SDS-SEA

SUSTAINABLE DEVELOPMENT STRATEGY FOR THE SEAS OF EAST ASIA

IMPLEMENTATION PLAN
2018-2022

gef

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Resilient nations.*

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SDS-SEA Implementation Plan 2018-2022

INTRODUCTION

The Seas of East Asia region is home to more than 2.1 billion people. With growing economies and populations that are highly dependent on the ocean sector and coastal and marine ecosystems, countries of the region are facing increasing pressure and challenges in their development processes, primarily from destruction and loss of habitats and natural coastlines, biodiversity loss and degradation, overfishing and food security, pollution from land-based and sea-based sources, and impairment of water quality, water supply and water security, among others. At the same time, the region is recognized to be one of the most vulnerable to the hazards and adverse impacts of climate change, extreme weather events and other natural and manmade hazards.

Recognizing the numerous ocean-related challenges in the region, the 14 Partner Countries of Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) adopted the Sustainable Development Strategies for the Seas of East Asia (SDS-SEA) in 2003. The SDS-SEA is a package of relevant principles, strategies, objectives and implementation approaches for achieving sustainable development of oceans and coasts of the Seas of East Asia region. In 2015, the SDS-SEA was updated to ensure that it remained relevant to the needs and circumstances of the region, The SDS-SEA 2015 also takes account of global agreements and targets that were adopted after 2003, including the UN Sustainable Development Goals[i], the UNFCCC Paris Climate Agreement[ii], the Convention on Biological Diversity-Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets[iii], the Sendai Framework for Action on Disaster Risk Reduction and Management[iv].

The SDS-SEA Implementation Plan 2018 – 2022 identifies expected outcomes, indicators and targeted actions and schedules for priority governance and management programs that contribute to the sustainable development of oceans and coasts and blue economy growth in the region over the next 5 years. The Implementation Plan is directly linked to the strategies and action programs of the SDS-SEA as well as other international and regional commitments and targets to which countries of the region have subscribed. While recognizing that all 17 UN SDGs are interrelated, the SDS-SEA IP 2018-2022 highlighted the international and regional instruments, commitments or targets that most relate to/directly linked to each priority management programs and governance programs.

The achievement of the expected outcomes identified in the Implementation Plan requires commitment and action by PEMSEA Country and Non-Country Partners, as well as cooperation and collaboration with international and regional organizations, donors, LMEs/sub-regional sea area strategic action programs, coastal communities, NGOs, civil society, universities, financial institutions, investors and the business sector. The Implementation Plan provides a framework of ocean governance and management priorities that can a) guide Partners in planning and developing their respective ocean and coastal programs and projects; b) serve as a platform for collaborative planning and implementation among Partners and other international and regional organizations; and c) be implemented consistent with international law.

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[i]   United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development A/RES/70/1 https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf
[ii] United Nations (2015). Paris Agreement. https://unfccc.int/sites/default/files/english_paris_agreement.pdf
[iii] Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets. https://www.cbd.int/sp/
[iv] United Nations. Sendai Framework for Disaster Risk Reduction 2015-2030. https://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf

The SDS-SEA Implementation Plan 2018 -2022 is comprised of three Priority Management Programs and three cross-cutting Governance Programs. The Priority Management Programs include: a) Biodiversity Conservation and Management; b) Climate Change and Disaster Risk Reduction and Management; and c) Pollution Reduction and Waste Management. The cross-cutting Governance Programs include: a) Ocean Governance and Strategic Partnerships; b) Knowledge Management and Capacity Development; and c) Blue Economy Investment and Sustainable Financing. Each program consists of Expected Outcomes, Indicators of benefit/impact; Targeted Actions and Schedule.

It is envisaged that each Partner and collaborating organization will confirm their commitment to the SDS-SEA Implementation Plan 2018 – 2022 by identifying their priorities, outputs and indicative actions over the next 5 years that align with this document and provide them to the PRF Secretariat. Progress and achievements of PEMSEA Partners and collaborating organizations will be tracked and highlighted during national and regional ocean events, as well as incorporated in PEMSEA's Annual Report and the triennial State of Oceans and Coasts Report.

It is anticipated that some of the priorities, desired outputs and indicative actions of Partner Countries will require access to external funding and/or scientific and technical resources and capacities. Partner Countries are invited to use this framework implementation plan to identify gaps and needs over the next 5 years in scaling up SDS-SEA implementation. Partner Countries are also encouraged to work with the PEMSEA Secretariat to develop project proposals and access required support and assistance from PEMSEA Country Partners, Non-Country Partners, donors, international organizations, other regional organizations and investors, as required and appropriate.

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SDS-SEA Implementation Plan 2018–2022

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

Biodiversity Conservation	Climate Change and Disaster Risk Reduction	Pollution Reduction and Waste Management
• MPA/MPA networking • Migratory marine species • Blue carbon/green infrastructure	• Vulnerability/hazard risks in coastal communities and economies • Sustainable cities • Green ports/green shipping	• Pollution/nutrient management • Integrated waste management/ plastics/ circular economy • Integrated river basin management/S2S • Renewable energy

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

Ocean Governance and Strategic Partnerships	Knowledge Management and Capacity Building	Blue Economy Investments and Sustainable Financing
• National ocean policy, institutional arrangements and legislation • SOC reporting system • Enhanced access to financing for SDS-SEA IP (e.g., Green Climate Fund accreditation) • Enabling partnerships and networks	• Regional knowledge hub for oceans and coasts • Regional training and technical support/services • Targeted research projects	• Ocean Investment Facility and Fund • Pipeline of investable blue economy projects • PPP/business sector working examples/ templates

PRIORITY MANAGEMENT PROGRAMS ALIGNED WITH GLOBAL AND REGIONAL COMMITMENTS AND TARGETS

1.0   BIODIVERSITY CONSERVATION AND MANAGEMENT

The East Asian Seas Region is known as the global center of marine biodiversity and endemism. It hosts one of the most diverse and richest marine ecosystems in the world and as such, is considered as a global hotspot for biodiversity conservation. The region's marine ecosystems, however, are also known to be one of the most threatened by an array of drivers ranging from high population growth, rapid industrialization, urbanization and climate change. These drivers are exerting tremendous pressures on the region's natural resource base. Local pressures, which include overharvesting of fishery resource, use of destructive fishing methods, land- and sea-based pollution, coastal development and marine recreation are most severe in Southeast Asia where 95% of coral reefs are threatened and 50% are in the high or very high threat category. Indonesia and the Philippines, two of the world's megadiversity countries, have the largest areas of threatened reefs (Burke *et al.*, 2011). Global stressors on the other hand come in the form of ocean acidification and rising sea temperature, which reduce coral calcification and can elicit coral bleaching events respectively. Integrated coastal management has been recommended as a necessary framework to help address the cumulative impacts of the various stressors.

