the implementation of the recommendations and decisions of the Council intersessionally.

The PEMSEA Resource Facility (PRF) is the secretariat, established in 2007. It is composed of two functional units.

The PRF's Secretariat Services supports the PC and the EC. The Secretariat also coordinates the implementation of SDS-SEA and assists in the operations of different PEMSEA networks; organizes the EAS Congress and the Ministerial Forum; and is in charge of information, education, and communications initiatives. Funding comes mainly from contributions of PEMSEA Country Partners.

The PRF's Technical Services implements projects, conducts training, and provides technical assistance to individual

countries. As specified in the operating arrangements of the Haikou Agreement, Technical Services is also in charge of formulating a business plan and marketing strategy for SDS-SEA implementation. An Executive Director heads the PRF and coordinates between the two units.

The triennial EAS Congress is a meeting of experts, regional and global partners, and other stakeholders to share experience, provide updates on the progress and next steps on regional strategy implementation. The Ministerial Forum is the main event of the Congress where ministers with jurisdiction over the waters in their respective PEMSEA member countries gather to discuss progress and policies, affirm the partnership, and adopt commitments and targets to achieve the shared vision of healthy oceans, people, and economies.

Finally, the State of Ocean and Coasts (SOC) report is the operational tool for reporting on SDS-SEA implementation and the ICM programs being carried out in line with the regional strategy. The results of such monitoring and evaluation are reviewed at the EAS Congress for all to learn from and plan the necessary actions for the next three years.

## EXECUTIVE COMMITTEE MEMBERS



**DR. CHUA THIA-ENG**

Council Chair,  
EAS Partnership Council (2007–2013)  
Former Executive Director, PEMSEA  
Resource Facility (1993–2006)



**DR. LI HAIQING**

Intergovernmental Session Chair, East Asian Seas  
Partnership Council (2007–2013)  
Director General, Department of International  
Cooperation, State Oceanic Administration, China



**MR. HIROSHI TERASHIMA**

Technical Session Chair, East Asian Seas Partnership  
Council (2007–2013)  
Former President, Ocean Policy Research Institute–  
Sasakawa Peace Foundation (OPRI-SPF), Japan



**AMBASSADOR MARY SEET-CHENG**

Council Chair (2013–2015), Council Co-Chair  
(2011–2013), East Asian Seas Partnership Council  
Senior Specialist Adviser and Non-Resident  
Ambassador of Singapore to Panama and Cuba,  
Ministry of Foreign Affairs, Singapore



**ATTY. ANALIZA REBUELTA-TEH**

Intergovernmental Session Chair (2013–2015),  
Intergovernmental Session Co-Chair (2011–  
2013), East Asian Seas Partnership Council  
Undersecretary for Climate Change, Department  
of Environment and Natural Resources,  
Philippines



**DR. CHUL-HWAN KOH**

Technical Session Chair (2013–2015), Technical  
Session Co-Chair (2011–2013), East Asian Seas  
Partnership Council  
Professor of Marine Biology, School School of  
Earth and Environmental Sciences (Oceanography),  
College of Natural Sciences, Seoul National  
University, Seoul, Republic of Korea



**DR. ZHANG ZHANHAI**

Intergovernmental Session Co-Chair (2013–2015),  
East Asian Seas Partnership Council  
Director-General, Department of International  
Cooperation, State Oceanic Administration,  
Beijing, China



**ATTY. ANTONIO LA VIÑA**

Council Chair (2015-2018), Council Chair (2013-2015), East Asian Seas Partnership Council Professor; former Dean, Ateneo School of Government; former Executive Director, Manila Observatory



**DR. ZHANG HAIWEN**

Intergovernmental Session Chair (2015–2018), EAS Partnership Council Director General, Department of International Cooperation, State Oceanic Administration, Beijing, China



**MR. MAKOTO HARUNARI**

Technical Session Chair (2015–2018), Technical Session Co-Chair (2013–2015), East Asian Seas Partnership Council Managing Director, Japan Transport Research Institute, Tokyo, Japan



**MR. ARIEF YUWONO**

Council Chair (2019–present), Council Co-Chair (2015–2018), East Asian Seas Partnership Council Advisor for Energy to the Minister of Environment and Forestry, Republic of Indonesia



**DR. CA VU THANH**

Intergovernmental Session Chair (2019–present), Intergovernmental Session Co-Chair (2015–2018), East Asian Seas Partnership Council Associate Professor, Hanoi University of Natural Resources and Environment, Hanoi, Viet Nam



**DR. JAE RYOUNG OH**

Technical Session Chair (2019–present), Technical Session Co-Chair (2015–2018), East Asian Seas Partnership Council Adviser, International Cooperation Department, Korea Institute of Ocean Science and Technology (KIOST), Republic of Korea



**DR. VANN MONYNEATH**

Council Co-Chair (2019–present), East Asian Seas Partnership Council Secretary General, National Council for Sustainable Development (NCSD), Ministry of Environment (MoE), Cambodia



**MME. CHEN YUE**

Intergovernmental Session Co-Chair (2019–present), East Asian Seas Partnership Council Acting Director General, Department of International Cooperation, Ministry of Natural Resources, China



**DR. KEITA FURUKAWA**

Technical Session Co-Chair (2019–present), EAS PC; President, Association for Shore Environment Creation; and Affiliated Research Fellow, OPRI-SPF

## Ministerial commitments

- **Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia (2003):** Adoption of SDS-SEA as a common platform for regional cooperation and a framework for policy and program development and implementation at the national and local levels
- **Haikou Partnership Agreement on the Implementation of the SDS-SEA (2006):** Recognition of PEMSEA as the regional coordinating mechanism for SDS-SEA implementation and adoption of Partnership Operating Arrangements
- **Manila Declaration on Strengthening the Implementation of ICM for Sustainable Development and Climate Change Adaptation in the Seas of the East Asia Region (2009):** Strengthened commitment to ICM for sustainable development and climate change adaptation
- **Changwon Declaration Toward an Ocean-based Blue Economy: Moving Ahead with the SDS-SEA, (2012):** Commitment towards an ocean-based blue economy
- **Da Nang Compact on the SDS-SEA (2015):** Adoption of SDS-SEA 2015 in alignment with SDGs and other relevant global goals; and commitment to cover 25 percent of the region's coastline with ICM by 2021 and adopt national and local coastal and ocean policies and supporting legislation and institutional arrangements by the same year
- **Iloilo Ministerial Declaration: East Asian Region Moving As One to Secure Healthy Oceans, People, and Economies (2018):** Adoption of commitments towards a sustainable future, including the reaffirmation of the Da Nang Compact targets; supporting the PRF in achieving the SDS-SEA targets and SDGs; commitment to take action in line with SDS-SEA Implementation Plan 2018-2022; tackling marine litter; implementing policies and programs for sustainable management of coastal tourism destinations; and commitment to the Paris Agreement, including Nationally Determined Contributions (NDCs)



## D. A legal personality

The Philippines has been hosting PEMSEA since the Regional Programme Office opened in June 1994; the Philippine government, through the Department of Environment and Natural Resources (DENR), later had the PEMSEA office built in 2007 on the department's grounds in Quezon City.

Because the Haikou Partnership Agreement made no provisions for the legal personality of PEMSEA, the organization could not directly receive funding, except when channeled through UNDP. For this reason, the EAS PC moved to review how PEMSEA can operate independently to better facilitate the implementation of the SDS-SEA.

Among several options studied by the PRF, it was decided that a multilateral agreement could be reached by Country Partners to recognize PEMSEA as an organization with its own legal personality.

On November 26, 2009, the agreement recognizing the international legal personality of PEMSEA was signed by eight countries: Cambodia, China, DPR Korea, Indonesia, Lao PDR, the Philippines, RO Korea, and Timor-Leste. PEMSEA officially became an international organization for coastal and ocean governance. It now had the legal personality to enter into contracts and receive and manage funds in its own name. In 2011, the EAS Partnership Council approved PEMSEA's Re-engineering Plan as well as its Rules of Governance.

In July 2012, the Headquarters Agreement between PEMSEA and the Philippines was signed by then PEMSEA Executive Director Prof. Raphael Lotilla and Philippine Foreign Affairs Secretary Albert del Rosario. In 2013, PEMSEA was recognized as implementing partner of the UNDP, so the facility's management and operations manual, policies, procedures, documents, records, and audit processes were adopted by the PRF Management Committee in 2013.



Philippine Foreign Affairs Secretary Albert del Rosario and PEMSEA Executive Director Prof. Raphael Lotilla sign the Headquarters Agreement, July 2012.

In May 2015, the Philippine Senate ratified the Headquarters Agreement, and adopted it to establish the PEMSEA Resource Facility. With this imprimatur, PEMSEA completed an evolution that began in Haikou in 2006 and concluded with its establishment as a bona-fide regional collaborative mechanism to implement the SDS-SEA.

## 'Having a separate legal personality was meant to simplify things'

### PROF. RAPHAEL P.M. LOTILLA

was Executive Director of the PRF from 2008 to 2012. Before joining PEMSEA, he was Deputy Director-General of the Philippines' National Economic Development Authority (NEDA), and served as Secretary of the Department of Energy (DOE).



***In your essay "The Road to Recognition" in the book Perspectives on Building a Regional Mechanism for Coastal and Ocean Governance in the Seas of East Asia, you recounted the 2006 signed agreement among Country Partners to recognize the international legal personality of PEMSEA was signed in 2006. Has being a legal entity made PEMSEA's regional work easier?***

The agreement itself facilitates the implementation of SDS-SEA. Even before the agreement on legal personality was adopted, though, it didn't mean the countries weren't taking steps to implement it. What it does is pave the way for PEMSEA to be a sustainable regional effort that would not be fully dependent on just one or two funding sources. You have to have the mechanism in place; you need the international legal personality in order to open accounts, receive funds, enter into agreements on how PEMSEA can assist countries. Before that, PEMSEA was just a regional program of GEF, implemented by UNDP.

That doesn't solve all the issues, however, because at the end of the day, it's the commitment of the regional partners, the individual countries, that will sustain it, and we live in a complex region with complex politics.

***You also wrote, "By being able to manage its own funds, PEMSEA has better chances of cost-efficiency and sustainability." Does this mean PEMSEA would be able to focus more with bigger and more secured funding?***

If PEMSEA had a huge fund, it could use the funding leverage. PEMSEA's funds are, in the greater scheme of things, small, which you have to divide among several countries. You hope that as countries would want to implement the SDS-SEA, they would find that the PEMSEA mechanism would be an effective instrument.

International organizations have politics of their own that consume your energies and resources instead of the main focus. You spend time going to each of these countries having them sign an agreement, and sometimes they lose focus on implementation. Those are among the challenges.

The thing is, by focusing on working with local governments and communities, one gets around a number of difficulties.



Secretary Del Rosario and Prof. Lotilla (center) with PEMSEA team members at the Headquarters Agreement signing (Photo by PEMSEA)

The downside of not having a legal personality is that funds have to be coursed through one of the UN bodies, and then through the Philippines, as country office and regional conduit. There will be management fees, so how much would redound to actual implementation? Plus, to get the signatures of officers and ministries in each country is quite a task. Having a separate legal personality was meant to simplify things. PEMSEA could then receive funds directly from GEF, put up its own mechanisms for audit and financial control, and cut through different levels of approval and decision-making.

***Why was the Philippines chosen as the host country, and what led to this decision?***

The Philippines really made a strong representation, and had some advantages at that particular point. For one thing, we were an ASEAN country, and we had the full backing of the government through the DENR. We were also a center of biodiversity. Our marine environment is actually far bigger than our land territory, and we have a strong marine science community here.

***What do you think has been PEMSEA's biggest contribution to sustainable coastal development and***

***the state of the seas? How do you foresee PEMSEA's role in the future?***

The best thing PEMSEA did remains working at the local community level. You can really see the commitment and see projects grow, to the level where activities become sustainable, and you can see the continuity despite changes in administration at the local level. To me, that's the sustainable development part they've been able to achieve, whether it's Bataan, the Philippines, or Sriracha, Thailand.

There has been some deterioration; when national government policy collides with that of the local people, you have a mismatch in terms of political power, to the detriment of the locals. PEMSEA was able to integrate a number of activities, however.

I can't say that direction is clear, precisely because of the political turmoil in the region. We have to learn to live with changes in government. But even in times of COVID-19 or climate change, the sustainability of the response will still be based on the ground. It doesn't lose its significance or scientific basis, especially at a time when you don't know where the next challenge will come from. Integration would still have to be promoted, because that is the only way to bring actors together at the local level.



## E. Scaling up the SDS-SEA

Ten years after the SDS-SEA was first adopted, GEF released a US\$10.6 million project grant for the GEF/UNDP Project on Scaling Up the Implementation of the SDS-SEA from September 2014 to December 2020. This was part of the fourth cycle of GEF support, which is considered the “transformation” phase designed to create PEMSEA as a self-sustaining regional coordinating mechanism for SDS-SEA implementation. A Project Cooperation Agreement was signed between UNDP and PEMSEA in August 2014, designating PEMSEA as UNDP’s implementing partner for this endeavor.

The project, which was in line with GEF 5’s International Waters strategy, sought to “catalyze actions and investments at the regional, national, and local levels to rehabilitate and sustain coastal and marine ecosystem services and build a sustainable coastal and ocean-based economy in eight countries in the East Asian Region, in accordance with the SDS-SEA.” The project involved eight countries sharing six sub-regional LMEs: Cambodia, China, Indonesia, Lao PDR, Philippines, Thailand, Timor-Leste, and Viet Nam, with Japan, RO Korea, and Singapore participating on a cost-sharing basis.

The project had three main components, where implementation was guided by the core target of covering 20 percent of the regional coastline with ICM, which directly contributed to the ICM scaling up target of the Da Nang Compact.

The first component was to establish partnerships for jointly carrying out ocean and coastal governance to enable a self-sustaining, country-owned regional mechanism governing East Asian LMEs since collaboration was indeed critical to the success of the scaling-up project. Other than the eight involved national governments, the project looped in 51 local governments and three associate members of the PEMSEA

Network of Local Governments (PNLG); 16 ICM learning centers, and four Regional Centers of Excellence (RCoE); seven port authorities; and several regional programs, donor organizations, business groups, NGOs, and communities. Membership in the PNLG has steadily increased since its launch in 2006, and has served as the driving force for ICM scaling up in support of SDS-SEA implementation. The PNLG adopted the Ansan Declaration and PNLG SAP 2016-2021 during the 2016 PNLG Forum that outlined the network’s commitments to implementing SDG 6, 11, 13, and 14.

The second component focused on establishing measures for healthy and resilient marine ecosystems through the implementation of management programs under the ICM framework that addressed habitat protection and biodiversity conservation, pollution reduction and water conservation, climate change adaptation and disaster risk reduction, and fisheries and sustainable livelihood development.

The countries made considerable progress in the formulation, adoption, and implementation of national policies, legislations, and long- and medium-term strategic plans and programs as well as strengthening institutional arrangements.

For instance, notable achievements were made in China with the creation of the China-PEMSEA Sustainable Coastal Management Cooperation Center (CPC). The Center coordinates and supports SDS-SEA implementation in China by systematically strengthening institutional capacity through training and ICM certification, providing technical services for local governments, and developing projects to enhance cooperation in SDS-SEA implementation between China and other PEMSEA Country Partners.

The protection, management, and restoration of coastal and marine ecosystems and the adoption of ICM as a mechanism to foster sustainable coastal development became part of national legislative agendas and priorities in eight countries such as a National Ocean Policy submitted to the Council of Ministers in Timor-Leste. More importantly, the overall project target of covering 20 percent of the regional coastline with ICM had been achieved and exceeded, with 40.4 percent coverage reported in 12 countries by the end of 2020.

The third component revolved around knowledge management, capacity development, and networking as support mechanisms for SDS-SEA implementation. Almost 350 knowledge products were produced from 2014 to

2020; these were widely disseminated through various channels, including the PEMSEA website and the Seas of East Asia Knowledge Bank (SEAKB). The SEAKB is a regional knowledge hub for ocean and coastal governance and blue economy, featuring a collection of case studies, manuals, technical reports, tools, and other resources such as guidance for SOC reporting, capacity building, ICM certification, and development of projects that could attract investments.

The Scaling Up SDS-SEA project also contributed in further strengthening the capacity of PRF to provide the necessary advisory and project services, knowledge, certification, and facilitation and secretariat services in support of SDS-SEA implementation.



# The Delivery Mechanism 3

## A. Why integrated coastal management (ICM) works

ICM combines different coastal and marine management efforts, including the regulation of human activities with direct impacts on the sustainable use of goods and services provided by coastal and marine ecosystems. ICM also emphasizes the commitment of major stakeholders, whose involvement in resource management is critical to the decision-making.

ICM has been established as a delivery mechanism on coastal and ocean governance in the region. UN organizations and several countries consider it as effective governance approach for the sustainable development of coastal areas.

PEMSEA pioneered the application of ICM in East Asia. Since then, the approach has been mainstreamed in different national policies and laws, achieving success on the ground in local governments, especially in terms of strengthening institutional mechanisms.

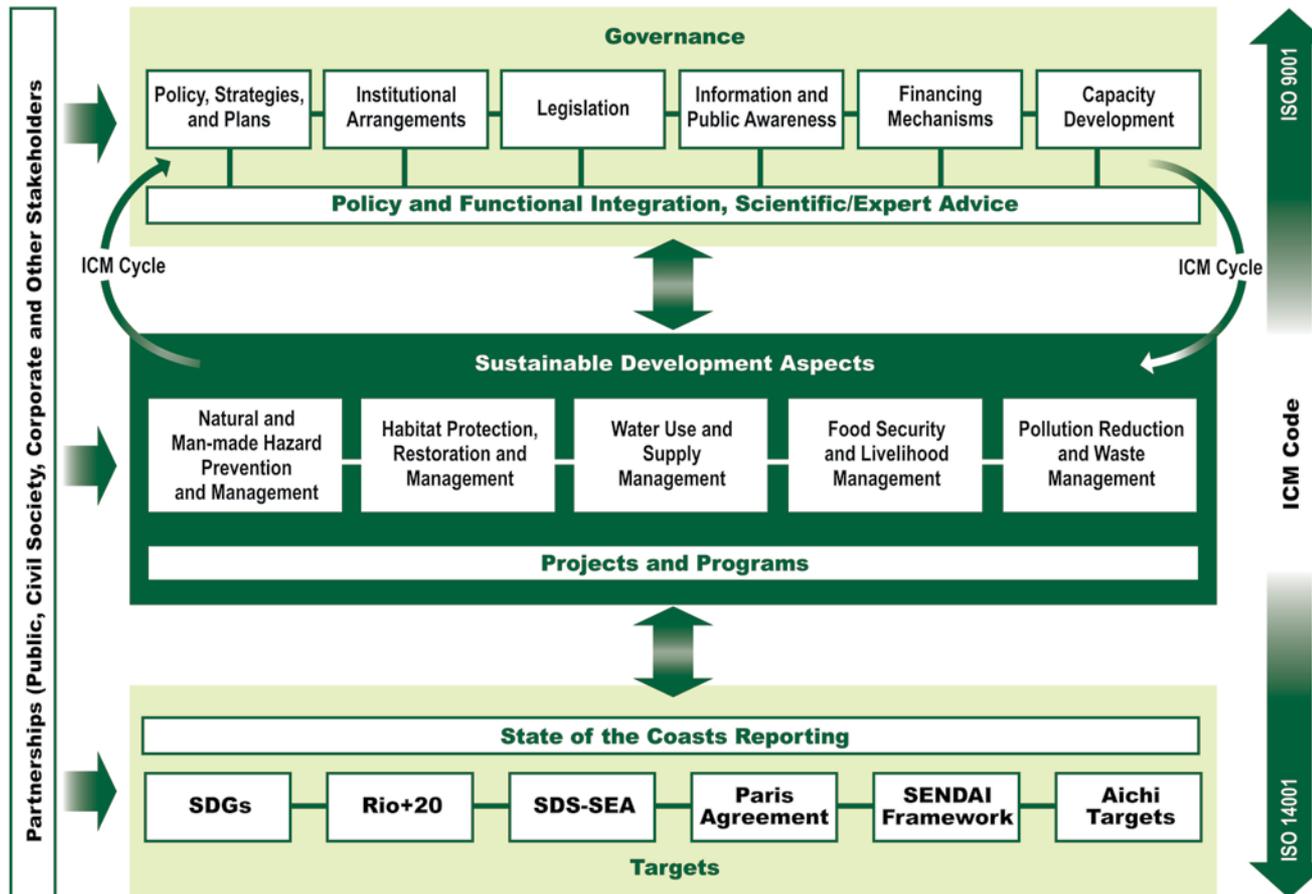
Over the years, ICM has been recognized by PEMSEA Country Partners as a systematic approach to

improving governance of marine areas and resources, requiring action at all levels to address a wide range of environmental challenges.

