

PEMSEA Annual Report 2021:
**From Recalibration
to Action**



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May 2022

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List of acronyms and abbreviations

3Rs	Reduce, reuse, recycle	DLSU-D	De La Salle University– Dasmariñas
ACCORD	Addressing Challenges of Coastal Communities through Ocean Research for Developing Economies	DONRE	Department of Environment and Natural Resources (Viet Nam)
AiIB	Asian Infrastructure Investment Bank	EAFM	Ecosystem approach to fisheries management
AP-PLAT	Asia-Pacific Climate Change Adaptation Information Platform	EAS	East Asian Seas
ASEAN	Association of Southeast Asian Nations	EMECS	Environmental Management of Enclosed Coastal Seas
ASEAN ENMAPS	Effectively Managing Ecological Networks of Marine Protected Areas in Large Marine Ecosystems in the ASEAN Region	EU	European Union
ASEANO	ASEAN-Norwegian Cooperation Project on Local Capacity Building for Reducing Plastic Pollution in the ASEAN Region	GEF	Global Environment Facility
ATS	Arafura and Timor Seas	GESI	Gender equality and social inclusion
ATSEA-2	UNDP/GEF/PEMSEA Arafura and Timor Seas Ecosystem Action Phase II	GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
AWGCME	ASEAN Working Group on Coastal and Marine Environment	HOPE	Healthy Ocean, People, and Economies
COP	Conference of Parties	ICM	Integrated coastal management
CSEAS Indonesia	Center for Southeast Asian Studies Indonesia	IGES	Institute for Global Environmental Strategies
CvSU	Cavite State University (Philippines)	IKI	International Climate Initiative
DENR	Department of Environment and Natural Resources (Philippines)	IMO	International Maritime Organization
DFW Indonesia	Destructive Fishing Watch Indonesia	IOC	Intergovernmental Oceanographic Commission
		IP	Implementation plan
		IUUF	Illegal, unreported, and unregulated fishing
		KSOP	Port Authority and Harbourmaster Office (Indonesia)
		LGU	Local government unit

MoE	Ministry of Environment (Cambodia)	PPA	Philippine Ports Authority
MPA	Marine protected area	PRF	PEMSEA Resource Facility
NextGEN	Green and Efficient Navigation	RCOE	Regional Center of Excellence
NPB	National Project Board	RGM	Regional governance mechanism
NIMC	National Inter-Ministerial Committee	RPOA-IUU	Regional Plan of Action to Promote Responsible Fishing Practices including Combating Illegal, Unreported and Unregulated Fishing
NIVA	Norwegian Institute for Water Research		Strategic action plan
NParks	National Parks Board (Singapore)		Sustainable Development Goal
OPRI-SPF	Ocean Policy Research Institute of the Sasakawa Peace Foundation	SAP SDG	Sustainable Development Strategy for the Seas of East Asia
OSRL	Oil Spill Response Limited	SDS-SEA	Stakeholder Partnership Forum
P4G	Partnering for Green Growth and Global Goals		United Nations
PA Barique	Posto Administrativo Barique	SPF	United Nations Development Programme
PC	Partnership Council	UN	United Nations Environment Programme
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia	UNDP	United Nations Economic and Social Commission for Asia and the Pacific
PG-ENRO	Provincial Government– Environment and Natural Resources Office	UNEP	United Nations Framework Convention on Climate Change
PNLC	PEMSEA Network of Learning Centers	UNESCAP	
PNLG	PEMSEA Network of Local Governments for Sustainable Coastal Development	UNFCCC	



Photo by PRF/J. Sandoval

JOINT MESSAGE

Spurred to greater action



Arief Yuwono
Chair
EAS Partnership
Council



Aimee T. Gonzales
Executive Director
PEMSEA Resource
Facility (PRF)

The link between ocean health and human health was foremost in our minds in 2021 as we experienced another year of the global pandemic. Mental, emotional, and physical well-being were tested with successive lockdowns and mobility restrictions which caused some temporary setbacks in many of our initiatives. Nevertheless, with collective determination, grit, and perseverance to succeed, Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) managed to have a relatively good year with many accomplishments that can spur us to greater action in the coming decade.

Notable highlights of the year included the successful organization of a nine-month-long, blended (online and face-to-face) East Asian Seas (EAS) Congress 2021 hosted by the Royal Government of Cambodia. It culminated in the 7th EAS Ministerial Forum, where 11 PEMSEA country partners reaffirmed their commitment to the EAS partnership and agreed to endorse the development of the PEMSEA Roadmap to 2030 that would reset and recalibrate actions to vigorously promote the blue economy pathway in the region and help fulfill our national, regional, and global commitments.

Much has been done to implement the region's commitment to the United Nations (UN) Sustainable Development Goals (SDGs), but much more is needed to attain our vision of a healthy ocean, people, and economies.

On a fun note, we had to be skillful in adaptive management, embrace uncertainty, and learn to be innovative and creative in the online delivery of knowledge products and technical services to implement the targets under the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA).

We definitely miss having face-to-face meetings of the EAS Partnership Council (PC) and seeing partners and collaborators at various global, regional, national, and local events. We look forward to networking, knowledge exchange, and capacity-building with coastal and ocean front-liners in our integrated coastal management (ICM) sites and other local communities in the region in person—hopefully soon.

COVID or no COVID, we will be busy in 2022 with the development of the SDS-SEA Implementation Plan (IP) 2023-2027, where we will also mainstream gender responsiveness and equity to pursue the blue economy pathway. We will be electing a new set of EAS PC Officers, operationalizing the PEMSEA Network of Learning Centers (PNLC), hosting the General Assembly of the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) in Tangerang, Indonesia, and conducting the midterm review of the Arafura and Timor Seas Ecosystem Action Phase II (ATSEA-2), one of our major projects funded by the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP).

We are also excited to deep dive into the nexus between ocean and climate, starting with our 2022 Ocean and Climate Dialogue on June 8. The dialogue aims to respond to the Glasgow Climate Pact's call to mainstream ocean issues and actions to help combat climate change. The dialogue aims to look into how ocean-based solutions are integrated in climate change-related policies and implemented in the EAS region. It also aims to discuss a select number of methodologies, tools, and practices related to these ocean-based solutions. We will work with the International Maritime Organization (IMO), the Association of Southeast Asian Nations (ASEAN), and the private sector on the generation of innovative solutions for reducing greenhouse gas emissions in the ports, shipping, and hinterland transport sector and the development and adoption of harmonized national measures to prevent the transfer of invasive aquatic species. We are also working with one of our Regional Centers of Excellence (RCOEs), the Institute for Global Environmental Strategies (IGES), in generating adaptation pathways to prevent coastal erosion in pilot sites.

All these and other national and local initiatives to pursue blue economy build upon our experience in applying ICM solutions in the EAS region.

In closing, we would like to thank you for your support in 2021 and look forward to continued collaboration in 2022 onward. Meanwhile, allow us to help you look back on the year that set us off on a new decade of powerful actions through this report.

A photograph of two people in a small boat on the water at sunset. The sun is a large, bright, glowing semi-circle on the horizon, casting a warm orange glow over the entire scene. The water is dark with some ripples. The two people are silhouetted against the bright light of the sunset. One person is on the left, holding a long pole or oar. The other person is on the right, sitting in the boat. The overall mood is serene and contemplative.

The (difficult)
year that was

In the midst of COVID-19

Challenges—and some opportunities

The COVID-19 pandemic brought unprecedented challenges in the region and the rest of the world, with several industries feeling the crunch, communities threatened in terms of health and security, and the environment under increased pressure from pollution. The coastal and marine sector of the EAS region was not spared from the ill effects of the pandemic.

Countries that are most dependent on the tourism sector were among those that experienced the largest contractions in economic growth with the decline being more than three times than in other countries (ILO, 2020). Asia and the Pacific was the first region to suffer the impacts of COVID-19 and is the hardest hit, with an 84 percent drop in international tourist arrivals in 2020, compared to the data in 2019 (WTO, 2021). With the pandemic, the share of tourism in total employment dropped by 18.4 percent in the region (WTTC, 2021). This has immense implications for the region, considering that at least three in every four workers in the tourism sector are informal workers, making them especially vulnerable to the negative impacts of the COVID-19 crisis (ILO, 2020).

In Southeast Asia, capture fisheries was also highly affected by COVID-19 because of the reduced market access and demand for fisheries-related products from hotel, retail, and catering services as well as the collapse of export markets (SEAFDEC, 2020a; OECD, 2020), resulting in unsold quantities of fresh catch and reduced income and loss

of livelihood for some. Small-scale fishers, who comprise half of the fishers in the region, were particularly affected. (SEAFDEC, 2020b).

Due to market disruptions and reduced demand, fish farmers cannot sell their harvest immediately and as such kept large quantities of live fish for an extended period of time, leading to high maintenance costs (OECD, 2020). Meanwhile, farmers who cultivated more than one species from different levels of the food chain reported fewer economic impacts due to COVID-19 (Sarà et al., 2021).

Informal workers, who generally constitute 68 percent of total employment in low-income countries, were negatively affected by the pandemic (WTO, 2020). Women were disproportionately affected by COVID-19. Even before the pandemic, women generally faced a great burden in balancing work outside home as well as caregiving. This, along with the risk of domestic violence, was further exacerbated during the COVID-19 crisis (FAO, 2021). Young people faced multiple shocks from COVID-19 as well, which included disruption to education and training, increased challenges in entering the labor market, and job loss. In addition, a large proportion of young workers was employed in the hard-hit sectors such as tourism (Northrop et al., 2020).

As reported by the 2021 study of Benson et al., Asia generated the highest quantity of discarded facemasks per capita per day, amounting to 52.9 percent of the global figure as a result of the mandatory application of single-use facemasks (or face shields) in many countries. Plastic waste was also on the rise due to increasing orders for food delivery (Kojima, et al., 2020). Once the



Fishing activities were interrupted during the COVID outbreak. (Photo by PRF/A. Sharkawi)

masks are discarded into the environment and not properly managed, they could degrade into smaller sized particles, which invariably tends to exacerbate the current problem of plastic pollution in Asia. Pre-pandemic, the plastic waste situation was already concerning as 55-60 percent of plastic waste entering the ocean was believed to have come from merely five countries in Asia, namely China, Indonesia, Philippines, Thailand and Viet Nam (Ocean Conservancy, 2017).

There was also reported increased incidence of illegal, unreported, and unregulated fishing (IUUF) due to reduced enforcement activities in some Southeast Asian countries (SEAFDEC, 2020b). Many Southeast Asian countries have limited capacity in maritime surveillance and enforcement to regulate and prevent IUUF. This capability is further weakened by reduced budget reallocation of governments in response to COVID-19 (Heazle, 2021).

A better way: Pursuing the blue economy

The health crisis made it challenging for nations to fulfill international, regional, and national commitments to climate change, biodiversity conservation, marine pollution, and sustainable coastal and marine governance. Undesirable environmental outcomes made it urgent to seek better paths to economic recovery.

PEMSEA has long advocated for the mainstreaming of the blue economy pathway, and the pandemic situation has made this call more urgent and relevant.

The implementation of blue economy has been on PEMSEA's agenda since 2012, when the Changwon Declaration was adopted by 10 countries during the 4th EAS Ministerial Forum in Changwon, RO Korea. PEMSEA defined blue economy as "a 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 oceans and coasts and enhancing their potential contribution to sustainable development, including improving human well-being, and reducing environmental risks and ecological scarcities.”

Moving forward, PEMSEA’s work includes incorporating the impacts of the pandemic in national and local state of the coasts reporting and making economic recovery plans with blue economy at the center. PEMSEA will continue to strive for social inclusion for the benefit of women, the informal waste sector, and other vulnerable groups while ensuring that local governments are technically and financially equipped to implement economic recovery plans. It will also work to include country and local plans and strategic recommendations in the PEMSEA Roadmap 2030 and SDS-SEA IP 2023-2027.

As a prelude to the EAS Congress 2021, PEMSEA hosted an ocean roundtable dialogue where country partners shared the steps that they are taking in pursuit of blue economy. All of them shared information on how COVID-19 has affected their economies and how they are applying the principles of blue economy in moving towards the post-pandemic renewal of the economy. National economic recovery plans and programs and continuing coastal conservation work have been initiated in several country partners, emphasizing green growth, climate change resilience, and strategic and sustainable coastal and marine sector development.

Several country partners have extended assistance to workers and businesses, particularly small and medium enterprises, in various forms: temporary cash supplements and tax breaks in Cambodia, enterprise rebuilding in China, cash transfers and electricity discounts in Indonesia, nature-based job creation in the Philippines, and sustainable job creation in Singapore.

Some country partners focused on specific areas that are essential under a blue economy. Sustainable fisheries and marine and coastal management were common priorities, and e-commerce and greater use of digital technology were frequently cited. Japan presented their plans on carbon neutrality, while RO Korea highlighted solutions to address marine litter. For Lao PDR, their focus was on integrated water resource management, while expanding and replicating ICM was at the center of efforts by Timor-Leste, which hoped for the expansion of more learning centers. DPR Korea is working towards establishing a National ICM Plan.

Country partners also expressed their shared desire that PEMSEA continue its work of leading regional and transboundary cooperation through creating more partnership opportunities.

More information on the state of blue economy in the region can be found in the *Regional State of Ocean and Coasts 2021: The East Asian Seas—Blue Economy: Where are We Now? Where are We Heading?* The report, published by PEMSEA, provides a comprehensive assessment of blue economic activities in the region and notes the impacts of SDS-SEA implementation on people, economy, and ocean health.

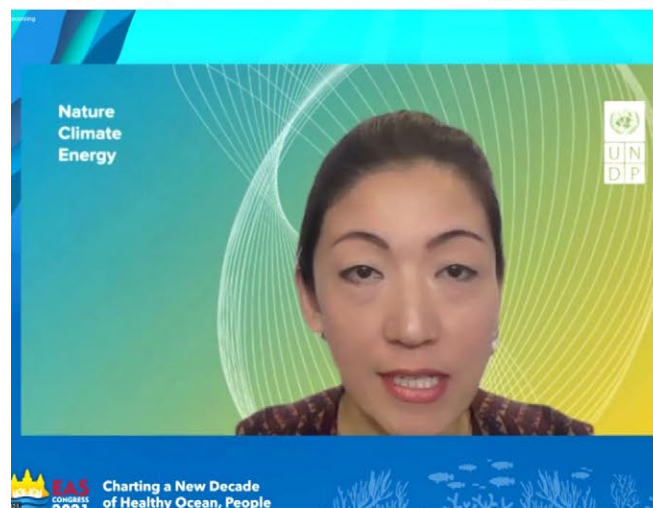
COVID-19 is discussed in-depth in the report's supplemental document entitled *Gearing Up for Recovery, Resiliency, and Inclusive Prosperity, the Blue Economy Way*. The supplemental document covers the issues brought about by COVID-19 and provides details of policies, best practices, and innovations to exemplify how the blue economy approach can pave the way for sustainable and inclusive economic prosperity.

Under this document, the following steps in achieving a blue economy were provided:

- First, countries must **manage the crisis and mitigate the socioeconomic impacts of the spread of the virus** as this is a prerequisite to economic recovery.
- Second, **adopt nature-based job programs, stimulus packages, low-interest loans, and incentives** for a blue recovery.
- Third, **promote a low carbon footprint and foster resiliency**. Marine renewable energy, for example, is an important field to explore in this regard, especially offshore wind power, an industry that was minimally affected by the pandemic (IEA, 2020).
- Fourth, the world must **forge ahead with innovations and digitalization**, with marine biotechnology now seen as the “brave new world” for ocean industries. E-commerce can also benefit the fishing industry and help combat IUUF. Digital solutions and policies can mean faster recovery from the COVID-19 crisis while also opening more opportunities for women as more jobs become available.
- Fifth, **strengthen governance, coordination, and partnerships**.

The report lists 12 specific ways to make the blue economy happen:

1. **Lay** the foundation and **promote** a common understanding of blue economy.
2. **Know, value,** and **manage** what you have.
3. **Adopt** and **implement** national ocean policies that advocate integrated ocean management and sustainable, resilient, and inclusive blue economy development.
4. **Harmonize** existing policies, procedures, incentives, and financing modalities for the sustainable use of coastal and marine resources
5. **Promote** equitable sharing of benefits from marine resources and biodiversity.
6. **Integrate** environmental considerations into mainstream risk assessments.
7. **Increase** public awareness and engage various stakeholders.
8. **Adopt** the principles of sustainable blue economy finance into decision-making.
9. **Get** the private sector as investors and partners in environmental investments.
10. **Apply** ocean science and traditional knowledge as tools for a better future.
11. **Provide** or **access** financing for research, development, and deployment.
12. **Collaborate** with other countries and **explore** trade and development policies.





Set for a new decade: East Asian Seas (EAS) Congress 2021

The EAS Congress has served as a leading forum on the sustainable development of the seas of the world's fastest-growing region since it started the first congress in Putrajaya, Malaysia, in 2003. The forum brings together participants from national and local governments, academe, scientific communities, youth, private firms, civil society, international organizations, multilateral banks, and other partners for solution-oriented discussion, knowledge sharing, and networking.

With the theme "**Charting a New Decade of HOPE (Healthy Ocean, People, and Economies)**," the 2021 EAS Congress came at a fitting time as the region nears the completion of executing the SDS-SEA IP 2018-2022 and in the wake of greater public awareness on the connection between ocean health and human health due to COVID-19.

Objectives

- **To share the lessons learned and track the progress made** in implementing the SDS-SEA
- **To build on and recalibrate existing management interventions and foster new opportunities** for regional partnerships using innovative approaches, technologies, investments, and financing towards the sustainable development of the coastal and marine environment
- **To set up a clear roadmap on transformative blue solutions** for the next decade in accordance with relevant international and regional commitments

The EAS Congress 2021 was hosted by the Royal Government of Cambodia and co-organized by the Ministry of Environment (MoE) in Cambodia, Provincial Administration of Preah Sihanouk, and PRF on December 1-2. Pre-Congress events in the form of knowledge-sharing collabs and network meetings were spread from April to November 2021. It was held virtually, except for several main events that took place in hybrid form in the Province of Preah Sihanouk, Cambodia, as the local host of the 2021 EAS Congress.

Subthemes of the EAS Congress 2021



Subtheme 1

Securing food, income, and livelihood in a blue economy



Subtheme 2

Fostering social inclusion



Subtheme 3

Managing and restoring natural capital



Subtheme 4

Reducing marine pollution



Subtheme 5

Averting climate change and promoting social resilience



Preah Sihanouk: A land of promise and gateway to sustainable growth



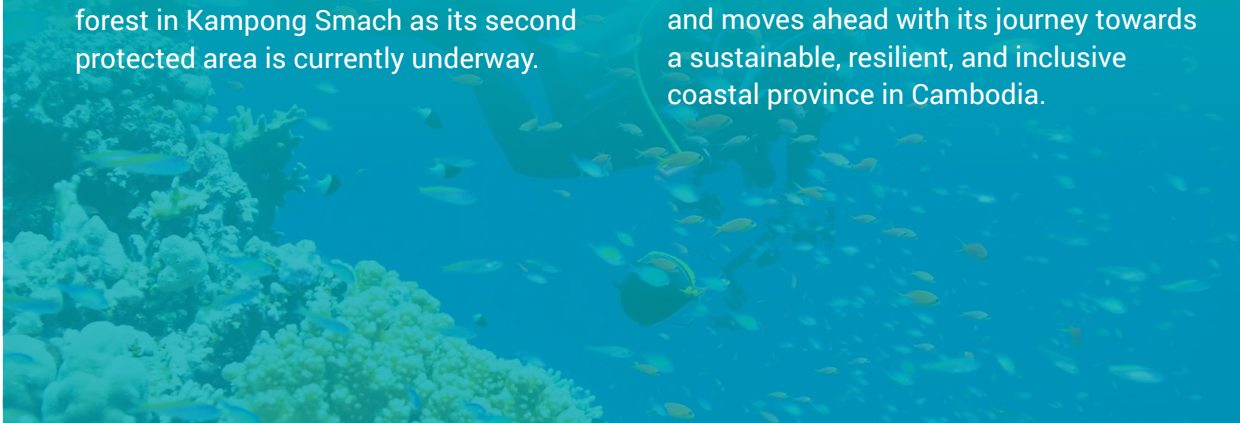
As one of the ICM sites of PEMSEA in Cambodia, the province of Preah Sihanouk is located 226 kilometers southwest of the capital city of Phnom Penh and is considered among the most beautiful bays in the world with its white sand and 32 islands. Its rich natural resources provide much-needed livelihood opportunities related to fisheries, trade, industry, and tourism. Along with Phnom Penh and Siem Reap, Preah Sihanouk is one of Cambodia's three poles of economic development. It is also the site of the country's only deep seawater port, a commercial gateway for local and international shipping.

The province is home to Koh Rong archipelago, the first Marine National Park in Cambodia with 52,000 hectares of coral reefs, seagrass beds, mangrove forests, and other marine habitats. The official declaration of the 3,300-hectare mangrove forest in Kampong Smach as its second protected area is currently underway.



The province is also implementing a number of programs on climate change and disaster risk reduction, sustainable fisheries and livelihood, and pollution reduction.

Given its strong marine-based economic potential, Preah Sihanouk continues to strike a delicate balance between the pursuit of economic growth, social imperatives, and environmental impacts and benefits as it transitions into a modern city and multi-purpose economic zone. The province affirms this commitment as it sustains its ICM program implementation and moves ahead with its journey towards a sustainable, resilient, and inclusive coastal province in Cambodia.