Significant effort has been made by the countries in the EAS Region in curbing the continuing habitat degradation and loss of biodiversity. These include among others: accession to biodiversity-related international conventions and agreements (i.e., CBD, CMS, CITES, RAMSAR); development and adoption of national biodiversity action plans, participation in regional programs and mechanisms with biodiversity components (i.e., ASEAN, CTI, SSME, ATSEA, YSLME, PEMSEA); implementation of donor-funded and community-based biodiversity conservation projects focusing on species conservation; establishment of MPAs as management tools in biodiversity conservation and planning; and developing conservation-focused ICM programs to contribute to scaling up ICM to cover 25% of the regional coastline by 2021.

Notwithstanding these achievements, various reports, including the SDS-SEA regional review covering the period 2003-2015, affirm that the following gaps and challenges remain:
• land-based discharges of pollutants and sediments;
• Increasing marine debris, plastics and micro-plastics;
• a little over 2% of the 229,534 km^2 of the total territorial waters of the ASEAN Member States (AMS) have been allocated to marine protected areas (ASEAN Biodiversity Outlook 2, 2017)
• region-wide strategies for conserving biologically connected MPAs and sustainable fishing have yet to be established
• conversion of coastal habitats to less ecologically sound uses
• lack of a more scientifically and systematically designated MPA network under a master plan;
• inadequate financing

- lack of technical capacity in assessing and evaluating effectiveness of biodiversity conservation, lack of evidence-based measures to show changes in biodiversity status
- pressures on natural resources and to nearby Protected Areas (PAs) due to poverty and lack of alternative opportunities.

The Biodiversity Conservation and Management Program for 2018-2022 targets three specific outcomes over the next five years: a) increasing the areal extent of healthy and resilient coastal and marine habitats; b) expanding and strengthening MPAs and MPA networks for the protection and conservation of marine biodiversity and threatened marine animals; and c) enhancing the use of green infrastructure and blue carbon for climate adaptation and mitigation and biodiversity conservation.

KEY INTERNATIONAL/REGIONAL COMMITMENTS AND TARGETS FOR BIODIVERSITY CONSERVATION AND MANAGEMENT

Sustainable Development Strategy for the Seas of East Asia
Sustain Strategy
Sustain the use of coastal and marine resources:
- Expand regional cooperation to conserve and manage environmental resources, including overexploited and endangered migratory species and coastal areas of trans boundary importance
- Restore and enhance coastal habitats and related resources in support of maintaining the integrity of their ecosystem services and value
- Integrate fisheries management into coastal management programs at the local level

Preserve Strategy
Preserve species and areas of coastal and marine environment of ecological, social and cultural significance:

- Establish integrated management regimes for efficient and effective management of marine protected areas and PA networks

UN Sustainable Development Goals
- SDG 14.2 (sustainable management and protection of marine and coastal ecosystems, strengthening their resilience and taking action for their restoration)
- SDG 14.4 (regulation of the harvesting and ending IUU fishing and destructive fishing practices)
- SDG 14.5 (at least 10 percent of coastal and marine areas conserved)
- SDG 14.7 (economic benefits to SIDS and least developed countries increased through sustainable use of marine resources, including sustainable fisheries, aquaculture and tourism)
- SDG 14.a (scientific knowledge increased, research capacity developed and marine technology transferred)

Aichi Biodiversity Targets
- Targets 6 and 7 (sustainable management of fish and invertebrate stocks)
- Target 10 (minimizing anthropogenic pressures on coral reef and other vulnerable ecosystems)
- Target 11 (10 percent of coastal and marine areas are conserved through effectively and equitably managed, ecologically representative and well-connected systems)

17th Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (October 2017), Resolution on Promoting Marine Protected Area Networks in the ASEAN Region
- Urges Parties to collaborate with existing region-wide networks which includes the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), the Coral Triangle Initiative (CTI), the ASEAN Working Groups on National Conservation and Biodiversity (NCB), Coastal and Marine Environment (CME), Climate Change (CC) and mechanisms associated with ASEAN State Officials for Environment (ASOEN) and various other national and regional programs that promote the establishment of marine protected area networks

BIODIVERSITY CONSERVATION AND MANAGEMENT
OBJECTIVES, EXPECTED OUTCOMES, INDICATORS AND TARGETED ACTIONS AND SCHEDULE

Objective: To protect, conserve and manage the biodiversity of ocean and coastal areas of biological, ecological, social and cultural significance in the Seas of East Asia.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
1.1 The areal extent of healthy, resilient habitats (i.e., blue forests), including mangroves, coral reefs, seagrass and other coastal habitats/areas is increased, resulting in ecological, social and economic benefits to coastal communities.	• Percentage of local governments implementing ICM programs with management plans for protecting, restoring and conserving coastal habitats. • Coverage provided by coastal use zoning schemes/MSPs that delineate conservation areas for significant coastal and marine sites, habitats and resources. • Published SOC reports[v] with data/information on socio-economic and ecological benefits and impacts to coastal communities.	**2018** • Priority locations/local governments identified for scaling up habitat conservation and management. **2019–2020** • Baseline assessment conducted and SOC report prepared/published. • Management plans developed, adopted and initiated. • Coastal use zoning schemes/MSPs developed and adopted. **2021–2022** • Management plans/zoning schemes implemented and evaluated. • SOC report prepared/ published.
1.2 MPAs, MPA networks and other conservation measures are scaled up and managed effectively across the East Asian region, enhancing the protection and conservation of marine biodiversity and threatened migratory marine animals.	• Improved and sustainable governance systems for MPAs and MPA networks in place and sustainable. • Improved Management Effectiveness Tracking Tool (METT) ratings achieved, demonstrating improved ecological, social, economic and administrative benefits and impacts.	**2018** • Marine key biodiversity areas identified/confirmed in LMEs and sub-regional sea areas of the region for MPA/MPA networking. **2019–2020** • Scoping, baseline, and METT assessments conducted • SOC baseline report prepared and published. • Management plans/MSPs developed and adopted.

[v] The State of the Coasts (SOC) reporting system was developed by PEMSEA to help governments and other organizations monitor and report on implementation of their Integrated Coastal Management (ICM) programs, including impacts and benefits. The SOC enables documentation and measurement of the effectiveness of policy and management interventions in support of sustainable coastal development. To assist local governments, a Guidebook on SOC reporting system was developed and adopted by PEMSEA countries, accessible via: http://pemsea.org/sites/default/files/soc-guide_0.pdf