PEMSEA developed the Framework for the Sustainable Development of Coastal Areas (SDCA), which requires that a complete ICM system include: a) the application of the ICM program development and implementation cycle in various activities under specified governance and strategic action programs; b) a State of Oceans and Coasts (SOC) reporting system to monitor existing conditions and response actions, with measurements made through various impact indicators and targets; and c) an ICM Code that adopts international standards for quality and environmental management.

The framework covers five sustainable development aspects critical to every ICM application or program, including: a) natural and man-made hazard prevention and management; b) habitat protection, restoration, and management; c) water use and supply management; d) food security and livelihood management; and e) pollution reduction and waste management.

## Framework for Sustainable Development of Coastal Areas through ICM Implementation (SDCA)



The first ICM demonstration sites in Batangas and Xiamen offered a wealth of lessons that paved the way for the evolution and refinement of the ICM methodology and transformation of the initial GEF/UNDP project into the present organization that is PEMSEA. Over the last few decades, ICM has been used in several sites across East Asia, covering 40.4 percent (86,285 km) of the coastline in 12 countries as of December 2020, benefiting millions

of people. The rewards of ICM extended into several areas previously considered unrelated to coastal development. In Xiamen, China, for example, pollution was greatly reduced and waste management improved in the waterfront area after three cycles of ICM implementation had increased the beach area for leisure and tourism. The result was cleaner water which contributed to improved marine habitat and biodiversity, high value residential real estate and dynamic industries.

In Chonburi, Thailand, various stakeholders worked with local fishers to conserve berried blue swimming crabs. From an ICM demonstration project in Sriracha Municipality in 2006, the effort expanded to seven other municipalities and was shared with other coastal local governments. An increase in crab catch dramatically improved the livelihood—and sense of ownership—of local crab fishermen.

An ICM program in Preah Sihanouk Province, Cambodia saw the rehabilitation of a five-hectare freshwater reservoir with the assistance of local communities and the UNDP/GEF Small Grants Programme (SGP). This program directly benefited over 5,000 people in need of potable water for domestic and agricultural use.

A pioneering province-wide ICM program in Batangas saw 14 coastal municipal governments and other stakeholders working together to establish a network of MPAs to protect fisheries, coral reefs, seagrass beds, and mangroves. The collaboration has resulted in higher fish catch and the return of important fish species.

For the ICM program in Da Nang, Viet Nam, the community resolved to deal with flooding and coastal erosion with resiliency improvement measures: natural buffers against storm surges; improved local forecasting, warning, response, and recovery systems; and building multipurpose shelters and model houses that are more resistant to typhoon damage. A 6,500-meter dike system was also reinforced as protection against sea level rise, saving hectares of agricultural land.



A mangrove sanctuary in Calatagan, Batangas



Crab Condominium Project in Chonburi, Thailand



Freshwater reservoir in Preah Sihanouk Province, Cambodia



Climate resilient housing in Da Nang, Viet Nam  
(Photos by PEMSEA)

## 'ICM is the interconnection between people and between people and the sea'

### MR. DOMINGOS DA CONCEIÇÃO DOS SANTOS

As Mayor of Liquiça (Timor-Leste) since March 2011, he has been involved in the two phases of PEMSEA ICM projects in the locality. He has participated in various ICM knowledge-sharing activities like study tours and comparative studies, the PNLG Forum, the EAS Congress, and more.

*Liquiça Municipality on the northern coast of Timor-Leste is an area of massive biological diversity and sociocultural and economic significance. However, poor management and unsustainable use of resources, exacerbated by climate change, posed serious challenges to sustainable development. The major resource, mangroves, was under threat as coastal communities were cutting trees for cooking and cash. The ICM project in Liquiça supported capacity building, stakeholder education, coastal and mangrove rehabilitation, and alternative livelihood activities like seaweed culture and processing, fish and food processing, roadside food kiosks, and ecotourism in three villages in the municipality: Ulmera, Vatuvou, and Vaviquina.*

#### **What was the situation in your area before the ICM project was introduced? Were the people having difficulty making a living?**

Dwindling fish stocks, increasing pollution, and lack of public awareness were the concerns prior to the implementation of ICM activities.



Mayor Dos Santos (left) being interviewed by PEMSEA's Mario Cabral

Before implementing ICM, there was only one dominant species of flying fish. After ICM, when people's knowledge began to increase and community-based MPAs were introduced, a lot of fish species began to come closer to the coast. In the mangrove ecosystem, many crabs started to appear. Also, there used to be few investors as the scenery on the coast was full of waste, but with ICM, people started to see the importance of the coast for resource-dependent communities. With ICM, alternative livelihoods were also made available such as beach kiosks and ecotourism..

#### **What new regulations were put in place in consideration of ICM?**

There are no formal regulations in place yet, just an appeal to coastal communities through *Tarabandu*, a customary law, which prohibits conflicts between people and between

people and nature. This has led local communities in Liquiça to recognize the importance, for example, of mangrove and coral reef ecosystems in helping multiple species of fish to thrive. The local government sees its role in increasing public awareness to enforce *Tarabandu*, to preserve the existing coastal and marine environment for future generations.

***What were the biggest challenges you faced?***

In my opinion, the challenges that have been experienced from the beginning and until now are financial and public awareness issues. The government was working with development partners to invest in coastal areas, but over time, the financial assistance dried up, resulting in concerns about the sustainability of programs. In addition, people are generally not proactive in finding solutions, often depending on the local government. The government, with outside assistance, can have good planning, but if there is not enough local budget to be allocated, there will be no meaningful long-term results.

***Were you familiar with ICM at the beginning? What is your understanding of it?***

Yes, ICM talks about the interconnection between people and between people and the sea and how to manage coastal areas for the purpose of increasing sustainable income while protecting the environment. For example, it is necessary to invest in renewable energy and to prevent and control marine pollution.

***Do you think it is a good idea to continue using ICM? How do you personally plan to contribute to the efforts?***

Yes, but in order to be effective and efficient, ICM activities should be piloted in one municipality first for a couple of years before this gets replicated in other areas. This will allow us to see the results of ICM implementation and revisit and refine the approach as needed.

## ICM practitioners on the ground in China: 'People are paying more attention to marine protection'

ICM has changed the lives of many coastal residents in China and the people involved in ICM implementation in the cities of Dongying, Quanzhou, Nan'an, and Lianyungang have seen how it happened.

**CASE OF DONGYING.** "Guangli River, the major river passing through the urban area of Dongying was seriously polluted and smelled bad due to sewage disposal," recalls research worker, Liu Pei. "People's lives were badly affected, and the quality of coastal waters and fishery resources had declined greatly."

"At the onset of ICM implementation, people in Dongying questioned the benefits it could bring," Liu notes, "but after the initial results, the public's willingness increased and so did public investment for ICM." Dongying became an ICM site in 2005, and since then, the Guangli River has undergone much improvement through strengthened rain and sewage diversion, new sewage treatment plants, river dredging and cleaning, artificial wetlands to assist in water purification, and ecological restoration of the estuary wetland. "There are now wetland parks along both sides of the river, which have become perfect places for people to relax," adds Liu.

"Next to my community is a tributary of the Guangli River," says Liu. "With the completion of the Guangli River Comprehensive Treatment Project, the river became clearer and the fish more abundant. Residents now like to take a walk and rest by the river."



**MR. LIU PEI**

Research worker,  
Dongying



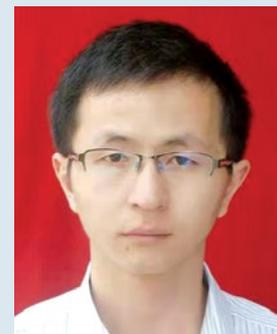
**MR. GUO RONGSEN**

One China Public Institution,  
Quanzhou



**MS. TAN YIJIE**

Bureau of Natural Resources  
and Planning, Lianyungang



**MR. PAN SUZE**

Natural Resources Bureau,  
Nan'an

"The ocean and coasts provide us with the necessary conditions for survival and well-being," says Liu of the need for the community to protect its coastal environment and resources.

“We should strengthen public environmental education, so that environment-friendly lifestyles can be deeply rooted in the hearts of the people.”

**CASE OF QUANZHOU.** Guo Rongsen, an employee at One China Public Institution, found coastal management in Quanzhou problematic before ICM was introduced.

“The coastal areas were not effectively supervised,” he adds. “There were few marine ecological restoration projects, making it difficult to achieve sustainable use of the coastal zone. The local fisheries was abundant but the ocean was polluted.” In addition, with population increase, rapid urbanization, and climate change, the sea level keeps rising and coasts are constantly being eroded.

Guo had no qualms about accepting ICM. He recalls how it solved “the contradictions between various departments on coastal development. ICM helped to coordinate and supervise the use of coastal resources and the environment to ensure sustainable development.” Guo adds that “I will do my part to protect the marine ecological environment and encourage others to also participate in the protection of marine and fishery resources.”

**CASE OF LIANYUNGANG.** “The city has abundant marine resources and a fine coastline,” says Tan Yijie, who works for the local Bureau of Natural Resources and Planning. “Haizhou Bay Fishing Ground, one of the eight largest fishing grounds in China, is in Lianyungang. However, with the construction of the Binhai New District and the development of industries, the coastline has been overexploited while water quality deteriorated.”

The city became the site of an ICM project in 2005 and formally became a member of the PNLG in 2011, during which period plans in areas such as marine functional zoning, biological resource protection, and ecological environment restoration for the city were prepared, according to Tan. A number of MPAs were also established over the years such as mangroves, seagrass beds, and coastal wetlands.

Tan has full confidence in ICM implementation. “After less than two decades, the project has effectively promoted the integrated governance of ocean and coasts and improved mutual exchanges and cooperation.” As a result, the city’s ecological environment and biodiversity have been gradually restored. She adds, “People also feel more comfortable now taking coastal trips, are more assured in buying seafood products, and find more satisfaction with the coastal environment.”

She says, “As a coastal city, Lianyungang must play its role as a blue engine consistently, strengthening the integrated management of the ocean and coasts and further developing the city’s marine fisheries, maritime transportation, coastal tourism, and other marine industries. All these will contribute greatly to the improvement of living conditions of coastal residents and the marine ecological environment and results in increased contribution of the coastal and marine sector to the national economy.”

**CASE OF NAN’AN.** Pan Zuze, who works for the Natural Resources Bureau in Nan’an, noted the intensive development of salt fields, marine fisheries, maritime transport, oil and gas storage, and urban industries along the city’s coastline. “This damaged the local marine environment and fishery resources.

Most of the local residents had reduced fishery production and had to switch to other industries. Moreover, the locals in coastal communities have a deep-rooted traditional concept of sea use and weak legal awareness.”

“With the advancement of ICM, various management systems and regulations have been introduced,” says Pan. The changes in perspective of coastal residents in his area were evident. “As a staff of a marine administrative department, I usually visit the first-tier coastal towns and communities and I can still see changes due to ICM. For example, people are paying more attention to marine protection, and there is more publicity on marine environmental protection in coastal villages and

communities. Coastal development and utilization are standardized, and household garbage is no longer dumped in the sea. The coastal areas have become cleaner and more beautiful. With the improved coastal environment, blue sea, nice waves and the appearance of Chinese white dolphins, people are more likely to play around the coastal area, and their living space can be expanded.”

“As a buffer zone between sea and land, the coastal area plays an irreplaceable role in helping people and the sea exist together in harmony,” says Pan. “It is of great significance to protect the marine environment and do well in ICM as the abundant coastal resources are our common treasure.



Red beach in Panjin, Liaoning, China (Photo by China-PEMSEA Sustainable Coastal Management Cooperation Center) (CPC)







Singapore ecotourism marine park (Photo by MCAP Singapore)

## 1. Scaling up

The proven environmental and economic viability of an ICM initiative encourages scaling up of efforts from local to national and to the regional levels. Local governments and communities institutionalize ICM programs in other areas, incorporating their principles in regular activities, and replicating good practices.

After the success of the model sites in Xiamen and Batangas, examples and experiences were shared. A Regional Network of Local Governments (RNLG) implementing ICM, precursor of the PNLG, was established in 2001 in Shihwa, RO Korea. The Haikou Partnership Agreement of 2006 set a target for implementing ICM programs in at least 20 percent of the region's coastline by 2015. By this time, PEMSEA had trained almost 2,000 coastal managers and government representatives and had facilitated ICM implementation in different settings. The work had also been comprehensively documented in reports and manuals, both on video and on paper, providing excellent educational foundation for replication projects. By June 2010, some 10 percent of the East Asian coastline was covered by ICM programs.

By 2015, 14 percent of the coastline of East Asia had been covered with ICM projects and programs; by 2016, this number had reached 17 percent, and the ICM programs had evolved into an ICM system that continues to showcase the benefits of institutionalizing the governance mechanism and integrated approaches to implementing various activities guided by the shared vision of local governments and stakeholders.

Further scaling up advanced the target to cover 25 percent of the regional coastline by 2021. As of late 2018, PEMSEA had conducted 178 ICM training and workshop activities for over 5,000 participants and ICM practitioners. Several countries in East Asia had also passed ICM legislation and included multi-sectoral mechanisms for institutional arrangements in coastal and marine management. As of early 2019, nine countries had national ICM coordinating mechanisms.

## 'The beach gives us jobs, a daily life, a good environment, everything'

**MS. MEAN BOPHA**, owner of 888 Restaurant, and **MS. MAO HAROTEY**, manager of Angkor Beach Restaurant, both in Ochheuteal Beach, share their experiences with the ICM project.

*Sihanoukville is the capital of Preah Sihanouk Province in Cambodia and is home to seven white sand beaches and several islands that draw a steady stream of tourists and provide regular income for the local people.*

*With the burgeoning coastal tourism industry, however, social and environmental problems were also growing. The number of tourist facilities was increasing, but the province lacked adequate waste disposal facilities and regulations to manage the problems. In 2001, the provincial government initiated ICM, making use of coastal use zoning as one of the tools to address land and sea use conflicts. This was in line with the three priorities identified in the province's Coastal Strategy Implementation Plan: pollution, livelihood management, and habitat protection. Ochheuteal Beach was selected as a pilot site for the Tourism Development and Management Project that aimed to ensure correct placement of infrastructure, maintain beach integrity, and create an impetus for improved tourist facilities and services. The area's built-up zone includes semi-permanent huts and other structures that house shops and restaurants.*



Mean Bopha and Mao Harotey, restaurateurs at Ochheuteal Beach

### **What was the situation in your area before the project was introduced? Were you having difficulty making a living?**

**Mean Bopha:** Previously, there were many foreign and domestic tourists visiting Ochheuteal Beach, but they would give us feedback on how the ocean and beach were getting polluted. The sand was no longer white whenever there was heavy rain and there was plenty of plastic and trash in the sea. At that time, beach clean-ups were already being carried out daily.

**Mao Harotey:** Before the project started, the number of tourists was decreasing due to pollution, forcing us to reduce the number of staff as our business was in crisis.

***How was the project introduced? What changes were made? What were you asked to do as your contribution to the effort?***

**Mean Bopha:** This project has been really good for us. The authorities gave us complete information about the project activities and guidelines for all stall renovations. All restaurants were built with the same design, scale, and measurements to showcase our tradition.

By the end of the project, the view of our restaurant had changed; the beach space is bigger and all umbrellas and chairs are now placed properly. The project also improved garden space, car parks, and walkways. Waste management is being regulated by local authorities. Swimming zones are marked with buoys, and the number of motorboats is regulated by the Department of Tourism. From a big mess with backwater discharge on the beach, it now looks cleaner.

We invested almost US\$5,000 in renovating our restaurant; we are happy that this amount has contributed to improving our beach. The beach is cleaned every day by around 23 municipal workers, and around 19 beach guards also patrol regularly.

**Mao Harotey:** It looks so good now with all these beautiful restaurants, but there are regulations—our space was narrowed, the number of tables was reduced, and we can't put huts or tables on the beach anymore except during holidays. We ask permission from the Provincial Administration to allow us to arrange tables on the beach.

***Did you have any hesitation at the beginning of the project? What were the biggest challenges you faced?***

**Mao Harotey:** At the beginning, we were not happy because we already spent a big amount of money to rebuild in 2007. Then the local authorities told us to rebuild again; we had to spend our own money and reduce the size of our land area and shop. With several meetings with local authorities, though, I changed my mind because it turns out that the government had a good plan, and all the shops agreed to support the project.

***Are you satisfied with the change?***

**Mao Harotey:** Yes, our income increased and many domestic tourists came back with newfound appreciation, not just with the improved environmental conditions but also the presence of new infrastructure, which made it convenient for travelers to visit.

***Do you think it is a good idea to continue implementing the project in Ochheuteal Beach? How do you personally plan to contribute to the efforts?***

**Mean Bopha:** It's a good idea to continue improving Ochheuteal Beach; we understand the long-term project impact. We will join with local authorities and follow regulations, and we will contribute what we can to take care of our beach and sea. The beach gives us livelihoods and a good environment, among others.



## 2. The ICM Cycle



The six stages of the ICM Cycle and their components

The development of an ICM program goes through a step-by-step process formally known as the ICM Development and Implementation Cycle. Its six stages are designed to be continuously built upon with stakeholders' increasing knowledge, experience, and capacity.

Before the cycle commences, candidate ICM sites are assessed according to specific selection criteria to determine the sites' viability for sustainable ICM implementation.

**Stage 1, PREPARING**, lays the groundwork by the staff and project coordinators; establishing working systems with the local government; setting the budget and workplan; identifying and consulting stakeholders; and surveying the political landscape.

**Stage 2, INITIATING**, means conducting an environmental risk assessment and developing Coastal Strategy. An integrated information management system (IIMS) stores data to be shared among the involved line agencies.

**Stage 3, DEVELOPING**, involves additional data gathering and conduct of stakeholder consultations; formulating the Coastal Strategy Implementation Plan (CSIP), which includes action programs that address the risks in the ERA, and the coastal use zoning plan. Changes in environmental risks are monitored and management approaches are refined accordingly.

**Stage 4, ADOPTING**, is when the local government embraces the Coastal Strategy and its related plans, usually with three- to five-year time frames. Information on environmental and public health and the benefits of ICM are communicated to the general public. Legal and funding mechanisms are also put in place at this point.

**Stage 5, IMPLEMENTING**, involves setting up a multi-sectoral mechanism for coordinating and networking; institutionalizing project management by the local government; allocating financial resources dedicated to ICM implementation; and continued monitoring.

**Stage 6, REFINING AND CONSOLIDATING**, involves reviewing the Coastal Strategy, its related plans, and the institutional set-up and refining them as needed based on stakeholder feedback. In this process, local staff gains experience, making ICM implementation more efficient. In preparation for the next cycle, the SOC report is updated, and the project aims for ICM certification for the site.



Public consultation and data gathering in Lao PDR (Photo by PEMSEA)

## 'It is important for Thailand to not let the seas be ruined again'

**MS. NISAKORN WIWEKWIN** is a Public Health and Environment Department officer and ICM Coordinator of Saensuk Municipality, Chonburi Province, Thailand and has been involved since the start of the Chonburi ICM project in 2001. She contributed to the development and adoption of the Chonburi Coastal Strategy in 2004 and coordinated the development and implementation of Coastal Strategy Implementation Plans (CSIPs) for the province. She has been a mentor for the scaling up of ICM development and implementation in the nearby provinces of Chantaburi, Rayong, and Trat and was also a PRF intern in 2005.