Key outputs of EAS Congress 2021



Signing of the Preah Sihanouk Declaration



Adoption of the 2022-2030 Strategic Action Plan (SAP) of the PNLG



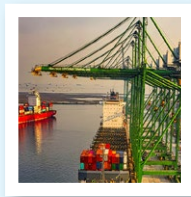
Launch of the PNLG Charter



Start of preparations for the SDS-SEA IP 2023-2027



Expanded and strengthened partnerships and investments in the EAS region



Commitment from countries to engage in the IKI/IMO Blue Solutions for Reducing Maritime Transport Greenhouse Gas Emissions through Increased Energy Efficiency of Ship and Port Activities in East Asia



Completion of the 2021 Regional State of Ocean and Coasts: The East Asian Seas Region and its supplemental report



Launch of Sea Change: The PEMSEA Story—28 Years of Collaboration for the Seas of East Asia



EAS Congress 2021 by the numbers

1,417 participants in the Main Conference

36 conveners and co-conveners

11 sponsors

120 resource speakers

257 pick-ups (media hits and bylined articles)

Breakdown of pre-Congress collabs by subtheme and topic

Subtheme/topic	Number of collaborations
Securing food, income, and livelihood in a blue economy	
Blue economy	4
Fostering social inclusion	
Gender equality	1
Managing and restoring natural capital	
Marine protected areas (MPAs) and MPA networks	3
Nature-based solutions	1
Reducing pollution and solid waste	
Oil spills	1
Toxins and emerging chemical pollutants	2
Marine plastic pollution	3
Biofouling	2
Averting climate change and promoting social resilience	
Climate change mitigation	1
Climate change adaptation	2
Crosscutting	
ICM or marine spatial planning	3
TOTAL	23

Key events

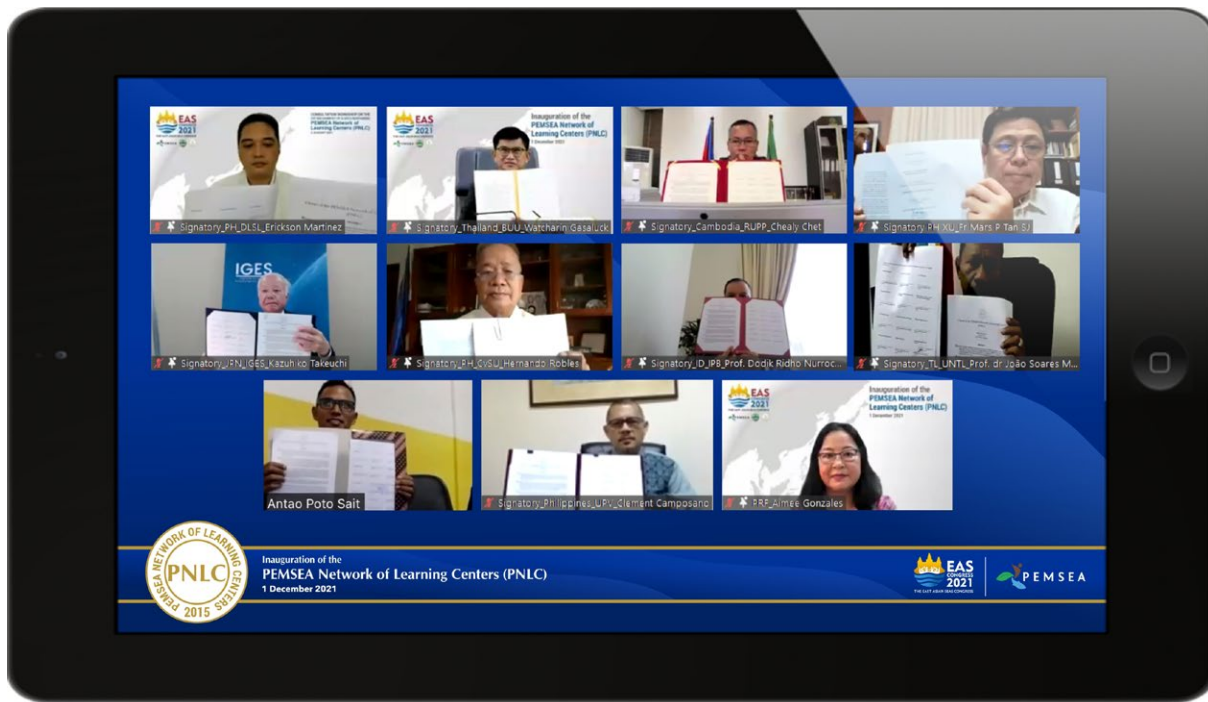
1. Inauguration of the PNLC

Organized by the PRF on December 1, 2021 via Zoom, the inauguration launched the PNLC Charter, which formalized this network of respected academic and scientific institutions that have worked with PEMSEA for many years. With 18 member institutions, composed of 15 PEMSEA Learning Centers and three RCOEs from nine countries in East Asia, the PNLC has been supporting adjacent local governments in building their capacity to implement ICM by conducting hands-on training, research, knowledge exchange and documentation, and adaptation and replication of best practices for application in other local communities. The charter also laid out the ground rules on membership and operations and identified options for financing the network.

The members collectively expressed their continuing commitment to fulfill the SDGs through their respective sustainable development strategies, aligned with the SDS-SEA. They pledged to continue to promote and apply ICM, pursue climate resilience, and continue to support PEMSEA, especially on education and research.



Dr. Wansuk Senanan, President of the PNLC and Assistant Professor at the Department of Aquatic Sciences in Burapha University, Thailand



High-level representatives from PNLC member institutions show their signed copies of the PNLC Charter with PRF Executive Director Aimee Gonzales (bottom right) as witness (Photo by PRF/J. Castillo)

“With our institutional focus on fisheries and aquatic sciences, we are particularly concerned with the challenges we face with regards to SDG 14 (on life below water)... It is our firm belief that active participation in the PNLC can help strengthen our existing research, public service, and academic programs... given the opportunities to work with and learn from other institutions with similar mandates.”

Dr. Clement Camposano
Chancellor, University of the
Philippines Visayas

“To increase resilience to climate change, we have to bring together our wisdom and knowledge,” said Prof. Kazuhiko Takeuchi, President of the Institute for Global Environmental Strategies. “For instance, IGES, together with the Ministry of the Environment of Japan and other partners, promotes the Asia-Pacific Climate Change Adaptation Information Platform or AP-PLAT. Strengthening the capacity of the Asia Pacific region to adapt to climate change and improving access to scientific knowledge make up an important part of our mission.” During one of their events at the EAS Congress 2021, IGES had a fruitful discussion on future collaborations in terms of AP-PLAT in the EAS region. They look forward to exploring other opportunities for partnership with PNLC and the rest of PEMSEA in the near future.

2. 2021 PNLG Forum

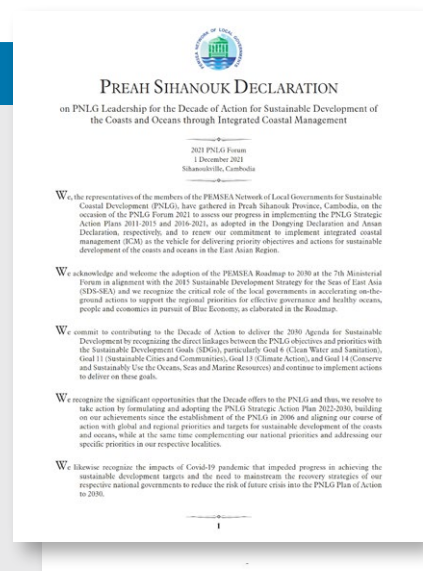


With the theme “Networking for a New Ocean Decade of Hope,” the 2021 PNLG Forum took place on December 1, 2021 and was hosted by the Provincial Administration of Preah Sihanouk and co-organized

by the PNLG Secretariat and PRF. The event was held in Zoom with a physical venue for Cambodian participants at the Independence Hotel in Sihanoukville, Cambodia.

Outputs of the PNLG forum

- ✓ Approval of the 2021 work summary and 2022 work plan of the PNLG Secretariat
- ✓ Signing of the Preah Sihanouk PNLG Declaration
- ✓ Election of new PNLG officers
- ✓ Induction of Busan, RO Korea as the 55th PNLG member
- ✓ Announcement of Tangerang Regency, Indonesia as the local government host of the 2022 PNLG Forum



The new PNLG leaders



Dr. Le Quang Nam



Mr. Ahmed Zaki Iskandar



City leaders of Da Nang congratulate Dr. Le (center) during his oath-taking as the new PNLG President.

The **new President of the PNLG, Dr. Le Quang Nam**, is the Vice Chairman of the People's Committee in Da Nang, Vietnam. He used to be the Director of the Da Nang Department of Science and Technology and Da Nang Department of Natural Resources and Environment as well as Secretary of the Party's Committee of Cam Le District in Da Nang. He has a Ph.D. in energy engineering and has management experience in investments, urban planning, environmental resources, construction, occupational safety, and transportation.

In his acceptance speech, he intends to take PNLG on new directions and partnerships while building on the PNLG's strengths and the recognition it receives for its accomplishments in ICM implementation.

Meanwhile, **Mr. Ahmed Zaki Iskandar, the new PNLG Vice President** is the Regent of Tangerang Regency in Indonesia. He has served in various capacities at the local and national levels in the country. He was Chairman of the Central Executive Board of the Golkar Party and was a member of the Central People's Representative Council, Household Affairs Board, and Commission 1 for Defense, Foreign Affairs and Information. He graduated with a master's degree in governance studies from the Institute of Domestic Government in Indonesia and a bachelor's degree in economics from the University of Paramita–Tangerang.

In his acceptance speech, he underscored the need for regional cooperation and that all PNLG members must harmonize their efforts to prove the solidarity of their leadership within the region.



Mr. Iskandar (center) joining in the 2021 PNLG Forum
(Photo by Tangerang Regency Government)

Under the Preah Sihanouk PNLG Declaration, members committed to adopt the PNLG SAP 2022-2030 and pursue blue economy in upholding the plan.

The SAP charts the future of the network, especially in a post-COVID setting, until 2030, the same year that the SDGs are set for completion. It outlines the objectives, outcomes, targeted actions, responsible entities and partners, timeline, and indicators under three major programs as follows:

- First, to **strengthen governance and partnerships** in terms of the sustainable development of coastal and marine areas in East Asia. Targeted actions include scaling up the implementation of the ICM Code and Recognition System and evaluation of ICM effectiveness; capacity development, knowledge, management, and resource sharing for the benefit of PNLG members; organization of the Annual PNLG Forum and its interim activities; and expanding the PNLG membership and linkages with other networks and partners.
- Second, to **implement priority management programs** under the respective ICM programs of PNLG members. Targeted actions will delve on SDG 6, focusing on integrated coastal and water resources management; SDG 11, in support of the Marine Debris Prevention Initiative (as committed by PNLG members during the 2019 PNLG Forum) and solid waste management; SDG 13, particularly to enhance the resilience of coastal communities to the impacts of climate change and other natural and manmade hazards; and SDG 14, particularly to increase the spatial extent of healthy and resilient habitats and sustainable use of marine resources.
- Third, to **enhance monitoring, evaluation, and reporting** by facilitating the access to tools, methodologies, and knowledge platforms for monitoring and reporting of progress on social, economic, and environmental status and changes. Targeted actions include increasing access to specialized tools and methodologies; developing, pilot-testing, and applying a harmonized framework and methodology to assess ICM effectiveness; applying the State of the Coasts reporting system or other similar tools at the local level; knowledge-sharing through platforms such as the Seas of East Asia Knowledge Bank (SEAKB), an online interactive platform housing coastal and marine data on the EAS region; and reporting of progress on implementing SDG commitments through the PNLG online tracking system of the SEAKB.

Welcoming Busan, RO Korea



Oryukdo Skywalk (Photo by J. Sung)

Busan, the newest member of the PNLG, envisions becoming a smart, green city and has trained its sights on becoming the “Maritime Capital of Northeast Asia.”

Busan is RO Korea’s second largest city, located on the southeastern tip of the Korean peninsula, and is home to some 350 million people. Geographically, it features a coastline with beautiful beaches as well as cliffs and mountains that serve as frequent hiking destinations.

There are over 27,000 companies working in maritime-related fields, employing over 160,000 people in an industry worth USD 281.9 billion. Busan is considered the seafood center and largest international fisheries hub of the country. In 2018 alone, it exported USD 537 million worth of fisheries-related products. The Jagalchi Fish Market and Busan International Fish Market are just

some local landmarks to visit. Busan is also the world’s sixth largest port and second in terms of freight.

There are three marine protected areas in Busan such as the famous Oryukdo Islets. An important artery into the city, Nakdong River is also a protected area.

With marine litter as a major concern, Busan is focusing on source management, voluntary collection of waste by citizens, and education and awareness raising.



Jagalchi Fish Market (Photo by M. Winkler)



3. Main Conference



(LEFT) Representatives from the national and local governments and development partners in Cambodia convene at the Independence Hotel for the Main Conference; (ABOVE RIGHT) Phan Sopheak Nita, one of the master of ceremonies of the Main Conference and concurrent Head of the Public Relations and International Cooperation Division at Phnom Penh Capital Administration; (BELOW RIGHT) Plenary discussion at the Main Conference with moderator Mitzi Borromeo (left) and to the right from the top: Dr. Akiko Yamamoto, Regional Team Leader for Nature, Climate and Energy at the Bangkok Regional Hub of UNDP; Dr. Gil Jacinto, Philippine National Focal Person for the Intergovernmental Oceanographic Commission (IOC); and Frank Belitz, Principal Officer of the Strategy and Policy Department of the Asian Infrastructure Investment Bank (AIIB)
 (Photo by PRF/K. See)

In his welcome remarks during the opening ceremony of the main conference, H.E. Eang Sophalleth, Secretary of State of the Ministry of Environment in Cambodia, described the theme of the 2021 EAS Congress as “full of optimism and energy to carry forward, to put our very best as a region. Despite our differences in national culture, historical background, political system, and development status, we have demonstrated our firm commitment to the partnership in carrying out the sustainable development of the East Asian coasts and ocean in the service of, and for the benefit of, the present and future generations and the planet.”

The Main Conference featured a keynote address from the Minister of Environment, H.E. Say Samal, as Chair of the Main Conference, and a plenary consisting of TEDx-style talks on the state of implementing of the ten targets of SDG 14 to conserve and sustainably use the ocean,

seas, and marine resources for sustainable development (by Dr. Andrew Hudson, Head of the Water and Ocean Governance Programme of UNDP), blue economy initiatives and portfolio of the AIIB (by Sir Danny Alexander, Vice President for Policy and Strategy of AIIB), and empowering young scientists and promoting innovation during the UN Decade of Ocean Science for Sustainable Development (by Dr. Jacinto). Conclusions and recommendations of the EAS Congress 2021, specifically from the collabs and Main Conference plenary, were also presented along with a cultural presentation from Cambodia capping the event.



H.E. Sophalleth

Minister Say Samal

As highlighted by Minister Say, “As we are putting our utmost efforts in socioeconomic recovery, adjusting to the new normal of living with COVID-19, it is more important than ever that we strengthen our collaboration and multilateralism as a foundation for regional peace and stability...The region’s transformation into a blue economy is doable, given the availability of innovative and cost-effective technologies and practices as well as existing programs and projects that can be scaled up further. This includes ICM, which PEMSEA has pioneered and will serve as the region’s bedrock for blue economy transformation.”

“It is more important than ever that we strengthen our collaboration and multilateralism as a foundation for regional peace and stability... The region’s transformation into a blue economy is doable, given the availability of innovative and cost-effective technologies and practices as well as existing programs and projects that can be scaled up further.”

H.E. Say Samal
Minister of Environment,
Cambodia

Main conclusions and recommendations of the EAS Congress 2021

- The **SDS-SEA remains a powerful framework** to achieve sustainable ocean and coastal development, facilitate a blue recovery from the impacts of the global pandemic, and implement the SDGs and other relevant international and regional goals.
- **ICM is still acknowledged as a fundamental tool to build blue economies, but there are also other essential management approaches** such as integrated river basin management (IRBM) and intermodal maritime transport.
- **Gender and climate response and actions need to be mainstreamed** in coastal and ocean strategies and programs.
- **More local adaptation of innovative tools and solutions, financing, and public-private partnership is needed** for the management of the coastal and marine sector.
- Successful coastal and ocean programs are often **co-designed and co-managed by local stakeholders** and their **benefits are explicitly identified**.
- **Empirical evidence, policy options, and information on good practices need to be accessible and adapted** for local governments and coastal stakeholders.
- **Conduct regular monitoring of the state of the ocean and coasts** to assess management interventions, address gaps thereof, and seize opportunities to transform the EAS region towards a blue economy.
- **Provide enabling policies and incentives to develop emerging sustainable industries** such as offshore renewable energy, green ports, and marine biotechnology.

4. Partnership Night

As the homecoming segment of the EAS Congress 2021, the Partnership Night offered an opportunity for reunions, networking, and camaraderie for former and current partners, staff, sponsors, collaborators, and other stakeholders of PEMSEA.

It was also an opportunity to acknowledge the contributions of individuals from the

PEMSEA family throughout the years. During an appreciation and recognition ceremony, certificates were handed out to two individuals: Dr. Jose Padilla, Regional Technical Advisor for Water, Coastal, and Marine at the Bangkok Regional Hub of UNDP, and Mr. Long Rithirak, Deputy Director General of the Ministry of Environment in Cambodia and PEMSEA National Focal Point in the country.



Dr. Jose Padilla of UNDP was recognized for his long-standing support and guidance in transforming PEMSEA into a

successful international organization fostering healthy and resilient coasts and ocean. Dr. Padilla has been instrumental in the approval of high-impact regional projects, including Scaling up the Implementation of the SDS-SEA, ATSEA-2, Sulu-Celebes Sea Sustainable Fisheries Management Project, West Pacific East Asia Projects, and Yellow Sea Large Marine Ecosystem Project. He is currently working on securing more projects that address coastal pollution in river basins and strengthen the networking of MPAs in the EAS region.



Padilla during a site visit in Guimaras, one of PEMSEA's ICM sites in the Philippines, in 2016



Padilla (far right) with PEMSEA staff and other ICM stakeholders in Tumulintinan Point MPA in Guimaras, Philippines in 2016



Mr. Long Rithirak of Cambodia's Ministry of Environment was cited for his role in organizing the EAS Congress 2021, and more

importantly, his 27 years of service in PEMSEA. He was thanked for his exceptional contributions in scaling up the implementation of the SDS-SEA, which resulted in full ICM coverage for Cambodia's coastal provinces and their membership in the PNLG. Mr. Long also facilitated the implementation of an oil spill preparedness project in the Gulf of Thailand with Thailand and Viet Nam and an ocean research program in cooperation with Plymouth Marine Laboratory, one of PEMSEA's non-country partners.

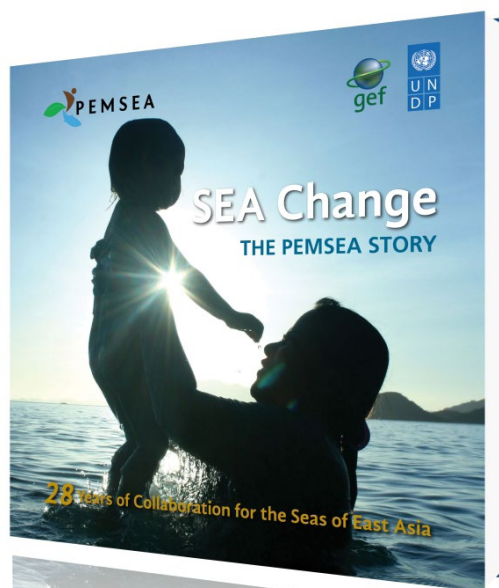


Long (center) with other guests at the opening of the Chua Thia-Eng Library in the Philippines in 2013



Long (far right) with representatives from PRF and MoE discussing the preparations for the EAS Congress 2021 and the voluntary contributions of Cambodia to PRF (March 2021)

In addition, the Partnership Night launched the book *Sea Change: The PEMSEA Story—28 Years of Collaboration for the Seas of East Asia*. The launch included messages from Dr. Chua Thia-Eng, EAS PC Chair Emeritus, and Dr. Selva Ramachandran, Resident Representative of the Philippine Country Office of UNDP. The book, produced by PRF with support from GEF through UNDP, chronicles the origin, development, challenges, and success stories of PEMSEA from its days as a regional marine pollution project to its role today as the regional coordinating mechanism for the SDS-SEA.



“As PEMSEA celebrates its 28th year of existence, we, at UNDP, are proud to be part of this dynamic organization,” wrote Ms. Kanni Wignaraja, Assistant Secretary General and Director of the Regional Bureau for Asia and the Pacific of UNDP, in the book’s Foreword. “As the world strives to build back better beyond the COVID-19 pandemic, the 14 countries in the region can look up to PEMSEA for support to a green recovery.”

Mr. Yuwono called the book “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.”



PRF Executive Director Gonzales giving the opening message at Partnership Night



Dr. Ramachandran giving a speech on behalf of UNDP Philippines in support of the launch of *The PEMSEA Story*

XIAMEN: A success story

by MR. PAN SHUIJIAN
Vice Mayor of the Xiamen Municipal People's Government from 2000 to 2012, and Chair Emeritus of the PMLG 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.

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

GEF Intervention

- Marine Pollution Prevention and Management in the East Asian Seas 1993–1998
- Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) 1999–2007
- Implementation of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) 2008–2013
- Scaling up the Implementation of the SDS-SEA 2014–2020

SINGAPORE

“The plan has been up of success that have past inter best exam focus on implment levels of g participati

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

28 Years of Collaboration for the Seas of East Asia

‘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.