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
	• Land- and sea-use zoning/MSP schemes in place and functional, guiding planning, monitoring, surveillance, financing and management processes of government.	**2021–2022** • Governance systems developed and adopted. • Sustainable financing mechanisms initiated. • Environmental monitoring and reporting system set up. • SOC reports prepared and published.
1.3 Carbon emissions are mitigated and the capacity of the coastal ecosystems of the region to sequester additional carbon is enhanced utilizing green infrastructure and blue carbon for climate adaptation and mitigation and biodiversity conservation.	• Innovative blue carbon financing mechanisms, tools and capacities transferred to local governments, helping to sustain restoration and conservation management programs. • Blue carbon[1]/green infrastructure[2] pilot projects demonstrating the dual benefits of both improving the resilience of coastal areass, while mitigating carbon emissions and improving the capacity of the region to sequester additional carbon in support of NDCs. • Blue carbon and green infrastructure projects incorporated into medium-term development plans of Partner Countries, catalyzing available financing.	**2018** • Pilot sites/local governments identified for blue carbon and green infrastructure projects **2019–2020** • Best-practice approaches to implementing green infrastructure, as well as standards for quantifying its ecological (ecosystem services, biodiversity, climate mitigation) and economic benefits transferred, adapted and/or developed. • Pilot projects for the transfer of blue carbon financing mechanisms and green infrastructure developed and initiated in collaboration with national and local governments, international organizations, technical experts, companies and financial institutions. **2021–2022** • Based on the pilot project experiences, tools, knowledge products and capacities are shared and transferred among PEMSEA Partner Countries • Pathways to scaling up blue carbon and green infrastructure approaches developed in collaboration with PEMSEA Partner Countries.

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[1] Blue carbon is the carbon stored in marine ecosystems. Blue carbon is subdivided into oceanic and coastal blue carbon component. The concept of coastal blue carbon recognizes the role of ocean's biological systems in buffering the world's atmospheric CO_2 levels. Coastal blue carbon is the contribution to climate mitigation made by coastal ecosystems, particularly mangroves, tidal marshes (salt, brackish, and fresh-water marshes) and seagrasses. This service is provided through the extraction of CO_2 by plants directly from the atmosphere and surface waters.

[2] Green infrastructure (e.g., mangroves, seagrasses, salt marshes, coral reefs) has been demonstrated as an effective solution to enhance the resilience of coastal areas, with a host of co-benefits, including carbon sequestration, food security, water quality and economic activity (e.g., tourism).

2.0 CLIMATE CHANGE (CC) ADAPTATION AND DISASTER RISK REDUCTION AND MANAGEMENT (DDRM)

For EAS countries, climate change adaptation/disaster risk reduction is a key area of concern due to the major impacts of ocean warming, sea level rise, and ocean acidification, which are very likely to increase significantly throughout the 21st century. PEMSEA Partner Countries have themselves identified climate change adaptation and disaster risk reduction as national priorities towards the achievement of sustainable development, particularly in terms of enhancing adaptive capacity, risk assessment, and improving response systems and infrastructure.

Over the years, the region has shown its commitment to addressing climate change and disaster risks. The EAS countries are parties to the UN Framework Convention for Climate Change (UNFCCC), the Hyogo Framework of Action (2005-2015) and the Sendai Framework for Disaster Risk Reduction (2015-2030). Several regional commitments have also been entered by the countries highlighting CC and DRR as priorities, and as part of the overall implementation of the SDS-SEA through integrated coastal management (ICM). These include the Manila Declaration (2009) and the Changwon Declaration (2012). In 2015, countries in the EAS region adopted the updated SDS-SEA integrating the "Adapt" Strategy, which provides the clear framework and strategies for addressing CC/DRR. Similarly, Action 3.2 of the SDS-SEA Implementation Plan (2012-2016) covered the priorities of CCA/DRR through scaling up the implementation of ICM programs.

Despite the progress of Partner Countries in developing climate smart policy and legislation, including the establishment of national institutional mechanisms for CCA/DRR, as well as on-the-ground management programs on improving natural defenses through habitat restoration and management, fisheries and livelihoods management, much still needs to be done.

The regional review of the implementation of the SDS-SEA (2003-2015) highlighted the following gaps and constraints in addressing climate and disaster risks in the EAS Countries:
* Natural disaster impact not fully considered in coastal infrastructure
* Poor inter-sectoral coordination in disaster response
* Low capacity in ocean observation and forecasting for early responses and assessment of impact from storm surges, tsunami and other marine disasters
* Information and education at local level is weak about climate change
* Low individual and institutional capacity for oil spill preparedness
* Lack of public participation in disaster management

A review published by the Stockholm Environment Institute in 2016 on CCA readiness in the ASEAN countries, identified the following critical gaps[3]:
* Lack of adequate funding
* Adaptation demands multi-level action (from national to provincial, to district/regency/city/municipality and village level), but countries' efforts are still focused on the national level. There are some local adaptation actions, but they are not widespread enough to create a multiplier effect and energize a broader local constituency for adaptation. Opportunities are being missed to learn from local practices and knowledge that could inform adaptation actions.
* It is unclear how well planning has focused on impacts, failing to address the multi-faceted nature of climate risk, and neglecting key factors that determine adaptive capacity.

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[3] Stockholm Environment Institute. 2016. Climate change adaptation readiness in the ASEAN countries. Discussion Brief.

- Major sources of vulnerability, linked to social structures and poverty, are not being addressed. A closely related issue is that adaptation efforts are failing to engage and listen to vulnerable populations in adaptation discussions and decision-making.

Results of the collaborative planning conducted with the Partner Countries reinforced further the need to strengthen adaptation and mitigation policies, institutional/technical/scientific capacity, financial resources, technologies and technology transfer, data/information availability and sharing, monitoring and evaluation of programs, and the application of scientific/research outputs for the implementation of management programs.

Based on the above assessments, the following action programs are formulated to step-up the efforts of integrating CCA/DRRM into the governance and management of coastal and marine areas and their contiguous river basins.

KEY INTERNATIONAL/REGIONAL COMMITMENTS AND TARGETS FOR CLIMATE CHANGE AND DISASTER RISK REDUCTION AND MANAGEMENT

Sustainable Development Strategy for the Seas of East Asia
Protect Strategy
Protect ecosystems, human health and society from risks which occur as a consequence of human activity
- Mitigate transboundary environmental threats in regional seas, including LMEs and sub-regional sea areas

Adapt Strategy
Adapt to the adverse effects of climate change and other natural and manmade hazards
- Mainstream climate change adaptation and disaster risk reduction and management into sustainable development programs and investment plans at the national and local levels
- Strengthen the capacity of national and local governments, communities and other stakeholders to adapt to the impacts of climate change and respond to natural and man-made hazards
- Develop and enhance financial and fiscal instruments to stimulate and promote investments in green infrastructure, technology and management practices for improving the resiliency and health of coastal ecosystems and coastal communities

UN Sustainable Development Goals
- SDG13.1 (resilience and adaptive capacity to climate-related hazards and natural disasters strengthened)
- SDG 13.2 (climate change measures integrated into national policies, strategies and planning)
- SDG 13.3 (education, awareness-raising and capacities on climate change mitigation, adaptation, impact reduction and early warning improved)
- SDG 13.b (mechanisms for raising capacities in planning and management in least developed countries and SIDS promoted, including focusing on women, youth, and local and marginalized communities)