*Chonburi is a coastal province in Thailand, 80 km southeast of Bangkok, with a 160 km coastline and a wealth of natural resources. It is also the center of marine fisheries and aquaculture in the inner Gulf of Thailand, and a major industrial manufacturing center. The province has had to deal with conflicting use of coastal resources, habitat loss, pollution, unregulated coastal development, and urbanization. In August 2001, the Chonburi provincial government, in collaboration with PEMSEA, initiated an ICM demonstration project that led to the adoption of ICM concepts in policymaking and management. By late 2008, all 26 coastal local governments had become part of the Chonburi ICM Network; by 2010, the entire province, or a total of 99 local governments, was covered. The ICM project in Chonburi was initiated in five municipalities: Sriracha, Laemchabang, Saensuk, Au Udom (now Chaoprayasurasak), and Koh Sichang.*

### **What was the situation in your area before the ICM project was introduced? Were the people having difficulty making a living?**

The Eastern Seaboard Development Project, which was a long-term initiative of the Thai government, was launched in 1981 to expand economic development from Bangkok to other provinces. This transformed Chonburi and its adjoining provinces into industrial centers and direct gateways for import and export. This was accompanied by continuous development of important public infrastructure, including roads, electricity, waterworks, and harbors for domestic and international transport. The rapid development resulted in the deterioration of the marine and coastal environment and resources; reduction in fisheries production; increase in pollution; and visible degradation of beach areas as well as natural, historical, and cultural tourist destinations.

These had socioeconomic consequences for sectors and communities dependent on healthy marine and coastal resources, including fisheries and tourism.

***How was the ICM project introduced? What changes were made? How did you contribute to the effort?***

ICM was introduced in Chonburi when the national government was decentralizing management responsibilities to the local governments. The introduction of a local environmental management system that could harmonize economic development and environmental conservation was very timely. The formal adoption of a Coastal Strategy in 2004, and the enactment of a provincial order to establish a coordinating mechanism for its implementation, were vital to ensuring wider recognition of the value of the ICM program.

Thailand's 2015 National Act on the Promotion of Marine and Coastal Resources Management mandated the establishment of an inter-agency and multi-sectoral coordinating committee for marine and coastal resource management at the provincial and national levels. It provided an opportunity for Chonburi to further strengthen and institutionalize its existing ICM mechanism and share its experiences with other provinces. It was apparent from the ICM activities that local governments, scientific institutions, and other sectors benefited from working together.

I participated in developing a CSIP for Sriracha and Saensuk. The local CSIP and ICM action plans identified priority programs and activities that required funding from local and national governments and other partners. Local businesses were able to align their corporate social responsibility programs with the priority programs of local governments.



Training of the local oil spill response team of Saensuk Municipality, Thailand  
(Photo by N. Wiwekwin)

***Were you familiar with ICM at the beginning?***

Yes, ICM is an acknowledged process to deal with current and long-term coastal challenges, including climate change. ICM promotes a strategic, integrated, and adaptive approach to coastal zone planning and management in order to contribute to the sustainable development of coastal areas.

***Have things changed in your community because of ICM? Were the changes sustained?***

The coordination mechanism established under the ICM program was resilient to changes in political and administrative leadership. Over the 15-year history of ICM in Chonburi, leadership changes at local, provincial, and national levels have occurred during the scaling up of ICM practices throughout the entire province. The institutional arrangements were efficient, effective, and continued to receive strong support from local stakeholders.

Things did improve. For four decades, for example, transferring commodities from small vessels to bigger ships in Sriracha Bay for international transport caused dust clouds that settled in the bay area. The nearby local governments of Sriracha and Koh Sichang did not have the authority to address the problem as the area was under national government jurisdiction. As part of the ICM project, Sriracha municipal government collaborated with researchers from the Sriracha Fisheries Research Station of Kasetsart University in 2006 to assess seawater, sediment, and air quality as well as benthic communities in the area. The research showed that sea-based operations have negative impacts on the local ecosystem and not just on air quality. The results were then brought to the attention of concerned national agencies. The municipal government was later granted the authority to manage its surrounding sea area under Act 2551 of the Ministry of Interior on 30 October 2008. Sichang was the



Wiwekwin (standing, with mike) speaking at a workshop

first municipality in Thailand to have a designated sea area and the authority to protect and manage the marine natural resources and environment, collect fees from shipping boats, and control shipping operations.

***Why do you think it is important for people in your community to be concerned about protecting the oceans and coasts for the future?***

Chonburi is the center of marine fisheries and aquaculture. The tourism industry is also Thailand's biggest income source, and the number of tourists and tourism activities has a direct impact on the health of coastal seas, marine wildlife, and other natural resources. Over the last two decades, over-exploitation of resources, population growth, intensified tourism, aquaculture, and industries caused environmental degradation that led to coastal problems.

It is important for Thailand to not let the seas be ruined again by environmentally destructive mass tourism. There must be sustainable use and management of ocean resources and coastal tourism not only to serve the national economy, but also the locals' way of life, while preserving the health of the oceans, seas, and coasts.





Mangrove saplings being transported for replanting (Photo by PEMSEA/R. Lansap)

### 3. The ICM Code

PEMSEA developed the ICM Code in 2007 to serve as a standard for an integrated management system that aims to improve the performance of local governments in coastal and ocean governance, as well as sustainable development and management of coastal and marine resources.

Specifically, the ICM Code was developed incorporating the principles and essential elements of ICM as reflected in several international and regional instruments such as Agenda 21, UN SDGs, and SDS-SEA, as well as the requirements of two prevailing international standards in Environmental Management Systems and Quality Management Systems—the ISO 14001:2004 and ISO 9001:2000, respectively. Through the application of the ICM Code, local governments will be able to strengthen their management systems, consistent with the objectives of major international environmental instruments, as well as with the requirements of ISO 14001:2004 and ISO 9001:2000.

In 2011, the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG), in its forum in Dongying, China, included in its Dongying Declaration on Building a “Blue Economy” through Integrated Coastal Management a provision to “Implement the PEMSEA ICM Code and Recognition System across 50 percent of the PNLG local government membership by 2015 as a certification of local government achievement and success in sustainable coastal development through ICM implementation.”

## 'ICM is not a one-time exercise, but a continuous and iterative process'

**MR. FAKHRIE WAHYUDIN** is an employee of the City Planning, Research and Development Office of Bontang, Indonesia and lives in the city itself. He was also an intern at the PRF in 2018, where he learned more about PEMSEA, the SDS-SEA program, the Framework for Sustainable Development of Coastal Areas through ICM, the SDS-SEA/ICM Project, and expected outcomes for Bontang City and how to achieve these. He coordinated the implementation of the SDS-SEA/ICM project in Bontang City, and facilitated the city's membership in the PEMSEA Network of Local Governments in 2018.



*Bontang City in East Kalimantan, on the eastern coast of Borneo in Indonesia, is a land of rivers, mangrove forests, coral reefs, and seagrass beds. In response to growing environmental problems, an ICM project was implemented in 2007 with the support of the Center for Coastal and Marine Resources Studies of IPB University (CCMRS-IPB), a PEMSEA ICM Learning Center in Indonesia. Following the strategic planning and zoning process in 2007-2009, the Regent's Order establishing an MPA in Bontang was issued in 2011 in order to maintain the long-term sustainability of small-scale fisheries. In 2014, the MPA management plan was drafted. Bontang was one of the ICM sites that was later selected for the SDS-SEA Scaling Up Project in 2015, as a model to demonstrate how ICM approaches can help improve the effectiveness of MPA management. The implementation of the SDS-SEA Scaling up Project in Bontang was coordinated by the City Planning, Research and Development Office.*

### **What was the situation in your area before the ICM project was introduced? What were the key issues?**

The city has 135.79 km of coastline and lies adjacent to the Makassar Strait, a busy and congested international shipping lane. There are big industries: fertilizer, petrochemicals, natural gas, coal stacking, and shipping. There are a lot of settlements, ports, aquaculture farms, fishing operations, tourism sites, and recreational spots.

The key issues were degradation of marine and coastal ecosystems due to the development of industries, settlements, shipping, tourism, and fishery activities that were not environmentally friendly.

The main ecosystems here are mangroves, seagrass beds, and coral reefs. Degradation of these ecosystems caused aquatic biota, both coastal and offshore, to lose their nursery, feeding, and spawning grounds, resulting in low fish catch and consequently reduced income for fisherfolk.

***How did ICM start in Bontang? What were you asked to do as your contribution to the project?***

The implementation of ICM in Bontang started in 2007 with the enactment of National Law No. 27 of 2007 on the Management of Coastal Areas and Small Islands, as well as the preparation of the Coastal Zone Strategic Plan of Bontang City in 2007. In 2008, the Coastal Use Zone Plan of Bontang City was prepared, and in 2009 was synchronized with the Land Use Plan to become an integrated land and sea use spatial plan, the first of its kind in Indonesia. Meanwhile, the Management Plan of the Coastal and Marine Area of Bontang City was legalized in 2012 and the Management Plan of the MPA in 2014.

The application of ICM in Bontang introduced a new process of planning, utilizing, monitoring, and regulating the management of coastal and small island resources that considers the interplay or dynamics between different stakeholders, terrestrial and marine ecosystems, and policy and science, something which has not been done before in development activities.

As a staff member at the City Planning, Research and Development Office, I was asked to supervise the integration of CRM into regional development planning, including the establishment and management of the Bontang MPA.

***Did you have any misgivings at the beginning of the project? What were your biggest challenges?***

From 2007 to 2014, there was no hesitation on my part in running ICM. However, after the issuance of National Law No. 23 of 2014, which transferred the authority of the district or city government over marine resources of less than 4 nautical miles (about 7.4 km) to the provincial

government, I had some skepticism about the success of the ICM programs previously carried out by the city, especially since the provincial government was not ready to accept this responsibility. The conditions on-site required immediate handling of urgent problems. This was the biggest challenge I had ever faced.

It was fortunate that Bontang City was designated one of the locations for scaling up the implementation of the SDS-SEA in 2015, raising new hopes for the sustainability of ICM in our city.

With changes in policies on the management of coastal areas in Indonesia since 2014, the Government of Bontang City adjusted its strategy by emphasizing the importance of consistency and complementarity between different management actions, including the provincial and national governments, as well as maintaining the integrity of the coastal ecosystem, both on land, which is the responsibility of Bontang City government, and the sea, which is the responsibility of the provincial government. To facilitate coordination with the Provincial Government of East Kalimantan and other stakeholders, the Government of Bontang City formalized the establishment of the ICM Coordination Team, consisting of the Program Coordinating Committee (PCC) and the Program Management Office (PMO) in 2017.

The main expected outcome of the SDS-SEA project in Bontang City was to achieve 10 percent improvement on the MPA management effectiveness rating in relation to the baseline by making use of the Management Effectiveness Tracking Tool (METT).

As a framework for management of the MPA, the ICM Coordination Team, in cooperation with CCMRS-IPB,



Wahyudin presenting the Coastal Use Zoning Plan for Bontang City, Indonesia

conducted a risk and vulnerability assessment (RVA) of the MPA in 2018. Following up on recommendations from the RVA, the provincial and national governments made it a priority to get the MPA in East Kalimantan Province legally recognized in 2021.

The results of the METT evaluation showed that the target outcome of 10 percent improvement of MPA management effectiveness had been achieved.

***Were you familiar with ICM at the beginning?***

I am quite familiar with ICM because I had completed the Integrated Coastal Zone Planning and Management Training carried out by the provincial government in collaboration with the Ministry of Marine Affairs and Fisheries in 2005. From that training, I understood the hierarchy of integrated

coastal and marine management planning, and how to do it step by step.

***Have things changed in your community because of ICM?***

The implementation of ICM in Bontang City, which has only been running for 13 years with various dynamic challenges and problems, has yet to produce significant positive changes on the site.

I realize that change is a long-term process. ICM is not a one-time exercise, but a continuous and iterative process of policy and management interventions to address unresolved as well as new issues arising from coastal development. Effective use of the ICM cycle allows planning and management processes to meet new challenges.

However, I do feel that the public's attention to the importance of protecting the coasts and ocean is increasing. This is shown by the progress noted by indicators on institutional arrangements and financing mechanisms in the local State of Coasts (SOC) report.

There are still some small groups, however, that violate or engage in destructive activities such as illegal fishing due to ineffective law enforcement and lack of information and public awareness as seen in the SOC report.

***What did you gain from your involvement in ICM?***

I gained a lot of experience and newfound knowledge about ICM. I have come to understand that ICM is not only a theory-based science but also empirical in nature. ICM employs a holistic, interactive approach in policy-making, planning, and implementation in addressing complex management issues that cut across various sectors and stakeholders. Thanks to my work in ICM, I also have a wider network now, through which I can acquire new knowledge, skills, and opportunities to improve my quality of life.

***Why do you think it's important for people in your community to protect the coasts and ocean for the future?***

The coasts and ocean have primary functions and uses in human life. They provide natural resources, both renewable and non-renewable, and life support services.

To quote the Sustainable Development Impact Summit 2019 of the World Economic Forum, "The oceans help us breathe, regulate climate, [and] absorb huge amounts of heat from



Survey of coastal mangroves with Mulawarman University



Survey of coastal mangroves with CCMRS-IPB

the sun. It's an important source of food, as fish accounts for 16 percent of all animal protein consumed globally. It's not just a source of food, but is home to an abundance of life. Finally, it creates millions of jobs; by 2030, ocean-based industries will employ more than 40 million people worldwide. The ocean economy is of particular importance in developing countries, where most of the people rely on the sea for their livelihoods."



#### 4. ICM System Certification

In tandem with the ICM Code, which is designed to guide local governments in developing and implementing an ICM system, PEMSEA has established and implemented an ICM System Certification, which provides a means to formally evaluate, acknowledge, and certify that a local government's ICM system conforms to the requirements of the ICM Code.

The certification has three levels: The first level, **PROFICIENT ICM GOVERNANCE LEVEL**, marks the development and implementation of an ICM project that complies with entry level requirements of the ICM Code. Next is the **EFFECTIVE ICM LEVEL**, which indicates success in creating efficient processes resulting in environmental benefits in key areas, consistent with ISO 14001 and ISO 9001. Finally, there is the **BLUE ECONOMY LEVEL**, which demonstrates a high level of system excellence, sustainable development, and constant improvement.

The ICM System Certification acknowledges the commitment of the local government to protect the environment and to fulfill the needs and expectations of its stakeholders through ICM.

PEMSEA also runs an experience-based ICM Professional Certification Program to recognize competent individuals working in sustainable development and those who are pursuing professional growth towards coastal and ocean governance. The certification system officially recognizes ICM leaders and practitioners.

Certification can add value to the work of such professionals by combining learnings from previous capacity development

#### Box 13

#### ICM System certified local governments

##### Level 2-certified:

Dongying, China  
Xiamen, China  
Bataan, Philippines  
Batangas, Philippines

##### Level 1-certified:

Preah Sihanouk, Cambodia  
Fangchenggang, China  
Lianyungang, China  
Quanzhou, China  
Cavite, Philippines  
Guimaras, Philippines  
Thua Thien Hue, Viet Nam

activities such as internships, training, and degree programs to establish standards for ICM practice. Certification can draw from communities of practice as well as ICM platforms, institutions, and management tools to preserve and utilize pools of capacity and expertise that had been built up over the years. Finally, an established certification process can continue to measure competencies and reveal where gaps in capacity development still exist.

Criteria for earning a certificate are demonstrated knowledge in coastal and marine ecosystem governance and leadership in a multi-disciplinary working environment. Candidates can be certified as a **PROFICIENT ICM PROFESSIONAL**, an **EFFECTIVE ICM PROFESSIONAL**, or the highest level, **EXPERT ICM PROFESSIONAL**.

## 5. The PSHEM Code and Recognition System

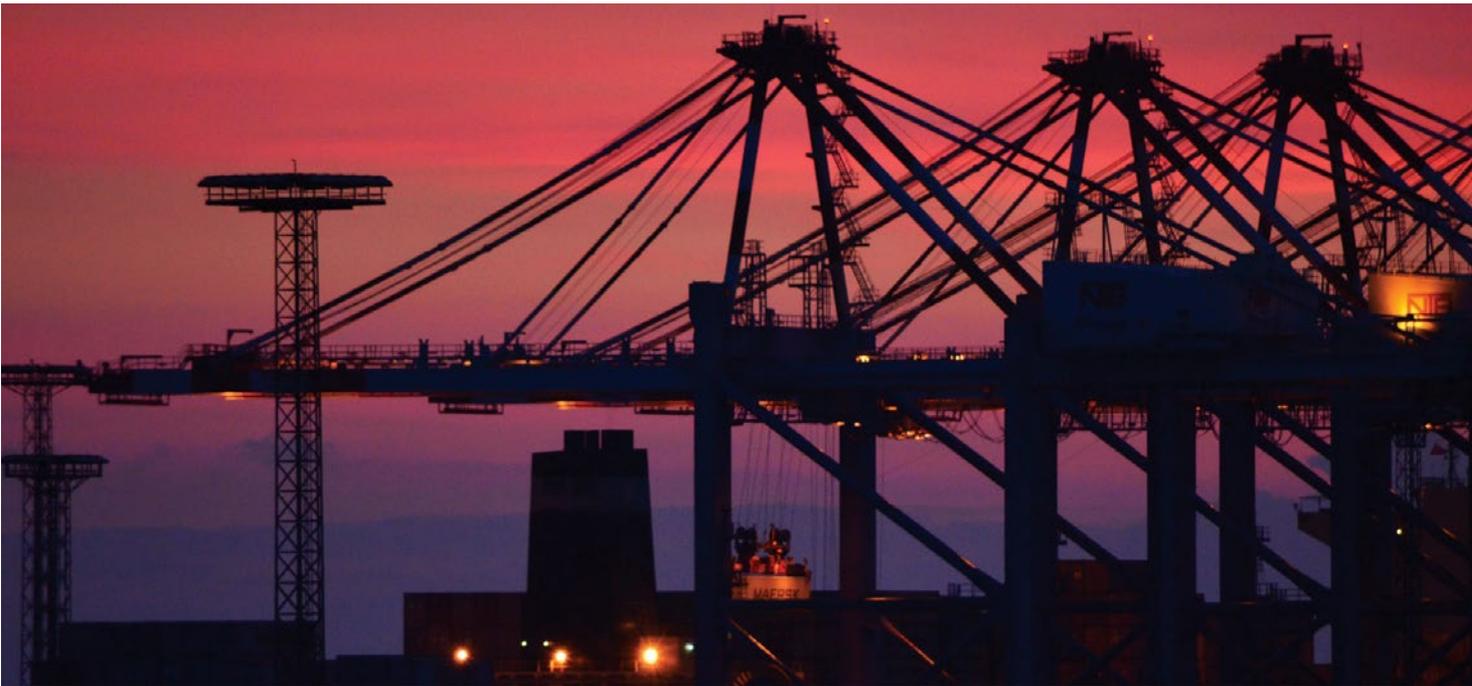
PEMSEA developed the Port Safety, Health, and Environmental Management (PSHEM) Code and demonstrated its application through the implementation of the PSHEMS System in selected ports in the region. The PSHEM Code aims to provide port authorities or any other company operating within the port, whose activities may have an effect on the environment and health and safety of people, environment, cargo, and port installations, with a voluntary standard against which to measure the performance of their operations. The PSHEM Code is structured using the PSHEM System Continual Improvement Process and the key elements of recognized international standards, namely ISO 9001 (Quality Management), ISO 14001 (Environmental Management), and Occupational Health and Safety Assessment Series (OHSAS) 18001 (Occupational Health and Safety).

### Box 14

#### Certified ports in East Asia implementing the PSHEM Code and System

Batangas Port, Philippines  
Cagayan de Oro Port, Philippines  
Iloilo Port, Philippines  
General Santos Port, Philippines  
Bangkok Port, Thailand  
Laem Chabang Port, Thailand

Requirements are generalized for widespread application; hence, the PSHEM Code does not state specific criteria but rather demands commitment from management and stakeholders to prioritize safety, health, and environmental management; this includes the prevention of accidents and pollution.



Laem Chabang Port, Thailand (Photo by Thailand Environment Institute)

## B. The State of Ocean and Coasts

PEMSEA launched the State of Ocean and Coasts (SOC) reporting system as a means to identify and monitor the varied impacts and knock-on effects that any management changes may produce. Local State of Coasts reports are indicator-based, covering governance and sustainable development aspects of the Sustainable Development of Coastal Areas (SDCA) framework, while national (NSOC) and regional SOC reports are focused more on accounting for the state of ocean economy in the countries and region, respectively, and the contributions of the coastal and marine sector to the overall economy.

The local SOC report is considered a scorecard and its first part presents baseline information, including demographic and socioeconomic data, the estimated value of coastal and marine resources and services within the area, and the contribution of such resources and services to gross domestic product (GDP). Such data help track changes and impacts of policies and programs over time.

For the second part of the report, sustainable management projects and economic, cultural, and ecosystem services are listed, as well as governance indicators and the outcomes of activities conducted by local authorities—for example, are there coastal or sectoral policies, coordinating mechanisms, laws, financing, stakeholder consultation and training? This informs local leaders of the general situation.