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 travellers to visit.

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

PREFACE: CROSSROADS 1

East Asia is one of the world's most populous and economically dynamic regions. The countries of East Asia, being together a diversity of complex, ancient societies, have been increasingly linked to the global economy. East Asian integration has brought and continues to bring, in-line, accelerating, network, and their economic potential in the establishment of very vibrant trade and investment routes.

The East Asian Seas (EAS) have an area of 2 million km², stretching from the Bering Sea in the north to the Indonesian Sea in the south. The total coastline measures around 29,000 km, with 15 percent of the region's population—about 1.5 billion people—living within 50 km of this coastline.

The area of East Asia support 30 percent of the world's population. More than 80 percent of global marine capture fisheries produce more than 80 percent of the world's aquaculture output, and are home to most of the world's 10 largest seaports.

There are also rich fish, soft forests, and wetlands. These are highly productive ecosystems, source of natural assets and resources from which humans derive a wide variety of products services that make it possible, and open which human activities rely.

UNDP/IMO Regional Management of the Seas (RMS) FIRST MEETING OF THE SEASIDE (2017) PHILIPPINES

5. 7th EAS Ministerial Forum

The 7th EAS Ministerial Forum is the culminating, high-level event of the 2021 EAS Congress. It convened senior government officials from the region to provide direction for regional cooperation in line with the SDS-SEA.

All 11 country partners of PEMSEA were present at the forum (Cambodia, China, DPR Korea, Indonesia, Japan, Lao PDR, Philippines, RO Korea, Singapore, Timor-Leste, and Viet Nam). They were joined by the EAS PC Chair Emeritus, Dr. Chua Thia-Eng, members of PEMSEA's Executive Committee, and representatives from PEMSEA's non-country partners, collaborators, PNLG, academe, youth, and other development partners.

Minister Say, as Chair of the forum, expressed that the global pandemic underscored "how everything and everyone is interconnected"

Adopted commitments under the Declaration:

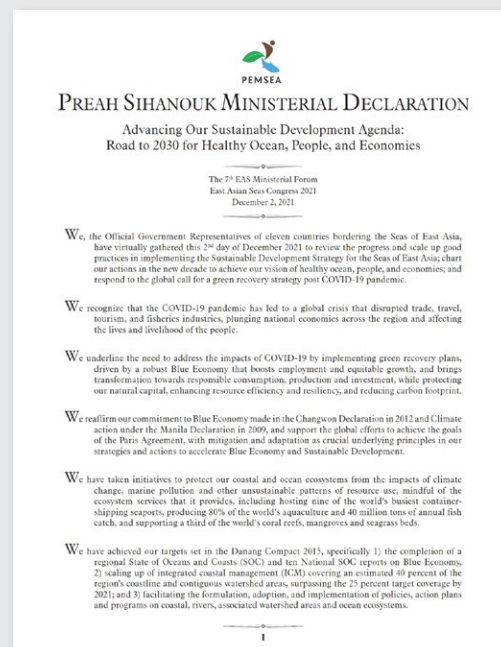
- Reaffirm and build on previous Ministerial commitments of the EAS Partnership in support of SDS-SEA implementation and key international agreements
- Endorse the development of the SDS-SEA IP 2023-2027 and PEMSEA Roadmap to 2030
- Build back better from the impacts of the global pandemic through strengthened partnership towards a responsible and strengthened ocean governance that is anchored on sustainable development and blue economy principles



Group photo of Ministers with Dr. Chua Thia-Eng and PEMSEA's Executive Committee members.

and acknowledged PEMSEA's outstanding work in promoting river, coastal, and ocean protection and management. He also renewed Cambodia's commitment to the implementation of ICM and blue economy.

Country statements were delivered showcasing each country's insights and initiatives in striving for healthy ocean, people, and economies. The event culminated in the signing of the Preah Sihanouk Ministerial Declaration.

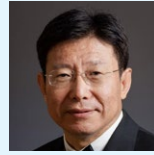


Highlights from the Ministerial Forum



"With regard to green development, the Royal Government [of Cambodia] has been conducting a comprehensive study to formulate a master plan with a vision to turn Preah Sihanouk province into a model, multi-purpose Special Economic Zone that incorporates all aspects of sustainable development."

- **H.E. Sao Sopheap**
Secretary of State, Ministry of Environment, Cambodia



"China has made major arrangements for promoting green development and seeking the harmonious coexistence between man and nature...We would like to positively develop blue partnerships with other countries with a view to contribute to the sustainable development of marine ecosystems and welfare of the people in the region."

- **Hon. Zhang Zhanhai**
Chief Engineer and Director General, Ministry of Natural Resources, China



"In order to...achieve sustainable development, all countries in the EAS should constantly develop and enhance their capabilities to protect and manage their own marine and coastal environment."

- **Hon. Ri Myong San**
Vice Minister, Ministry of External Economic Relations, DPR Korea



"We are pleased to inform you that out of 34 provinces in Indonesia, 28 provinces have already declared their respective coastal area and small island zoning plans under ICM, covering about 83 percent or 90,000 kilometers of Indonesia's coastline."

- **Hon. Luckmi Purwandari**
Acting Director of Coastal and Marine Pollution and Degradation Control, Ministry of Environment and Forestry, Indonesia



"The role of PEMSEA is important in integrating global efforts into feasible efforts that are tailored to the characteristics of each country...We believe that it is more meaningful for Japan, an island nation that connects to the world through the sea, to address ocean issues in cooperation with other countries."

- **Hon. Takada Masayuki**
Deputy Minister for Technical Affairs, Ministry of Land, Infrastructure, Transport and Tourism, Japan



"Lao PDR has been cooperating with other regional and international organizations to jointly manage and develop water resources in the EAS region... Lao PDR has been serving as the Chair of the ASEAN Water Working Group for 2020-2022 and the Global Water Partnership for Southeast Asia for 2019-2021."

- **Hon. Chanthanet Boualapha**
Vice Minister, Ministry of Natural Resources and Environment, Lao PDR



"The Philippines urges all country partners to embrace the Preah Sihanouk Ministerial Declaration on building coastal resilience to climate change impacts in East Asia and to contribute in advancing the global sustainable development agenda."

- **Hon. Roy Cimatu**
Secretary, Department of Environment and Natural Resources, Philippines



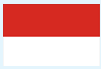
"The 2021 P4G (Partnering for Green Growth and Global Goals) Seoul Summit in May succeeded in sounding the alarm for the entire world that marine litter issues must be resolved promptly and efficiently in order to ensure the sustainability of the ocean."

- **Hon. Moon Seong-Hyeok**
Minister, Ministry of Oceans and Fisheries, RO Korea



"Singapore has adopted and will continue to promote the integrated urban coastal management framework, a proactive planning and management framework for sustainable development of marine and coastal areas in an urban context."

- **Hon. Hazri Hassan**
Director, International Policy Division, Ministry of Sustainability and the Environment, Singapore



"For more than 15 years of being a PEMSEA country partner, we have demonstrated and benefited from the strategic, integrated, and vision-oriented approach of PEMSEA and the SDS-SEA and ICM programs."

- **Hon. Acacio Guterres**
Director General for Fisheries, Aquaculture and Marine Resources, Ministry of Agriculture and Fisheries, Timor-Leste



"Viet Nam has successfully implemented the SDS-SEA, specifically in the replication of integrated coastal zone management in coastal provinces and the promulgation and implementation of the strategy for this management approach to 2020 with a vision to 2030."

- **Hon. Le Minh Ngan**
Deputy Minister, Ministry of Natural Resources and Environment, Viet Nam



"The declaration provides an inflection point in taking on the many challenges and opportunities towards a full recovery from the COVID-19 pandemic. We laud the commitments made by our country partners even as they are in the midst of implementing their respective economic recovery programs."

- **Ms. Aimee Gonzales**
Executive Director, PRF



Video on the evolution of **EAS Ministerial Declarations** from 2003 to 2018

[WATCH VIDEO](#)



Check out the **Post-Congress Report** for more details on the EAS Congress 2021. The report contains the full account of the Congress, its key results, other notable accomplishments, and overview of all conducted events, along with the proceedings, recordings, and presentation materials.

[POST-CONGRESS REPORT](#)



SPONSORS

Ministry of Natural Resources (MNR), China

Ministry of Environment and Forestry (MoEF), Indonesia

Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan

Department of Environment and Natural Resources (DENR), Philippines

Ministry of Oceans and Fisheries (MOF), RO Korea

Ministry of Sustainability and the Environment (MSE), Singapore

ASEAN-Norwegian Cooperation Project on Local Capacity Building for Reducing Plastic Pollution in the ASEAN Region (ASEANO)

UNDP/GEF Arafura and Timor Seas Ecosystem Action Phase II (ATSEA-2)

Korea Institute of Ocean Science and Technology (KIOST)

CO-CONVENERS

ASEAN Centre for Biodiversity (ACB)

Center for Climate Change Adaptation (CCA), National Institute for Environmental Studies (NIES), Japan

China-PEMSEA Sustainable Coastal Management Cooperation Center (CPC)

City University of Hong Kong (CityU)

Coastal and Ocean Management Institute (COMI), Xiamen University (XMU), China

Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University (PolyU)

Department of Science and Environmental Studies, The Education University of Hong Kong (EdUHK)

Fujian Institute for Sustainable Oceans (FISO), Xiamen University (XMU), China

Global Challenges Research Fund (GCRF) Blue Communities (BC)

Global Environment Facility (GEF)

Global Initiative for Southeast Asia (GISEA)

Institute for Global Environmental Strategies (IGES)

International Maritime Organization (IMO)

Korea Maritime Institute (KMI)

Ministry of the Environment Japan (MOEJ)

Natural Resources Defense Council (NRDC), United States of America (USA)

North-East Asian Subregional Programme for Environmental Cooperation (NEASPEC)

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

Ocean University of China (OUC)

Oil Spill Response Limited (OSRL)

PEMSEA Network of Local Governments (PNLG) Secretariat

Plymouth Marine Laboratory (PML)

Rethinking Plastics: Circular Economy Solutions to Marine Litter

Society of Entrepreneurs and Ecology (SEE) Foundation

State Key Laboratory of Marine Pollution (SKLMP)

The Blue Carbon Initiative

UNDP Global Marine Commodities (GMC)

United Nations Development Programme (UNDP)

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

Viet Nam National University (VNU), Ha Noi

Wageningen University & Research (WUR)



Photo by UNDP Indonesia

Project highlights

Translating plans to actions: UNDP/GEF/PEMSEA Arafura and Timor Seas Ecosystem Action Phase II (ATSEA-2)



Fish catch at Dobo Port in Aru Islands, Indonesia (Photo by UNDP Indonesia)

Launched in 2019 with a five-year implementation period, the ATSEA-2 project is the second phase of the GEF-financed, UNDP-supported ATSEA program. Designed to enhance regional collaboration and coordination in the Arafura and Timor Seas (ATS), it focuses on supporting the implementation of the 10-year Strategic Action Programme (SAP) endorsed through a Ministerial Declaration in 2014, with the long-term objective of promoting sustainable development of the Arafura and Timor Seas region to improve the quality of life of its inhabitants through restoration, conservation, and sustainable management of its coastal and marine ecosystems.

ATSEA-2 supports the implementation of the following governance and environmental objectives of the SAP: (1) strengthening of regional governance in the ATS region; (2) recovering and sustaining fisheries; (3) restoring degraded habitats for sustainable provision of ecosystem services; (4) reducing land- and marine-based sources of pollution; (5) protecting key marine species; and (6) adaptation to the impacts of climate change.

Participating countries are Indonesia, Papua New Guinea, and Timor-Leste, with Australia participating as non-project beneficiary. Key project sites include Aru Islands (Maluku Province), Merauke Regency (Papua Province)

and Rote Ndao Regency (East Nusa Tenggara Province) in Indonesia; South Fly District in Western Province, PNG; and municipalities of Covalima, Lautem, Manatuto, Manufahi, and Viqueque in Timor-Leste.

PEMSEA serves as an implementing partner of UNDP-Indonesia, the principal project representative, in implementing the regional and Papua New Guinea components of the project. The Indonesia and Timor-Leste components are being executed through their respective UNDP country offices.



Participating countries and sites in the ATSEA-2 Project (Map by ATSEA-2)

Expected deliverables of ATSEA-2 by 2024



- A functioning regional governance mechanism (RGM), supported by a Stakeholder Partnership Forum (SPF) and National Inter-Ministerial Committees



- Approximately 125 kilometers of coastline under ICM



- Establishment of new MPAs, strengthened management effectiveness of existing MPAs, and design of a regional MPA network



- Improved scientific knowledge regarding climate change impacts on the region and strengthened adaptive capacity of local communities



- Up to 25 percent of over-exploited fisheries in the ATS region moved to more sustainable levels



- Improved fisheries management of red snapper, barramundi, and shrimp fisheries



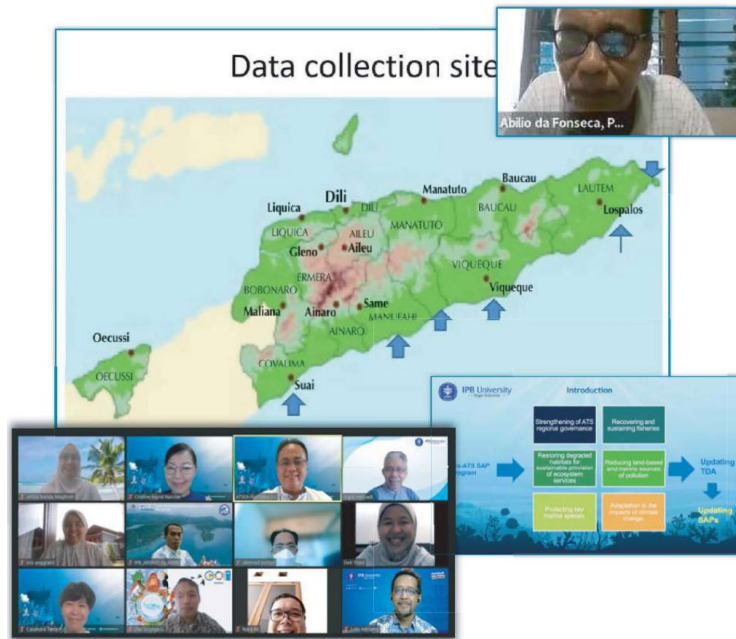
- Developed action plan on enhanced protection of marine turtles



- Oil spill response systems and procedures integrated in development planning in ICM sites



- Financing mechanisms in place for the implementation of the SAP and National Action Programmes for the sustainable development of the region



Meeting on the updating process for the Transboundary Diagnostic Analysis of the Arafura and Timor Seas (Photos by ATSEA-2)

Key accomplishments at the regional level

On Component 1 (regional, national, and local governance for large marine ecosystem management):

- **Completion of the following key regional activities and outputs:**

- ◊ Regional Governance Assessment and Guidance Document on the Development of the RGM and SPF; in-country consultations on the proposed structure and implementation arrangements for the proposed regional mechanism; 3rd Regional Steering Committee Meeting; and Consultative Meeting on the Regional SPF
- ◊ Climate Change Vulnerability Assessment Report and Guide for Decision-Makers on the use of the mentioned report; case study on the application of the guide for the preparation of a Community Action Plan for Oeseli Village in Rote Ndao Regency, Indonesia

- ◊ Training on Gender Equality and Social Inclusion (GESI) for regional and national project staff; implementation of Combined GESI and Social and Environmental Safeguard Survey with results feeding into a GESI analysis, GESI Action Plan, Social and Environmental Screening Procedure, and Social and Environmental Safeguard Management Plans
- ◊ Draft Financial Landscape Assessment Report, which will serve as reference in preparing a five-year financial plan for the updated SAP
- ◊ Commencement of the updating process for the Transboundary Diagnostic Analysis for the ATS region

- **Establishment of national coordination mechanisms for the ATSEA program:**

- ◊ **Indonesia:** National Project Board (NPB) meetings conducted; national

governance concept for Indonesia's National Inter-Ministerial Committee (NIMC) structure developed, along with the concept and draft legal framework for Indonesia's national representation on the SPF; province-level policy documents developed in Papua (for Kolepom MPA establishment, Kolepom Zonation Task Force, and IUU Fisheries Forum) and East Nusa Tenggara (Marine Pollution Task Force); and gender assessment and action plans completed for Rote Ndao and Aru Islands

- ◇ **Papua New Guinea:** NPB, NIMC, and SPF established and operational; assessments on legal framework on marine and fisheries management in relation to South Fly, stakeholder analysis and capacity evaluation, and biophysical and socioeconomic characteristics completed; and capacity development plan for the project prepared
- ◇ **Timor-Leste:** NPB operational; task force for ATSEA-2 project coordination established to guide the process of NIMC establishment in Timor-Leste; Letter of Agreement between the Ministry of Agriculture and Fisheries and UNDP was signed to facilitate better coordination and support for ATSEA-2 implementation in Timor-Leste

On Component 2 (improving the carrying capacity of a large marine ecosystem to sustain its ecosystem services):

Completion of the following key activities and outputs at the regional, national and sub-national levels:

- **Improving management of fisheries and coastal resources:**
 - ◇ **Ecosystem approach to fisheries management (EAFM):**
 - **ATS region:** Regional Fishery Baseline Report on Red Snapper and Regional EAFM Plan for Red Snapper completed; EAFM Training of Trainers conducted
 - **Indonesia:** Fisheries pre-assessment and value chain analysis of red snapper and shrimp in Aru Islands and barramundi in Papua completed
 - **Papua New Guinea:** Development of artisanal fisheries management plan for Papua New Guinea initiated; capacity development plan for training and awareness on sustainable fishing developed
 - **Timor-Leste:** Fishery baseline assessment and EAFM plan for red snapper in the Timor Seas completed; capacity building on sustainable fishing practices in Lautem, Manatuto, and Manufahi conducted
 - ◇ **IUUF:**
 - **ATS region:** Regional Baseline Assessment on IUUF, Review of Policies and Regulations on IUUF, Identification of Support for the Food and Agriculture Organization's Global Record of Fishing Vessels Refrigerated Transport and Supply Vessel (GRI), and Report on Co-surveillance Best Practices and Lessons Learned completed; collaborative discussions held with the Regional Plan of Action to Promote Responsible Fishing Practices including Combating IUUF in the Region (RPOA-IUU) on priority areas of collaboration and support from ATSEA-2; and enhancement of the Monitoring, Control, and Surveillance (MCS) Information System conducted

- **Indonesia:** IUUF assessment for Aru and Merauke; capacity building on marine fisheries resource surveillance, vessel registration, e-logbook, and data management and analysis conducted
- **Reducing marine pollution:**
 - ◇ **ATS region:** Regional assessment report and webinar on marine- and land-based pollution in the ATS region completed
 - ◇ **Indonesia:** Assessment report on marine- and land-based pollution in Rote Ndao completed; webinar on the mitigation and management of oil spills in Timor Sea conducted
 - ◇ **Timor-Leste:** Report on marine- and land-based pollution in the south coast of Timor-Leste completed
- **Conserving coastal and marine biodiversity:**
 - ◇ **ATS region:** Various research work completed (i.e., regional profile of ecosystem assets, valuation, and connectivity, and evaluation of pressures); proposed MPA network design and roadmap for new MPAs and Sea Turtle Action Plan endorsed by Australia, Papua New Guinea, and Timor-Leste (formal endorsement from Indonesia is expected in the second quarter of 2022); and training on virtual database and information management system conducted
 - ◇ **Indonesia:** Biodiversity atlas for ATS region focusing on Aru, Merauke, and Rote developed; status of habitats and ecosystems in Southeast Aru Island Marine Sanctuary as well as economic valuation for Kolepom and Aru completed; and Zonation Task Force in place in Kolepom
 - ◇ **Timor-Leste:** Community groups on marine turtle conservation identified and engaged in Nino Konis Santana National Park
- **Incorporating climate change in local ICM:**
 - ◇ **Indonesia:** Ecological and socioeconomic assessments related to ICM development in Rote Ndao completed
 - ◇ **Timor-Leste:** ICM baseline study and Strategic Implementation Plan in Posto Administrativo (PA) Barique (Manatuto) completed; protection of catchment areas in Manatuto and Manufahi against future erosion and mudslides promoted through tree planting activities

On Component 3 (knowledge management):

- Completion of Theory of Change for the SAP
- Increased stakeholder reach through ATSEA-2's social media, online newsletters, and website and other (external) online platforms and events

Being a non-GEF beneficiary country, Australia does not have specific activities under the ATSEA-2 Project, but the country actively participates in the development of the RGM, conduct of thematic regional assessments, and preparation of issue-specific regional plans and continues to carry out key activities that contribute to the implementation of the ATS SAP.

Voices from the ground: implementing ATSEA 2 in Timor Leste

Interview with Mr. Almerindo Oliveira da Silva, ATSEA-2 National Project Coordinator in Timor-Leste.

With 20 years of experience in development work covering value-chain promotion in agriculture, economic diversification, disaster risk reduction and emergency response, and climate change adaptation with a range of international organizations and government institutions in Timor-Leste, he currently oversees the delivery of activities, outputs, and targets at the national and sub-national levels for the Timor-Leste component of the project and helps ensure a clear and strategic alignment between the Regional Project Management Unit and the National Coordination Unit of ATSEA-2.

As the National Project Coordinator of Timor-Leste, what kinds of community-based learning and livelihood skills development are you pursuing in your jurisdiction and what are the expected benefits?