Aichi Biodiversity Targets
- Target 10 (minimize the multiple anthropogenic pressures on coral reefs and other vulnerable ecosystems impacted by climate change or ocean acidification)
- Target 14: (restore and safeguard the ecosystems that provide essential services)
- Target 15: (enhance ecosystem resilience and the contribution of biodiversity to carbon stocks)

UNFCCC Paris Climate Agreement
- Article 2 (increase in global average temperature held to well below 2°C above pre-industrial levels; pursue efforts to limit temperature increase to 1.5 degrees above pre-industrial levels)
- Article 4 (global GHG emissions peak as soon as possible; after 2050 all anthropogenic emissions balanced with "removal by sinks", on the basis of equity and in the context of sustainable development and efforts to eradicate poverty; nationally determined contribution (NDC) update every 5 years, with each update representing a progression beyond current NDC)
- Article 5 (action to conserve and enhance sinks and reservoirs of GHGs)
- Article 13 (a common framework of transparency for reporting; developing countries may need more help reaching their goals)
- Article 14 (first stocktaking in 2023; a "facilitative dialogue" will take place in 2018. Nations are expected to improve their NDCs at that meeting (Item 20 of the Paris Decision))

Sendai Framework for Disaster Risk Reduction 2015-2030
- Substantially reduce global disaster mortality
- Substantially reduce the number of affected people
- Reduce direct disaster economic loss in relation to gross domestic product (GDP)
- Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities
- Substantially increase the number of countries with national and local disaster risk reduction strategies
- Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation
- Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people

CLIMATE CHANGE AND DISASTER RISK REDUCTION AND MANAGEMENT
OBJECTIVES, EXPECTED OUTCOMES, INDICATORS AND TARGETED ACTIONS AND SCHEDULE

Objective: To strengthen capacities in managing the risks associated with climate change and other natural and anthropogenic hazards across the region.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
2.1 ICM and CCA/DRRM policies, programs and actions institutionalized across national and local levels of government, enhancing resiliency and adaptive capacity to climate-related hazards and natural and man-made disasters.	• Sustainable development and ecosystem based CCA/DRRM policies, developed, integrated and institutionalized in PEMSEA Countries. • Outputs from ICM projects, scientific studies and research within and outside the region translated into knowledge products and informative documents for use by policymakers, planners and managers. • Climate change adaptation and disaster risk reduction and management projects incorporated into national and local government medium-term development and investment plans.	**2018** • Policy dialogues conducted at the regional and national levels to review and assess good practices, shortcomings and needs among PEMSEA Partner Countries for integrating sustainable development and ecosystem based CCA/DRRM agenda. **2019−2020** • Collaborative agreements and arrangements developed with regional and international organizations and institutions (e.g., ADPC; UNISDR, universities) to provide improved access to capacity development opportunities in ecosystem based CCA/DRRM among Partner Countries and local governments.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
		2021–2022 • Good practices and evidence of the impacts and benefits of innovative policies and practices linking sustainable development targets with ecosystem based CCA/DRRM packaged and promoted to national and local governments for adoption and incorporation into development plans.
2.2 Innovative projects/approaches developed and implemented in collaboration with national and local governments, decreasing vulnerability of coastal communities, applying blue economy solutions and improving food security and livelihood options in highly vulnerable coastal areas.	• Projects developed with Partner Countries and local governments to fill identified gaps and needs in ecosystem based CCA/DRRM programs and capacities. • Public sector commitments and investments in climate change adaptation and disaster risk reduction and management programs and projects substantially increased at national and local levels.	**2018** Highly vulnerable coastal areas and communities for scaling up ICM programs focused on ecosystem based CCA/DRRM improvements. **2019–2020** • Project proposals developed with Partner Countries to fill identified gaps and needs in ecosystem based CCA/DRRM programs and capacities; submitted to internal and external funding sources to help accelerate these programs and benefit highly vulnerable coastal communities. • New CCA/DRRM projects initiated in highly vulnerable coastal communities. **2021–2022** • Assessments conducted on projects/ initiatives including reductions in vulnerability, improved resiliency, improved economy, increased livelihood options and enhanced food security • Lessons learned, good practices, innovative policies packaged and shared among PEMSEA Partner Countries and other stakeholders.
2.3 Emissions from maritime related transport and port activities are reduced to protect near-port communities from high pollution levels and lower GHG emissions in support NDC's in PEMSEA Partner Countries.	• PEMSEA Partner Countries and port cities realize air pollution and GHGs reductions in the maritime transport chain, contributing to global efforts to address climate change.	**2018** • PEMSEA Partner Countries and representative port cities identified to explore gaps, challenges and impacts in pollution emissions/GHG reductions. **2019–2020** • In collaboration with IMO and other relevant international organizations, port cities, port authorities and operators, and the shipping industry, pilot projects for innovative policies, new technologies and procedures are developed, financed and initiated to demonstrate low-carbon, alternative energy solutions for port operations. **2021–2022** • In-person and virtual training programs conducted to improve regional expertise and buy-in by leaders at the national level, based on results of pilot projects • Strategy and road map for green shipping/green ports across the East Asian region in support of blue economy development in the maritime sector.

3.0 POLLUTION REDUCTION AND WASTE MANAGEMENT

Reported trends suggest that the continuous decline of the region's coastal and marine ecosystems is caused in part by various pollution-related detriments, increasing threats to the services that these ecosystems provide to humanity. The majority of marine pollutants come from land-based sources, which includes nutrient over-enrichment (eutrophication) caused by agricultural run-offs, and municipal and industrial wastes and discharges.

Marine debris, also known as marine litter, is defined as "any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment"[4]. Marine litter originates from land- and sea-based sources, a majority of which (approximately 80%) comes from land-based sources. A marine litter that takes decades to decompose, plastics, comprise 60 to 80 percent of all marine debris.

Sea-based sources of marine pollution include maritime transport, industrial exploration and offshore oil platforms, fishing, and aquaculture. Aside from the plastics, solid waste, and other industrial waste that sea-based activities generate, the threat of oil and chemical spills, and the capacity of ballast water to introduce invasive species also have significant effects to coastal and marine ecosystems worldwide.

PEMSEA Partner Countries are parties and signatories to major international instruments, conventions, and protocols on marine pollution management and major international and regional programs of actions, including the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) and the ASEAN Cooperation Plan on Transboundary Pollution. Under the GPA framework, National Plans of Actions and/or relevant national plans and strategies to address land-based pollution are developed and prepared by the signatory countries[5] (United Nations, 2017b).

At the country level, initiatives that address marine pollution focus on the management of pollutants from land-based sources such as projects and programs on solid waste and wastewater management, sewage treatment, and sanitation programs. Several EAS countries also have their respective Intergrated River Basin and Coastal Area Management (IRBCAM)/Integrated Water Resource Management (IWRM) plans. Sub-regional efforts such as the Gulf of Thailand's cooperation on oil spill preparedness and response, the YSLME's program focus on land-based pollution from major river basin's discharging in the Yellow Sea, and NOWPAP's marine litter management and preparedness and response exercises addressing oil and noxious and harmful substances, are all notable steps towards marine pollution management in the region.