Finally, the third part of the local SOC report includes sustainable development indicators and specific details of conditions, responses, and achievements for the information of on-the-ground coastal managers and other users. With such data, the local SOC report provides opportunities for local governments to identify areas that will need more work to be addressed in the next reporting cycle.

Local, national, and regional SOC reports are excellent tools for enabling good governance, harnessing scientific support and blue economy investments, coordinating the various sectors, and supporting evidence-based policy- and decision-making for the vision of sustainable ocean and coasts for all.

## 'SOC reporting is an integral part of coastal and ocean governance and management'

**MR. STEPHEN ADRIAN ROSS** was Executive Director of PRF from 2014 to 2017. One of the founding members of PEMSEA, he worked with the organization for 20 years as a Senior Technical Officer for the IMO, and as PEMSEA's Senior Programme Officer and Chief Technical Officer before being appointed Executive Director.



***You have stressed the value of the SOC report as a key instrument in sustainable coastal management. Could you elaborate on this, especially for a broader readership?***

The SOC reports help to identify gaps in existing ICM programs as well as new and emerging issues that need to be prioritized.

SOC reports are prepared by local teams using a common set of indicators that encompass governance, environmental, social, and economic characteristics of the area. By conducting SOC reporting every three to five years, stakeholders are able to track the overall effectiveness and benefits of ICM programs. This not only provides governments with a powerful planning, management, and evaluation tool for sustainable development of coastal areas but also provides communities with the capacity and means to participate in the planning and evaluating the state of their social, economic, and environmental well-being.

The results of the first national and regional SOC reports have been encouraging. The national SOC reports also delved into the

valuation of natural assets and ecosystem services and their often unaccounted contribution to national and regional economies and employment.

The results of the first national and regional SOC reports have been encouraging. However, to reap the full benefits of this impressive work, PEMSEA and its Country Partners would need to consider ways and means of tackling SOC conclusions and recommendations.

***How do you see PEMSEA's role evolving in the coming years?***

The National State of Oceans and Coasts reports recently developed and published by 10 PEMSEA partner countries focus on blue economy transformation. To my mind, these SOC reports provide both direction and role for PEMSEA's evolution. While there are numerous definitions, in practical

terms, blue economy growth is driven by public and private investments that ensure the sustainable use of coastal and marine resources while promoting economic growth, enhancing energy efficiency, reducing carbon emissions and pollution, and preserving and improving livelihoods across a range of ocean-dependent and ocean-related sectors.

PEMSEA, as a regional organization, is uniquely positioned to take on this challenge, given its long and well-known history of partnership development among the public and private sectors; its on-the-ground ICM experience and know-how, its commitment to the delivery of the objectives and targets of the SDS-SEA, SDGs, and other international conventions and agreements that contribute to sustainable development; and its network of local government leaders who are on the frontline of the struggle. The main question is how PEMSEA can provide value-added approaches and

services that will assist national and local governments with this transformation.

This is an evolutionary process for PEMSEA, not an abandonment of what PEMSEA does. PEMSEA will continue to scale up the application of ICM across the region, both geographically and functionally, addressing existing and emerging challenges to sustainable development through adaptation and innovation. Blue economy is an emerging challenge for many countries as evidenced in the NSOC reports. PEMSEA, in keeping with its vision and mission, can address the blue economy challenge through innovation, value-added services, and novel partnership arrangements.

Under the guidance of PEMSEA, NSOC and SOC reports were completed by 10 national governments and developed by 34 local governments as of 2021.



A port area on the coast of Preah Sihanouk Province, Cambodia (Photo by the Provincial Administration of Preah Sihanouk)





## C. The blue economy

The concept of “blue economy” has emerged in recent years as a universally beneficial approach to the sustainable development of coasts and ocean. During the 2012 EAS Congress, Ministers from 10 Country Partners adopted the “Changwon Declaration Toward an Ocean-Based Blue Economy: Moving Ahead with the Sustainable Development Strategy for the Seas of East Asia,” which defined a “blue economy” as “practical ocean-based economic model using green infrastructure and technologies, innovative financing mechanisms, and proactive institutional arrangements for meeting the twin goals of protecting our ocean and coasts and enhancing its potential contribution to sustainable development, including improving human well-being, and reducing environmental risks and ecological scarcities.” PEMSEA promotes “blue economy” as an alternative pathway to boost economic growth.

The scope of the term “blue economy” was also defined in the Declaration; it covers ocean-based or ocean-related economic activities. However, these activities must be sustainable. Ocean-based enterprises like fishing, aquaculture, and shipping are those that take place in the water while ocean-related activities use ocean products such as seafood or salt or deal in products and services for the ocean such as like ship-building and resorts.

The term “blue economy” also includes marine education, research, and the work of public agencies with mandates in coastal and marine governance such as the Coast Guard and marine research institutions. In recent years, ‘green’ coastal and marine activities have also evolved, mainly to protect the environment. These range from ecotourism and wastewater

“Investment is just one important tool for sustainable development, and it relies on policymakers.”

– **MR. RYAN WHISNANT**, former PRF Director of Strategic Initiatives

“Blue economy investment has advanced, but we’re probably still four to five years away from seeing a major shift in oceans as an investment asset class. It took energy efficiency and renewable energy at least 10 years to come into the mainstream.”

– **DR. VEERLE VANDEWEERD**, sustainable development expert and former Director of Environment and Energy, UNDP

treatment to invasive aquatic species management and the use of low carbon and renewable energy.

Several industries have been identified as key to building a blue economy. Topping the list is fisheries and aquaculture, with eight of the 15 leading fishing economies in the world located in East Asia with annual exports amounting to US\$136 billion; 68 percent of the world's fishing fleet, in fact, is based in Asia (<http://pemsea.org/our-work/blue-economy>). Other blue economy industries are ports, shipping, and marine transport; marine technology and environmental services; oil and gas; renewable energy; marine biotechnology; seabed mining; coastal manufacturing; and tourism, resorts, and coastal development.

In 2015, PEMSEA released a report on *Blue Economy for Business in East Asia* to highlight the role of private industry. While such companies investing in blue economy are indeed exposed to a number of risks because of environmental vulnerability, the opportunities are still considerable. Cost savings from resource efficiency can be further enhanced by a company's increased access to premium and emerging markets through their green reputation and brand and socially and environmentally conscious investors offering capital. Good relationships can also be developed with governments and communities, thereby allowing greater access to areas and resources for operations because of a good track record. Innovation will become par for the course because of evolving environmental standards and sustainability trends.

But because blue economy opportunities can be more difficult to navigate, PEMSEA has been helping guide proponents in making the right investments, offering technical expertise to source, evaluate, and develop bankable projects that have positive social and environmental impacts.

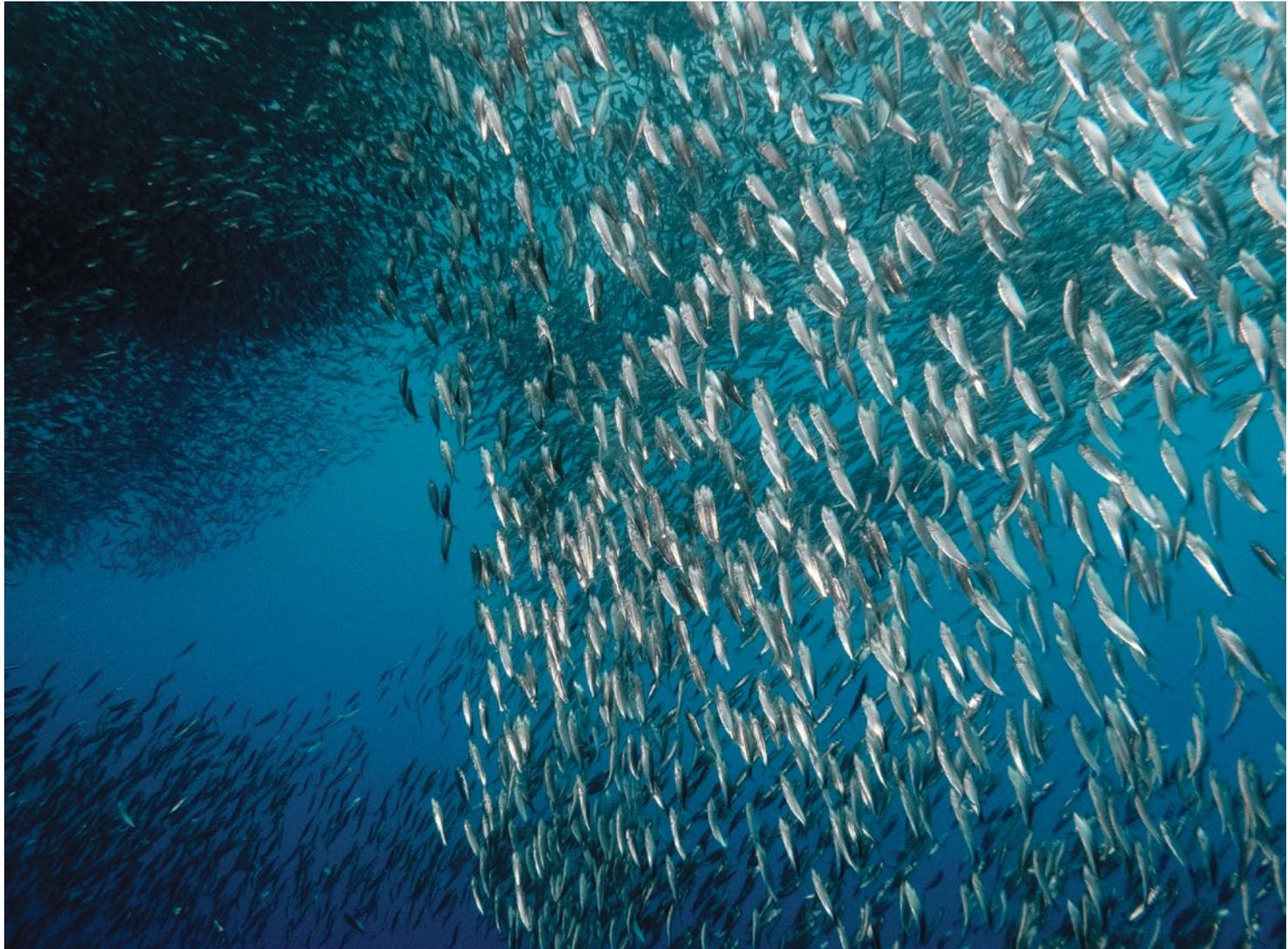
PEMSEA has, in fact, outlined the roles it—and other interested and capable organizations—can play in blue economy mainstreaming. It can produce funding as a grant or investment, as a capital provider, or play the part of finance catalyzer with blended financing from a variety of sources. As a pipeline developer, it can tap local knowledge and networks to identify and develop potentially investable projects and enterprises. With its experience in conservation and sustainable development, PEMSEA can also play technical advisor to companies testing blue economy waters, or serve as middleman to build relationships between investors and stakeholders. It can also provide the advocacy and capacity-building platform to facilitate private investment.

**“It can be easier to incorporate conservation aspects into private sector projects than it is to expect local NGOs or projects to know how to run a business.”**

– **MR. JURGEN ZEITLBERGER**, conservation investment expert

“Blue Economy Investments and Sustainable Financing” was identified as one of the three priority governance programs of the SDS-SEA Implementation Plan for 2018–2022; the goal is to bolster such blue economy financing through various funding mechanisms and partnerships. According to the objectives of this particular program, access to public and private sector financing must be enabled by 2022.

An ocean investment facility in the EAS, for example, can help identify and promote blue economy investment targets. Ultimately, blue economy should lead to better ecosystem health, greater resilience, and improved socioeconomic benefits if it is to encourage scaled-up investments.



Schooling sardines (Photo by PEMSEA/J. Cabiles)

## Lessons from blue economy investments



Aiming to make sustainable fishing a way of life (Photo by PEMSEA/Y. Victoriano)

*These lessons were taken from “Enabling Blue Economy Investment for Sustainable Development in the Seas of East Asia: Lessons on Engaging the Private Sector for Partnership and Investment,” 2019.*

In 2015, PEMSEA identified several areas for private sector investment related to the governance of ocean and coasts, including ICM development and implementation, ecotourism, maritime transport, ocean energy, and others. PEMSEA developed pilot investment cases to improve capacity and understanding in four sectors: sustainable seafood, marine protection and sustainable tourism,

wastewater management, and ocean plastic pollution management. Among the valuable lessons learned from work on these pilot cases were the following:

- **Establish good governance** as investment can only be possible with proper policies and regulations and their enforcement. PEMSEA’s ICM Code and Certification System, for example, have enabled local governments to validate their ICM practices, leading to improved performance in coastal and ocean governance as well as sustainable development and management of coastal and marine resources.

- **Invest in capacity building for local entrepreneurs to help solidify the blue economy investment process in East Asia.** The genuine interest and desire of local governments must be matched by even the most basic skills training, if necessary.
  - **Open doors with value-added partnerships,** as investors in new areas could certainly benefit from partners with local knowledge and networks, even across the region.
  - **Do not underestimate the time and resources needed to make meaningful progress, and realistically project how long and how much it will take to develop a project.** Even a small- to medium-scale project may need a year of development before opening up to investment.
  - **Impact measurement for investment in coastal sustainable development needs to advance.** More qualified organizations are needed to gauge and manage social, environmental, and financial performance and evaluate if deals are successful, using accurate tools and metrics.
  - **Work remains to address the perceived risks around ocean investment.** Investors are still familiarizing themselves with oceans as a complex new area to venture into, about which they know very little. Packaging investments together, having an anchor investor lead the way, and having the right local and national policy and regulatory frameworks will help.
  - **Market investment projects proactively, as they need visibility and critical mass to sustain themselves.** Online clearinghouses for sharing information and linking groups have been suggested, but the projects being promoted must still be good enough to attract investors.
  - **Involving investment expertise early has tremendous advantages in providing proven, observed data on investment cases as they are developed.** Clarifications can be made early on, and the investment expert can also provide links to investment funds and line up interested financiers.
- PEMSEA's work in the blue economy and private sector engagement also yielded lessons worth carrying forward when it comes to value-added partnerships with the private sector in the region:
- **Ensure that some important baseline factors for success are in place.** These include a formalized agreement, a wide range of stakeholders, sustainable and significant benefits for all, a long-term strategy with sustainable financing mechanisms, replicable and scalable initiatives, and strategic communications.
  - **Understand what companies are looking for.** PEMSEA's research and experience have revealed the characteristics of an ideal public-private partnership. Among others, it must be regional in scale; include value chain partners and competitors; facilitate access, understanding, and political support with local stakeholders; tap into research base for policy tools and build capacity through training, workshops, and other educational channels; assist with institution-building and establishment of effective governance mechanisms, and more.
  - **Focus on a single, tangible issue relevant to multiple stakeholders.** Find one problem to solve that everyone cares about, making it easier to make plans and leverage policy.

- **Recognition is key for initial trust and engagement.** There is a need to promote an organization's work and contributions to address issues relevant to companies, such as pollution, climate change, and biodiversity conservation. Local successes and collaborations with other organizations should likewise be promoted and shared as examples of successful partnerships.
- **Internal capacity for engaging the private sector is critical.** An organization must be able to identify opportunities and make an effective business pitch in a language understood by private sector entities. Technical expertise can prove invaluable.
- **Meet companies where they are but strive to evolve from a corporate social responsibility (CSR) mindset.** Companies still operating from this paradigm

have a limited perspective and must move to the bigger concept of a shared value—a management strategy through which companies find business opportunities in social problems.

- **Target existing industry collaborations instead of linking up with companies one by one.** Such industry associations may be ready or willing to expand their coverage to oceans, or with a sustainable development emphasis.
- **Use your strengths as a development organization.** Organizations should analyze their strengths and limitations and know what they can bring to the table, particularly when it comes to engaging local stakeholders, by serving as a neutral convener or linking up with a network of local experts.



Coral transplanting by local fishermen (Photo by PEMSEA/L. Catabay)

## D. Partnerships and networks

The Haikou Partnership Agreement of 2006 had outlined Partnership Operating Arrangements, which began the process of formalizing partnerships for PEMSEA. It was originally signed by 11 Country Partners and 12 Non-Country Partners; today, the number of NCPs has expanded to 22, all working together with Country Partners and the PRF to provide technical and scientific support for

the implementation of the SDS-SEA. These include scientific institutions, industry associations, and regional programs. Further, PEMSEA also links up with a number of collaborating organizations to coordinate joint efforts on research, planning, investment, and other strategic work towards the sustainable development of coasts and ocean in the region.

### PEMSEA's Non-Country Partners



ASEAN Centre for Biodiversity (ACB)



Coastal Management Center (CMC)



Conservation International (CI) Philippines



International Center for Environmental Management of Enclosed Coastal Seas (EMECS)



International Ocean Institute (IOI)



International Union for Conservation of Nature and Natural Resources (IUCN)–Asia Regional Office (ARO)



Intergovernmental Oceanographic Commission - Sub-Commission for the Western Pacific (IOC-WESTPAC)



International Petroleum Industry Environmental Conservation Association (IPIECA)



Korea Environment Institute (KEI)



Korea Institute of Ocean Science and Technology (KIOST)



Korea Marine Environment Management Corporation (KOEM)



Korea Maritime Institute (KMI)



Marine Biodiversity Institute of Korea (MABIK)



Norwegian Institute for Water Research (NIVA)



Northwest Pacific Action Plan (NOWPAP)



Ocean Policy Research Institute -Sasakawa Peace Foundation (OPRI-SPF)



Oil Spill Response Limited (OSRL)



Plymouth Marine Laboratory (PML)



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



UNDP/GEF Small Grants Programme (SGP)



UNDP/GEF Yellow Sea Large Marine Ecosystem Project



UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)

**PML as Non-Country Partner:**

‘Our partnership helps build meaningful and transformative solutions for a sustainable ocean-based economy’

by **PROF. ICARUS ALLEN**

Chief Executive, Plymouth Marine  
Laboratory

Plymouth Marine Laboratory (PML) enjoys a long-standing relationship with PEMSEA, developed from a meeting in Manila with Dr. Chua Thia-Eng and the PEMSEA team in 2004, leading to our subsequently signing up as a Non-Country Partner at the East Asian Seas Congress in 2006.

PEMSEA’s strong legacy in developing and building on collaborative partnerships and promoting the sustainable development of the region’s ocean and coasts has been of great value to PML when connecting with regional ocean stakeholders. Experiences range from supporting local coastal communities to working with local governments and regional bodies, including a collaboration on ecosystem modeling with the UNDP/GEF Yellow Sea Large Marine Ecosystem (LME) in 2009 to, more recently, the signing of a Memorandum of Understanding (MoU) with the MoE of Cambodia and with the Department of Environment and Natural Resources of Da Nang City, Viet Nam.



Prof. Icarus Allen of PML (right) with PEMSEA Executive Director Aimee Gonzales

It has been a privilege over the years to support the successful evolution of PEMSEA while also strengthening PML’s involvement across the region, the latter in part due to the Global Challenges Research Fund (GCRF) of the UK Government. The regional £6.7 million Blue Communities project was realized through GCRF funding, and addresses sustainable use of marine resources by multiple users while protecting fragile marine ecosystems and supporting the livelihoods, food security, health, and well-being of people in coastal communities.

The ongoing pandemic continues to present serious challenges for many regional stakeholders, and PML experts have worked hard to find ways to continue their scientific work and capacity building; this includes exploring the impacts of COVID-19 such as on inshore fishing and aquaculture. Addressing Challenges of Coastal Communities through Ocean Research for Developing Economies (ACCORD), which includes partners in Cambodia and Viet Nam, is an example of one such project.

The coming decade presents several strategic opportunities for PEMSEA, especially in addressing the SDGs, the UN Decade of

Ocean Science for Sustainable Development and Ecosystem Restoration, the Post-2020 Global Biodiversity Framework, and working with the UNFCCC such as by providing further regional guidance on climate mitigation strategies and exploring the submission of ocean and coastal NDCs by PEMSEA Country Partners.

PML is looking forward to continuing its partnership with PEMSEA, which I see as instrumental towards building meaningful and transformative solutions for a sustainable ocean-based economy.



Prof. Allen speaking to stakeholders from Viet Nam and Cambodia

**OPRI-SPF as Non-Country Partner:**

**‘East Asia needs to be recognized as a region generating innovative solutions’**

by **DR. ATSUSHI SUNAMI**

President, OPRI-SPF

PEMSEA provides a platform for leaders from the government, research institutes, NGOs, private sector, international organizations, and other stakeholder groups to discuss policies and regional cooperation to promote coastal and marine environment protection and conservation and sustainable use of marine and coastal resources in East Asia. PEMSEA brings together key players from diverse countries in the region under the common theme of sustainable coastal and marine environment management.