In support of the Strategic Development Plan for Timor-Leste (2011-2030) and the ATS SAP and NAP, the ATSEA-2 Project in Timor-Leste includes activities that promote institutional strengthening, stakeholder engagement, and capacity building to support the development and implementation of integrated programs for managing and conserving coastal and marine resources at the national and sub-national levels. Community-based learning and livelihood skills development are undertaken within the broader context of participatory program development and implementation, with key demonstration projects that show tangible benefits on the ground.

In PA Barique, Manatuto, ATSEA-2 supports the development of a local ICM program that considers climate change impacts. We facilitated



Mr. Almerindo Oliveira da Silva

a baseline assessment on climate change vulnerability and adaptation options for two coastal villages (Aubeon and Uma Boco) in PA Barique. Among others, the assessment provided recommendations on how marine and coastal environmental management programs can be formulated to integrate both livelihood sustainability and nature conservation. The findings from this assessment facilitated the process for developing an ICM plan for PA Barique, with full participation of local communities and an inter-agency ICM Sub Task Team, which outlined good practices for sustainable management of marine resources and climate change adaptation, including mangrove restoration and riverbank stabilization as well as alternative livelihood activities that complement conservation efforts. A marine pollution hot spot assessment at the Southern Coast of Timor-Leste also provided inputs and recommendations to the development of the ICM Plan for PA Barique.

In parallel with the technical assessment and ICM planning activities in PA Barique, the project organized awareness campaigns and training on plastic recycling for the community, a training on production of affordable fish feeds from locally available materials, and planting of over

2,000 seedlings, including those from fruit bearing trees, as part of climate change adaptation and income diversification through agroforestry. Then to protect their coastal areas and livelihoods from the risk of oil spills from the offshore oil and gas operations, we will also work to build the capacity of stakeholders in controlling pollution and developing an oil spill contingency plan.

In Betano Village, Manufahi, where the project is supporting the development of an MPA in line with the ICM approach, we have conducted training on boat engine repair and bottom longline fishing, fish handling, value addition to seafood products, and financial management, and supported the planting of 2,750 trees. The project has also identified a community (Aldeia Weberek, Suco Dotic, Posto Administrativo Alas in Manufahi Municipality) for demonstrating upland farming and drought-resilient home gardens in vulnerable coastal communities to help ensure food security and steer the communities away from income-generating activities that harm mangrove forests.

Further livelihood development and community empowerment activities will be undertaken in support of improving MPA management effectiveness in the Nino Konis Santana National Park and the implementation of the EAFM plan for red snapper in Timor-Leste

Can you describe what the situation is like in your communities before these activities and how they are now? Are there any improvements?

Prior to the ATSEA-2 Project, most of the communities were used to receiving free services and subsidies from the government

and expected financial benefits from every development project. They had little appreciation for research, assessment, and planning activities as they preferred practical projects with tangible benefits such as infrastructure. The people were also worried about development projects in their areas that were not sustained post-project and did not contribute to improving their livelihoods. The government also had limited capacity to translate the priorities and commitments in the Strategic Development Plan into practical plans that reflect and address concerns in local areas. There was also limited coordination among government institutions.

With their engagement in the ICM process where they were given the opportunity to define plans and livelihood activities that are sustainable and meet their expectations, the local community leaders



Conduct of the combined GESI and Social and Environmental Safeguards survey in Indonesia (Photo by UNDP Indonesia)

and local authorities have been showing more ownership over project activities. A Declaration of Commitment for the implementation of the ICM Strategic Plan for PA Barique and ICM Action Plan for Tokderek, Suco Uma-Boco, was expected to be signed by the Heads of PA Barique and Manatuto Municipality as well as the Director General for Fisheries of Ministry of Agriculture and Fisheries on January 7, 2022. The Declaration will facilitate the incorporation of the identified priority actions into the Suco Village Development Plans and work and budget plans of PA Barique, Ministry of Agriculture and Fisheries, and other concerned government agencies and partners.

The communities also recognize the value of the training provided. As an example, the training on value addition to seafood products for the women's groups can help these groups obtain more competitive prices for their products. Women groups were also trained to improve their financial management skills. On the other hand, fishermen who were trained on boat engine repairs also received fishing equipment from the Ministry of Agriculture and Fisheries. Their well-maintained boats can improve fishers' safety while out on the sea, prevent engine oil leaks, improve fuel efficiency, and help them go further into the sea. These will

eventually help fishers to avoid concentrating on nearshore fisheries that can otherwise lead to unsustainable resource exploitation. We hope to observe more benefits as the project implementation progresses in various sites.

What are the key lessons learned in implementing these activities?

- Integrated management approaches are necessary to drive economic growth while ensuring sustainable management and use of coastal and marine resources.
- The development of integrated management plans and programs will require active participation of the government and local people, public trust in the government, and presence of enabling conditions, including government commitment, mechanism for coordination and stakeholder participation, supporting policies and regulations, enabling capacities, and financial resource commitments, among others.
- More knowledge exchange between Timor-Leste and other countries in the ATS region is needed as this will enable the former to glean relevant insights from the more advanced countries.



Photo by UNDP Indonesia



TRADE MARK
QUIK  **SILVER**
WASH IN COLD WATER

Photo by UNDP Indonesia

“The fish resources here [in Merauke] are abundant and the women must play a role in improving their families’ economy through fish product processing.”

Interview with Ms. Hasnah Lampu Satu, Head of KUB Eltimo



Hasnah Lampu Satu (center) with (from left), Johanis Valentino Fofied and Handoko Adi Susanto of ATSEA-2, Hasnah's spouse Mahyudin, Kamal of Ministry of Marine Affairs and Fisheries (MMAF) Indonesia, Deti Triani of ATSEA-2, and Suprpto of MMAF Indonesia
(Photo by ATSEA-2)

Hailing from Merauke, Indonesia, one of the project sites of ATSEA-2, Hasnah is a prominent figure in her community. Her daily routine is a combination of regular housewife duties as well as processing of fisheries-related products, especially snapper and mackerel.

Several years ago, when her husband's boat capsized in heavy seas, he changed his livelihood from fishing to transport. Hasnah, however, has continued working in the home-scale fishing industry and formed Eltimo, a business group known in local language as *kelompok usaha bersama* or

KUB, in 2013 with the support of Merauke Regency Fisheries Service. The word *Eltimo* comes from the language of the Marind Tribe, an Indigenous group that continues to live in most areas in Merauke. It means “tasty food” and is generally used to describe delicious dishes.

Once established, KUB Eltimo soon began to get involved in training and exhibitions facilitated by the International Fund for Agricultural Development and Merauke District Fisheries Service. In 2017, they created their brand and logo to improve the marketing of their products.

With full control of the local fish production, KUB Eltimo is able to minimize the links in its supply chain and as a result, increase the added value of its fishery products. Raw materials are processed into various products that are popular commodities in local markets such as crackers (*amplang*, *kerupuk*, and *pilus*), fish balls (*bakso*), fish cake (*pempek*), nuggets, shredded fish, and shrimp paste (*terasi*). The necessary skills and experience required for making these products are either self-taught or imparted through training sessions held by the government and NGOs. The courtyard of Hasnah's house is currently used as a learning center, where women in the community can learn together and develop collaborative networks for the production of fishery products.

KUB Eltimo also serves as an information hub for surrounding households. In several activities organized by ATSEA-2 in collaboration with Destructive Fishing Watch (DFW) Indonesia, Hasnah has been disseminating information on the technical documents required for registering fishing vessels with KSOP (Port Authority and Harbourmaster Office) while also helping to profile the local social environment. By helping to mobilize women in outreach activities, she has significantly helped fishermen to run their operations more effectively and reach their targets. This also helps to bridge the information gap for men who spend a large amount of time at sea.

KUB Eltimo has the potential to provide additional support in the implementation of ATSEA-2 in Merauke; they can be engaged in the project's efforts to strengthen the capacity



Bakso and pilus from KUB Eltimo (Photo by ATSEA-2)

of local stakeholders in managing fisheries and other coastal and marine resources.

The following are excerpts from the project team's interview with Hasnah:

How did you feel when the ATSEA-2 Project was first introduced in Merauke?

The first time I heard about ATSEA-2 was when DFW Indonesia started to implement their program to combat IUUF in Merauke. My mother, on the other hand, had already heard about ATSEA as her husband took part in some of its activities under ATSEA-1.

While listening to DFW Indonesia, I was happy because I wanted our local fishers to get some support in registering their fishing vessels. Since then, I have helped bring the community together and provided information regarding vessel registration and also supported DFW Indonesia in organizing community meetings in my home. As a result, most people in the area have already registered their fishing vessels with KSOP.

What are the main challenges of KUB Eltimo?

So far, KUB Eltimo's products have been marketed in various places, including Jakarta, Jayapura, and Makassar. However,

the COVID-19 pandemic has made the market sluggish, rendering the distribution and sale of fishery products even more difficult. Under normal circumstances, KUB Eltimo is comprised of 10 women, predominantly housewives, who work part-time in fish processing. However, due to the pandemic, there are currently only four or five women actively engaged in this part-time work.

Our products are already Halal-certified but the period of validity of this certificate will expire soon. Given our current financial condition, we have neither processed the renewal of this certificate nor the application for securing a distribution permit from the National Agency of Drug and Food Control. Getting the approval for our application is also time-consuming. Without this permit, every product can only be made to order.

Our fish processing equipment remains rather limited. The development assistance that we have received so far is not sufficient to cover the processing equipment. When budgets for development aid are prepared, KUB Eltimo is normally at the back of the queue because we have already received support in the past.

We have limited product marketing. Products have been marketed online but more often as souvenirs for guests who come to Merauke, and even then, orders have to be

placed in advance to ensure product availability as we operate on a made-to-order basis.

Shipping costs out of Merauke are expensive. We can only ship our products when there are plenty of orders to minimize the cost of delivery.

We need training on financial management as our members have the wrong impression that the proceeds from our sales must be divided equally without deducting capital, whose cost we still need to roll over in the next production cycle.

How has the ATSEA-2 Project helped your community and the work you do at KUB Eltimo? Is there anything that the project can do better to help the community? Can you provide some examples of lessons learned so far?

At the moment, ATSEA-2 is playing a fairly minimal role in our day-to-day operations—generally in supporting the registration of fishing vessels and training on filling out the electronic logbook and monitoring system for fisheries.

We hope that ATSEA-2 can provide further assistance to us and other local fisheries-related business groups. Personally, I hope that ATSEA-2 can assist us in the application process for the distribution permit as well as provide support on product marketing and financial management. This way, communities can become independent and more prosperous.

Fighting plastic pollution: Philippine component of the ASEAN-Norwegian Cooperation Project on Local Capacity Building for Reducing Plastic Pollution in the ASEAN Region (ASEANO)



A student throws a PET bottle in a wire basket at a school in Cavite. Among the most effective initiatives to combat plastic waste are proper segregation for eventual recycling, aided in part by waste pickers and junkshops. (Photo by PRF/G. Yan)

ASEANO is a regional capacity building project led by the Norwegian Institute for Water Research (NIVA) and the Center for Southeast Asian Studies (CSEAS) Indonesia in close collaboration with PEMSEA and the ASEAN Secretariat under the purview of the ASEAN Working Group on Coastal and Marine Environment (AWGCME). The project, which runs from 2019 to 2022, is funded by the Norwegian Development Program to Combat Marine Litter and Microplastics. The main goal of the ASEANO project is to build capacity to tackle plastic pollution from the ASEAN region through improved knowledge and capacity-building on the sources, release, transport, and

fate of plastic pollution. The project has sites in Indonesia and the Philippines with some additional activities in Viet Nam.

The Philippine component is focused on the Imus River basin, which is one of the major tributaries of Manila Bay. PEMSEA serves as the project partner for this component, which is done in close collaboration with the Provincial Government of Cavite, through the Provincial Government of Environment and Natural Resources (PG-ENRO), and two local universities: Cavite State University (CvSU), one of PEMSEA's Learning Center, and De La Salle University–Dasmariñas (DLSU-D).

The project has undertaken environmental assessment and monitoring, researched the potential socioeconomic impacts of plastic pollution and responses to plastic use changes, worked to establish potential capacity building, and promoted education and information dissemination on marine plastic pollution reduction in the Philippines. All of these activities are patterned after similar activities in Indonesia and Viet Nam to determine good practices on tools and methodologies, strengthen law and policy enforcement, and improve stakeholder engagement insofar as plastic pollution is concerned in the ASEAN region.

2021 accomplishments

- **On research:**

- **CvSU** carried out mapping and characterization of the Imus River watershed using primary and secondary data sources. They also pinpointed the likely hotspot areas that may produce relatively high leakage of plastic waste; this was done through household waste characterization, remote sensing, and analysis of information gleaned from the local solid waste management plans.

Based on the findings of their studies, there are 222 *barangay* within seven local government units (LGUs) that overlap with the Imus River watershed. These *barangay* vary in population, geographical size, and land use. Waste mostly comes from residential areas; however, as homes can have mixed purposes (for instance, many have small home-scale stores or similar businesses attached), it can be difficult to classify waste by sectoral origin. The studies also note that with proper intervention in key areas, the amount

of plastic waste in Manila Bay feeding in from the Imus River watershed could be significantly reduced.

- **DLSU-D** studied the composition of plastic entering the river through a survey while carrying out studies on people's knowledge, attitudes, and practices concerning plastic waste, their ability and willingness to pay for anti-pollution measures, and the implications of plastic pollution mitigation initiatives concerning the Imus River.

The findings indicate that plastic pollution in the river largely differs between the wet and dry seasons and that microplastic concentrations increase further downstream.

They also revealed that the public is aware of the dangers of plastic pollution and that a positive relationship exists between the public's knowledge of plastic pollution and their attitude towards the same. However, out of 1,171 respondents, only 256 (21.9 percent) indicated that their income or savings benefited from the river; many cited heavy pollution as prohibiting use of this water body. Eighty-one percent believe that discipline in terms of waste segregation and disposal is important. Thirty percent of the respondents do not have the ability to pay for current pollution mitigation services. There is little willingness to pay significantly more for better waste management. It was also noted from the studies that public knowledge of actions taken to address plastic pollution is mostly limited to clean-up drives.

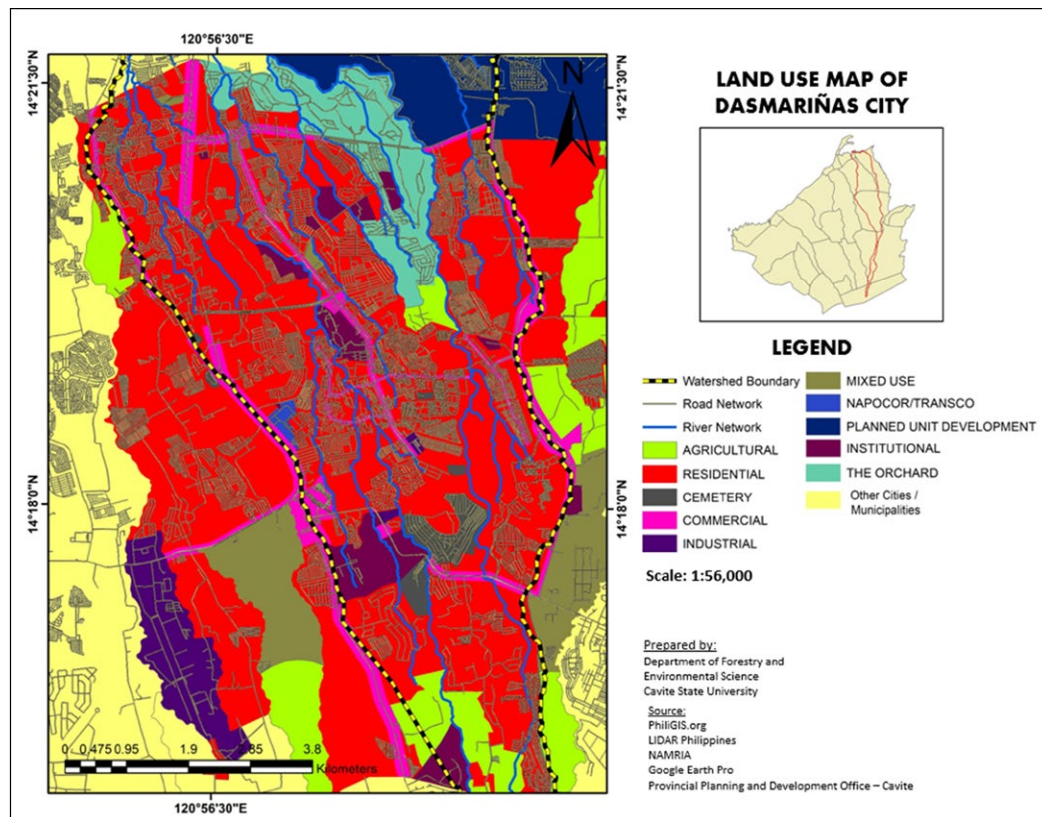
Considering these findings, the project recommends launching an information, education, and communication campaign

targeting all sectors of society and that incentives should be developed to promote plastic pollution reduction.

- **PRF** is currently conducting research and surveys on the practices of the food service industry in Dasmariñas City.
- **On education and outreach:** PEMSEA has translated the project’s research findings into easily accessible communication materials that target local governments and communities. These include the layman version of the studies on the hotspots of plastic waste in the Imus River; social implications of plastic pollution mitigation; and knowledge, attitudes and practices concerning plastic waste. The layman version can be accessed [here](#).

Information on the plastic pollution in the Imus River watershed, including future trends, are currently being developed by NIVA using a catchment-based model based on the completed studies of CvSU and DLSU-D.

Work continues on disseminating information and communicating the project results, with several publications targeted for completion in 2022. These include an LGU toolkit containing tools and resources to assist plastic pollution reduction and improve waste management at the LGU level; and an interactive map of the Imus River system (complete with stories, lessons learned, and other information) to be presented under the SEAKB.



Land use map of Dasmariñas City (Map by CvSU)

“The outputs of our three ASEANO subprojects helped fill in the research gaps about plastic pollution in the Imus River.”

Interview with Dr. Johnny Ching, Director of the University Research Office in DLSU-D



The City of Imus runs its own recycling points scheme where points earned from depositing recyclable materials at the local government can be exchanged for household goods. There is also a raffle system in place with one raffle ticket provided for each kilogram of residual plastic waste donated.

Dr. Ching is the project leader and point person for three ASEANO Philippine subprojects that were awarded to DLSU-D and also served as one of the researchers in one of the subprojects of CvSU. As project leader, he oversaw the technical and financial aspects of the DLSU-D subprojects, recruited faculty members as researchers for the teams, and made sure that the different tasks under each subproject were done according to their respective completion date.

How did you come to be a part of this project?

My involvement in the ASEANO project was made possible through Ms. Anabelle Cayabyab, the Head of PG-ENRO in Cavite.

We met during the Joint Cavite Water and Solid Wastes Summit held in DLSU-D in November 2019, where she introduced the possibility of inviting researchers from DLSU-D for a project concerning the Imus River and the City of Dasmariñas. As Director of the University Research Office, I welcomed the invitation and processed the needed papers for the research collaborations with PEMSEA.

How do you think this project can change the lives of people in these communities?

Reducing plastic pollution...would benefit the communities, directly or indirectly, especially in terms of their health and socioeconomic status.

Our subprojects helped produce the baseline information that is necessary to create and implement effective action plans and information, education, and communication programs that would mitigate plastic pollution in the Imus River as well as related coastal and marine waters...The outputs of our three ASEANO subprojects helped fill in the research gaps about plastic pollution in the Imus River.

“We need to first understand plastics and circular economy to be able to determine the proper actions in managing solid waste. There is no magic solution to the issue.”

Excerpts from the message of Ms. Anabelle Cayabyab, Head of PG-ENRO, Cavite, Philippines, during the EAS Congress 2021 event entitled “Replicable Models on Marine Plastic Pollution Monitoring” held on 9 November 2021

What we have learned from the experience of managing our solid waste in the province are:

1. **Attitude.** The main issue here is not the solid waste per se, but rather the attitude of the individuals in the

generation and management of solid waste because they think it is the sole responsibility of the government to collect and dispose of their waste. They do not want to participate in the process.

2. **Science-based approach.** Policies and programs on solid waste management should be informed by science.
3. **Facility.** We have various policies and ordinances in place, but at the end of the day, the province does not have any centralized or clustered facility for handling residual waste, which constitutes 30 percent of our total solid waste by volume.