However, it is expected that unless land-based pollution through the various East Asian national river systems is effectively addressed, it is bound to worsen. The use of rivers and the ocean for waste disposal is a common practice across the region. A good example is marine litter. Marine litter has been recognized as a global environmental problem (GEF STAP, 2011), with negative impacts on receiving ecosystems and consequences on the food system. Specifically, the amount of plastic waste entering the global oceans has been estimated at up to 12.7 million tonnes, with East and Southeast Asian countries identified as major contributors to the problem (Jambeck et al 2015). A global model of plastic emissions further estimated that between 1.15 and 2.41 million tonnes of plastic currently flow from the global riverine system into the

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4   UNEP (2009). Marine Litter: A Global Challenge. United Nations Environment Programme, Nairobi.
5   UN (2017b). Progress towards the Sustainable Development Goals. Retrieved July 05, 2017, from
     https://sustainabledevelopment.un.org/sdg14.

oceans every year and fragment into micro-plastics. The same model identified that the top 20 polluting rivers were mostly located in Asia and accounted for more than two thirds (67%) of the global annual input, while covering only 2.2% of the continental surface area and representing 21% of the global population (Labreton et al. 2017).

Nutrient loadings in rivers and LMEs of the region are also a recognized threat to both fresh water and coastal water ecosystem health. The major anthropogenic sources of river nutrient loading are land runoff from fertilizer use and livestock production, sewage, and atmospheric nitrogen deposition. Excess nutrients – nitrogen (N), phosphorus (P), silica (Si) – entering coastal waters (eutrophication), result in algal blooms, which leads to reduced oxygen conditions, increased number of dead zones in coastal waters, increased turbidity, and changes in community composition, as well as threats to human health, among other effects. In 2015, the GEF-supported Transboundary Water Assessment Programme (TWAP) identified the Bay of Bengal, South China Sea and East China Sea as high-risk areas for coastal eutrophication from nutrient loadings. Furthermore, the risk for coastal eutrophication was predicted to increase in these LMEs by 2050 based on current trends (IOC-UNESCO and UNEP (2016). Large Marine Ecosystems: Status and Trends).

The SDS-SEA Implementation Plan 2018 -2022 concentrates on three expected outcomes over the next 5 years namely: a) accession to and/or compliance with relevant international conventions and agreements on marine pollution prevention and management enhanced; b) reduction in marine pollution loadings among PEMSEA Partner Countries, including marine debris, plastics/micro-plastics and nutrient pollution; and c) demonstration of good practices and experiences in integrated river basin and coastal area management demonstrated for improved source-to-sea (S2S) governance and management for the EAS region.

KEY INTERNATIONAL/REGIONAL COMMITMENTS AND TARGETS FOR POLLUTION REDUCTION AND WASTE MANAGEMENT

Sustainable Development Strategy for the Seas of East Asia
Sustain Strategy
- Maintain and enhance the quality of coastal waters
- Extend the implementation of integrated watershed development and management programs to all major river basins, lakes and international water systems in the region

Protect Strategy
Protect ecosystems, human health and society from risks which occur as a consequence of human activity.
- Prevent coastal and marine degradation from land-based human activities
- Prevent adverse impacts from sea-based human activities
- Ensure recovery of clean up costs and compensation for damages

Implement Strategy
Implement international instruments relevant to the management of the coastal and marine environment
- Translate the principles and objectives of international conventions and agreements into desired management outcomes
- Enhance synergies and linkages between international conventions and agreements at the regional level
- Execute obligations under international conventions and agreements at the local level

UN Sustainable Development Goals

- SDG 6.3: Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- SDG 6.a: Expand international cooperation and capacity building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.
- SDG 11.6: Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
- SDG 12.4: Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.
- SDG 14.1: Prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution by 2025.

Aichi Biodiversity Targets

- Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

IMO Conventions (e.g.,MARPOL; Ballast Water; London; OPRC; Anti-fouling; CLC; Fund)

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

ASEAN Cooperation Plan for Transboundary Pollution

POLLUTION REDUCTION AND WASTE MANAGEMENT
OBJECTIVES, EXPECTED OUTCOMES, INDICATORS AND TARGETED ACTIONS AND SCHEDULE

Objective: To prevent and significantly reduce pollutant discharges and accidental spills from land- and sea-based sources in coastal and sub-regional sea areas of the region.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
3.1 Accession to and/or compliance with relevant international conventions and agreements on marine pollution prevention and management enhanced	• Partner Country accession and compliance with international conventions and agreements on marine pollution prevention and management	**2018** • PEMSEA Annual Report published, identifying current status of Partner Country accession and compliance with relevant international conventions
	• Objectives and principles of international conventions on marine pollution consolidated into the legislative, administrative, operational and reporting requirements and procedures in Partner Countries	**2019−2020** • Regional and national learning events organized/co-organized to build awareness on the needs and benefits of international conventions and agreements, country progress and compliance with such instruments, and strategies and plans to strengthening approaches to implementation

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
		• Access to training, technical assistance and projects facilitated in collaboration with international and regional organizations, aimed at developing and strengthening policy, legislation, implementation, and monitoring and reporting processes to improve compliance with international conventions. • Sub-regional oil spill contingency plan for the Gulf of Thailand completed and adopted by the three littoral states (Cambodia; Thailand; Vietnam). **2021–2022** • Regional State of Oceans and Coasts Report prepared in collaboration with Partner Countries, LMEs programmes, regional organizations, etc., incorporating indicators of compliance with international conventions and targets, and the social, economic and ecological benefits derived.
3.2 Marine pollution reduced among PEMSEA Partner Countries from land-based and sea-based sources, including marine debris, plastics/micro-plastics and nutrient pollution.	• Local governments prioritize investments in pollution reduction, waste management and water supply conservation and management in their development and investment plans	**2018** • Potential investment projects in pollution reduction/nutrient management, solid waste/plastics management, water supply conservation and management, and water resources management identified in PEMSEA Partner Countries. **2019–2020** • Prefeasibility/feasibility studies completed in collaboration with concerned local governments and local stakeholders. • Financing arrangements and investment mechanisms identified and confirmed; partnership arrangements developed with investors and business sector **2021–2022** • Facilities constructed and commissioned • Knowledge products, skills and experience within each country and across the region • Scaling up and replication projects developed and initiated in each country.
3.3 Good practices and experiences in integrated river basin and coastal area management demonstrated in PEMSEA Partner Countries and incorporated into a regional strategy and road map for improved source-to-sea (S2S) governance and management for the EAS region.	• Integrated river basin management (IRBM) projects implemented in PEMSEA Partner Countries, providing foundation for improved governance and integrated management of river basins and associated coastal and ocean regions. • S2S regional strategy and road map developed, serving PEMSEA Partner Countries, financial institutions, donors and investors as a platform for cooperation and collaboration.	**2018** • Project Document for a foundation-building project, entitled Reducing Pollution and Preserving Environmental Flows in the East Asian Seas through the Implementation of Integrated River Basin Management in ASEAN Countries, developed and submitted to GEF in collaboration with UNDP, the ASEAN Working Group on Water Resources Management, and 7 ASEAN Members States and 5 PEMSEA Country Partners (i.e., Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, and Viet Nam).