East Asia needs to be recognized as a region generating innovative solutions for coastal and marine environment protection and resource management. By combining traditional knowledge with innovative approaches, East Asian stakeholders must make the best use of their ingenuity and capitalize on the region’s potential to promote sustainable ocean-based economies and overcome the challenges posed by COVID-19 through a blue recovery agenda. PEMSEA remains a key regional platform for the region to achieve such goals.



Dr. Atsushi Sunami (above); Dr. Sunami discussing blue economy at the Our Ocean Forum (below)





Field workshop on restored tidal flat in Shima City, Japan (Photo by K. Furukawa/OPRI-SPF)

## 1. The PEMSEA Network of Local Governments

The PEMSEA Network of Local Governments (PNLG) for Sustainable Coastal Development brings together local government units and leaders region-wide. Officially founded in December 2006 in Haikou, China, with the signing of the PNLG Charter and Code of Conduct by 18 founding local government members, the PNLG, which evolved from the Regional Network of Local Governments, is “an integral part of PEMSEA,” as its Charter reads. It is the first such organization in the region, a self-sustaining body that has played a critical role in SDS-SEA implementation by spreading the concept and principles of ICM all over the region in its mission of working for sustainable development. The PNLG serves as the primary driving force in achieving the regional target of 25 percent ICM coverage of the region’s coasts by 2021.

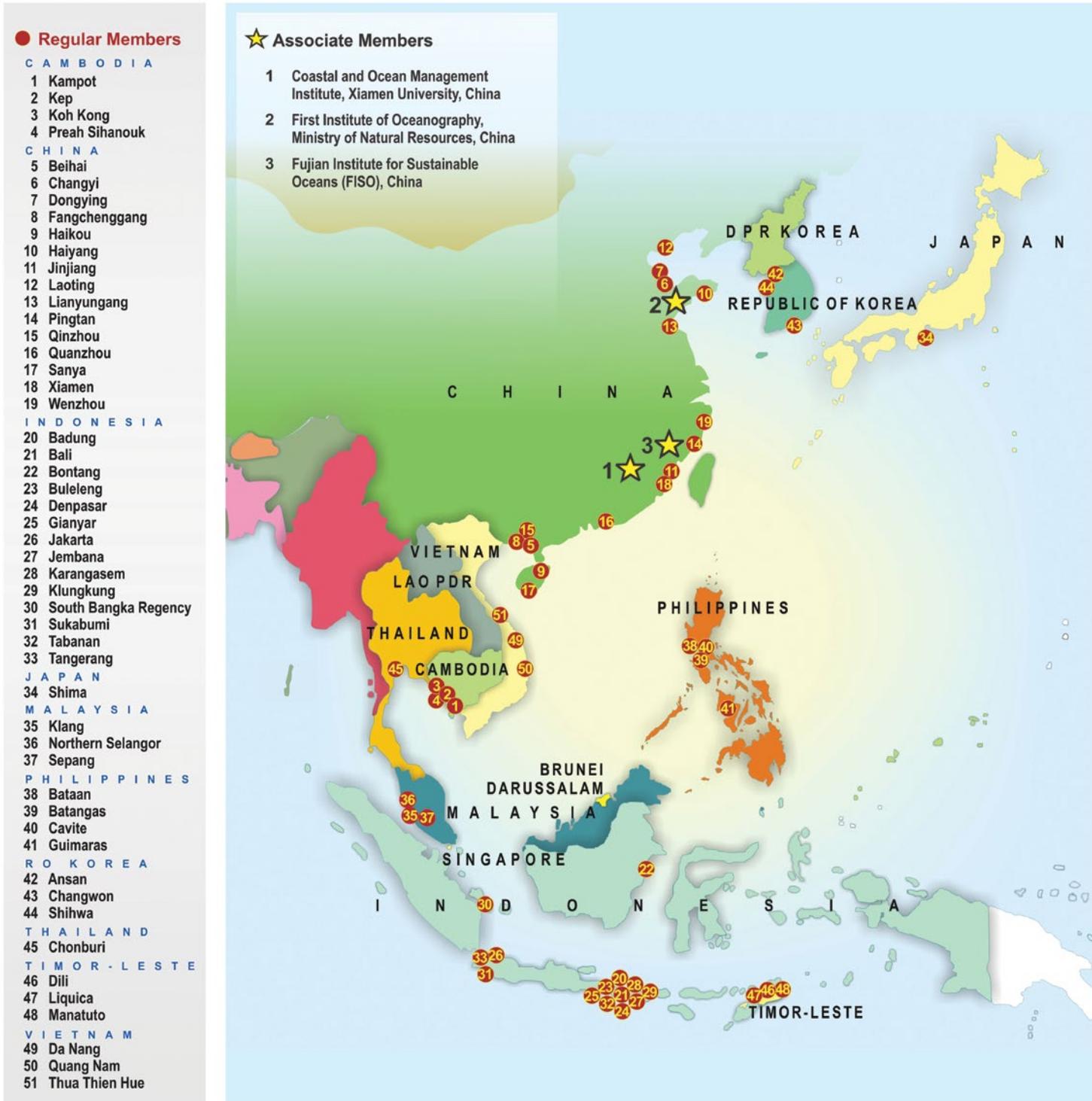
The network’s objectives are the enhancement of local governments’ capacity to manage their own coastal and marine resources in a sustainable manner; promotion of the ICM approach; linking together of scientific institutions and local governments for capacity building and scientific knowledge; innovative financing mechanisms financing mechanisms and partnership arrangements for environment-related investments; strengthening of multi-stakeholder involvement in the management of coastal and marine resources to encourage accountability; and enhancement of local governance and inter-agency and multi-sectoral coordination for coastal and ocean management.

The PNLG Secretariat is based in Xiamen, China and is funded by membership fees, operational funds of local governments hosting the secretariat, grants, and financial assistance from PEMSEA and other partners, and other fund-raising activities. PNLG holds an annual forum, which includes a meeting of the General Assembly, its governing body headed by a President and Vice-President, and a technical meeting of all network members.

With ICM as its chosen approach, the PNLG is the best example of local level partnership, relying on shared ideas, experiences, and activities. While country-specific initiatives are proposed, a broad range of issues is still covered such as biodiversity conservation, climate change adaptation, and pollution reduction. Among the noteworthy examples of the PNLG at work include the PNLG SAP 2016-2021, adopted at the network’s annual forum in Ansan, RO Korea in 2016. At the 2019 PNLG Forum, a Marine Debris Initiative was launched so that PNLG members could share practical knowledge and launch collaborations among local governments to help address marine debris pollution.

The PNLG SAP 2022-2030 is currently being developed in alignment with the SDGs and findings of the midterm review of the SDS-SEA Implementation Plan 2018-2022 for approval and adoption by the General Assembly during the 2021 PNLG Forum.

## Map of PNLG members





## ‘Effective governance is an essential condition to promote sustainable management’

**MME. HAJAH NORAINI BINTI HAJI ROSLAN** is the President of the PNLG. She served for eight years as mayor in the Kuala Selangor and Hulu Selangor District Councils and has been mayor of the Subang Jaya Municipal Council in Selangor, Malaysia since 2018.

### ***Why is it important to institutionalize ICM at the local government level?***

ICM helps local governments achieve development targets in a number of areas—pollution reduction and waste management; food security and livelihood management; water use and supply management; habitat protection, restoration, and management; and natural and man-made hazard prevention and management. One of the key elements to build sustainable and inclusive blue economy development is investment in governance, which creates a pipeline of investable opportunities to grow the blue economy in a way that benefits national economies, including local government level and local communities, while protecting resources for future growth.

Effective governance is an essential condition to promote sustainable management of aquatic resources and environment, and ensuring biodiversity and ecosystem resilience, which in turn contribute to building community resilience against various shocks, including climate change. Effective governance will also help create an enabling



PNLG President Hajah Noraini Binti Haji Roslan

environment for responsible private sector investments throughout the value chain by reducing risks and providing incentives for innovation. Finally, effective governance will enhance the contribution of fisheries and aquaculture to the macro-economy, which will help improve the visibility of the sector, and consequently, resource allocation.

### ***Why is ICM attractive as a planning tool to LGUs? How will it help promote blue economy especially at the local level, and what would be the promising sectors that will benefit from ICM application?***

Integration and coordination of various coastal and marine management efforts is the major objective of the ICM approach. ICM addresses the governance of human activities affecting the sustainable use of goods and services

generated by coastal and marine ecosystems. Coastal zones are among the most productive areas in the world, offering a wide variety of valuable habitats and ecosystem services that have always attracted human activity. A large number of developing coastal and island nations depends on tourism and fisheries for a significant part of their gross domestic product (GDP) and public revenue.

Aquaculture is projected to continue to grow rapidly, and if done sustainably, can serve as a major source of food

and a cornerstone of the blue economy. Ecotourism, and particularly nature-based tourism, also provides an important path towards the sustainable development of marine and coastal ecosystems. Coastal tourism is a key component of small island state economies. The value of nature-based tourism is expected to increase over time, as the supply of pristine natural assets declines, while demand, which seems impervious to economic shocks, increases with rising GDP. This development actually has benefited local communities at the coastal area.



The 2020 PNLG Forum, with many members attending online

## 2. The PEMSEA Network of Learning Centers

One of the main thrusts of PEMSEA is the exchange of ideas and information. In order to strengthen its capacity building activities and advisory services in support of SDS-SEA implementation, the PNLC was launched in 2015, composed of PEMSEA ICM Learning Centers and Regional Centers of Excellence (RCOEs), as a platform to link higher education institutions and research organizations to facilitate and promote beneficial experiences, develop good practices, and disseminate sound information.

PEMSEA RCOEs are established, prestigious organizations that provide expert advice in identified areas of expertise to meet the needs of various stakeholders in addition to conducting research and supplying the results thereof to interested countries and institutions and holding training courses. There are currently 3 RCOEs. The Center for Marine Environmental Research and Innovative Technology (MERIT) of the University in Hong Kong was the first among the RCOEs to be accredited in 2008. MERIT taps academicians and scientists from six Hong Kong universities and others outside the EAS region, and is working with PEMSEA in the field of marine pollution, its specialization.

The University of the Philippines–Marine Science Institute (UP-MSI), accredited as an RCoE in 2012, leads the region in coral reef studies and MPA management.

The Institute for Global Environmental Strategies (IGES) in Japan is into policy development and research and has worked with PEMSEA on climate change adaptation and disaster risk reduction since its accreditation in 2020.

The Coastal and Ocean Management Institute (COMI) of Xiamen University in China specializes in sustainable coastal development and is the first platform in the university to combine both natural and social sciences in its research; it was also accredited in 2020.

Meanwhile, ICM Learning Centers are higher education institutions that serve as venues for knowledge sharing and transfer of skills. They support work on the ground, provide specialized capacity building activities, and implement other local ICM initiatives. In 2014, PEMSEA had its first six ICM Learning Centers: the Royal University of Phnom Penh (RUPP), Cambodia; COMI of Xiamen University, China; CCMRS-IPB, Indonesia; Xavier University -Ateneo de Cagayan and De La Salle University -Lipa, Philippines; and University of Da Nang, Viet Nam.

The PNLC was officially launched at the EAS Congress of 2015 in Da Nang, Viet Nam with the belief that higher education institutions are essential to spreading the word on sustainable development of the coasts and ocean through education and research. PEMSEA recognizes the role of schools in implementing SDG 14 (Life Below Water) and other ocean and coastal related goals.

The PNLC releases studies on coastal and ocean management, monitors and reports the latest findings and trends, and trains practitioners in scientific and research skills. The network also presents excellent opportunities for hands-on learning.

To date, PEMSEA has 16 ICM Learning Centers in eight Country Partners; in addition to the aforementioned first six centers from 2014, the others are the Ocean College of Zhejiang University, China; Kim Il Sung University, DPR Korea; Diponegoro University and Udayana University, Indonesia; University of the Philippines Visayas and Cavite State University, Philippines; Burapha University and Prince of Songkla University, Thailand; and Universidade Nacional Timor Lorosa'e and Oriental University of Timor-Leste, both in Timor-Leste.

There have been many fruitful collaborations. In 2013, even before the launch of the PNLC, for example, two PEMSEA fellows from the Batangas PG-ENRO (Philippines) and Burapha University (Thailand) received training in contaminant analysis in a marine setting in MERIT in Hong Kong. After the PNLC was launched, these studies were applied in a collaborative study between Burapha University and MERIT in Chonburi, Thailand in 2016 on the use of artificial mussels for monitoring heavy metals. In the same year in Batangas, the Batangas Environmental Laboratory received funding to upgrade its marine water monitoring program, specifically through the opening of a new laboratory with additional equipment for analyzing microbiological, toxic metal, and trace organics; a storage area for chemicals; and a hot room, among others.

Additionally, during the same year, more PNLC members received training at ICM sites across the region, including for SOC reporting. Bogor Agricultural University in Indonesia hosted an International Conference on Integrated Coastal Management and Marine Biotechnology, while two students from De La Salle Lipa (Philippines) and Da Nang University (Viet Nam) were selected by PEMSEA

to participate in the Global Environmental Leadership Programme of Hong Kong Baptist University.

In 2017, PEMSEA, working with various partners, trained 326 individuals in a wide range of related areas. Another 269 participants joined workshops in a learning-by-doing approach to capacity development regarding ICM implementation. In Timor-Leste, Universidade Nacional Timor Lorosa'e and Oriental University of Timor-Leste helped in conducting the ICM baseline and vulnerability assessments for three sites as well as the preparation of the NSOC report. In Indonesia, the Center for Sustainable Development at Udayana University did a similar work in Bali while CCMRS-IPB (Indonesia) supported four ICM sites by providing training in ICM implementation, local SOC reporting, MPA management, ecosystems approach to fisheries management (EAFM), and RVA2.

Also in 2017, five PEMSEA fellows went for leadership training in the Inter-University Programme for Global Environmental Leaders in Hong Kong, and in the University Network for Climate and Ecosystems Change and Adaptation Research (UNCECAR) 2017 Leadership for Sustainability Programme at the United Nations University in Japan.

In 2018, the Faculty of Fisheries and Marine Science of Diponegoro University in Indonesia provided training and technical support on ICM, local SOC reporting, RVA, pollution reduction and waste management, and alternative livelihood development for Semarang, Indonesia.

In 2019, the PNLC, PNLG, COMI organized the first PNLG-PNLC joint learning session for an exchange of knowledge

and best practices among local governments and ICM practitioners in ocean and coastal management.

In total, for the period 2014-2020, PEMSEA organized more than 200 training courses and workshops at regional, national, and local levels, benefiting more than 7,000 participants. In addition, as early as 1995, as part of its capacity building programs, PEMSEA had initiated an Internship and Fellowship Program to provide young professionals with research experience and/or practical exposure on coastal and marine resource management, mainly by working with the PRF. Many have now joined

government and private organizations as policy-makers, ICM champions, and development catalysts working at the local or national levels. A total of 44 interns have completed the PEMSEA Internship and Fellowship Programme.

The PNLC, together with the PRF, is now working on a Charter that will formalize the network and specify the network's ground rules on membership; identify joint activities and outputs amongst its members; and explore options for sustainability and funding support such as through voluntary member contributions or joint fundraising initiatives.



ICM Training for Trainers in Batangas City, the Philippines, conducted by PEMSEA and the Northwest Pacific Action Plan (NOWPAP)

## Map of PNLC Regional Centers of Excellence and ICM Learning Centers



The PEMSEA Network of Learning Centers (PNLC), composed of ICM Learning Centers and Regional Centers of Excellence (RCoE), was launched in 2015 as a platform to link scientific and training institutions to facilitate and promote beneficial experience, develop good practices, and disseminate sound information. Sixteen ICM Learning Centers in seven countries are designated and accredited to provide technical assistance to ICM sites and facilitate knowledge sharing among agencies, institutions, and projects.

### CCMRS-IPB (Indonesia) as ICM Learning Center:

## 'Future ocean champions need passion, knowledge, and power'

**DR. ARIO DAMAR** is Associate Professor in Coastal and Marine Ecology at the Department of Aquatic Resources Management, Faculty of Fisheries and Marine Sciences, IPB University-Indonesia. He was former director of the Center for Coastal and Marine Resources Studies (CCMRS) of IPB University-Indonesia, a PEMSEA ICM Learning Center.

#### *How do you see your institution's role in sharing knowledge on marine resources conservation in Indonesia and in the region?*

CCMRS IPB has been participating on a national capacity in building activities for integrated coastal management (ICM) since 1995. We have been conducting ICM training courses for almost all coastal regencies of Indonesia. More than 500 alumni are distributed all over the country. The training is not specific to marine conservation, but more general in terms of ICM.

We conduct discussions and seminars related to ICM. This year, 2021, we plan to organize the 3rd International Conference on Coastal Management and Bio Technology (ICMBT) in October.



Dr. Ario Damar

We have been working closely with the Ministry of Marine Affairs and Fisheries (MMAF) and the Ministry of Environment and Forestry (MOEF) in various programs related to knowledge dissemination and management.

Since 2019, CCMRS IPB has been assigned by the Coordinating Ministry for Maritime Affairs as one of the institutions involved in the working group for the preparation of the Road Map for Mitigation and Adaptation of Land Subsidence in the coastal area.

In addition to that, CCMRS IPB is a resource institution for issues related to the management, conservation, and

protection of coastal ecosystems, climate change adaptation, blue economy, pollution reduction, and the valuation of environmental services by the MMAF, MOEF, and Ministries of National Development Planning/National Development Planning Agency and Transportation.

We have been also closely working with MMAF and MOEF, NGOs, and private companies in the dissemination and implementation of ICM.

We have had several related activities, among them ICM and Mangrove Restoration for Indonesian Coastal Community Resilience and Disaster Risk Reduction, in cooperation with the Indonesian Red Cross and the American Red Cross in 2013-2018; Disaster Risk Reduction and Mitigation Programs through Ecosystem Rehabilitation, Conservation, and Preservation in cooperation with the Indonesian Red Cross and Australian Red Cross in 2018-2019, and also the Japanese Red Cross Society in 2017-2019; and many others. In 2020, CCMRS IPB was awarded a Coral Reef Rehabilitation and Management Program (COREMAP) Coral Triangle Initiative-Indonesian Climate Change Trust Fund (CTI-ICCTF) Project in Raja Ampat, Papua to develop coastal zoning guidelines related to the implementation of the West Papua Province Coastal and Zoning Plan, which was legally adopted by West Papua Province Local Regulation.

### ***How has your experience been in building capacity for ICM implementation?***

The success of ICM implementation in an administrative governmental area is the result of both institutional and individual performances. In our experience, both are very important, though institutional arrangement seems to be more so. The basic principle for success is a system of

coordination, and this only can be achieved with a good coordinating mechanism, especially at the regency or city level. This should be the first requirement for an institution. After that, the capability of the person in charge is also important; you need someone who is able to guard the whole process of implementation.

A good example is Sukabumi Regency, where they have a good coordinating mechanism for all activities related to ICM. Change in local leadership will not significantly affect performance, as the system is already in place. The local focal point is the environmental agency, and the project coordinating committee or project management office for ICM in this area is already part of the government system.

From our perspective, development of an ICM implementation system is very important for a local government, and must be strengthened by its legal adoption via a local governmental decree.

### ***How important do you think knowledge dissemination and education are to the work of PEMSEA?***

The success of the work of PEMSEA is a function of the knowledge of the targeted people or institution, and depends on successful knowledge transfer. Hence, such transfer is a crucial step in the process of learning. Various ICM approaches and tools will be more beneficial if they are systematically distributed to targeted institutions or people. This can be facilitated through the PEMSEA Network of Learning Centers (PNLC) members in each area. It is really necessary to have regular workshops between PNLC and the PEMSEA Network of Local Governments (PNLG), facilitated by PEMSEA. Here, transfer of knowledge between PNLC and PNLG or within PNLG or PNLC can take place.

***What is your vision for the ocean and coastal champions of tomorrow, especially with the prospect of ongoing challenges like fisheries depletion and climate change?***

The future champions of coasts and oceans are the ones with a combination of passion, knowledge, and power. Passion means a spirit to lead people and institutions in implementing ICM practices. That person should have knowledge, either through formal or informal education,

about coastal and ocean management. And that person should have power, whether in a formal or informal position in society. The higher the position, the better the result.