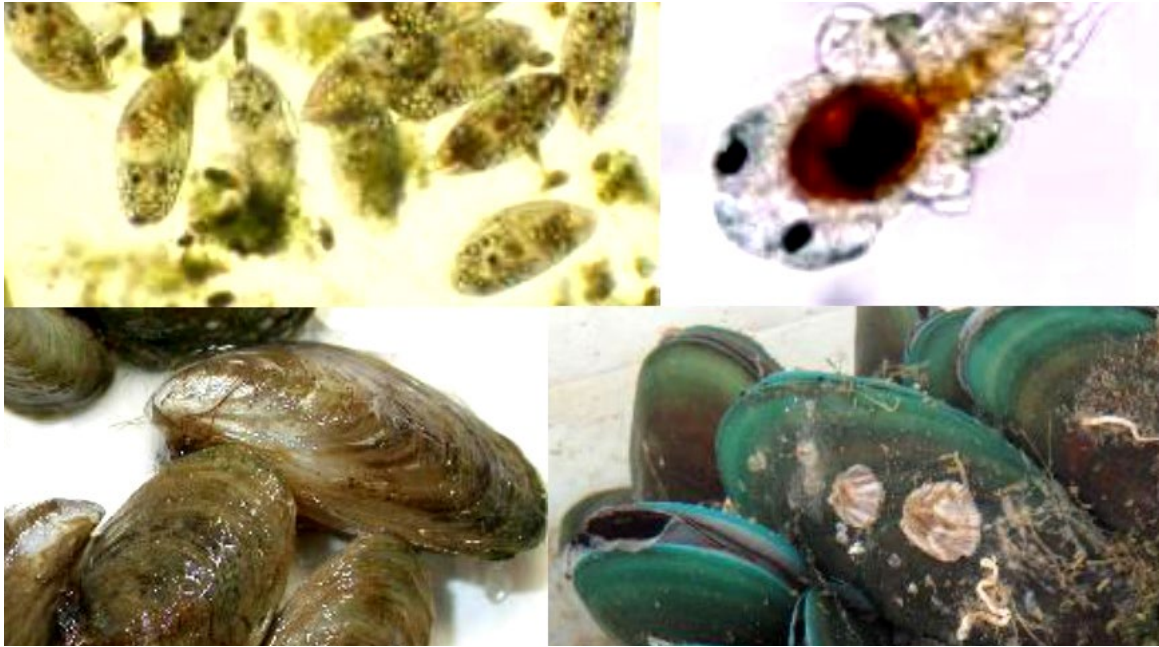
We need to first understand plastics and circular economy to be able to determine the proper actions in managing solid waste. There is no magic solution to the issue. The problem of plastic pollution needs everyone’s cooperation...especially in finding alternatives options to plastics... Based on our experience in Cavite, we feel that it is important to always start with needs assessment through inclusive local consultations so as to ensure a proper diagnostic of the [plastic pollution] issue, and eventually, ownership and buy-in on the solid waste management program.



Portions of the Imus River in Cavite are still in relatively good condition, with ample vegetation and aquatic life. Shown is an upland riverscape in Silang. (Photo by PRF/G. Yan)



Keeping invasive aquatic species at bay: The GEF-UNDP-IMO GloFouling Partnerships Project



Examples of species attaching themselves to maritime infrastructure and vessels in Singapore (Photo by NUS)

Invasive aquatic species can threaten the health of the world's oceans as these organisms can attach themselves to shipping hulls and other mobile infrastructure, allowing them to enter new environments around the world and disturb the ecosystem dynamics of local marine biodiversity. They may also compete with native organisms for limited resources and reduce biodiversity by causing the extinction of native plants and animals. Ballast water from ships, biofouling in submerged mobile marine structures, and aquaculture are the main culprits responsible for the unintentional transfer of these non-indigenous species.

Referring to the gradual accumulation of water-borne species on submerged structures, biofouling may appear as a harmless natural process. However, for ships and other structures, these organisms can eventually

contribute to corrosion and increased weight of these structures or decreased speed of moving parts, resulting in increased operational costs and carbon emissions within the maritime sector.

In response, the GloFouling Partnerships project was initiated by the IMO with funding from GEF and UNDP to protect marine ecosystems from the negative effects of invasive aquatic species. Launched in 2019, running until 2023, this global project focuses on the implementation of the IMO's guidelines on control and management of ship biofouling by delivering a range of governance reforms at the national level through technology transfer, capacity-building activities, and demonstration sites. PEMSEA serves as the project's regional coordinating organization for East Asia.

In 2021, PEMSEA, together with IMO, organized online knowledge sharing seminars with a view to develop and adopt harmonized national measures to manage ship biofouling. This will continue on in

2022. The regional stocktaking report on biofouling shared in these seminars revealed uneven policies and inadequate information and data to address the issue of biofouling.

Key messages from the regional awareness raising seminars

- **Biofouling is a pervasive challenge in Southeast Asia** due to warm waters and high marine biodiversity.
- **ASEAN countries lack the policy and legal framework for combatting biofouling** at both the national and regional levels.
- **Some PEMSEA countries are investing in R&D for technologies on biofouling removal, prevention, and management** as they realize the benefits of these technologies on the growth of the maritime industry and health of marine ecosystems.
- R&D efforts in identifying invasive aquatic species are globally ongoing, but **more work needs to be done in understanding their life cycle, preventing and managing their spread, and addressing their impacts on the economy and environment.** Countries like Indonesia and the Philippines, with support from the GloFouling Partnerships Project, are conducting a baseline assessment on the economic impacts and the regulatory and policy landscape related to biofouling and invasive aquatic species.
- To address biofouling and invasive aquatic species, there is a need for:
 - **Harmonized guidelines** to address these concerns at the regional level;
 - An **integrated information management system** at the national and regional levels;
 - A **inter-agency coordinating mechanism** in each country; and
 - **Awareness building and capacity development** for better understanding of and management response to these issues.
- Regional guidelines to address ship biofouling should:
 - **Align with the IMO Guidelines and explicitly address the specific conditions of the ASEAN region as well as the aspects relevant for the implementation of these IMO Guidelines in the region.**
 - **Ensure that national policies and strategies for ship biofouling management are coherent;**
 - **Promote access to the necessary information and technical and financial support to effectively implement the guidelines; and**
 - **Facilitate dissemination and exchange of experiences and lessons learned on ship biofouling management.**

Managing maritime discharge: EU-GIZ Ship Waste Management in Ports



Hauling of solid waste from *M/V St. Augustine of Hippo* at Batangas Port (Photo by PRF/A. Dacaymat, Jr.)

The EU-GIZ Ship Waste Management is a component of the “Rethinking Plastics: Circular Economy Solutions to Marine Litter” project running from 2019 until 2022.

The project is co-financed by the European Union (EU) and the German Federal Ministry for Economic Cooperation and Development and jointly implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, EU, and Expertise France. It supports the transition towards a circular economy for plastics in seven countries in East and Southeast Asia—namely China, Indonesia, Japan, Philippines, Singapore, Thailand, and Viet Nam—to contribute to a significant reduction of marine litter. The project aims to facilitate dialogue on plastic and waste between the

EU, regional organizations such as ASEAN, and partner countries, especially in terms of the environment, shipping, and industry. It seeks to improve plastic waste management such as by encouraging extended producer responsibility and promote sustainable consumption and production of plastics, especially through packaging design and standards.

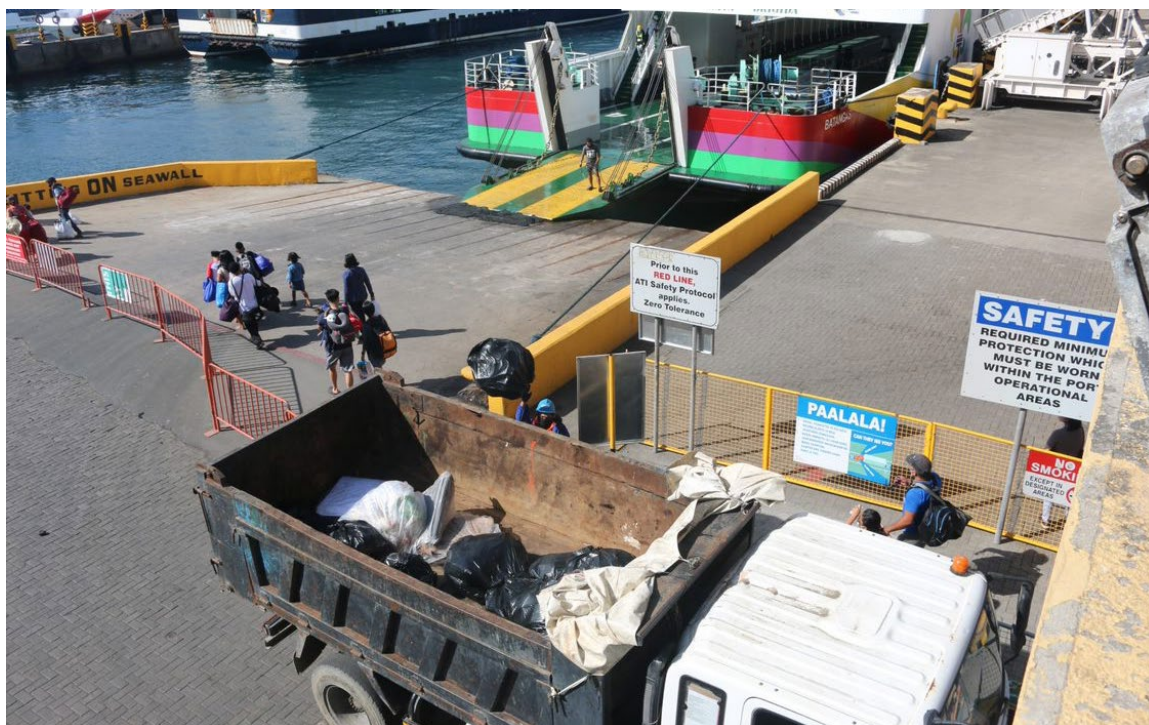
In relation to marine plastic waste, the project aims to improve waste management in ports, engage fishermen in waste collection, minimize the dumping of fishing gear at sea, strengthen green purchasing policies, share good practices, and raise awareness among the public on issues related to plastic consumption and its impacts on the environment.

PEMSEA implements the EU-GIZ Ship Waste Management in Philippine Ports, which aims to pilot-test a digital waste notification and cost recovery scheme at Batangas Port. A core project team comprised of the Philippine Ports Authority (PPA)–Port Operations and Services Department, Batangas Port, Expertise France, and PRF has been established. Other organizations involved in the implementation include the Department of Environment and Natural Resources, Maritime Industry Authority, and Philippine Coast Guard.

This project aims to demonstrate practices to sustainably reduce the discharge of ship waste, including cargo residues, into the seas and coasts of the Philippines while ensuring the smooth operations of maritime traffic and improving the availability and

use of adequate port reception facilities as well as the delivery of ship waste to these facilities.

Among the tools being applied are a mandatory advance waste notification system; optimization of processes for a cost recovery system; documentation of processes on ship waste handling and management in the port in the form of a Ship Waste Management Manual; and capacity-building of relevant port personnel and other stakeholders such as other mandated agencies, the shore reception facility provider, and shipping lines. The project also involves the review and assessment of relevant policies and regulations on ship waste management and aims to provide policy recommendations for strengthening ship waste management.



Hauling of solid waste from Batangas Port (Photo by PRF/A. Dacaymat, Jr.)

2021 accomplishments of the ship waste management project

- Consensus on the platform to be used for the mandatory advance waste notification system
- Development of the Ship Waste Management Manual
- Gathering of data for establishing the optimized cost recovery system
- Completed consultations with the shore reception facility provider and PPA to discuss options for streamlining payment processes in Batangas Port
- Identification of prospective topics for future training on ship waste management, to be supported by the project and linked with PPA's own capacity-building initiatives
- Development of policy/legal assessment identifying the gaps and challenges in the implementation of relevant policies as well as best international practices that can be adopted in the Philippines for improved ship waste management



Documentation of ship waste management processes in Batangas Port in March 2021 (Photo by PRF/A. Dacaymat, Jr.)

The 3Rs: Coca-Cola Foundation Philippines' Grant on Ecological Solid Waste Management in Cavite, Philippines



Community needs assessment in Bernardo Pulido (December 2021)

Funded by Coca-Cola Foundation Philippines, Inc. with a duration of 2020-2022, the project aims to implement the 3Rs (reduce, reuse, recycle) and assist in alternative livelihood and social development programs of the Caritas Diocese of Imus Foundation, Inc., a Catholic church-based social action group. These will be done through capacity-building for local governments and communities, enhancement of livelihood opportunities for target communities, and conduct of information, education, and communication campaigns on circular economy and solid waste management.

Immediate goals of the project



Establishing sustained solid waste management practices in **5 pilot communities from five barangay** in Cavite



Building greater awareness of recycling among a targeted population of **3,678,301 individuals**



Increasing solid waste diversion rate from 35 percent in 2020 to **45 percent by 2022**

Livelihood generation is an important component of the work. Four communities (Bernardo Pulido, General Mariano Alvarez; San Rafael 3, Noveleta; San Jose, Tagaytay City; and Bucana, Ternate) had been assessed for their livelihood and organizational capacity, and training sessions were conducted regarding circular economy, self-help for livelihood microfinance, livelihood planning, and financial management. The project has supported the livelihood of 110 individuals—mostly women—in the four communities. The Cavite Provincial Cooperative Livelihood and Entrepreneurial Development Office provided training for people from Caritas Diocese of Imus Foundation, Inc. and Barangay Bucana. The alternative livelihoods in Barangay Bucana were registered with the Department of Labor and Employment, with the products accredited under the One Town One Product initiative of the Department of Trade and Industry.

Four awareness raising and training sessions on solid waste management, circular economy, and livelihood development were completed in 2021. These were participated by 155 individuals from the five pilot communities (*barangay*) of the project.

With the goal of recalibrating the project to ensure that management interventions in solid waste management are community-owned and supported by updated waste data and information, a plastic circularity audit and community needs assessment were conducted in December 2021.

The plastic circularity audit, which entailed the survey of junkshops in the five cities and

municipalities (Amadeo, General Mariano Alvarez, Noveleta, Tagaytay, and Ternate) found that most of the recyclables (such as plastic, paper, glass, and metals), which account for about 13-26 percent of the total waste generation in their respective areas, are sold in junkshops. The audit also showed that junkshops in these areas receive about 200 kilograms to two tons of plastic waste every month. Plastic recyclables are bought by aggregators, which are mostly located in the province, and then brought to recyclers or plastic processors in Valenzuela and Las Piñas where they are converted into household plastic items (e.g., pails, dippers).

On the other hand, the community needs assessment was undertaken in five communities (Bernardo Pulido, General Mariano Alvarez; Bucana, Ternate; San Rafael 3, Noveleta; Banaybanay, Amadeo; and San Jose, Tagaytay) to understand the current practices, challenges, and gaps in solid/plastic waste management in the community. Initial feedback from the community consultation revealed limited implementation of proper segregation at source or at the household level, limited capacity of the community for proper segregation, and the need to reactivate or operationalize the materials recovery facilities in the various barangay.



Women in Bucana at work



Photo by PRF/M. De Guzman

Stories from our partners

China



Seeds of *Suaeda salsa* are planted in Dongying, China in September 2021. These plants have high salt tolerance and high value as traditional Chinese medicine and a vegetable, making them ideal species to restore vegetation in areas with high soil salinity. (Photo by MNR China)

In July 2021, the General Office of the Ministry of Natural Resources, China, issued the Technical Guidelines for Marine Ecological Restoration, which aim to improve the scientific, standardized level of marine ecological restoration in China to restore damaged or degraded marine ecosystems and coastal landforms and consequently improve the quality of ecosystem services of marine ecosystems.

The Guidelines serve as the overall normative document for marine ecological restoration in China. They clarify the

purpose, principles, types, general requirements, and technical processes of marine ecological restoration of typical ecosystems such as mangroves, salt marshes, seagrass beds, seaweed beds, coral reefs, oyster reefs, beaches, bays, estuaries, and islands. They provide evidence-based techniques for conducting ecological surveys, diagnosing issues on degradation, and determining restoration targets.

The Guidelines are currently being pilot tested in Dongying and Qingdao.

DPR Korea

In 2021, DPR Korea adopted regulations on coastal protection and management, implemented their national plan on marine resource protection, and adopted relevant measures for the building and maintenance of coastal protection facilities nationwide.

A member of the PNLC, Kim Il Sung University organized two short-term courses to

capacitate coastal management officers and experts in the field of ICM.

DPR Korea also conducted research to predict coastline changes in 50 years and is intensifying its research on the sustainable protection and management of the marine environment in the east and west coasts of the country.

International Environmental Management of Enclosed Coastal Seas (EMECS) Center

In collaboration with the United Kingdom-based Estuarine and Coastal Sciences Association, the International EMECS Center co-hosted the first online International Conference on the Environmental Management of Enclosed Coastal Seas (EMECS 13 Conference) on September 6-9, 2021, after it was postponed in 2020 due to COVID-19.

The conference was held with the theme “Estuaries and Coastal Seas in the Anthropocene: Structure, Functions, Services, and Management,” and drew 450 participants, including researchers and government officials from 47 countries. A total of 30 regular and special sessions were held along with ten keynote lectures, 277 oral presentations, and 86 poster presentations.

The regular sessions covered a wide range of topics such as environmental conservation and restoration, human impacts on the coast-estuarine system, pollution, contamination, and integrated coastal zone management.



Senior high school students from Japan with Hokkaido University Professor Ichiro Imai (third from left) and Kobe University Professor Hiroshi Kawai (third from right) during the *Students and Schools Partnership* session (Photo by Intl. EMECS Center)

The three special sessions organized by EMECS—namely “ICM and *Satoumi*,” “Plastics in the Sea,” and “Students and Schools Partnership”—were held in a hybrid (online and onsite) format at Kobe Portopia Hotel, Japan. In the third special session, senior high school students from Japan, Germany, and the United Kingdom gave their presentations on topics such as marine debris, overfishing, and ocean acidification and received praise from viewers for their high quality of research.

¹ *Satoumi* is defined as marine and coastal landscapes that have been formed and maintained by prolonged interaction between humans and ecosystems.

IPIECA

In 2021, the Oil Spill Group of IPIECA issued the Technical Support Document on Oil Spill Surveillance Planning to help operators navigate the steps in implementing and maintaining a surveillance program during an oil spill response situation. The group also produced a one-page infographic to remind operators and responders of the responsible use of oil spill dispersant. This will be followed up with a video in 2022. In addition, the group began updating the existing Incident Management Systems Good Practice Guide and will be including revised sections on forward planning and response during a pandemic. Other good practice guides—covering responder health and safety and other exercises—were revised to include sections on pandemic management. The group worked with International Tanker Owners Pollution Federation Limited to update the Oil Spill Compensation Guide as well as the IMO to update the Readiness Evaluation Tool for Oil Spills and convert the tool into a web-based application for completion in 2022.

IPIECA made the proprietary Shoreline Response Program training program developed by British Petroleum available to a wide group of stakeholders to customize for their own use.

The IPIECA–IMO Global Initiative for Southeast Asia carried out a number of region-specific efforts. It launched a remote legal assistance program to support ASEAN member states to effectively implement key provisions in existing instruments on oil spill preparedness, liability, and compensation. This program is expected to conclude in the first half of 2022.



Oil spill response: Should you spray dispersant?

If you are planning on using dispersants, call an expert first. For free advice 365 days: call your regional dispersant approval agency or your local Global Response Network member

- Do you have permission from the government authorities to spray dispersant? **NOVICE** → Ensure you have government approval
- Is the oil black, brown or true colour? **NOVICE** → Oil is too thin (Indescent rainbow coloured, or silvery)
- Is the oil liquid, does it flow? **NOVICE** → Oil is too thick (Tar, tar balls, or high viscosity oils; Molasses or chocolate-coloured heavier oil)
- Is the oil in the sea? **NOVICE** → Only use dispersants in the open water (Oil spills on land; Oil spills in rivers and lakes)
- Have you considered the distance to shore and that the water depth is not too shallow i.e. less than 10 m water depth? **NOVICE** → In water depths of less than 10 m, seek advice from local regulators and experts (Oil spills near the shore, harbours and estuaries; Oil spills in mangroves or near reefs)
- Have you checked that there is no coral reef, water intake or other highly sensitive subsurface feature? **NOVICE** → If sensitive subsurface features are present (Oil spills near coral reefs; Oil spills near water intakes)
- Do you have the right personal protective equipment and can apply dispersants safely? **NOVICE** → Ensure you have the correct PPE
- Have you checked to see if the dispersant works on the oil spill? **NOVICE** → On how to do a simple test to confirm dispersant effectiveness, before doing a full operational spray run
- Do you have a monitoring plan in place to keep checking if the dispersants are working? **NOVICE** → On how to make a simple monitoring plan

• Dispersants may be the best response option if used correctly.
 • Follow the industry approved guidance and use 1 part dispersant to 20 parts spilled oil. Use the appropriate application equipment, making sure the dispersants land on the slick as small droplets.
 • Watch to check if it's working. Look for a coffee-coloured plume forming and spreading below the sea surface. If you see a milky-coloured plume around the oil spill's edge, or there is no change to its appearance, the dispersants are probably not working.
 • Be ready to STOP spraying and use different response tactics at any time.

IF IN DOUBT, ASK AN EXPERT! 365
 Call your regional dispersant approval agency, or call your local Global Response Network member. Find your local contact number at globalresponsenetwork.org/enquiries

Global Response Network

Visit www.ipieca.org or www.iopg.org for guidance on dispersants and other oil spill preparedness and response resources

Infographic on the responsible use of oil spill dispersant

Korea Marine Environment Management Corporation (KOEM)

In 2020, KOEM introduced the Banryeo-Beach Program, in which companies, social groups, and schools adopt a beach to look after as if it were a *banryeo*.² Starting with three locations in Jeju in 2020, a total of 23 organizations have adopted 20 beaches as their banryeo beach as of 2021.

In 2021, areas with damaged ecosystems from industrialization were selected as primary locations to implement the tidal flat restoration project of KOEM. This project was selected as part of the Green New Deal, one of three major elements of the Korean New Deal, which was introduced in 2020 as

a national development strategy to support COVID-19 recovery and lead international efforts to adapt to the structural changes needed for a digital, green economy in a post-pandemic world. This includes a list of investment projects to propel the country towards the vision espoused by the New Deal.

On the other hand, in support of the country's pledge to achieve carbon neutrality by 2050, KOEM implemented the national blue carbon monitoring and inventory system in 2021 to calculate national greenhouse gas statistics in coastal wetlands.