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
		2019–2020 • GEF/UNDP/ASEAN Project on IRBM initiated in 7 countries. • New foundation-building project proposals developed in collaboration with PEMSEA Partner Countries, donors and international organizations to extend/improve S2S governance and management on other countries/river basins of the region • Two regional forums/events organized with participating countries, experts, regional organizations and academe to identify key indicators for tracking and assessing S2S governance, management and impacts, and to formulate a regional S2S strategy and road map. **2021–2022** • Regional S2S strategy and road map completed and submitted for adoption by ASEAN Member States and PEMSEA Partner Countries. • Regional training packages prepared and disseminated and capacity building events conducted among responsible national and local planning agencies, based on the experience, models, tools, and financing and investment templates developed during the S2S foundation projects. • New project proposals and partnerships developed to assist PEMSEA Partner Countries with scaling up IRBM/S2S programs in priority river basins and LMEs/sub-regional sea areas.

PRIORITY GOVERNANCE PROGRAMS ALIGNED WITH GLOBAL AND REGIONAL COMMITMENTS AND TARGETS

4.0   OCEAN GOVERNANCE AND STRATEGIC PARTNERSHIPS

The Regional Review on SDS-SEA Implementation 2003-2015 noted the significant progress made by the EAS countries in developing and implementing national policies, strategies, action plans and programs in coastal and ocean management and river basin management (84% of countries with policies, action plans and programs; 75% with national interagency and intersectoral coordination mechanisms) , as well as in expanding the geographical and functional coverage of ICM in the region (>14% regional coastline coverage as of June 2015). In terms of State of the Coasts (SOC) reporting, 29 local governments were recorded to have initiated or completed their reports by end of 2015, while national and regional SOC reporting process was initiated in 2016.

At the organizational and institutional level, good progress was also achieved by PEMSEA in line with its transformation into an international organization with its own legal entity, including ratification of PEMSEA's Headquarters Agreement with the Government of the Philippines (May 2015), compliance of PRF's financial management system as certified by KPMG audits (from 2014-2015) and PriceWaterHouseCoopers audit (2016); and the Third Party Assessment Report: Achieving a Self-Sustaining PEMSEA Resource Facility, which was received and accepted by the EAS Partnership Council in July 2017.

The Da Nang Compact, which was adopted during the Minsters Forum at the EAS Congress 2015, set 4 key targets for ocean governance and strategic partnerships in support of SDS-SEA implementation, as follows: a) by 2017, a self-sustaining PEMSEA Resource Facility managing and coordinating a suite of products, services and financing mechanisms, for advancing SDS-SEA implementation at the regional, national and local levels; b) by 2018, a regional State of Oceans and Coasts reporting system to monitor the impacts and benefits, and to continually improve planning and management of SDS-SEA implementation; c) by 2021, national ocean and coastal policies, and supporting legislation and institutional arrangements set up and functional in 100% of PEMSEA Partner Countries, consistent with international environmental and sustainable development commitments and based on best available scientific information; and d) by 2021, ICM programs for sustainable development of coastal and marine areas covering at least 25% of the region's coastline and contiguous watershed areas, supporting national priorities and commitments under UN SDGs, UNFCCC, Aichi Biodiversity Targets, UNISDR Post-2015 Framework for Disaster Risk reduction, and other relevant environmental and sustainable development targets subscribed to by PEMSEA Partner Countries.

These 4 targets are the focus of the Ocean Governance and Strategic Partnerships portion of the SDS-SEA Implementation Plan 2018 – 2022.

OCEAN GOVERNANCE AND STRATEGIC PARTNERSHIPS
OBJECTIVES, EXPECTED OUTCOMES, INDICATORS AND TARGETED ACTIONS AND SCHEDULE

Objective: To strengthen ocean and coastal governance and management at regional, national and local levels.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
4.1 A self-sustaining PEMSEA Resource Facility managing and coordinating a suite of products, services and financing mechanisms, for advancing SDS-SEA implementation at the regional, national and local levels.	• Voluntary agreements signed with PEMSEA Partner Countries, confirming country ownership of PEMSEA and providing core funding for operation of the PRF Secretariat. • Agreements signed with PEMSEA Non-Country Partners confirming resource and financial commitments to the expected outcomes and targeted actions of the SDS-SEA Implementation Plan 2018-2022.	**2018** • Objectives, scope and content of Voluntary Agreements developed and agreed to by PEMSEA Partners. **2019–2020** • Voluntary Agreements signed with PEMSEA Partners. • Voluntary Agreements fully operationalized. • PEMSEA Resource Facility managing and coordinating a full suite of products, services and financing mechanisms in support of SDS-SEA implementation.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
4.2 A regional State of Oceans and Coasts reporting system to monitor the impacts and benefits, and to continually improve planning and management of SDS-SEA implementation.	• Inaugural national and regional State of Oceans and Coasts (SOC) Reports developed and published by PEMSEA Country Partners, collaborating organizations, LMEs and sub-regional sea areas programmes. • SOC reporting system adopted, refined and utilized by PEMSEA Partner Countries and LMEs/sub-regional sea areas to plan, evaluate and report on progress, achievements, impacts and challenges of SDS-SEA implementation and other related LME/sub-regional SAPs for sustainable development of oceans and coasts and blue economy growth across the region.	**2018** • National and Regional SOC Reports submitted to the Ministers Forum during the EAS Congress 2018. **2019 -2020** • Methodologies, objectives and benefits of the SOC reporting system reviewed and evaluated by PEMSEA, particularly in relation to measuring changes and trends in blue economy development in the region and in relation to UN SDG 14 targets. **2021-2022** • Second national, LME/sub-regional sea areas and regional SOC reports prepared, published and disseminated by PEMSEA Partner Countries, LMEs/sub-regional sea areas programmes, and collaborating organizations using agreed methodologies, objectives and themes.
4.3 National ocean and coastal policies and supporting legislation and institutional arrangements set up and functional PEMSEA Partner Countries.	• National ocean and coastal policies, supporting institutional arrangements, legislation and programs established and functional in PEMSEA Partner Countries, consistent with international environmental and sustainable development commitments and based on best available scientific information.	**2018** • Ocean Leadership Forum organized and conducted as a side event of the EAS Partnership Council to inform policymakers and program managers of innovations in policy, regulatory, environmental, economic and financial instruments • Legislators' or Parliamentarians' Forum organized at the EAS Congress 2018 to explore and discuss innovations in policy, regulatory, environmental, economic and financial instruments **2019–2020** • Legislative agenda prepared and agreed to in each PEMSEA Partner Country identifying proposed new developments/reforms in national ocean policy, institutional arrangements and legislation. • Legislative agenda implementation initiated in each country, as required. **2021–2022** • Regional and national forums and events conducted, sharing innovations, experiences and lessons among policymakers and legislators within and outside of the region. • Regional review of national ocean policy, institutional arrangements and legislation completed as part of SOC reporting, including impacts and benefits with regard to achieving national and regional targets for sustainable development and blue economy.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
4.4 ICM programs for sustainable development of coastal and marine areas covering at least 25% of the region's coastline and contiguous watershed areas	• Length of coastline covered by ICM programs, supporting national priorities and commitments under UN SDGs, UNFCCC, Aichi Biodiversity Targets, UNISDR Post-2015 Framework for Disaster Risk reduction, and other relevant environmental and sustainable development targets subscribed to by PEMSEA Partner Countries. • Local governments/ICM programs certified under PEMSEA's ICM Code and Certification System	**2018** • Priority coastlines for ICM program up-scaling over the next 5 years identified by PEMSEA Country Partners • National ICM programs developed and adopted in support of ICM scaling up and replication targets. **2019−2020** • New projects developed in collaboration with national and local governments to enable upscaling of ICM coverage and submitted to internal and external funding sources. • New projects initiated at the local government level and provided with access to ICM capacity enabling and technical support services as required. • PNLG members certified under PEMSEA's ICM Code and Certification System **2021−2022** • PNLG on-line tracking system and local government SOC reports employed to demonstrate benefits and impacts of ICM program implementation and local government contributions to SDGs 6, 11, 13 and 14.