It will be much better if the future champion has specific knowledge of either fisheries management or climate change impacts management, but if not, he or she should be able to develop close links with experts in specific scientific fields.



A focus group discussion for livelihood programs in Lombok, Indonesia (Photo by A. Damar)

## BUU (Thailand) as ICM Learning Center:

**‘We need ocean and coastal champions at all levels, now and in the future’**

The PEMSEA Network Learning Center, Burapha University (PNLC-BUU) was established in 2016, after the Memorandum of Understanding was signed between PEMSEA and the university, located in Chonburi, Thailand, in 2015. Before her retirement in September 2020, **DR. PRAPARSIRI BARNETTE** was an Assistant Professor and Chair of the Ph.D Programme in Aquatic Science of Burapha University, Chair of the PNLC-BUU, and member of the Advisory Committee of the Chonburi ICM Program. **DR. WANSUK SENANAN** is Assistant Professor at the Department of Aquatic Science of Burapha University, and is current chair of the PNLC-BUU.



PNLC-BUU’s Dr. Barnette and Dr. Senanan

### ***How do you see your institution’s role in sharing knowledge on marine resources conservation in Thailand and in the region?***

PNLC-BUU draws on the strength of existing expertise from three academic units within Burapha University: the Department of Aquatic Science of the Faculty of Science, the Faculty of Marine Technology, and the Institute of Marine Science. In addition to training students in marine conservation areas, these units also conduct locally relevant research in marine conservation, ocean management and policies, marine spatial planning, remote sensing, geographic information systems, and aquaculture biotechnology. Through the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) project, PNLC-BUU provided outreach services to national and local communities by bridging

research and innovation, both at the university and through PEMSEA trainings, for their respective issues.

At the regional level, PNLC-BUU has benefited from opportunities to learn from international communities and share our insights on local implementation of ICM through the EAS Congress and PEMSEA Network of Local Governments (PNLG) forum. PNLC-BUU continues to facilitate community research on management tools, and will be able to share results and methodologies with broader international communities in the future.

### ***What has been gained from all the capacity building activities?***

Capacity building and training activities provided by PEMSEA/UNDP have been valuable to university staff (as

trainers/facilitators), concerned government agencies, and targeted local communities. Trained staff were better equipped with standardized methodologies to support local ICM activities. For example, the Chonburi Integrated Environmental Monitoring Program (Chonburi IEMP) was established and maintained by a network led by the Department of Marine and Coastal Resources (DMCR), whose staff attended the PEMSEA IEMP workshops. Dr. Praparsiri Barnette, who served on the Chonburi ICM Program's advisory board, applied artificial mussel technology to monitor water quality along the Chonburi coastal area. This technology was learned from the University of Hong Kong through one of the PEMSEA workshops. The training on Ocean Health Index (OHI) by PEMSEA/Conservation International provided a solid foundation for Thailand (with the help of PNLC-BUU) to conduct an independent Ocean Health Index (OHI) assessment in 2020.

Furthermore, the training also provided excellent networking opportunities for the region. The network of practitioners and the insights gained from local ICM implementations lay the foundation for work-integrated learning opportunities for university students.

***How important do you think knowledge dissemination and education are to the work of PEMSEA?***

Management interventions by the government can be slow, and may not be responsive to new challenges. The work of PEMSEA on knowledge dissemination and education can increase the chance of local governments and communities to carry out some specific activities under broadly defined goals within the national strategic plan. In addition, such work helps facilitate and catalyze implementation at the pilot sites.

***What is your vision for the ocean and coastal champions of tomorrow, especially with the prospect of ongoing challenges like fisheries depletion and climate change?***

Resolving complex coastal issues requires strong commitment and collaboration among stakeholders—various levels of government, communities, academia, private sectors, and to a certain extent, society as a whole. We need ocean and coastal champions at all levels, now and in the future. Concerted efforts based on existing mechanisms and tools and some creative interventions are needed. For example, strengthening and empowering new and existing marine conservation groups—with appropriate means—will allow the multiplication of efforts in local communities. For the incoming generation, well-designed coastal education and training at all levels will allow for the appreciation of the issues' depth and extent. Research and innovation in coastal resources and management continue to be necessary.



Dr. Barnette (third from left) at a wastewater treatment training session for Chantaburi ICM sites (above); Dr. Senanan (standing) during Ocean Health Index training at Thailand's Department of Marine and Coastal Resources (below)





## 'ICM is a way out of all development problems'

*It was the Center for Coastal and Marine Resource Studies of IPB University (Bogor Agricultural University), established in 2009 as PEMSEA's first ICM Learning Center in Indonesia, that first brought ICM to Tangerang Regency in Banten Province.*

*In 2017, after training in ICM under the PEMSEA Resource Facility, **MR. HARI MAHARDIKA** returned to his home turf in Tangerang to carry on with the local ICM project, the Gerbang Mapan Program. Mahardika trained his community members in coastal community mangrove nursery establishment and planting, and mangrove reforestation as part of the implementation of the Gerbang Mapan program. Many private sector partners (businesses and organizations) were also engaged in mangrove reforestation as part of their CSR programs. Since then, the program has replanted four hectares of mangrove areas in Pulau Cangkir Island, 20 in Patramanggala Village, 15 in Ketapang, and five in Tanjung Pasir. Some 60 volunteers visiting schools to spread environmental awareness, with a focus on protecting mangroves, have also reached 10,000 students through Tangerang's Pesisir Mengajar (Coastal Teaching) Program.*

*Mahardika also facilitated the signing of a Memorandum of Understanding between Tangerang and PLTU, a local public electricity company, to help protect and rehabilitate mangroves, protect biodiversity and conservation, support environmental education and research, and maintain green open spaces. Today, 39-year-old Mahardika is Section Head of the Fishery Product Technology Fisheries Agency of Tangerang Regency, and is also Secretary of the Tangerang ICM Project Management Office.*

**Hari Mahardika**  
Tangerang Regency  
Indonesia



### **What was the situation in your area before the ICM was introduced?**

Before we implemented ICM, the development of coastal areas in Tangerang was not well-organized. Each department focused on its respective responsibilities, so there was lack of synergy, not to mention the severe environmental damage resulting in more than 579 hectares of coastal areas affected by erosion, a decrease in mangrove cover from 212 hectares in 2014 to only 79 hectares in 2015, and waste that was not handled properly. The damage to coastal resources resulted in decreased community income and an unhealthy coastal environment.

### **How was the ICM introduced? What changes were made? And what have you been doing to help?**

Early in 2014, the regency had a Priority Flagship Program, the Gerbang Mapan or Coastal Community Development Movement, which began with a road map that we collaborated on with IPB University's Center for Coastal and Marine Resources Studies; we believed in their capability to

assist and guide us in protecting the coastal area of Tangerang. IPB proposed an ICM approach, and the resulting road map got the attention of the executive secretary of the regency, and we got a more serious budget. In 2015 we started ICM training for the Gerbang Mapan core work team. By 2018, we had trained more than 200 officers from 25 villages, eight sub-districts, and eight core offices. We have also had the Pesisir Mengajar volunteers since 2016.

We have not yet had new regulations, because at the district level it is enough to follow existing rules, but starting in 2014 we have had a formal work team for coastal development, and since 2019, we have been led by a head of division in the planning bureau.

There is still much to do to ensure that coastal development is in place, but since the ICM approach has been used, I have been continuing to learn and apply this concept, from planning, field execution, and documenting, to constantly improving so that Gerbang Mapan follows the ideal ICM model.

***Did you have any misgivings at the beginning of the project? What were the biggest challenges you faced?***

I did not experience any significant difficulties with the ICM approach, because although slowly, this concept was received



Mahardika (in cap, front and center) amid the mangroves with the Marine Buddies Tangerang

very well. The key was the support from the Center for Coastal and Marine Resource Studies of Institut Pertanian Bogor (IPB) University, and leaders who were open to accepting new ideas. We hope, however, that there will be support from the central government for us to carry out better coastal management.

***Were you familiar with integrated coastal management (ICM) at the beginning? What is your understanding of it?***

Not the whole concept, but I won third place in a national paper writing contest on coastal development, and the theme I wrote about was alternative education in coastal areas, which was inspired by the implementation of "Proyek Pesisir" in several regions in Indonesia. It turned out to be all about the ICM concept!

***Have things changed in your community because of ICM?***

Yes, for instance, Tangerang's mangrove cover has increased by 178 hectares in 2018 and by 200 hectares in early 2021.

***Do you think it is a good idea to continue using ICM? How do you personally plan to contribute to the efforts?***

I am not yet satisfied with the results of ICM in Tangerang; even though we have State of the Coasts reports and other coastal studies, Tangerang still does not have an ICM level 1 certificate. My second dream is that the coastal community will become more prosperous, with good livelihoods; farmers can harvest good fish, and processors of fishery products can have good incomes. My third dream is for ICM to spread to other cities and provinces, and to be an advanced method for developing a coastal area.

### 3. The PEMSEA Network of Young Leaders

Putting great value on the youth as future stewards of ocean sustainability and implementors of the SDS-SEA, PEMSEA developed its youth program to empower East Asian youth leaders to take ownership of the health of coasts and oceans in East Asia and contribute to ICM at the community level. The program provides venues for learning and exposure through online and in-person gatherings, as well as financial support for such training.

Professional development is available through an online community, webinars, and ICM training workshops. Members of the East Asian Seas (EAS) Youth Program may also apply for available scholarships related to coastal and ocean sustainability. Finally, regional participation is encouraged through the EAS Youth Forum, a platform for young leaders to interact with experts and ICM practitioners from around the region.

The program was launched at the Fifth East Asian Seas (EAS) Youth Forum at the EAS Congress 2018 in Iloilo, the Philippines, where the first batch of the PEMSEA Network of Young Leaders (PNYL) was also assembled. The PNYL executes the Youth Programme's policy, advocacy, and campaigns, in coordination with the PEMSEA Resource Facility (PRF), and serves as a platform for knowledge sharing and collaboration. The pioneer PNYL batch consisted of the 70 delegates to the Youth Forum, led by elected PNYL Captain John Carl Alonsagay.

Even before the PNYL, the EAS Youth Forum had been taking place back-to-back with the EAS Congress, and involves young delegates in workshops and discussions on



Delegates to the 2015 EAS Youth Forum in Da Nang City, Viet Nam

coastal and marine challenges. The forum has served as a venue for youth to learn both concepts and practical skills in working with the environment in order to play more active roles in protecting it. The first forum was held at the EAS Congress in Haikou, China in 2006.

To further encourage involvement of the region's youth in sustainable development, PEMSEA launched the EAS Youth Forum Grant Competition at the Fourth EAS Youth Forum in Da Nang, Viet Nam in 2015, open to youth leaders aged 18 to 25 from any of PEMSEA's partner countries. Grants were made available for implementing sustainable development projects in the region, preferably in collaboration with local governments and community organizations, and within the framework of ICM programs.

PNYL members are expected to be active participants at the 7th EAS Congress in Sihanoukville, Cambodia in December 2021.

## Voices of the new generation

Youth hear about it in different ways. **MR. MARK JOSEPH TINAO**, 25, an environment officer and self-confessed “TikTok influencer” from the Philippines who identifies marine litter as his province’s biggest problem, learned about the Fifth EAS Youth Forum in Iloilo, the Philippines in 2018 on social media. Student **MR. JUNIOR GAMA PINTO**, 22, from Timor-Leste got word of it from the PEMSEA ICM Learning Center at the National University of Timor Lorosa’e, while **MS. NUR AMALINA MUHD FADHLULLAH NG**, a 24-year-old civil engineer from Malaysia, heard about it from a university lecturer. Pinto also singles out “marine pollution because of land-based activities and plastics disposal” as a big concern, while Ng, who does her part by creating more awareness of environmental problems, worries that “there are still people who can’t accept them and ignore them.”

“I wanted to gain connections and get to know more about policy-making and management,” says Pinto of his reasons for participating in the forum. “The most memorable experience was the field trip to the Southeast Asia Fisheries Development Center (SEAFDEC).” SEAFDEC’s main station in Tigbauan, Iloilo has a museum and aquarium visitor center, and delegates also visited the broodstock management center in Nueva Valencia in nearby Guimaras Island. “The biggest lesson I learned was about mangrove conservation to protect our seas and oceans from pollution, and protect our people from the seas and ocean phenomena.”

Ng, meanwhile, was “keen to know about other Asian countries’ efforts in protecting the coasts and the oceans,

**Mark Joseph Tiniao**  
Philippines



**Junior Gama Pinto**  
Timor-Leste



that we might as well adapt in our country.” The most memorable experience, she says, was the moving talk by one of the speakers. “He was apologizing to our generation, because his generation couldn’t stop the damage done by global warming and climate change. His talk was so sincere, I could feel it. From that lesson on, I knew that I should do something, even a tiny step, to save the world from destruction by humankind.”

Tinao, who has since worked on planting specific mangrove species in appropriate areas in his community, sees the problem of pollution, particularly by microplastics, as a grave one.

“Microplastics and some marine debris are barely seen by our naked eye, and the ocean is collecting them right now, every second. The ocean in the future might be a reservoir of litter instead of fish and sea creatures.

“More damage could happen,” says Ng, “and I really hope that one day the Malaysian government will take urgent action, and care for our resources and protect them.”

Pinto has since engaged in activities to increase fish production, such as aquaculture, seaweed farming, and mangrove planting in coastal areas. “Our ocean and sea can become safe and sustainable,” he says optimistically. “We have to work on marine pollution socialization with people from up in the mountains to the coastal areas, and lead them to plant mangroves.”



Splashing a mangrove sapling (Photo by PEMSEA/K. Eco)



# The Road Ahead 4

## A. Self-sufficiency for future challenges

As PEMSEA looks ahead and takes on changing realities and priorities in the region, internal and external direction setting is required. This direction has identified two main areas of focus: response to future trends, and striving for self-sufficiency. The organization has formulated a Post-2020 Strategy with three strategic objectives.

**Objective 1** is to establish strong expertise and brand awareness, centered on “future-proofing” the seas of East Asia. This is to maintain its position as the leading go-to intergovernmental organization on coastal and marine issues in the region. Under this objective are two thrusts: First is to strengthen PEMSEA’s position as a unique intergovernmental body aligned with the diverse challenges and opportunities facing the EAS, which means setting a clear policy agenda, facilitating dialogues, developing policy initiatives and working groups, building and strengthening institutions, and conducting targeted marketing. Second is to increase even more PEMSEA’s expertise in areas such as ocean governance, technology, and private sector engagement, to further solidify its role as a leading provider of solutions for sustainable seas. This entails

conducting research and development, building a network of experts on the identified trends and opportunities, and publishing regular information to strengthen its thought leadership.

**Objective 2** is to enhance existing alignment and partnerships with PEMSEA’s network of stakeholders. Under this, the first thrust involves establishing anchor partnerships for selected issues across stakeholder groups, which means developing such partnerships every year with a wide range of multilateral, bilateral, government, or private partners. PEMSEA defines “anchor partnerships” as high-profile partnerships with key players, whose operations and funding align with PEMSEA’s policy and agenda, and with whom PEMSEA can leverage assets and resources to achieve greater impact. The second thrust entails developing the capacity and expertise to build up these partnerships, which means creating a Partnership Unit systematically dedicated to partnership development.

Finally, **Objective 3** is to achieve diverse and sustainable funding streams, as PEMSEA’s ability to lead the promotion of sustainable solutions for East Asia’s

“I have strongly advocated in the past years for PEMSEA to take on the role as Implementing Partner for development partners as it matures as an intergovernmental organization. This has paved the way for PEMSEA to tackle major regional initiatives such as the Scaling up Implementation of the SDS-SEA and the Arafura and Timor Seas Project, both UNDP-GEF projects. To date, PEMSEA has done well in this role.”



– **DR. JOSE PADILLA**  
Regional Technical Advisor,  
UNDP Bangkok Regional Hub

Oceans and coasts is dependent on its preparedness to secure sufficient resources for its activities. The first thrust is to further enhance its current approaches for self-sufficiency by investing in acquiring clients and in strategic business development, and establishing a dependable mechanism for sustained partner contributions. Such sustained and regular contributions demonstrate the Country Partners’ continued commitment to the Partnership. The second thrust is to develop new and innovative self-sufficiency approaches and expand current initiatives, such as conducting joint fundraising activities and mobilizing a spin-off entity that could take charge of more business-oriented or commercially sourced engagements, offering services from within the organization’s areas of expertise.

Partnership remains a key word, now and in the future. The implementation of the SDS-SEA remains the foundation upon which PEMSEA and its partners are working, a guide for action and priorities, thus determining where the collaboration will go from here. Post-2020 trends indicate

that focus on the areas under the SDS-SEA Implementation Plan for 2018–2020, such as climate change, biodiversity, pollution, and the blue economy, will continue to be critical for PEMSEA’s sustainability going forward.

Climate change remains the most urgent of the global environmental challenges looming beyond 2021, what with its deadly effects on the East Asian Seas. Scientists predict that because of global warming, coral bleaching is expected to be an annual occurrence by the year 2030; by 2050, the Coral Triangle, that important hotspot of biodiversity, will be under extreme stress due to rising temperatures. By 2100, average temperatures in China and Southeast Asia would increase by a lethal 6 to 8 degrees Centigrade, with coral reef systems on the verge of collapse. (PEMSEA Post-2020 Futures Report and Strategy)

With the view of addressing biodiversity conservation, the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) has already prepared its post-2020



## SDS-SEA Implementation Plan 2018–2022

### P R I O R I T Y M A N A G E M E N T P R O G R A M S

#### Biodiversity Conservation

- MPA/MPA networking
- Migratory marine species
- Blue carbon/green infrastructure

#### Climate Change and Disaster Risk Reduction

- Vulnerability/hazard risks in coastal communities and economies
- Sustainable cities
- Green ports/green shipping

#### Pollution Reduction and Waste Management

- Pollution/nutrient management
- Integrated waste management/ plastics/ circular economy
- Integrated river basin management/S2S
- Renewable energy

### G O V E R N A N C E P R O G R A M S

#### Ocean Governance and Strategic Partnerships

- National ocean policy, institutional arrangements and legislation
- SOC reporting system
- Enhanced access to financing for SDS-SEA IP (e.g., Green Climate Fund accreditation)
- Enabling partnerships and networks

#### Knowledge Management and Capacity Building

- Regional knowledge hub for oceans and coasts
- Regional training and technical support/services
- Targeted research projects

#### Blue Economy Investments and Sustainable Financing

- Ocean Investment Facility and Fund
- Pipeline of investable blue economy projects
- PPP/business sector working examples/ templates

Global Biodiversity Framework, which includes principles and actions to guide its implementation, and provisions for global, regional, and thematic consultations.