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

Japan hosted the Olympics in the summer of 2021, after it was postponed in 2020 due to the global pandemic. As part of the Olympics, a sailing competition was held from July 25 to August 4 in Enoshima, about 60 kilometers southwest of Tokyo. OPRI-SPF convened the 183rd Ocean Forum at Hayama Marina on July 20, 2021 as a prelude to the sailing competition to draw people's attention to ocean issues. It was the first time in its history that the Ocean Forum was held outdoors.

Dr. Hide Sakaguchi, President of OPRI, and Mr. Masanori Kobayashi, a Senior Research Fellow at the institute, held discussions with professional sailor Mr. Norio Igei, sailing photojournalist Mr. Jun'ichi Hirai, and



(SEATED FROM LEFT) Mr. Kobayashi, Mr. Hirai, Mr. Igei, Ms. Hirata, and Mr. Sakaguchi during the 183rd Ocean Forum at Hayama Marina
(Photo by OPRI-SPF)

Managing Director of the Climate Network and 2021 Goldman Environmental Prize recipient Ms. Kimiko Hirata.

Mr. Igei explained how sailors try to reduce the use of disposable plastics and promote recycling to take care of

² *Banryeo* means "companion" in Korean.

the marine environment. The event also provided children with an opportunity to ride a sailboat and play on the beach to make them appreciate the benefits of the ocean, be sensitive to the changes therein, and encourage them to take care of and value this important resource. School programs used to allow students to play on the beach and swim in the ocean. However, these programs were abolished in recent years in consideration of children's safety.

Mr. Hirai spoke about sailing competitions around the world and noted how sailors need a clean and healthy ocean as a space for the competition. He, alongside Mr. Igei and Ms. Hirata, expressed hope that the Olympic sailing competition would help raise awareness on the importance of the ocean that sustains life and that ocean protection requires collective effort.

Oil Spill Response Limited (OSRL)

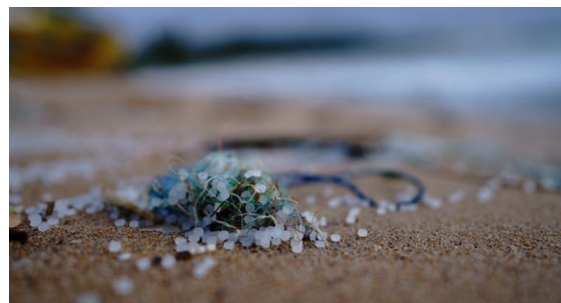
Supporting cooperation for oil spill preparedness and response within the Gulf of Thailand remains a key focus for OSRL in the Asia Pacific region. Beyond this gulf, OSRL has been responding to the ongoing X-Press Pearl incident in May 2021 in Sri Lanka and has since been working closely with the International Tanker Owners Pollution Federation Limited and Marine Environment Protection Agency on behalf of the London Protection and Indemnity Club to support local clean-up operations. They also participated in various webinars hosted by ATSEA-2 as well as the Clean Pacific Round Table hosted by the Secretariat of the Pacific Regional Environment Programme to raise awareness on oil spill risks within the Asia Pacific.

In recognition of the importance of financing in oil spill disasters, OSRL worked closely with Malaysia to engage relevant government agencies in developing a working document to enhance the mobilization of international resources in Malaysia in the event of a large-scale oil spill event.

OSRL also collaborated with leading international wildlife organizations to develop Global Oiled Wildlife Response Services and delivered webinars to raise awareness on oiled wildlife response.



X-Press Pearl on fire in the days leading to its sinkage and spillage of various chemicals and plastic pellets into the sea
(Photo by SLPA/N Ilangamuwa)



Plastic pellets from the X-Press Pearl washed ashore at Mirissa Harbour, Weligama, Sri Lanka. (Photo by S. Funk)

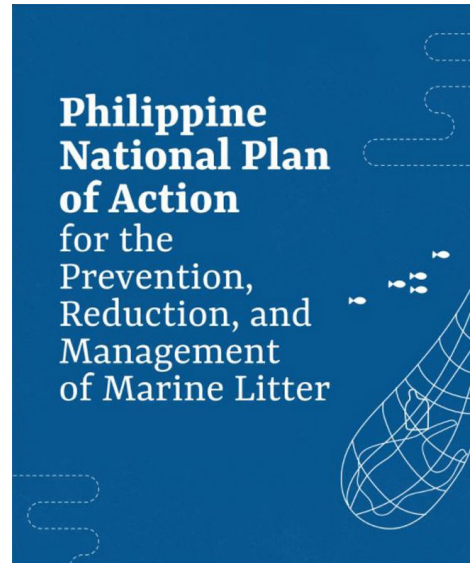
Philippines

In 2021, the Department of Environment and Natural Resources actively provided technical expertise to the Philippine Congress to expedite the passage of the ICM bill and operationalize the Philippine Rise as marine protected area.

Furthermore, the National Solid Waste Commission adopted the National Plan of Action for the Prevention, Reduction, and Management of Marine Litter in 2021, demonstrating the commitment of the Philippine government to combating marine litter. The plan has an overarching goal of zero waste in Philippine waters by 2040.

In the same year, the DENR prepared the National Implementation Report on Land-based Pollution for the Strategic Action Programme for the South China Sea and Gulf of Thailand Project. The report covers

the proposed national outputs and activities on addressing land-based pollution in the Philippines and is to be complemented by regional activities as summarized in the regional counterpart report.



Plymouth Marine Laboratory (PML)

PML is part of the Closing the Loop project of the UN Economic and Social Commission for Asia and the Pacific (UNESCAP). Supported by the Government of Japan, the project aims to build the tools and technology for measuring and monitoring plastic waste in Surabaya, Indonesia; Kuala Lumpur, Malaysia; Nakhon Si Thammarat, Thailand; and Da Nang, Viet Nam. Using innovations such as artificial intelligence, satellite imaging, drones, citizen science, and waste flow modelling, the project is able to pinpoint the source-to-sea movement



PML Director of Science and Deputy Chief Executive Steve Widdicombe as resource speaker at one of PML's events during the UNFCCC COP 26 (Photo by PML)

of plastic leakage and provide sound recommendations to combat the problem of plastic waste. In 2021, PML, together with other project partners, released a series of e-learning modules on innovative tools and practices related to plastic pollution monitoring and management.

Additionally, as an accredited observer organization for the UN Climate Change Conference of Parties (COP), PML had over 25 ocean events at COP 26 in Glasgow, Scotland last October 31 to November 13, highlighting the ocean's role in combatting climate change and the consequences of global warming on the ocean and society.



Baseline assessment of plastic pollution in Da Nang is conducted to support the development of a city level action plan to reduce plastic pollution. (Photo by CTL Project)

RO Korea

During the 2021 Partnering for Green Growth and Global Goals (P4G) Seoul Summit organized by the Ministry of Ocean and Fisheries in May, an oceans special session was held, where various ideas on public-private collaboration regarding carbon neutrality and marine waste management were presented and discussed.

Months later in October, the Korean government presented a blueprint to deliver negative carbon emissions of over 3.2 million tons by 2050 and established the 2050 Carbon Neutrality Roadmap to further drive the reduction in greenhouse gas emissions and increase in carbon

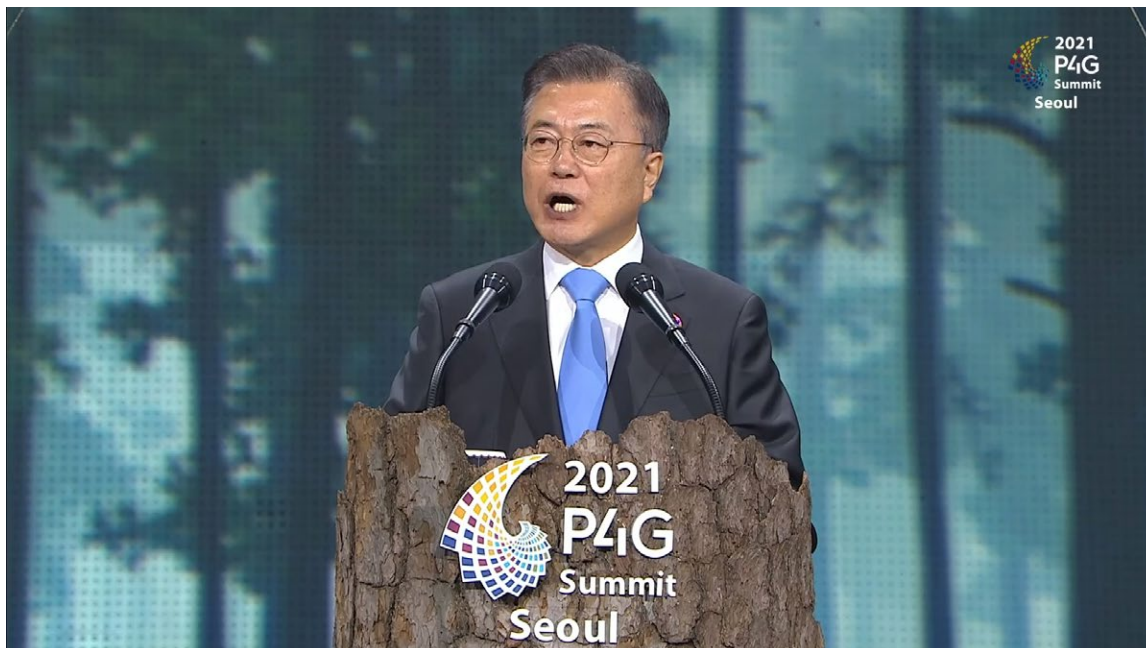
sinks in sectors such as shipping, ports, fisheries, marine energy, and blue carbon.

It hosted the Korea-Indonesia Blue Carbon joint event for the United Nations Framework Convention on Climate Change (UNFCCC) COP 26 on November 3, 2021 to lead international discussions on carbon neutrality strategies in the ocean and fisheries sector.

The government rolled out the First Marine Waste Master Plan (2021-2030) and the First Comprehensive Plan for Air Quality Improvement in Port Areas (2021-2025) to reduce marine waste and fine dust, which are both considered as major hazards for the marine environment, at ports.

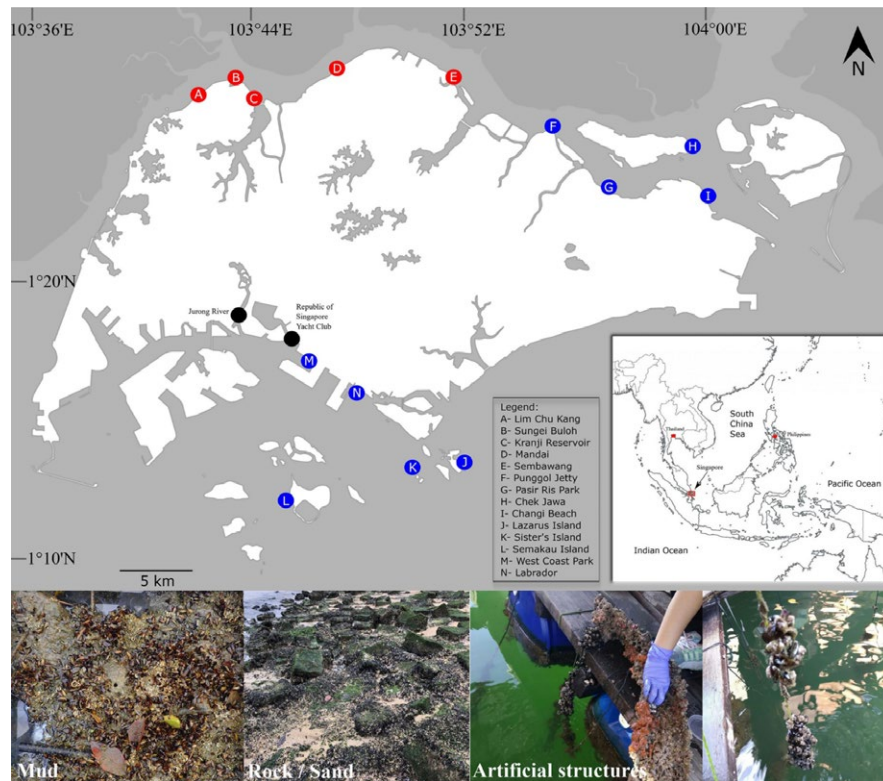
The government has also set up Marine Litter Management Commission, a whole-of-government venue for relevant ministries, other public institutions, and professional experts to discuss and share various action plans to achieve reductions in marine litter.

In addition, as tidal flats in four sites in RO Korea were included in the list of World Natural Heritage Sites, the Korean government implemented an integrated tidal flat management plan and rolled out policies to ensure the sustainability and biodiversity of these marine ecosystems. It added eight names to the list of marine protective species and established the First Comprehensive Aquarium Management Plan (2021-2025).



Former RO Korea President Moon Jae-In provides the opening remarks at the 2021 P4G Seoul Summit.

Singapore



A map of *Mytella strigata* distribution in Singapore (Yip et al., 2021). Red circles represent positive detection of *M. strigata* by both eDNA-qPCR analysis and field surveys, blue circles represent no detection by both methods, and black circles indicate *M. strigata* presence recorded by Lim, et al. (2018). The inset map shows the locations of *M. strigata* invasion in Southeast Asia whereas the photos show various substrate types with dense mats of *M. strigata*.

Under the Singapore Green Plan 2030 that was launched in 2021, Singapore aims to have an additional 200 hectares of nature parks by 2030 in line with its integrated urban coastal management framework. Nature parks serve as buffers and complementary habitats for Singapore's native flora and fauna. The country is also nurturing nature through enhancement and restoration of coastal and marine environments and biodiversity. By 2030, Singapore aims to restore and enhance 30 hectares of forest, marine, and coastal habitats.

On research and development, the country's National Parks Board (NParks) has conducted coastal marine habitat mapping studies to produce high-resolution habitat maps that can be used as base reference for ecological research, conservation, and urban planning efforts. It also launched a new Marine Climate Change Science program to better understand the response of local marine ecosystems to increasing environmental pressures and develop nature-based climate solutions. NParks is also collaborating with Nanyang Technological University to develop new technologies such as Eco-Cement, an

eco-friendly coastline protection material. Together with the National University of Singapore, NParks also developed a protocol for monitoring the invasive *Mytella strigata* mussel using environmental DNA detection from water samples, which will enable early detection and management of this invasive mussel species, particularly in ecologically sensitive areas.

Singapore is supporting the IMO's target to reduce greenhouse emissions from international shipping by half from 2008 levels by 2050. In 2021, IMO and Singapore jointly launched the NextGEN (Green and Efficient Navigation) virtual ecosystem to facilitate information sharing on decarbonization initiatives across the maritime industry, with the aim of seeding potential collaboration across stakeholders. To date, NextGEN encompasses over 150

maritime decarbonization projects with over 540 partners and 13 fuel types. NextGEN was also presented at the EAS Congress 2021.

The Maritime Port Authority of Singapore and PSA Corporation have sought to balance environmental protection and port development in the ongoing construction of the Next-Generation Tuas Port, which when fully developed in 2040, will be the world's largest fully automated terminal in a single location, with the ability to handle 65 million TEUs (twenty-foot equivalent units or containers). In operating the new Tuas Port, PSA Corporation aims to achieve net zero emissions by 2050 by using electrified equipment and vehicles, smart power management platforms, and green buildings. The relocation of all existing container port terminals in Singapore to Tuas will help eliminate inter-terminal haulage and associated emissions.



Envisioned design for the Next-Generation Tuas Port (Photo by MPA Singapore)

Viet Nam

In 2021, Viet Nam developed a number of policies and implemented various activities related to the SDS-SEA IP 2018-2022:

- National and local multi-sectoral coordination mechanisms for coastal and marine economic development have been implemented synchronously and effectively.
- The law on marine and island resources and environment has been widely implemented through the replication of ICM in coastal provinces.
- National marine spatial planning, including the master plan on sustainable exploitation and use of coastal resources, was developed based on the ecosystem approach.
- The National Assembly passed the Revised Law on Environmental Protection as an updated version to the original (2014) version. Taking effect on January 1, 2022, the revised law will provide communities with a larger role in conservation and impose responsibilities on corporations. Owners of factories will be required to use the best available technology in controlling pollution and limiting environmental impacts. The new law also has provisions on plastic waste and extended producer responsibility.
- Topics on coastal and marine management, climate change, and risk assessment have been integrated into undergraduate and graduate training programs.
- Research and surveys on marine resources and management of ocean plastic waste have been strengthened.
- International cooperation was promoted with new collaborations signed with Clean Cities, Blue Ocean; Asian Development Bank; and GIZ.
- Viet Nam developed and published reports on the state of coastal areas and resources at the national and provincial levels.





Photo by UNDP Indonesia

PEMSEA's presence in key global and regional events

As a leading and recognized authority on sustainable coastal and marine development in the EAS region, PEMSEA participated in a number of high-level events on the global and regional scales, where PEMSEA's representatives served as keynote and resource speakers and panelists on a number of topics.



On blue economy

- Presented the regional context and expected impacts of marine spatial planning in East Asia during a **workshop organized by the Food and Agriculture Organization and IMO** to discuss the role of marine spatial planning in the implementation of blue economy strategies in fish ports.
- Discussed the links between marine spatial planning and blue economy at the IOC event entitled **"Marine Spatial Planning Dialogue: South China Sea and Gulf of Thailand Large Marine Ecosystems."** The dialogue was organized along the sidelines of the Regional Working Group Meetings for the UNEP/GEF Project on Implementing the Strategic Action Programme for the South China Sea and Gulf of Thailand.
- Shared examples of local practices on building a blue economy through integrated management solutions in the EAS region at the **Asia Pacific Climate Week 2021**.
- Served as resource speaker on collaboration towards blue economy development during the **2021 World Ocean Week in Xiamen**.
- Took part in the **IMO-UNEP-Norway Zero- and Low-Emission Innovation Forum** that exchanged best practices, ideas, and developments in maritime decarbonization, especially for the benefit of least developed countries and small island developing states.
- Presented PEMSEA's assessment of the current situation of and projected future pathways for reducing greenhouse gas emissions in the shipping industry of the EAS region as well as their implications on Incheon Port in RO Korea at the **2021 Incheon International Ocean Forum**.



On water security

- Served as a panelist to discuss emerging solutions and areas for collaboration in the field of water security and quality at

the **1st Water Security Dialogue: Solutions for a Changing Region** organized by ASEAN and Mekong River Commission.



On marine pollution

- Served as a keynote speaker in another milestone event, the **1st Regional Clean Seas Youth Forum**, which is a platform for the youth to share their novel ideas and practical experiences on reduction and mitigation of land-based sources of marine pollution, particularly those concerning nutrients, wastewater, marine litter, and microplastics.
- Joined the **launch of A New Treaty on Plastic Pollution: Perspectives from Asia**,

a publication of the World Wide Fund for Nature Singapore that shows how a new global treaty on marine plastic pollution can benefit the EAS region. The report also identifies common themes and outlines of differing views to inform the international debate and to ensure that perspectives and concerns of Asian countries are reflected in the elements of this treaty.



On climate change

- Joined the **launch of the “Coastal Zones Under Intensifying Human Activities and Changing Climate: A Regional Programme Integrating Science, Management and Society to Support Ocean Sustainability.”** This project of Xiamen University (China) is one of the endorsed actions under the UN Decade of Ocean Science. It aims to examine the trajectories of six model East Asian coastal ecosystems over the past 50 years and predict their future (30-year) direction and consequently

help facilitate the effective integration of science, governance, and society to change the business-as-usual scenario in these areas.

- Served as opening speaker in the Korea International Cooperation Conference on Oceans and Fisheries (to discuss recommendations on the focus and priorities of RO Korea's official developmental assistance in the marine and fisheries sector) as well as the 2021 International Symposium of Blue Carbon.



On ocean governance and cooperation

- Served as a panelist in a session covering ocean restoration at the **1st World Ocean Summit Asia-Pacific**; resource speaker on developing sustainable coastal cities at the **World Ocean Forum 2021**; and as participant in the **Advisory Board Meeting for Asia Pacific of the Global Ocean Forum**.
- Shared PEMSEA's recommendations on strengthening regional marine cooperation in Asia during the **7th China-Southeast Asian Countries Marine Cooperation Forum**, **Philippines-China Think-Tank Dialogue on Ocean Governance and Maritime Cooperation in the South China Sea**, **Guiyang International Forum on Ecological Civilization**, and **14th Coordination Committee Meeting of the RPOA-IUU**.

In all these events, PEMSEA lent its presence to share expertise, drawing from decades of experience in sustainable coastal and marine development.



PEMSEA participated in The Economist's 1st World Ocean Summit Asia-Pacific in 2021.