5.0 KNOWLEDGE MANAGEMENT AND CAPACITY BUILDING

SDS-SEA implementation challenges national and local governments in coastal areas throughout the region with the formidable task of reducing conflicting and non-sustainable usage of natural resources through the application and replication of ICM programs. The objectives of the Knowledge Management and Capacity Development over the next five years are framed to address key issues in the current arrangements. The action programs, indicators and targets herein cannot be accomplished in isolation of other ongoing and planned programs or projects in the region. Rather, they provide a framework for collaborating and partnering opportunities for the common benefit of healthy and resilient oceans and coasts across the region.

The targeted actions and schedule in this knowledge management and capacity development implementation plan are contingent on:
- Identifying, accessing and utilizing available expertise and knowledge, mobilizing internal and external resources, creating new opportunities, and putting greater emphasis on ownership and representation of all sectors of society;
- Developing, sharing and translating scientific and traditional forms of knowledge on sustainable coastal development and management towards more informed policies and practices; and
- Forging communities and practice and expert networks as a support service to training, educating, mentoring and assisting in expanding the coverage of ICM programs and blue economy growth across the region

KEY INTERNATIONAL/REGIONAL COMMITMENTS AND TARGETS FOR KNOWLEDGE MANAGEMENT AND CAPACITY BUILDING

Sustainable Development Strategy for the Seas of East Asia
Communicate Strategy
- Raise public awareness, strengthen multisectoral participation and obtain scientific support for the sustainable development of the coastal and marine environment
- Enhance awareness and understanding of coastal and marine environmental and resource management issues and processes
- Utilize science and traditional knowledge in decision-making processes
- Mobilize governments, civil society, and the private sector utilizing innovative communication methods

Adapt Strategy
- Support targeted research on the valuation of natural resources and ecosystem services, and losses to society and economies as a consequence of degradation and destruction
- Recognize/certify the application of green technology and other actions aligned with an ocean-based blue economy at the level of communities and businesses

UN Sustainable Development Goals (NOTE: Most SDGs have specific target pertaining to knowledge and capacity development (i.e., SDG6a; SDG13b)
- SDG 14a (increase scientific knowledge, develop research capacity and transfer marine technology)
- SDG 17.6 (enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms)

- SDG 17.7 (Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries)
- SDG 17.9 (enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans including through North-South and South-South triangular cooperation)

Aichi Biodiversity Targets
- Strategic Goal E: enhance implementation through participatory planning, knowledge management and capacity building
- Target 18: traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, are respected, and fully integrated and reflected
- Target 19: knowledge, science base and technologies relating to biodiversity, its values, functioning, status and trends, and consequences of its loss, are improved, widely shared and transferred and applied.

UNFCCC Paris Climate Agreement
- Article 11: enhance capacity of developing country Parties to the Agreement; developed country Parties enhance support for capacity-building actions in developing country Parties.
- Article 12: enhance climate change education, training, public awareness, public participation and public access to information

KNOWLEDGE MANAGEMENT AND CAPACITY DEVELOPMENT
OBJECTIVES, EXPECTED OUTCOMES, INDICATORS AND TARGETED ACTIONS AND SCHEDULE

Objective: To raise public awareness, strengthen capacities, and incorporate scientific information and input to planning, managing and sustaining healthy and resilient oceans, coasts and coastal communities.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
5.1 A regional knowledge hub for oceans and coasts established.	• A fully operational regional knowledge-sharing, education and capacity building platform - seaknowledgebank.net - utilized by PEMSEA Partner Countries and interested stakeholders as the preferred platform for knowledge products, services and networking opportunities across the Seas of East Asia region.	**2018** • Seaknowledgebank.net launched at the EAS Congress 2018. **2019–2022** • Seaknowledgebank.net linked with other regional and international websites, portals and information systems (e.g., LME Learn; WCPFC; CTI; YSLME; etc.) for knowledge sharing and transfer. • Seaknowledgbank.net sustained and updated with innovations in knowledge products, tools, and best management practices from regional and global experiences. • Scholarships, fellowships, internships and other professional development opportunities identified and facilitated. • Communities of Practice (CoP) microsites embedded in the seaknowledgebank.net (e.g., PNLC; PNLG; climate change; disaster risk reduction, pollution and waste management) to help projects and programs with similar needs and situations.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
		• Develop and publish reports on innovative financing mechanisms (e.g., blue carbon, blue bonds, Ocean Investment Facility and Funds, etc.) and disseminate them through the seaknowledgebank.net and through national and regional events, including PNLG Forums, XWOW and the EAS Congress. • Promote and facilitate the use of the seaknowedgebank.net among PEMSEA Partners and other collaborating organizations and sponsors as a support tool for local governments and other organizations to identify and develop blue economy investments.
5.2 Regional ICM and special skills training programs, materials, case studies and advisory and mentoring services supporting scaling up and replication of ICM programs.	• Innovative and value-added education and training products, services and learning experiences helping PEMSEA Partners and stakeholders at the national and local levels to achieve sustainable development targets. • National and local governments, ports, business sector and professional individuals adopting and using PEMSEA's codes and certification systems. • Coverage and range of services provided by PNLC members to national and local governments and ICM sites enhanced.	**2018** • Priority capacity development needs in Partner Countries identified for SDS-SEA implementation over the next 5 years. • ICM professional certification system launched at EAS Congress 2018 • CSR recognition system launched at EAS Congress 2018. **2019−2020** • Traineeship for young professionals and visiting scholar/postdoctoral research program developed and initiated in support of SDS-SEA objectives and priorities. • First batch of ICM professionals certified by PEMSEA. • CSR recognition system promoted and applied among PNLG members across the region. • Capacities and range of services provided by PNLC members Learning Centers extended and enhanced through professional networking, special skills training, and mentoring in accordance with national ICM scaling-up programs and needs of Partner Countries. **2019−2022** • Capacity development and education opportunities, materials and technologies being applied in the region and elsewhere in support of sustainable development of oceans and coasts reviewed and evaluated. • Working relationships and partnership arrangements developed with institutions, organizations, programs and projects to develop, adapt and utilize training materials and training providers for special skills training. • Open access for continuing education via online recordings of selected courses and webinars explored and promoted. • Massive open online courses (MOOC) for special skills training developed, adapted and utilized. • Capacity development and communication plans empowering key sectors of society, particularly women, youth and indigenous people to participate in ICM programs developed and initiated.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
5.3 Targeted research projects providing scientific data, tools and methodologies for application in planning and decision-making processes for scaling up SDS-SEA implementation.[vi]	• Scientific information and perspectives from targeted research projects regularly disseminated as a contribution to policy and decision-making processes and public awareness of coasts and oceans.	**2018** • Priority targeted research needs identified in collaboration with PEMSEA Partners, PNLG, PNLC, LMEs/sub-regional sea areas for the next 5 years. **2019–2022** • Targeted research projects developed and promoted among PEMSEA Non-Country Partners, PEMSEA's Regional Centers of Excellence, PEMSEA Network of Learning Centers, scientific institutions, and universities. • Outputs from ongoing targeted research projects assessed, synthesized and packaged as knowledge products for dissemination, including case studies, policy briefs, ICM Solutions, etc.