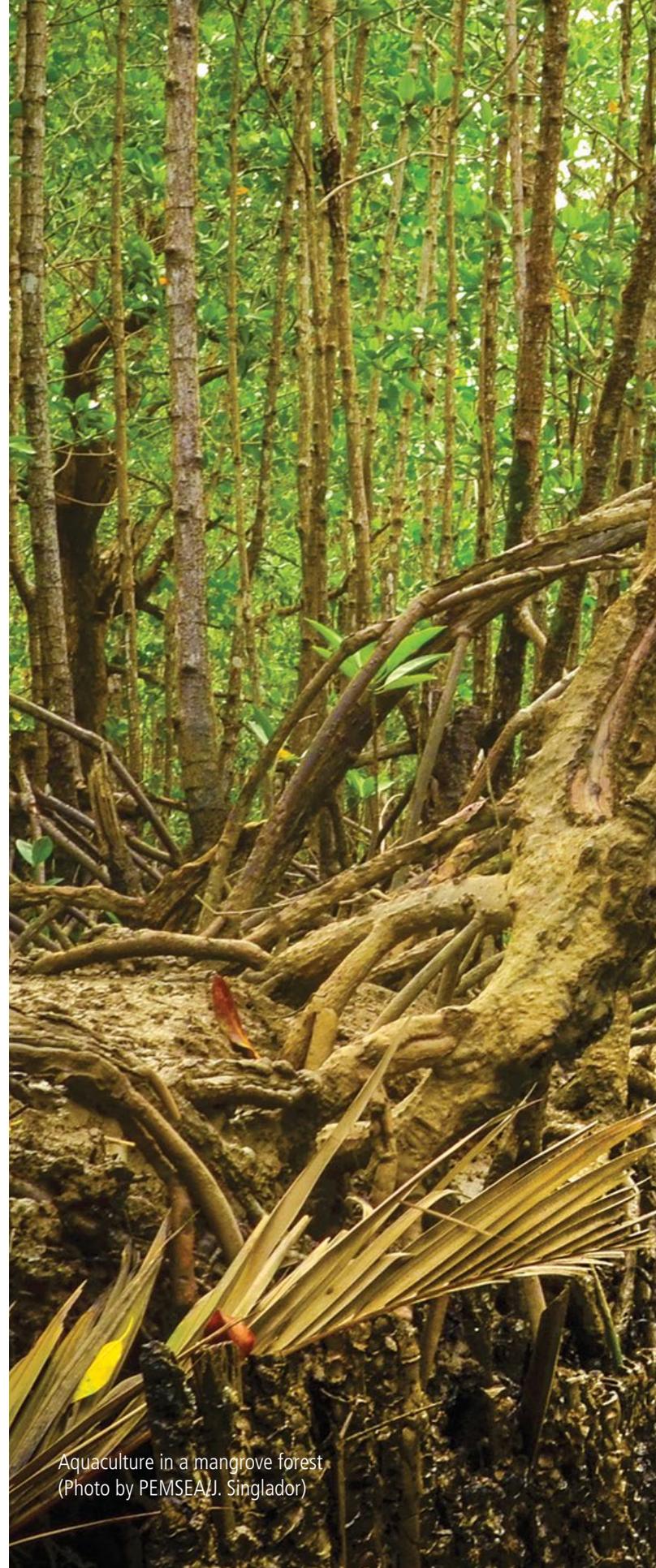
In recognition of the need to address the fate of the world's waters, and to coordinate scientific and governance efforts targeted at their long-term conservation and management, the UN Decade of Ocean Science for Sustainable Development from 2021 to 2030 was declared in 2017, and provides a framework to ensure scientific support of oceans in different

countries for sustainable development. It is an opportunity to work with both science and policy to strengthen the management of oceans and coasts for the benefit of humanity, with countries cooperating in scientific research and technology. Efforts will involve different stakeholders to create new ideas, solutions, partnerships, and applications. The Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is the lead agency for acting on the framework.

“The contribution of the seas of East Asia cannot be overemphasized, noting that the marine economy comprises 15-20 percent of the Gross Domestic Products of many East Asian countries. The value of PEMSEA as an institution at this time cannot be overlooked. Through all these years, UNDP has been consistently nurturing PEMSEA, firmly rooted in its belief that this region, with over a billion people, many of whom are still poor and vulnerable, deserves a higher level and intensity of inclusive development by which the blue economy has played a major role, especially to island states and archipelagic countries. UNDP in the Philippines will remain strong in its commitment on sustainable coasts and oceans and to the East Asian Seas and its people.”

– **DR. SELVA RAMACHANDRAN**

UNDP Resident Representative in the Philippines



Aquaculture in a mangrove forest  
(Photo by PEMSEAJ, Singlador)



## B. Beyond COVID-19

The aftermath of the global COVID-19 health crisis has presented a new and unexpected challenge, demanding a clear post-pandemic strategy. The pandemic has underscored the interconnectedness of people and places all over the world, the untenable way in which people have been using the planet's resources, and the urgent need for an overhaul in perspective and direction.

Science has already established the link between biodiversity and human health, another significant insight brought about by COVID-19. Evidence suggests that the SARS-COV-2 virus was zoonotic, that is, transmitted from animals to humans, as were Ebola, the Middle East Respiratory Syndrome (MERS), and acquired immunodeficiency syndrome (AIDS). Quite simply, factors behind biodiversity loss such as land conversion, intensive agriculture, and ecosystem and habitat deterioration have brought humans and wild animals closer together, exposing humans to infectious diseases, reveals a 2015 report by the CBD and the World Health Organization (WHO). The relationship between habitats and wildlife consumption habits in some countries could certainly be studied and linked by experts to the spread of infectious diseases.

For 2021 and beyond, PEMSEA has identified key signposts on the road to a better future. Preventative action on biodiversity loss and climate change is necessary for PEMSEA to continually focus on its vision of HOPE—healthy oceans, peoples, and economies.

The temporary halt to global conferences has given stakeholders more time to review and plan the scenario after the 2020 CBD, taking into account shared experiences of different countries. Governments must now accept the importance of risk prevention and reduction, spurring action on biodiversity loss and climate change—including consideration of sustainable infrastructure design, energy use, waste reduction, and low-impact technological innovations.

Blue economy-based economic stimulus packages could fund ecosystem restoration programs, and address solid waste and plastics pollution as well as climate change and disaster risk reduction initiatives.



A fisherman on his sailboat (Photo by PEMSEA/K. Eco)

## 'The pandemic has allowed PEMSEA to review and recalibrate'

### MS. AIMEE T. GONZALES

has been Executive Director of PEMSEA since 2018. Prior to joining PEMSEA, she held various posts at WWF International, most recently as Manager of the Marine Ecosystems Goods and Services. She also served as Head Executive Assistant to two Cabinet Secretaries of the Philippine Department of Environment and Natural Resources.



### ***Where is the region now in terms of SDS-SEA implementation?***

The region has embraced the SDS-SEA as a shared regional strategy on coastal and ocean governance. Country Partners use it as reference for their own planning and strategy development. It is a framework document that the partnership developed themselves, and there have been two iterations on the strategy since it was adopted in 2003. We conducted a mid-term review of the SDS-SEA Implementation Plan 2018-2022. The review was deemed important in light of new international developments as we enter a new decade—the global pandemic which has abruptly changed the way we live and work; the launch of new international programs through the UN Decade of Ocean Science; the Post-2020 Global Biodiversity Framework; and the UN Decade of Ecosystem Restoration. It is also a good time to review and recalibrate commitments to the 17 SDGS.

### ***Future strategy still mentions building partnerships—is today's level of regional collaboration still not enough?***

Environmental management is not static. It is dynamic and continues to evolve as the issues confronting our coastal communities, the coasts, and ocean—pollution, overfishing, biodiversity loss, and climate change—are complex and dynamic as well.

PEMSEA, as our very name stands for, relies on partnerships. I do not believe that one organization has all the solutions and can tackle the myriad and complex problems single-handedly. We need partners, and as the strategy and programs evolve, partners evolve, as well.

There is no magic formula. We need to nurture existing successful collaborations and build new ones that can help enhance and strengthen the implementation of SDS-SEA. For example, we worked extensively with scientific and technical

institutions, local governments, and the private sector and have even established networks in the form of the PNLC and PNLG. We have also initiated the establishment of a sustainable business network as venue for our private sector partners to contribute to blue economy development. The engagement of bilateral development agencies and expansion into other geographic areas like the Arafura Timor Seas have expanded the partnership opportunities for PEMSEA, and allowed for replicated of good practices from the EAS region.

***The future is calling for a stronger role for PEMSEA. What do you think is most needed to make it stronger?***

We need a solid and focused work plan to help countries transition to a sustainable, inclusive, and resilient blue economy at the national and local levels, especially in the context of post-COVID-19 economic recovery.

We need a diverse mix of funding sources from the public, private and philanthropic organizations in order to build on accomplishments and progress through the years and successfully transform PEMSEA as a self-sustaining regional coordination mechanism for coastal and ocean governance.

***There seems to be a need, as well, to create even greater awareness of PEMSEA, beyond sharing quantifiable impacts and achieved targets. What do you think is most essential for brand awareness?***

PEMSEA staff have been focused on providing technical assistance and capacity development to local governments and churning out technical reports and studies catering to donors and the scientific community.

We had a major communication and marketing planning session in 2015 and are now catching up on multimedia



PEMSEA engaging local communities through sharing of knowledge and best practices, as well as providing services to achieve sustainability all over the region

presentations of case studies and stories from the field to capture a broader audience and target other potential supporters.

Storytelling is powerful. We do have great storytellers, even within PEMSEA. I guess the key would be getting people to share their stories through videos and not just written text, capturing lessons and showing the human face of PEMSEA—hence this book on “Sea Change: The PEMSEA Story,” gathering views and perspectives of the people who worked with PEMSEA and those whose lives we have touched and changed somehow.

We plan to gather friends of PEMSEA, comprising of people and staff who were connected with the organization through the years. The intention is to bounce ideas and generate innovative and forward-looking initiatives, hoping to benefit from their wisdom, expertise, and experiences when they were at PEMSEA and also when they left the organization for other postings, experiences, and horizons.



PEMSEA and Thailand’s DMCR hosting the SDS-SEA Scaling Up and ICM Forum in Chonburi, Thailand, August 2020 (Photo by P. Barnette)

***Self-sufficiency seems to be an over-arching concern. How much farther do you think GEF/UNDP funding can take the organization? What about the role of the PEMSEA Resource Facility in this envisioned financial independence?***

We cannot continue to be too heavily dependent on multilateral grants, especially from GEF and UNDP. We need to have an agreed roadmap to 2030 that will strengthen PEMSEA’s position as a unique intergovernmental body that is proactively responsive to diverse challenges and opportunities facing the EAS while ensuring the financial sustainability of PEMSEA.

We are currently recalibrating our financial sustainability plan to secure diverse and sustained funding streams, including funding from GEF; countries’ sustained contributions; fees for PEMSEA’s services; partnerships; and joint fundraising. Countries need to follow through on their commitments during the Ministerial Forums in Da Nang, Viet Nam in 2015 and in Iloilo, Philippines in 2018 to support the PEMSEA secretariat and services. This is unfortunately voluntary. It would be great if countries can agree on a mechanism for sustained contributions, like a multi-year mandatory commitment based on ability to pay. This has been explored and discussed but not agreed upon.

To attract future investments and financial support, the PRF also needs to do its part in promoting a suite of services—project management, strategy and policy review, ICM and port certification services, training and capacity development, business and investment facilitation, monitoring and evaluation services.

***Blue economy seems to be a big buzzword for PEMSEA's direction today. Why is it so important?***

We were one of the early promoters of the blue economy concept as an alternative pathway to secure sustainable coasts and ocean in the region. We unpacked its principles and looked at its various components. We linked it to the ICM mechanism as a building block to securing sustainable jobs and livelihoods and even came up with an agreed definition in the Changwon Declaration in 2012.

Countries in the region came up with examples of how they are transitioning towards a blue economy long before other parts of the world picked it up. They included these examples in their NSOC and local SOC reports.

Blue economy has been confused with ocean economy — that for as long as we have economic growth in the coastal and marine sector, everything is okay. There is also the misconception that increasing food production from the ocean will lead to sustainable and healthier human diets. This does not consider, however, the issue of competing uses for ocean resources, depleting fish stocks, and the case of mariculture production replacing marine capture fisheries in an accelerating ocean economy.

Taking an integrated management approach beyond production to also consider access, affordability, and environmental sustainability will refocus the agenda on making production and consumption more equitable and environment-friendly. It is not enough to promote an ocean-based economy. We need to ensure that it is sustainable, inclusive and resilient. Achieving blue economy will require capacity building and showing how it works through demonstration models that can be adapted and scaled up in more places.

***Climate change remains a huge specter looming over the world's future. What do you think PEMSEA's role will be in addressing this?***

The cumulative effects of climate change—combined with overexploitation of natural resources, pollution, and rampant trade and economic activities across the EAS—are set to steer the region into uncharted territory. On top of the macro socioeconomic impacts of these trends, its more direct human impacts should not be underestimated. Food and water shortages, increasing disease and other health-related issues, and the collapse of certain industries—fisheries, most notably—are likely to cascade into a host of new and unexpected challenges for the region.

While an immensely complex and challenging issue, the effects of climate change can be mitigated and its progress slowed, if countries and stakeholders work together. The Paris Agreement within the UN Framework Convention on Climate Change (UNFCCC) is a crucial global treaty that addresses greenhouse gas emissions, mitigation, adaptation, and finance post-2020, by targeting to hold the increase in



PEMSEA and partners from the ASEAN-Norwegian cooperation project on local capacity building for reducing plastic pollution in the ASEAN region (ASEANO) Project on a site visit to see solid waste management initiatives in Silang, Cavite, Philippines



PEMSEA representatives at a training workshop on marine debris in RO Korea (above) and during the clean-up drive of DENR Philippines for Manila Bay (below)



global average temperature to well below 2°C. For East Asia, Japan, China, and Indonesia are among the world's 20 largest CO<sub>2</sub> emitters, while the Philippines, Myanmar, and Thailand are some of the world's most vulnerable countries to the impacts of climate change. This makes the case for cooperation within the region particularly salient, as addressing climate change in this part of the world has the potential of demonstrating the co-benefits of reducing emissions while improving adaptive capacities. Furthermore, the Sendai Framework for Disaster Risk Reduction (2015-2030), which was adopted universally by East Asian countries, outlines the goals for reducing vulnerability

against climate-induced disasters, among others, as well as increasing capacity and partnerships between government, the private sector, and civil society to improve adaptation and resilience particularly for coastal areas.

We have top-notch RCOEs as part of our network of advisers, who have the expertise, experience, and the ears of governments to lead regional policy dialogues. At the same time, we have the ICM Learning Centers that can help train and develop capacity to implement national and local adaptation plans. We are hoping to strengthen our capacity on climate financing to help local partners secure funding for their coastal resilience programs.

***The big question: How will PEMSEA's direction and priorities change in light of COVID-19?***

COVID-19 has changed the way we live and work, obviously. We used online technologies like Skype and WebEx before COVID-19, but that was the exception rather than the norm. We have always preferred face-to-face meetings and traveled around the region for meetings and field visits, ratcheting up our carbon footprint. Now we have adjusted to this new normal of Zoom meetings and so have many of our partners, especially at the local level. The good thing is we have built and nurtured relations, especially with local managers, frontliners, and other stakeholders through the years. This has allowed us to continue having positive interactions and meet our deliverables, albeit with some delays due to travel and mobility restrictions.

But apart from that, the pandemic has allowed PEMSEA to review and recalibrate its programs and prepare for our roadmap to 2030, take new opportunities to work on climate change management and biodiversity conservation, redesign our work on blue economy and sustainable

financing, and strengthen existing partnerships. It also offered opportunities for new partnerships, particularly with regards to circular economy, marine pollution, and solid waste management, such as the European Union -GIZ Project on Rethinking Plastics – Circular Economy Solutions to Marine Litter,”and a World Bank research project assessing the national implementation of plastic pollution management, and upcoming projects on promoting integrated river basin management and integrated maritime transport solutions to reduce greenhouse gas emissions in the region.

***In layman’s terms: What relevance will PEMSEA have in the world of the future?***

PEMSEA will remain relevant as a regional organization that will help and promote integrated, equitable, inclusive, innovative, resilient and environmentally friendly solutions for the coastal and marine sector.



PEMSEA during the second stage of the recertification audit for ISO 9001



A virtual Zoom meeting taking the place of physical interaction during the COVID-19 pandemic



### CAMBODIA

# '100 percent of Cambodia's coastline is now under ICM'

#### Benefits gained from being a PEMSEA Country Partner

PEMSEA helped produce a number of concrete actions that benefited Cambodia at the national and local levels. Key ministries and stakeholders have collaborated on a number of publications and guidelines such as the NSOC report for Cambodia and the National Guidelines for the Use of Oil Dispersants in Oil Spills.

The implementation of SDS-SEA has helped us see the importance of blue economy. In 2015, around 16 percent of GDP came directly from ocean-related sectors (e.g., fisheries, ports, shipping, coastal and marine tourism), employing over 3 million people. The total economic value of coastal and marine ecosystems, both direct and indirect uses, has been estimated at around US\$200 million–500 million a year.

PEMSEA has also strengthened coastal management at the local level in Cambodia. Our entire coastline is now covered under ICM.

ICM is implemented in the coastal provinces of Kampot, Kep, Koh Kong, and Preah Sihanouk, and focuses on strengthening management in various areas such as



**MR. LONG RITHIRAK**

Deputy Director General, Ministry of Environment

governance, climate change, disaster risk reduction, pollution reduction, and waste management.

Also, because of PEMSEA, capacity for environmental management of port operations has been strengthened through the implementation of the Port Safety, Health, and Environmental Management System (PSHEMS) in Phnom Penh and Sihanoukville ports. This has led to better and safer operations in the ports, in compliance with national and international laws.

PEMSEA has designated the Royal University of Phnom Penh as an ICM Learning Center to provide technical support and scientific advice to coastal provinces. Strengthening the capacities of national and local institutions through on-site, national, and international training and other capacity-building activities (e.g., traineeship and study visits) has been an effective strategy to improve and enhance the sustainability of activities in the coastal areas.

The blue economy concept promoted by PEMSEA can help optimize the benefits derived from Cambodia's coastal and marine resources and lead to significant improvements not only in the environment but also in the well-being of the Cambodian people.

The blue economy can support the transition of the country to a sustainable growth path. There are a number of investment opportunities for blue economy in Cambodia, such as sustainable ecotourism and beach management; green port development; climate-resilient coastal infrastructure; and sustainable and climate-smart fisheries, aquaculture, and food processing.

### PEOPLE'S REPUBLIC OF CHINA

# 'We are committed to strengthening cooperation with PEMSEA'

#### Benefits gained from being a PEMSEA Country Partner

The People's Republic of China has been supporting the implementation of Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) in the East Asian Seas (EAS) region and actively practiced integrated coastal management (ICM) programs for a long time. Being a PEMSEA country partner, China has benefited greatly from PEMSEA undertakings. Xiamen and Dongying City have developed good models for ICM scaling up. The Marine Environmental Management Program of Bohai Sea was implemented in three provinces and one city around Bohai Sea, with the Declaration on the Environmental Protection of Bohai Sea signed. Twenty-two Chinese coastal cities have initiated and are implementing ICM programs. China also offers strong support to the PEMSEA Network of Local Governments (PNLG), PEMSEA Network of Learning Centers (PNLC), and PEMSEA Regional Center of Excellence (RCoE).

The ecosystem-based management concept and method have been mainstreamed in formulating marine policy and planning at all levels of Chinese government. The Partnership has enhanced the understanding and implementation of ICM in Chinese coastal cities. A significant number of local officials and technical personnel have been trained through the SDS-SEA project, and innovative ICM teams developed. Taking advantage of the SDS-SEA project, public awareness



**DR. ZHANG ZHANHAI**

Chief Engineer, Ministry of Natural Resources

of marine environment and ecosystem protection has increased greatly in China.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

We expect the SDS-SEA to be continuously implemented by PEMSEA in the EAS region, as well as the ICM Code Certification and Recognition System. We hope PEMSEA will increase its leading role in marine environmental protection and sustainable resource utilization, and continue to provide platforms on ICM experience exchange among PEMSEA members. We hope that PEMSEA can develop further partnership with other country partners and stakeholders in the region in marine ecosystem conservation, early warning of marine disaster, and adaptation of climate change, as well as blue economy. PEMSEA is expected to encourage blue partnerships in the region with a view to promoting the implementation of the SDS-SEA and contributing to the achievement of UN SDGs by 2030. We are committed to strengthening cooperation with PEMSEA by continuing scaling up the scope of ICM in China.

### DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

## 'PEMSEA's work in capacity-building has contributed to great improvements in ICM'



**MR. KWANG-JIN JONG**

Deputy Director-General, General Bureau for Cooperation with International Organizations

#### **Benefits gained from being a PEMSEA Country Partner**

DPR Korea is a maritime country surrounded by sea on three sides, the management of coasts and territorial waters is closely related to the development of the country as an economic power house. ICM helps us in terms of coastal and ocean governance by systematizing the methods for sustainable development of the environment and natural resources in the coasts and seas.

The history of ICM in the DPR Korea can be traced back to 1993, when the country joined the first phase of GEF/UNDP project. In 1999, when the second phase started, DPRK designated Nampho as an ICM demonstration site along with six other sites in the region.

With technical and financial support from PEMSEA, Nampho has had fruitful results for the benefit of its people

and the environment. Particular mention should be made of the successful implementation of a drinking water supply and sanitation project in Nampho, which benefits 150,000 citizens throughout the port city, as well as the improved monitoring and analytic capabilities for coastal and sea pollution at the West Sea Maritime Institute.

The success of the Nampho ICM project laid a firm foundation for ICM implementation in the country and proved that scaling up ICM would be beneficial for the people's welfare and livelihood and the environment. Wonsan, the largest city in the East Sea area of DPR Korea, followed suit and was designated as an ICM site in 2015.