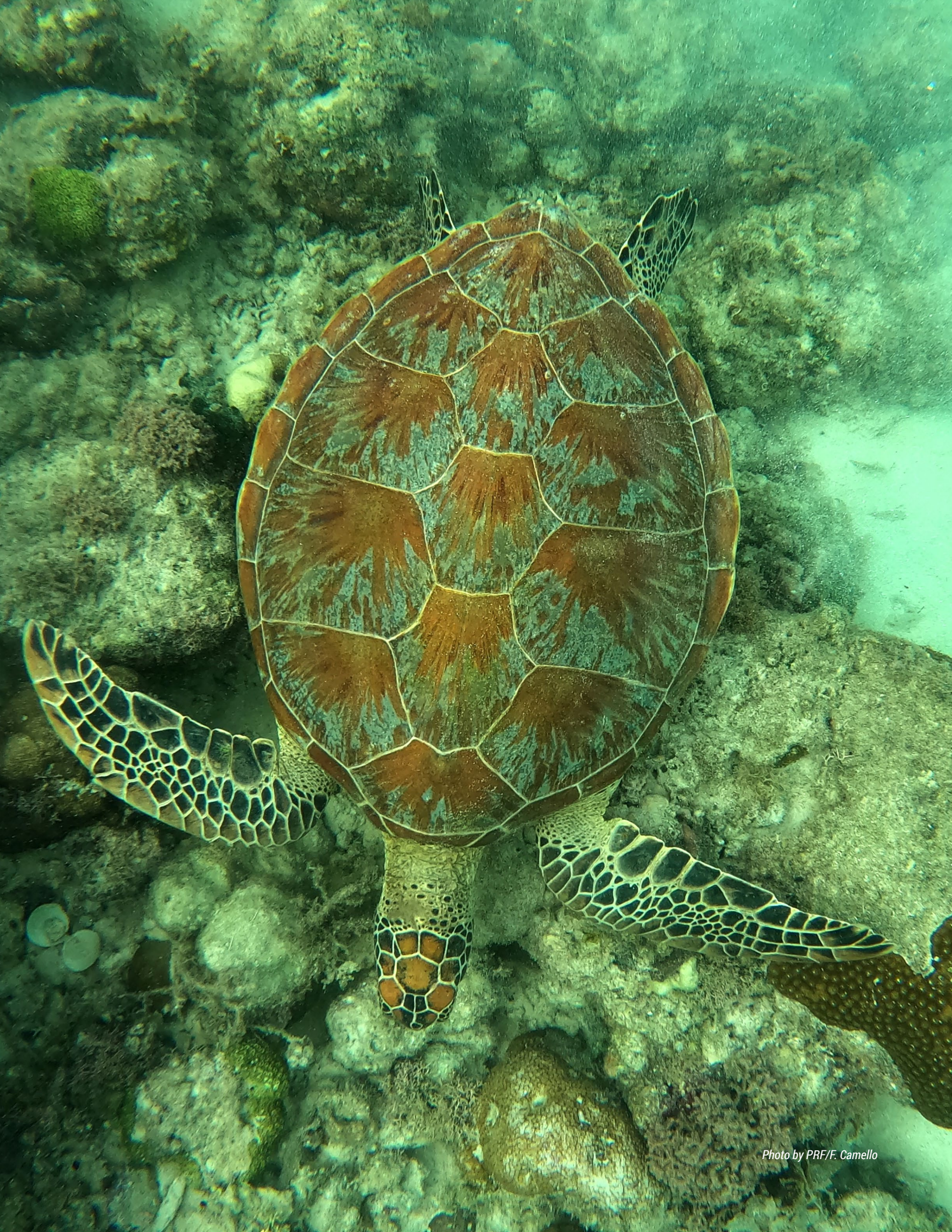


Photo by PRF/F. Camello

Knowledge products: Getting the message across



A Rapid Assessment Study on Biofouling Management and Invasive Aquatic Species in the EAS Region

Published in July 2021, this study, concerning the EAS region, identified invasive aquatic species found in the region; compiled and classified laws, policies, and studies related to biofouling; documented institutional arrangements, capacity, and available resources; and identified key stakeholders in biofouling management.

In the course of the study, a survey was conducted to gather data from eight countries: Cambodia, China, Indonesia, Malaysia, the Philippines, RO Korea, Singapore, and Thailand. The study revealed the absence of national biofouling strategies in the surveyed countries despite all countries being signatories to the Convention on Biological Diversity, which mandates countries to conduct national biodiversity planning.

The study serves as a crucial reference material in the region's efforts to harmonize national strategies on biofouling management.

[DOWNLOAD](#)



Shipping and Greenhouse Gases in the Seas of East-Asia Pacific: The International Situation and its Implications for the Port of Incheon

This paper assessed the current situation and expected future pathways for reducing greenhouse gas emissions in the EAS region and their implications on Incheon Port in RO Korea. It was prepared by the PRF for the Incheon Port Authority and was presented in the 2021 Incheon International Ocean Forum, where marine logistics scholars, entrepreneurs, government officials, and other stakeholders shared ideas on maritime shipping.

The study is necessitated by the fact that shipping emissions have increased over the years to 1,076 million tons in 2018, equivalent to 2.9 percent of total greenhouse gas emissions (IMO, 2020). Most of these emissions are believed to come from ships in the Seas of East Asia, which carry over 90 percent of the world's shipping trade and hosts the world's busiest ports (PEMSEA, 2021).

[DOWNLOAD](#)



Sea Change: The PEMSEA Story—28 Years of Collaboration for the Seas of East Asia

PRF, with the support of GEF and UNDP, published this coffee table book that features the reflections of some of the men and women who helped PEMSEA on its journey over the past 28 years. The book also drew from key historical documents written by PRF staff throughout the years.

It covered the initial pollution development projects and the successful implementation of ICM in Xiamen, China; the development and scaling up of the SDS-SEA; PEMSEA's evolution into a distinct legal personality; the expansion and widespread adoption of ICM; the State of Ocean and Coasts monitoring and reporting mechanism; the birth of the PNLC and PNLC; country partners' perspectives on the benefits of their engagement with PEMSEA; building a blue economy in the EAS region; and PEMSEA's way forward in the wake of COVID-19.

[DOWNLOAD](#)

World Bank/PEMSEA Assessment of Policies and Regulations to Guide Country Dialogue at National Level and Facilitate Actions at Local Levels to Reduce Plastic Waste in the Philippines

According to this study developed by PRF for the World Bank, annual global plastic flows into the ocean are expected to reach between 23 and 37 million metric tons by 2040, a disastrous scenario for all sectors: human communities, businesses, and ecosystems. Four identified trends are exacerbating the problem: population growth; increase in plastic use due to increasing production of cheap, virgin plastic; a shift to low-value, non-recyclable materials; and growing plastic consumption in countries with low rates of plastic waste collection.

In the Philippines, the lack of plastic waste data, including market information, and unclear waste production, consumption, and post-use patterns have resulted in many challenges in the management of waste, particularly single-use plastics.

The assessment presented a business-as-usual scenario that presented the likely future situation should no interventions are made. It also made an inventory of existing policies on solid and plastic waste management, covering the aspects of production, collection, and recycling.

From its study of current laws, policies, and programs, the assessment provided four key pathways for intervention, namely to capture and contain solid waste; reduce the production and use of unnecessary waste, particularly select single-use plastics; develop markets for recycled products; and design materials with plastic circularity in mind.

Expanding horizons: In the works

We continue to work on the following project proposals and hope to implement them in the next five years. These projects build on the concept of ICM and expand PEMSEA's portfolio by covering integrated river basin management; integrated transport modalities linking ports, ships, and hinterland transport to reduce greenhouse gas emissions; and management of marine protected areas in large marine ecosystems.



GEF/UNDP/ASEAN/PEMSEA Reducing Pollution and Preserving Environmental Flows in the East Asian Seas through the Implementation of Integrated River Basin Management (IRBM)

The proposed initiative supports the source-to-sea approach and will scale up ICM in East Asia through integrated water resource management in river basins. It is the first regional initiative in Southeast Asia to address common water resource-related issues at the basin and sub-basin level.

The USD 8.9-million project will be implemented for a duration of five years, possibly starting in 2022, in six countries: Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, and Viet Nam. It will be funded by GEF and UNDP, and will be implemented by PEMSEA in collaboration with ASEAN.



IKI/IMO Blue Solutions for Reducing Maritime Transport Greenhouse Gas Emissions through Increased Energy Efficiency of Ship and Port Activities in East Asia

The project aims to develop medium-term priority actions at the national and port/community levels; conduct pilot demonstrations of innovative technologies, policies, instruments, and approaches from

Asia and elsewhere; conduct capacity building to implement and enforce energy efficiency requirements and greenhouse gas-related regulations; and conduct knowledge sharing.

The USD 16-million project will be implemented for a duration of five years, possibly starting in 2023, in seven countries: Cambodia, China, Indonesia, Malaysia, Philippines, Thailand, and Viet Nam, with China, Japan, RO Korea, and Singapore as knowledge partners. It will be funded by IKI and implemented in collaboration with IMO.

The full project proposal is expected to be submitted to the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety in the second quarter of 2022.

GEF/UNDP/ACB/PEMSEA Effectively Managing Ecological Networks of MPAs in Large Marine Ecosystems in the ASEAN Region (ASEAN ENMAPS)

The project aims to develop and improve the management of MPA networks and marine corridors within select large marine ecosystems in the ASEAN region for the conservation of globally significant biodiversity and to support for sustainable fisheries and other ecosystem goods and services.

The project will identify new MPAs and define MPA networks in specific large marine ecosystems, support necessary management decisions to determine the scale of connectivity in these large marine ecosystems, and identify biological and spatial boundaries in conservation corridors between and among MPAs. Results thereof will also serve as basis for marine spatial planning and establishing coordination mechanisms across local governments, including transboundary arrangements across littoral countries. Once the bases for scaling up of MPAs and their connectivities are established, the project will focus on improving the management of individual MPAs and the MPA networks through a range of interventions such as capacity-building on ICM and adaptive management approaches, which will be applied in the development/refinement of management plans. Development and

implementation of investment projects that will promote the benefits of ecosystem management, restoration, and responsible governance will also be supported.

To sustain these gains, partnerships among various sectors, including the private sector, will be established. The results and lessons of the project will be packaged and disseminated into knowledge products. As a source for potential replication and scaling up of best practices, the project will incorporate all learning in existing knowledge management mechanisms in the region such as the Southeast Asia Knowledge Base, ASEAN Clearing House Mechanism, ASEAN Biodiversity Dashboard, and GEF International Waters Learning Exchange and Resources Network.

This USD 8-million project will be implemented for a duration of five years in Cambodia, Indonesia, Philippines, Thailand, and Viet Nam by ASEAN Centre for Biodiversity and PRF and will be funded by GEF and UNDP. The Project Identification Form was already approved, prompting the start of the development of the full project proposal.



The next generation of coastal leaders

PEMSEA values the role and importance of youth participation and engagement in fostering healthy and resilient coasts and ocean. One of the programs that PEMSEA offered in 2021 were virtual internships to select college graduates and early career professionals who were interested in research and on-the-job training from all over the world. The hired interns, hailing from Malaysia and Philippines, provided core support in the organization of the recently concluded EAS Congress 2021, the inaugural EAS Futures Youth Photo and Video Competition, and other PEMSEA work.



On the job: Interns' experiences

On the ground with PEMSEA

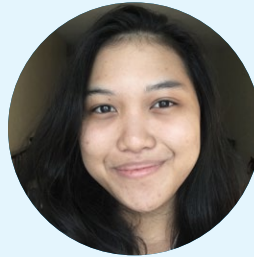
What accomplishments are you most proud of?

Isabelle “Isa” Acosta: Seeing both days of the Congress [proper] and the success of the collabs, being able to work and collaborate with people from different countries, and being part of other PEMSEA projects.

Xin Kin “Gretta” Lim: The PEMSEA monthly newsletters and press release translations in Mandarin and Malay. I thought it would be easy but there are differences in formal and informal use of words...It was interesting to learn to be neutral, accurate, and culturally sensitive [in terms of words]...It was a new style for me but all supervisors were very helpful.

Antonia “Toni” Maceda: I’m proud of the social media plan that we created...Facebook page likes and follows as well as LinkedIn page follows all went up beyond our target of 15 percent increase [from 2020 levels]. I also enjoyed the EAS Futures Photo and Video Competitions—the promotions, emails, letters, articles, watching the video entries, and seeing who won.

Jan Angelo Valdez: We surpassed our goal of 15 percent increase in page likes and follows for Facebook and followers for LinkedIn. I created the base [Zoom] designs for the Partnership Night, came up with regular newsletters for pre-Congress events from late September until the end



Isabelle Acosta



Xin Kin Lim



Antonia Maceda



Jan Angelo Valdez

of November, and gathered a significant number of submissions for the EAS Futures video competition. Being part of the EAS Congress...was already in itself an accomplishment.

What knowledge and skills did you gain?

Isa: I learned what actually goes on when it comes to protecting the ocean and environment. I also learned about project planning and management because we were made part of the team. I also developed writing skills for doing reports, proceedings, and social media analytics.

Gretta: Research skills from working on the [EAS Congress 2021] media database and COVID-19 studies; event organizing;

preparing guide questions for open forums during events; writing and documentation skills...and time management and multitasking.

Toni: How to stay organized, how to navigate Excel, how to analyze social media, how to promote events with clear, concise, and engaging captions, and how to navigate Zoom.

Jan: Serving as IT support [for the EAS Congress 2021], I learned how to facilitate online meetings or events through Zoom. I learned how to adapt media [content] into email newsletters and how to properly organize the minutes of a meeting. I sharpened my skills in designing and making layouts for digital content.

What were the main challenges you faced?

Isa: Adjusting to some of the tasks given as I had no experience in them. The field [that] PEMSEA is primarily working in is different from my degree program on European studies. The virtual set-up also made the work challenging in terms of productivity.

Gretta: The time difference between the Philippines and Belgium, where I was during the later part of the internship. Also the balance between workload and assignments.

Toni: Learning about PEMSEA—my [academic] major, communications, is far from what we were doing. There was an orientation but there was so much to take in. It was a challenge to keep organized...

because there was so much going on, and I had to complete tasks that I'd never done before and which were out of my comfort zone. It was also challenging creating captions that were more professional and less cutesy and fun.

Jan: The work-from-home situation was the main challenge as consultations online will never replace face-to-face interactions.

Are there any areas of improvement that you can suggest for PEMSEA's internship program?

Isa: None. Even if it was virtual, everything was smooth sailing. Please continue to involve interns in future meetings and events and other non-Congress-related tasks. When people think of interns, it's usually just about small tasks like photocopying, but here, I was actually part of seeing important things get done.

Gretta: Even if it was virtual, it was great. Supervisors were supportive and kind.

Toni: Maybe you could introduce unfamiliar concepts and events as tasks are being given and have a personal chat with interns every once in a while...It would be nice to get to know who I'm working with outside the job.

Jan: Due to limitations of online-based internship, I believe the program was already the best that could be provided—which was, in my opinion, more than enough of a learning experience.

What are your future plans? How do you think what you've learned will contribute to personal development?

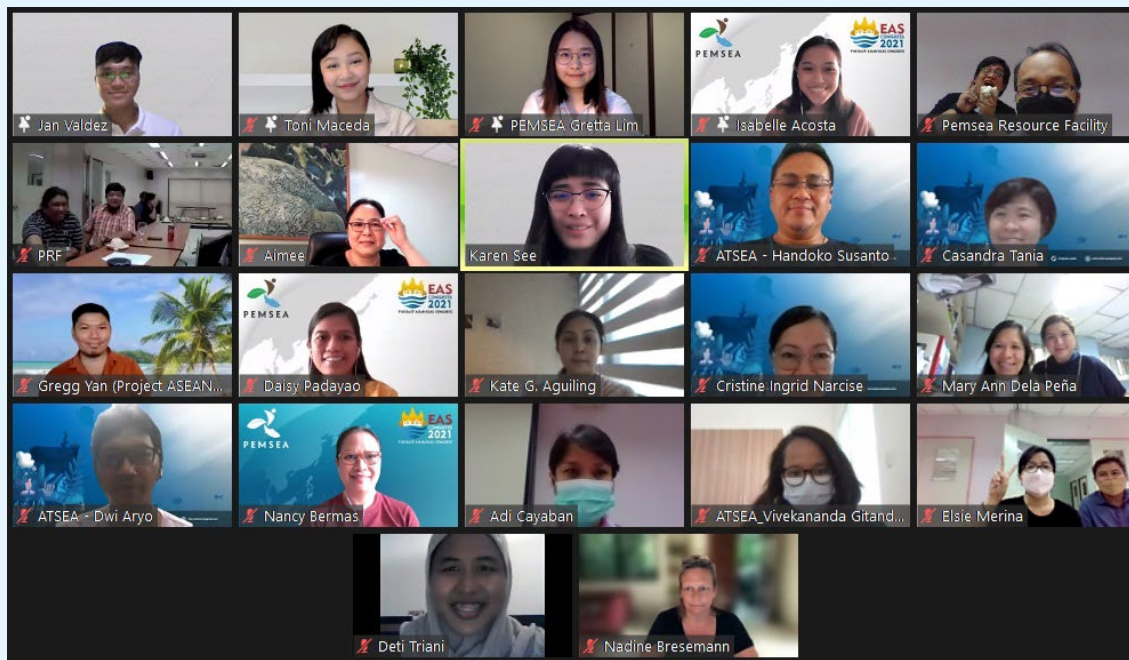
Isa: I would like to work in the same space—international or regional organizations. I now have a deeper understanding of what cooperation actually looks like. I learned to always look at the different views of stakeholders, such as implementers and recipients, when assessing projects just as the case was during my involvement in Blue Solutions...There were many other little things [in the internship] that will help me in making day-to-day decisions.

Gretta: I am currently pursuing my master's degree at Ghent University in Belgium, specifically the International Master of Science in Marine Biological Resources program. It was really useful for me to have done regional organizational work. Practical knowledge and theoretical knowledge

are different so I am glad that I got the opportunity to work with PEMSEA.

Toni: I will be working as a digital marketing officer for the youth segment of SM Supermalls, and the skills I learned from the social media plan that we made will help me strategize for campaigns. The insights from doing the monthly social media analytic reports will help me craft better, complete reports on the progress of online campaigns. The experience of doing collab rehearsals...has provided me with the necessary skills to provide technical support in Zoom events while the experience from doing event registration reports and matrices can help me stay organized. The skills I learned from social media promotions will help me craft engaging captions.

Jan: I plan to continue my career as a graphic designer.



PRF staff and interns during the Interns' Awarding Ceremony in December 2021 (Photo by PRF/R. Corpuz)

Winners of the 2021 East Asian Seas (EAS) Futures Photo and Video Competitions

As part of PEMSEA's efforts to engage and instill awareness among the youth in terms of coastal and marine issues and actions, the 2021 EAS Futures Photo and Video Competitions featured the unique perspectives and contributions of the youth with regards to the sustainable development of the coastal and marine environment. Cash prizes were awarded to winning entries.

Photo competition

With the theme "Sustaining the Oceans and Coasts," the competition showcased the ability of photography to deliver messages beyond words.

Entries from across the East Asian region were divided into three categories: high school students; university students; and other photographers (up to 30 years old). Several runners-up were also recognized, highlighting the diversity of ocean issues that the youth encountered and their broad understanding thereof.

1. High school category

First place went to Fria Mae Camello and her underwater photograph of the "**Turtle of Moalboal**" feeding on algae. It was shot when she was swimming with sardines in the area. "The seas of Moalboal, Cebu, Philippines boast the beauty of diverse and fascinating marine life hidden in the depth of the ocean that everyone has more to learn about," Ms. Camello wrote.



In second place was **"River Waste in the Right Place,"** featuring Renz Nathaniel Luyao's photograph of a contestant paddling to the finish line with his kayak full of retrieved garbage during the 2nd Dapitan Kayak Adventure River Clean-Up Competition in Zamboanga del Norte, Philippines.



Third placer was **"Last Night's Catch"** by Ken Shin Garay, who showed two basins full of the bounty of the sea in Matnog, Sorsogon, Philippines.

Two children running **"Along the Shore of Armoa Beach"** at sunset were photographed by Reuben James Guinto, who was awarded the Sponsor's Choice award. "The shore has so much to offer, from memories treasured for a lifetime to opportunities for livelihood," wrote Mr. Guinto.



2. University category

Billie Joe Peralta won first place with his colorful entry entitled “**Into the Coastline,**” showing two girls selling corals and seashells at the beach in Dipaculao, Aurora Province, Philippines.



Second place went to Mike Allen Gabinete’s “**Searching for Food,**” featuring *Actitis hypoleucos*, a common sandpiper, along a tidal flat. He noted, “The abundance and diversity of sea birds does not fail to amaze people spending time in coastal areas.”

Third place was Wilibert Vanne Sugui’s entry, entitled “**Plastic-Free, Problem-Free,**” featuring a man gathering beach garbage as seen ingenuously framed by a piece of plastic.



"Net Casting" by Mark Khevin De Guzman was the Sponsor's Choice. It showed a fisherman throwing a net in waist-deep water. "A noble job," he wrote. "Fishing requires strength, endurance, and patience."



3. Other photographers



Berth Lewis Acbang won first place for **"Golden Hour,"** where he captured a boat beside the Bangui Windmills in Ilocos Norte, Philippines, bathed in golden light. Mr. Acbang wrote how they have become "a popular coastal tourism spot and are viewed as an important avenue for economic growth."

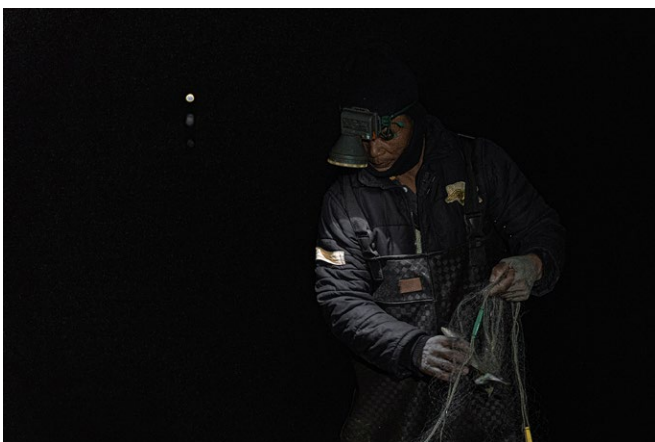
Jafet Potenzo Lopes won second place for his entry entitled **"Territory Defense of Fiddler Crab,"** showing the creature in the mud in the mangroves of Manatuto in Timor-Leste.



Liemuel Pantuhan photographed a fisherman in "**A Hopeful Throw**," which won third place.



Two Sponsor's Choices rounded out the list: Mark Angelo Sajonia's "**Casting into the Setting Sun**," which features fishermen on a boat, and Tao Xing's "**Into the Night**," a haunting image of a fisherman back from a fishing trip in the dark.



Video competition

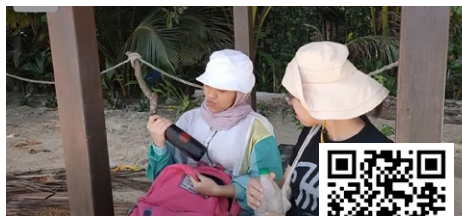
The competition featured the youth's perspective through a different medium to share their knowledge and understanding of, plans and dreams for, or best practices on coastal and marine resource development.



▶ WATCH VIDEO



“Descend” by **Ian Sylbert Chavez, Arsen Carl Vargas, Andrew Pasaporte,** and **Tisha Mae Haro** won first place. It shows young Filipinos learning the sport of freediving while featuring beautiful underwater scenes of marine life in the Philippines. “Not only does it improve our physical health but freediving is also in essence an activity where we connect intimately with nature. It enhances our emotional well-being and alleviates feelings of social isolation,” the filmmakers wrote.



▶ WATCH VIDEO



Second place winner, **“Dory’s Adventure”** by **Amira Azman, Nur Saidatul Dursina Binti Jaafar, Nur Afiqah Dharwisyah Binti Mohd Amin David, Lim Pey Chen, Nurul Afifah Binti Mohd Ridzuan,** and **Aina Syafiqah Binti Azmeerizal**, was filmed in Pulau Kapas, Terangganu, Malaysia and carried the theme, “Responsible and Sustainable Tourism.” “We want the audience to understand that to sustain the ocean, sustainability and ecotourism must be practiced and implemented at every available tourism spot,” stated the filmmakers in the humorous video.



▶ WATCH VIDEO



In third place was **“Exploring the Ocean—Ocean and I, the Future Starts Here”** (<https://youtu.be/vT8FkB7UoYg>) by Sun Qishun, Zhang Jianing, Hong Gengqi, Fan Dongyang, and Gao Yifei. The film is about a research student focused on interpreting paleoclimate and palaeoceanographic information from marine sediments as a means of predicting the future of the climate in a given area. “The ocean is like a history book, containing many stories of the Earth’s past,” wrote the filmmakers, “and all we have to do is to read it.”

Hopes for the region’s young scientists, according to Dr. Gil Jacinto

Dr. Gil Jacinto, Philippine National Focal Person for the IOC, shared his thoughts and supporting data on empowering young scientists and promoting innovation during the UN Decade of Ocean Science for Sustainable Development at the EAS Congress 2021. The Ocean Decade was declared in 2017 and runs from 2021 to 2030. It provides a common framework to ensure that ocean science can be used as transformative solutions in achieving the SDGs. The following are excerpts from his speech.

...When I first heard about PEMSEA’s theme for this year’s Congress, two words stood out to me: “charting” and “hope.” “Charting” means to show something on a chart or map, but it also means to pay close attention to or record in great detail. Then there’s the word “hope,” which is not only a great acronym for healthy ocean, people, and economies but also a powerful word, especially during this pandemic.

One can then connect—charting a new decade of hope for the ocean we have to the ocean we want and advancing the science required for that desired ocean. This brings us to the Decade of Ocean Science for Sustainable Development.

The priorities for the [Ocean] Decade’s research and development activities were established:

- Comprehensive ocean observing system;
- Quantitative understanding of ocean ecosystems and their functions;

- Capacity building and accelerated technology transfer, and ocean literacy;
- Earth-system observation, research, and prediction, supported by social and human sciences and economic valuation, among others;
- Integrated multi-hazard warning system; and
- Data and information portal supporting the [Ocean] Decade outcomes.



Dr. Gil Jacinto

...Almost 20 years ago, PEMSEA examined academic programs in ocean and coastal governance available both within and outside of East Asia. These programs covered environmental science, ocean science, fisheries, environmental impact assessment, and aquaculture. Several universities offered environmental management, marine affairs, and ICM programs. Most training courses in East Asia were delivered by universities, with a few delivered by training centers and others co-delivered by PEMSEA.

In that study, two recommendations were made: (1) PEMSEA’s role should be strengthened; and (2) a functional network of training institutions should be established.

These suggestions were carried out. Currently, PEMSEA has 15 Learning Centers and three RCOEs from nine countries in Asia.

Nonetheless, it may be important to ask: is the demand for capacity development in ocean and coastal governance being met by our region's universities and training centers?

...Young scientists need to believe and imagine a world of possibilities and not be constrained by the impossible. We have to consider a future in which everyone, especially the younger generation and the ocean science community, are given equal opportunities, regardless of gender or age and where local and indigenous knowledge is valued. We need to rely on best practices in ocean science while taking into account national and regional specificities as well as corresponding jurisdictions.

“In this Decade of Ocean Science and the years to come, we need young scientists, who are innovative, resilient, committed, and imaginative. The COVID pandemic showed the world what can be done. In the not-so-distant future, there will be new technologies but even more challenges in our ocean planet. There will be skills and expertise that we may not even be aware of today.”

Dr. Gil Jacinto

Philippine National Focal Person for the IOC



After all, the future ocean, in which we and future generations will live, has a lot to offer and even more to learn about. It will require the co-creation of research and use of skills and expertise that includes diverse branches of inquiry such as natural sciences, social sciences, traditional knowledge, philosophy, policy and governance research, human behavioral sciences, and education science.

During the Decade of Ocean Science for Sustainable Development, let the young and the once-young scientists and colleagues in allied disciplines chart and navigate our way to an ocean of HOPE (healthy ocean, people, and environment).

Imagine and believe that the world is your oyster.



The men and
women behind
PEMSEA

East Asian Seas (EAS) Partnership Council (PC)

PEMSEA Executive Committee

Mr. Arief Yuwono

Council Chair, EAS PC

Dr. Vann Momyneath

Co-Chair, EAS PC

Dr. Ca Vu Thanh

Chair, Intergovernmental Session, EAS PC

Ms. Chen Yue

Co-Chair, Intergovernmental Session, EAS PC

Dr. Oh Jae Ryoung

Chair, Technical Session Chair, EAS PC

Dr. Keita Furukawa

Co-Chair, Technical Session, EAS PC

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**DPR Korea**

Mr. Jong Kwang-Jin, Deputy Director-General, General Bureau for Cooperation with International Organizations

**Indonesia**

Ir. Sigit Reliantoro, Acting Director-General for Environmental Pollution and Damage Control, Ministry of Environment and Forestry



Japan

Mr. Gota Otaka, Vice Director-General, Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism



Lao PDR

Dr. Inthavy Akkharath, Director-General, Department of Water Resources, Ministry of Natural Resources and Environment



Philippines

Atty. Analiza Rebuella-Teh, Undersecretary for Finance, Information Systems and Climate Change, Department of Environment and Natural Resources



RO Korea

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Singapore

Mr. Hazri Hassan, Director, International Policy Division, Ministry of Sustainability and the Environment



Timor-Leste

Mr. Acacio Guterres, Director-General of Fishery, Aquaculture and Marine Resources, Ministry of Agriculture and Fisheries



Viet Nam

Mr. Nguyen Que Lam, Deputy Director-General, Viet Nam Administration of Seas and Islands, Ministry of Natural Resources and Environment

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)



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



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



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 of the Sasakawa Peace Foundation (OPRI-SPF)



Oil Spill Response Limited (OSRL)



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



Plymouth Marine Laboratory (PML)



UNDP/GEF Small Grants Programme (SGP)

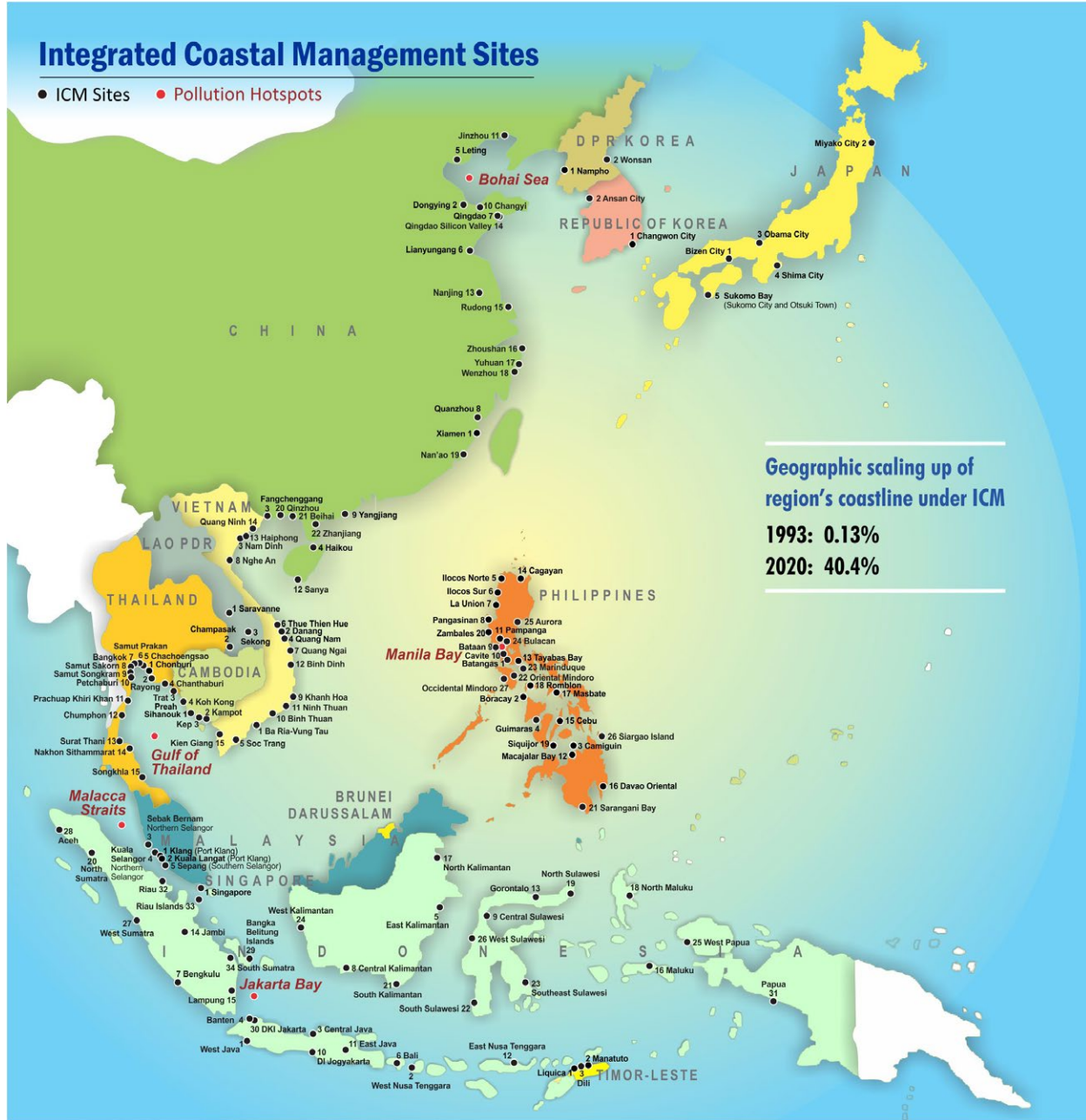


UNEP Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA)

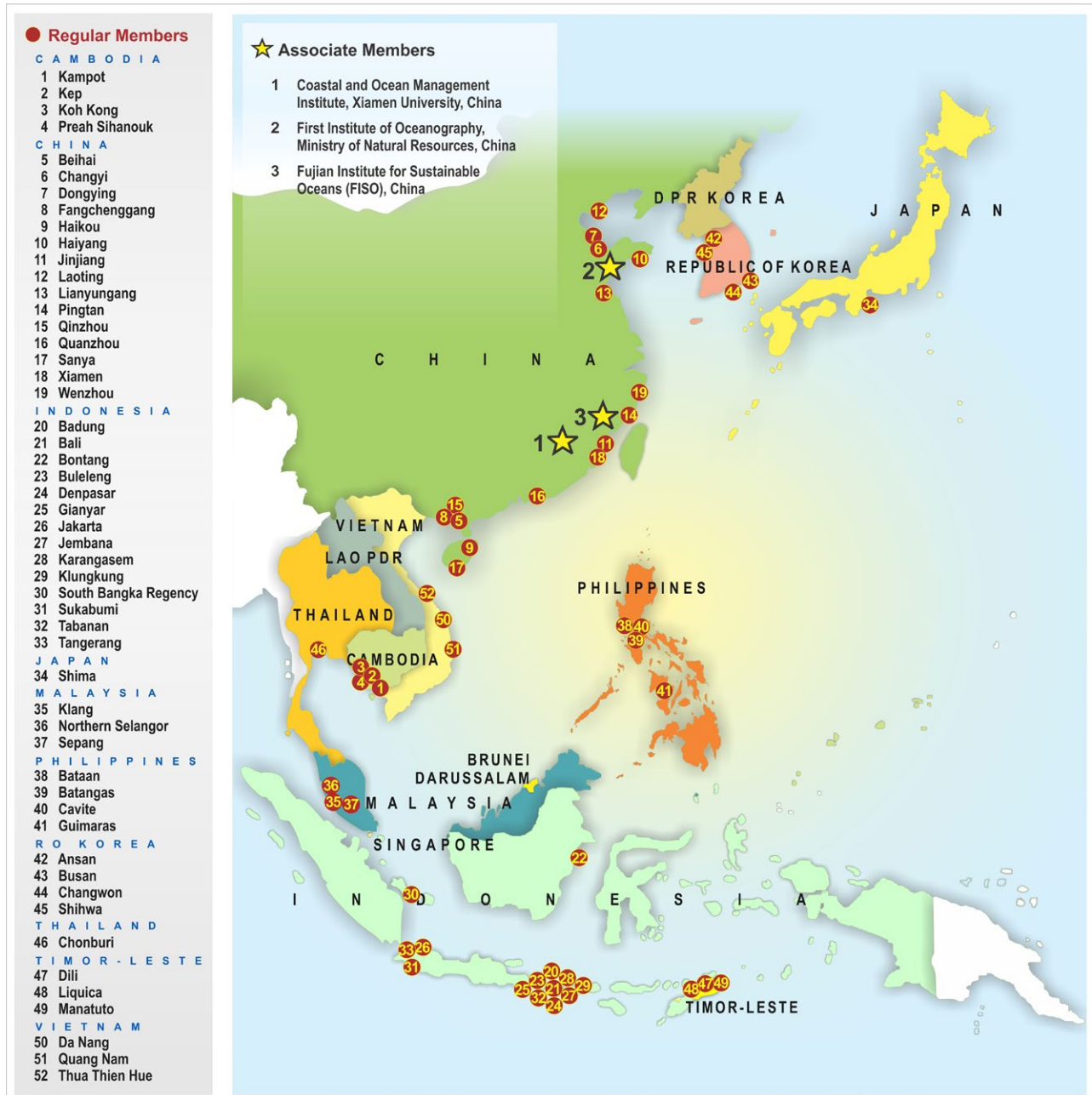
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PEMSEA Network of Learning Centers (PNLC)



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- Bousay, Amthong
- Cada, Roberto
- Cargamento, Agnes
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- Diamante-Fabunan, Dolores Ariadne
- Diaz, Raul
- Dizon, Leticia
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- Espenisin, Cari
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- Fornoles, Olivia
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- Guerrero, Socorro
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- Hernandez, Antonio Jr.
- Isla, Emmanuel

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- Javier, Tricia
- Jimenez-Marfil, Lilian
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- Kang, Katherine
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- Le Xuan Tuan
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- Zafra, Alfie
- Zhang, Claire
- Zhang, Luoping
- Zheng, Yanling

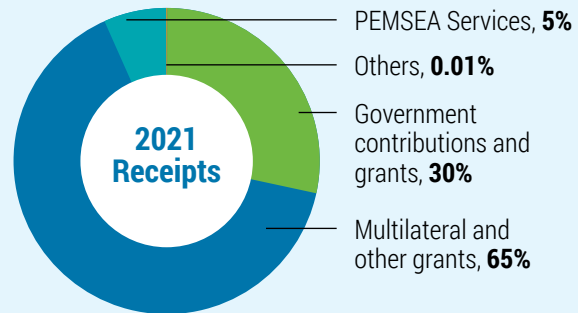
Distribution of former PRF staff across the world



2021 Financial Performance of PRF

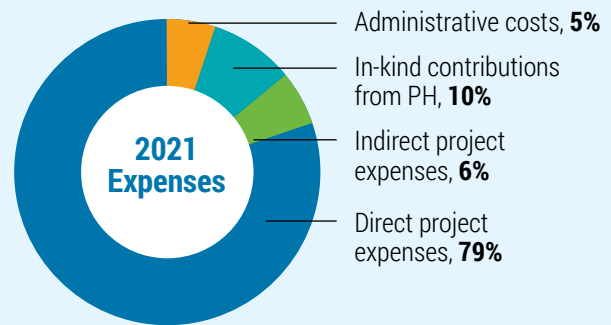
Receipts

In 2021, total receipts received by PRF from various funding sources amounted to USD 2.1 million. Multilateral funding sources represented 65 percent of the total receipts in 2021 (most of which came from the ATSEA-2 project) whereas 30 percent was generated from the contributions and grants of country partners.



Expenses

Expenses totaled USD 2.1 million, a 19 percent decrease from 2020. Personnel- and consultancy-related expenses constitute 68 percent of the total expenses. PRF engaged various external services but mainly national/local experts to assist country partners on project implementation.



Eighty-five percent (USD 1.7 million) of total expenses were project expenses, of which USD 1.6 million were direct project expenses, including the purchase of online meeting tools. Unlike previous years, physical travel expenses were minimal due to travel and mobility restrictions as a result of the global pandemic. The remainder of total expenses (15%) constituted administrative expenses. Two thirds of administrative expenses were covered by in-kind contributions of the Philippine Government for the PRF's office space and utilities.

Assets

Total assets amounted to USD 3.4 million, which was a 14 percent increase from 2020. This was mainly attributed to the increase in cash and receivables as well as commitment from countries under deferred grant.

We remain thankful for our partners' continuing support in working together towards the sustainable development of our shared Seas of East Asia.

* International Financial Reporting Standards require us to record receipts in the year that the funds were designated for use.

Statement of Financial Position (in US\$)

ASSETS	31 December	
	2021	2020
CURRENT ASSETS		
Cash	3,172,276	2,804,730
Receivable	108,289	69,011
Total current assets	3,280,565	2,873,741
NON CURRENT ASSETS		
FA at Fair value	63,752	70,580
Property & Equipment - net	2,244	8,250
Other non-current assets	50,061	21,118
Total non-current assets	116,057	99,948
TOTAL ASSETS	3,396,622	2,973,689
LIABILITIES AND FUND BALANCE		
CURRENT LIABILITIES		
Accounts Payable and Accrued Expenses	306,375	261,920
Deferred Grant	1,430,954	1,125,596
Total current liabilities	1,737,329	1,387,516
NON CURRENT LIABILITIES		
Defined contribution liability	155,520	101,479
Retirement benefit obligation	76,535	78,479
Total non-current liabilities	232,055	179,958
TOTAL LIABILITIES	1,969,384	1,567,474
EQUITY		
Fund Balance	1,404,730	1,399,493
Employee benefit reserve	25,124	6,576
Fair value reserve	(2,616)	146
Total equity	1,427,238	1,406,215
TOTAL LIABILITIES AND EQUITY	3,396,622	2,973,689

Statement of Receipts and Expenses (in US\$)

ASSETS	31 December	
	2021	2020
RECEIPTS		
Government Contributions and grants	620,292	523,548
Multilaterals and other grants	1,342,979	1,899,211
PEMSEA services	114,097	38,967
Others	195	1,966
TOTAL RECEIPTS	2,077,562	2,463,693
EXPENSES		
DIRECT PROJECT EXPENSES		
Personnel	688,274	715,360
Consultancy	507,620	234,833
Subcontract	314,947	842,131
Travel and meeting	65,272	47,478
Training		21,389
Other direct costs	55,945	149,902
Total direct project expenses	1,632,058	2,011,092
INDIRECT PROJECT EXPENSES		
Personnel	117,188	169,728
Travel and meeting		
Overhead	16,315	50,221
Total indirect project expenses	133,503	219,949
ADMINISTRATIVE COST		
Personnel	72,150	64,323
Consultancy	20,228	21,602
Travel and meeting		
Overhead	214,386	225,651
Total administrative cost	306,765	311,576
TOTAL EXPENSES	2,072,326	2,542,618
EXCESS (DEFICIENCY) OF RECEIPTS OVER EXPENSES	5,236	(78,925)
OTHER COMPREHENSIVE LOSS		
Items that will not be reclassified subsequently to receipts or expenses		
Remeasurements gain/loss on retirement benefit obligation	18,547	31,169
Fair value loss on FA at FVOCI	(2,762)	(5,215)
TOTAL COMPREHENSIVE INCOME	21,022	(52,971)

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