The head of the DPRK delegation and the Executive Director of PRF signed a five-year project beginning in 2016 entitled “Integrated Coastal Management Programmes of DPRK for Sustainable Development of Coastal and Marine Environment and Resources,” which will contribute to efforts to scale up ICM in the country. Past experiences prove that PEMSEA’s work in capacity-building has contributed to great improvements in ICM within PEMSEA Country Partners.

**Vision for PEMSEA moving forward, in alignment with the country’s own vision for sustainable coastal development**

Since the 1990s, PEMSEA has disseminated ICM to Country Partners and local governments. With its pioneering role in developing best practices in terms of the design and implementation of ICM approach in the East Asian region, we expect PEMSEA to continue serving as the regional coordinating mechanism for SDS-SEA implementation.

### REPUBLIC OF INDONESIA

'The PEMSEA strategy with the ICM approach has strengthened Indonesia's inter-agency network and coordination'



**MR. M.R. KARLIANSYAH**

Former Director-General for Environmental Pollution and Damage Control, MoEF

#### **Benefits gained from being a PEMSEA Country Partner**

Indonesia recognizes the excellent performance of PEMSEA's work in improving Indonesia's capacity for coastal and marine environment management towards sustainable development. This work includes the development of tools, knowledge products and services (e.g., certification), and organization of various training and fora such as the EAS Congress. PEMSEA's ICM approach has strengthened Indonesia's inter-agency network and coordination and accelerated capacity building efforts in sustainable coastal development.

We have also benefited from the PNLG and PNLC in terms of exchanging knowledge, best practices, and technical advice

in coastal and ocean governance. The ICM Learning Centers have played a crucial role, conducting studies and training; strengthening baseline data; and providing assistance to develop strategies, plans, and institutional arrangements.

We see the 2018 NSOC report for the country as a basis for determining national and local priorities and appreciates all stakeholders involved in the development of the report.

PEMSEA's work has a high degree of alignment with Indonesia's National Development Priorities as indicated in the Medium-Term National Development Plan (RPJMN) 2015-2019 RPJMN (Medium-Term National Development Plan).

**Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

We wish that PEMSEA could consistently maintain its alignment with national and regional development priorities, such as Indonesia's 2020-2024 Medium Term

Development Plan and Presidential Regulation No. 16/2017 on Ocean Policy and its action plans. As we begin to provide voluntary funding contributions for the implementation of the SDS-SEA, we hope that PEMSEA will be more responsive to political, legal, economic, and institutional changes in the country.

### JAPAN

# 'ICM is one of the fundamental ocean policies'

#### Benefits gained from being a PEMSEA Country Partner

Japan recognizes that integrated coastal management (ICM), which requires comprehensive and integrated measures for sustainable development and use and conservation of the ocean, is one of the fundamental ocean policies. In the Basic Plan on Ocean Policy based on the Basic Act on Ocean Policy, we define ICM as one of the measures we should implement comprehensively and systematically for sustainable development of coastal areas.

Keeping in mind the connections among forests, the countryside, rivers, the sea, the water cycles in river basins, and ecosystem management, we are proactively incorporating the satoumi concept, which involves local people in the necessary problem-solving activities to create better conditions for the oceans to be able to reap benefits. We are also attaching great importance to comprehensive efforts, including response to natural disasters, conservation of biodiversity, and measures against marine litter.

The establishment of the concept, implementation procedure, and evaluation method of ICM by PEMSEA has contributed to including ICM in the Basic Act on Ocean Policy adopted in 2007, and the Basic Plan on Ocean Policy developed in 2008, 2013, and 2018 as one of the policies for conservation of the marine environment.



**MR. OTAKA GOTA**

Vice Director-General, Policy Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

In addition, PEMSEA's ICM concept influenced the inclusion of new goals, including "conservation, regeneration, and creation of the coastal environment" in the Seto Inland Sea Environmental Conservation Basic Plan (2015).

PEMSEA's ICM concept also contributed to the implementation of the Marine Restoration Project in 2003, which comprises comprehensive environmental restoration efforts for the seas and basin areas of Tokyo Bay, Osaka Bay, Ise Bay, Hiroshima Bay, and more.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

We understand that there is growing interest in and concern for protection of the marine environment because of issues such as climate change, ocean acidification, conservation and sustainable use of marine biodiversity, and reduction of marine plastic litter, including micro plastics, both domestically and internationally.

We think that the reduction of marine plastic litter is one of the most urgent issues to be tackled, and we have carried out various measures. We adopted the Action Plan on reducing marine plastic litter at a ministerial meeting in May 2019, and took leadership as the Chair of the G20 Osaka Summit for adopting the G20 Implementation Framework for Actions on Marine Plastic Litter.

It is necessary to take worldwide action for the reduction of marine plastic litter, and coordinated measures should be taken through international frameworks such as the United

Nations. The various networks with Asian country and non-country partners developed by PEMSEA, established under the United Nations Development Plan, could contribute to solving issues, including the reduction of marine plastic litter. We expect that PEMSEA would deal with various issues, including maintenance and conservation of the marine environment and sustainable development of coastal areas. Further, it is important to actively participate in and support the UN Decade of Ocean Science for Sustainable Development, as there are good chances for active engagement by various stakeholders on this issue.

### LAO PEOPLE'S DEMOCRATIC REPUBLIC

'The core purpose of PEMSEA matches the government's policy and local needs'



**DR. INTHAVY AKKHARATH**

Director-General, Department of Water Resources, Ministry of Natural Resources and Environment (MONRE)

#### **Benefits gained from being a PEMSEA Country Partner**

Lao People's Democratic Republic (PDR) and PEMSEA have had a good partnership since 2007. The core purpose of PEMSEA matches the Laos Government's policy and local needs in term of integrated water resources management and the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) in Lao PDR. In our view, PEMSEA is a good partner; they adapt to our country's situation and needs all the time, and we feel ownership while implementing any projects.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

The implementation of the SDS-SEA in Lao PDR is aligned to the priority needs of the Lao Government. The Sedone River Basin is a target area of the project, which covers 10 priority river basins. We are implementing the project under the Ministry of Natural Resources and Environment (MONRE) strategy, in line with local needs, so project outcomes will directly contribute to Sustainable Development Goals (SDGs). We hope PEMSEA could continue to support us as a connector to other partnerships, and facilitate the implementation of water resources management and more projects in the country under SDS-SEA in the future.

### REPUBLIC OF THE PHILIPPINES

'Through PEMSEA, we have addressed a broad range of priority issues'



**ATTY. ANALIZA REUELTA-TEH**

Undersecretary for Finance, Information Systems,  
and Climate Change, DENR

#### **Benefits gained from being a PEMSEA Country Partner**

One of PEMSEA's significant contributions to the Philippines is the effective and efficient management of coastal and marine resources by providing technical assistance and funding for various activities with regards to the Implementation of the SDS-SEA. As the regional strategy cuts across a variety of coastal and ocean-related issues, the Philippines has addressed a broad range of priority issues such as those concerning biodiversity, water quality, fisheries and aquaculture, watersheds and river basins, disasters, and climate change.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

We envision that the PRF will continue providing technical assistance and funding support for future activities to achieve sustainable coastal and marine management, both with the national and local governments. We also foresee a strengthened partnership between the PRF and the DENR as the frontline agency in managing the Philippines' natural resources through one of its major programs, the Coastal and Marine Ecosystems Management Program (CMEMP). The broad expertise of PRF will aid in achieving the main goal of CMEMP, which is to achieve the effective management of the country's coastal and marine ecosystems through the establishment of a well-connected network of MPAs to help achieve food security and reduce the degradation of coastal and marine resources.

### REPUBLIC OF KOREA

## 'PEMSEA is an international organization specializing in ICM'



**MR. KANG JEONG-GOO**

Director, Marine Environment Policy Division, Marine Policy Office,  
Ministry of Oceans and Fisheries (MOF)

#### **Benefits gained from being a PEMSEA Country Partner**

The greatest benefit of being a Country Partner is that we get to be part of a regional networking platform and international organization that specializes in ICM with a broad range of members, including DPRK.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

We designated Sihwa Lake as an ICM site for sustainable coastal development in 2000, and since then, the lake has become cleaner. As such, we will consider using the ICM approach developed by PEMSEA for sustainable coastal development throughout the country.

### SINGAPORE

'We have developed ICM into a framework for sustainable development in an urban context'



**MR. HAZRI HASSAN**

Director of International Policy,  
Ministry of Sustainability and the Environment

#### **Benefits gained from being a PEMSEA Country Partner**

As a small island state, Singapore's coastal and marine environment is important in supporting its biodiversity, habitat protection, livability, and development. Singapore takes guidance from the integrated coastal management (ICM) framework developed and advocated by PEMSEA in managing the diverse uses of its limited coastal areas and conserving its marine biodiversity. Singapore has further developed ICM into a proactive planning and management framework for sustainable development of the marine and coastal areas in an urban context, which is more relevant to the country. Better known as integrated urban coastal management (IUCM), this framework recognizes and encourages close and active partnerships among stakeholders to create greater synergies to optimize the use of coastal resources and conserve sensitive coastal habitats amidst urban coastal development. It facilitates Singapore's coastal management by enhancing coordination of governmental stakeholders and coherence in governance, policies, and processes, and capitalizes on governing structures such as administrative processes, legislation, and institutions to allocate and coordinate the use of resources. This approach enhances flexibility and the ability to cope with constant

changes in the coastal and marine environment. Singapore's IUCM is a dynamic and reiterative process, because it is based on establishing continuous baselines and feedback loops to address the inherent complexity of coastal and marine environment issues in an urban environment.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

PEMSEA's ICM framework has provided some basis for Singapore's sustainable coastal development approach. Moving forward, Singapore would like to see PEMSEA continuing to focus on this core area of ICM, as well as any possible synergies with related and trending topics. Given the increasing presence of 1) marine litter and microplastics and circular economy, and 2) climate change and nature-based solutions as issues in various global platforms, PEMSEA could also consider giving these issues more focus in the context of ICM.

### TIMOR-LESTE

'We have learned a lot from the experiences of countries in the East Asian region'



**MR. ACACIO GUTERRES**

Director-General of Fishery, Aquaculture and Marine Resources, Ministry of Agriculture and Fisheries

#### **Benefits gained from being a PEMSEA Country Partner**

Through PEMSEA, we have learned a lot from the experiences in the East Asian region in terms of protecting the marine and coastal environment and promoting sustainable fisheries and ocean health to improve the life, livelihoods and well being of coastal communities. We have adapted them in Timor Leste and seeing some positive results. We still need to do more together with PEMSEA.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

Timor-Leste's national coasts and ocean territory will be better managed with the adoption of the draft National Oceans Policy to enhance the direction of ocean use and management, guide blue economy development, and assist external support bodies in understanding national ocean priorities. This policy aims to guide Timor-Leste in detailed planning and implementation towards achieving its vision of "A healthy and secure ocean that sustains the livelihoods, prosperity, and social and cultural values of the people of Timor-Leste in a fair and equitable manner."

### VIET NAM

'We have been actively involved in planning and implementing the SDS-SEA'



**MR. NGUYEN QUE LAM**

Deputy Director-General, Viet Nam Administration of Seas and Islands (VASI), Ministry of Natural Resources and Environment (MONRE)

#### **Benefits gained from being a PEMSEA Country Partner**

In recent years, Viet Nam has actively participated in events and activities chaired and coordinated by PEMSEA. Viet Nam has been actively involved in planning and implementing the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA), as part of our commitment as a country partner. The implementation of the Regional Project SDS-SEA for 2015-2020 in Viet Nam has contributed to government efforts in institutionalization, incorporation of international law, and capacity-building, both at the national and provincial level.

PEMSEA's activities have contributed to the establishment of national integrated coastal management (ICM) policies and strategic plans, especially in the implementation of the ICM approach, establishment of pilot project sites, connecting with other countries in the East Asian region, and formation of groups of experts and scientists to support the implementation of marine management policies in the

region. With financial and technical support from PEMSEA, Viet Nam has developed the National State of Oceans and Coasts Report 2018: Blue Economy Growth and implemented ICM in 70 percent of the coastline.

#### **Vision for PEMSEA moving forward, in alignment with the country's own vision for sustainable coastal development**

PEMSEA should further promote its role as a regional cooperation organization through sharing and exchanging experiences about ICM and blue economy. Viet Nam pledges to continue working closely with PEMSEA in the implementation of the SDS-SEA in order to turn Viet Nam into a rich, strong country based on green growth, as mentioned in the Strategy for Sustainable Development of the Marine Economy of Viet Nam Until 2030, Vision to 2045.

PEMSEA will continue to apply ICM in promoting sustainable coastal development, positioning blue economy as an alternative pathway, and engaging in public-private sector partnership on sustainable financing and investment for the coastal and marine sector.

PEMSEA will hold the virtual triennial EAS Congress 2021 on December 1-2, hosted by the Royal Government of Cambodia and co-organized by their Ministry of Environment, the Provincial Administration of Preah Sihanouk.

With the theme “Charting a New Decade of H.O.P.E. (Healthy Ocean, People, and Economies),” the EAS Congress 2021 has among its objectives the sharing of valuable lessons learned, tracking the progress made, and promoting good practices in line with SDSSEA implementation at all levels of governance. It aims to build on existing good management approaches and continue creating opportunities for regional partnerships using innovative technologies, investments, and financing towards sustainable development in a most crucial time.

The Congress will also focus on how to deal with current and future pandemics in light of COVID-19 after the world was made painfully aware of the link between ocean, planet, and human health.

The Congress envisions a roadmap of transformative blue solutions for the next decade in accordance with the UN Decade of Ocean Science, the 2030 Agenda for Sustainable Development, the UNFCCC, the Post-2020 Global Biodiversity Framework, and other relevant international and regional commitments. In the wake of the most globally challenging years in recent memory, a fresh outlook on the way forward may very well determine the sustainable prospects of the East Asian region as well as the planet itself.

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Frolicking in the mangroves (Photo by PEMSEA/R. Lansap)



## 1996

- Environment and Natural Resources Office (ENRO) is established by the Batangas Provincial Government.
- Batangas Bay Environmental Protection Council established by Provincial Ordinance.



## 1994

- Regional Programme office officially opens 3 June.
- Xiamen (China) and Batangas (Philippines) are established as first National ICM Demonstration Projects.

## 1997

- Sea use zoning plan is adopted by the Municipal Government of Xiamen.
- Thailand, Malaysia, Indonesia, and Singapore agree to implement the Malacca Straits Demonstration Project.

## 2001

- Manila Bay Coastal Strategy/Declaration is signed in October, Manila, Philippines.
- Regional Network of Local Governments Implementing ICM (RNLG) is established in March, Seoul, RO Korea.

## 2003

- Inaugural East Asian Seas Congress is held 8-12 December in Putrajaya, Malaysia.
- 1st Ministerial Forum adopts Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia.
- Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) is approved and initiated.

## 2007

- 1st EAS Partnership Council Meeting is held in July in Manado, Indonesia.
- International Ocean Institute, IUCN Asia Regional Office, Northwest Pacific Action Plan, and Swedish Environment Secretariat for Asia join PEMSEA and sign agreement supporting SDS-SEA implementation.

## 1990s

### 1993



- GEF/UNDP/IMO Project on Marine Pollution Prevention in the East Asian Seas (MPP-EAS) is signed.

### 1995



- First Regional Training Course on the Application of ICM System in Marine Pollution Prevention and Management is held in the Philippines, China, and Singapore.
- Batangas Coastal Resource Management Foundation (BCRMF) is established in support of Batangas Bay ICM Demonstration Project.

## 2000s

### 2002

- Japan joins PEMSEA.



### 2000



- 2nd Phase of PEMSEA funded by the Global Environment Facility is implemented by UNDP and executed by IMO.
- National ICM demonstration sites are established in Cambodia (Sihanoukville), DPR Korea (Nampho), Thailand (Chonburi), and Vietnam (Danang), in addition to existing sites in China (Xiamen) and the Philippines (Batangas).

### 2006

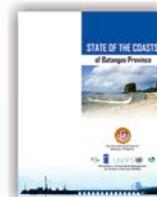


- EAS Congress 2006 is held 12-16 December in Haikou City, China.
- Lao PDR and Timor-Leste join PEMSEA as country partners and agree to implement the SDS-SEA.
- PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) Charter is signed by 18 local governments.

### 2005

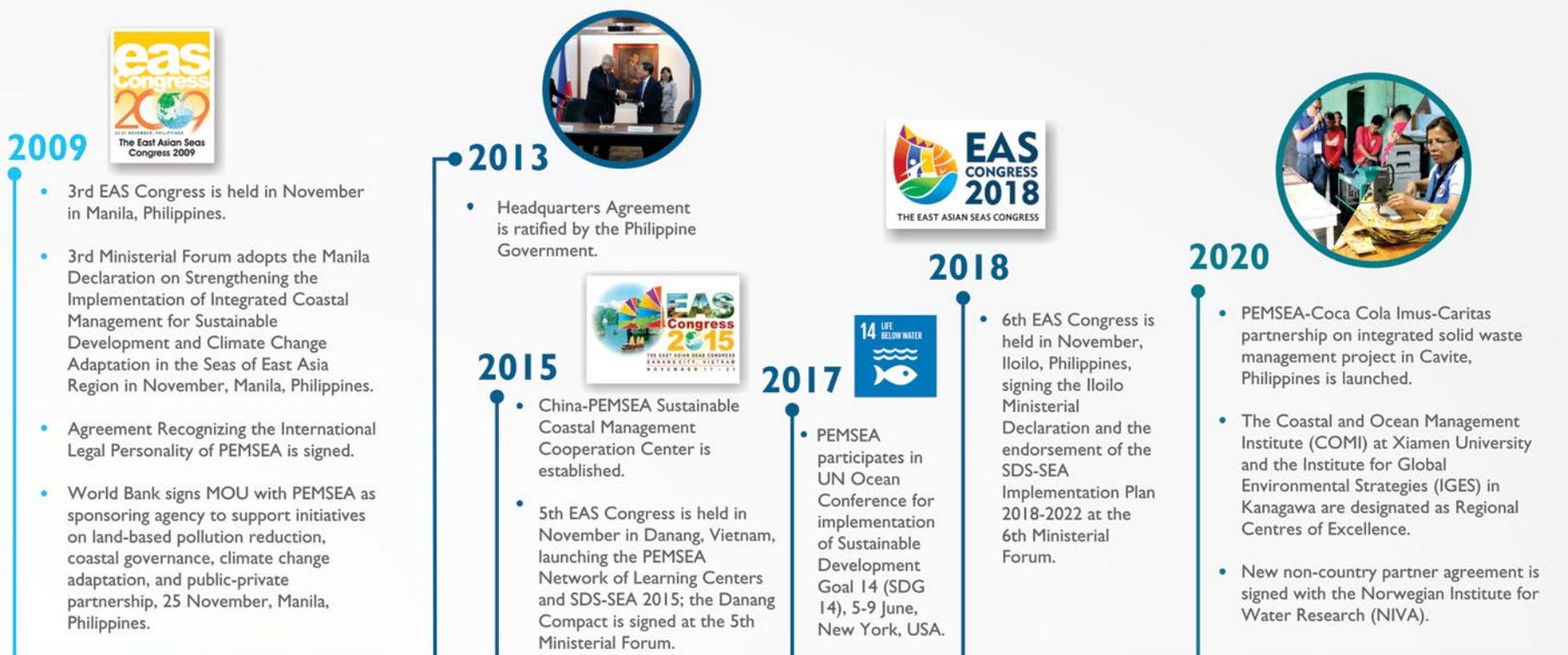
- Xiamen International Forum for Coastal Cities (XIFCC) is held, and adopts the Xiamen Declaration on Coastal Cities-Global Cooperation for Sustainable Development.

### 2008



- 1st State of Oceans and Coasts Report is published on Batangas Province, Philippines.
- Centre for Marine Environmental Research and Innovative Technology (MERIT) Hong Kong is designated as the first PEMSEA Regional Center of Excellence.
- Philippine Supreme Court requires 14 agencies to implement the Operational Plan for the Manila Bay Coastal Strategy (OPMBCS).

# Healthy and Resilient Coasts and Ocean in the Seas of East Asia



## 2010s

## 2020s

### 2011



### 2010

### 2012



### 2014



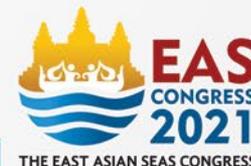
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### 2019



### 2021



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[www.undp.org](http://www.undp.org)



Children playing along the shore of Aroma Beach, Bataan, Philippines (Photo by PEMSEA/R. Guínto)