[vi]   This Expected Outcome is also a way for the region to contribute to the Decade of Ocean Science 2021-2030 for Sustainable Development proclaimed by the UN and mainly coordinated by (IOC) of UNESCO. This proclamation aims to gather ocean stakeholders globally behind a common framework to help ensure that ocean science can fully support countries in the achievement of the Sustainable Development Goal 14 on the ocean.

6.0 BLUE ECONOMY INVESTMENT AND SUSTAINABLE FINANCING OF THE SDS-SEA

The Changwon Declaration signed by PEMSEA Country Partners in 2012 identified a common understanding on blue economy[vii] which is complementary with international blue economy definitions and frameworks[viii]. This paved the way for the blue economy paradigm that promotes an alternative economic growth strategy in the coasts and oceans with low environmental impacts.

In line with this, scaling up of investment in sustainable development of coasts and oceans will be critical for achieving the targets of the SDS-SEA. Both national and local governments play a key role in prioritizing and developing blue economy investment projects supporting SDS-SEA implementation, in partnership with the private sector. Public financing alone will not be enough—both public and private sector financing will be needed. Local governments must have the capacity to develop projects that can attract private sector financing. Through partnership and pre-investment activities, PEMSEA will promote blue economy investment, working closely with local proponents of investment projects to identify investment opportunities, evaluate the operational feasibility and financial viability (i.e., "bankability" and capacity to attract financing) and link to sources of financing.

The expected outcomes of SDS-SEA implementation over the next 5 years for blue economy investment and sustainable financing are: a) an Ocean Investment Facility established in the East Asian Seas region, identifying, developing and promoting blue economy investment projects; b) improved access to sources of public and private sector financing, including sector-based ocean investment funds and other innovative investment mechanisms; c) socio-economic benefits and changes in ecosystem health and resilience resulting from blue economy investment realized and shared with regional and international partners for further scaling up investments.

KEY INTERNATIONAL/REGIONAL COMMITMENTS AND TARGETS FOR BLUE ECONOMY INVESTMENT AND SUSTAINABLE FINANCING

Sustainable Development Strategy for the Seas of East Asia
Develop Strategy
- Develop areas and opportunities in the coastal and marine environment that contribute to economic prosperity and social well-being while safeguarding ecological values.
- Promote sustainable economic development towards a blue economy in coastal and marine areas
- Adopt ICM as the management framework to achieve sustainable development of coastal and marine areas
- Incorporate transboundary environmental management programs in sub-regional growth areas
- Develop partnerships in sustainable financing and environmental investments

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vii "We understand the Blue Economy to be 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 its potential contribution to sustainable development, including improving human well-being, and reducing environmental risks and ecological scarcities." (Changwon Declaration 2012)
viii Complementary with several blue economy frameworks such as The World Bank's Blue Economy Development Framework , OPRI (2018) blue economy structure, etc.

Adapt Strategy
- Develop and strengthen investments in green industry, technology and practices for improving the residency of coastal communities
- Employ and optimize a range of new and innovative financial mechanisms available in UNFCCC and other international agreements to develop, implement and sustain ICM programs
- Evaluate, develop and adopt applicable insurance schemes for damages resulting from climate-related phenomena

UN Sustainable Development Goals
- Goal 14 Conserve and sustainably use the oceans, seas, marine resources for sustainable development

Addis Ababa Acton Agenda
- Promotimg inclusive and sustainable industrialization
- Mobilizing domestic and international private finance and investment in areas critical to sustainable development

UN FCCC Paris Climate Agreement
- Mobilize climate finance for both mitigation and adaptation to be scaled up and represent a progression beyond previous efforts

BLUE ECONOMY INVESTMENT AND SUSTAINABLE FINANCING OF SDS-SEA
OBJECTIVES, EXPECTED OUTCOMES, INDICATORS AND TARGETED ACTIONS AND SCHEDULE

Objective: To bolster blue economy investment and sustainable financing of the SDS-SEA by promoting improved access to sources of financing and development of financing mechanisms and partnerships.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
6.1 Improved access to sources of public and private sector financing, including sector-based ocean investment funds and other innovative investment mechanisms.	• Increased partnerships with international organizations, donors, companies and investors to invest in blue economy projects and sustainable development of coasts and oceans in the region.	**2018** • Work program and schedule developed for enhancing PRF's capacity as a pre-investment service developed. • Good practices or initiatives on blue economy presented at the EAS Congress 2018 • Investment projects in wastewater, sustainable tourism, sustainable fisheries/aquaculture, and MPAs/sustainable tourism developed and presented at the EAS Congress 2018. • Business plan and operating modality for a self-sustaining Pre-Investment Facility (PIF) completed. **2019–2020** • PIF launched in collaboration with Country Partners and sector-focused international partners.

2022 Expected Outcomes	Indicators	Targeted Actions and Schedule
		• In collaboration with international investment experts and fund managers, capacity development program focused on strengthening national and local governments' awareness and ability to identify, plan and develop bankable investment projects covering pollution reduction and waste management, eco-tourism, sustainable fisheries and aquaculture, alternative livelihoods, climate change adaptation, etc., are organized and conducted. • Pipeline of potential investment projects developed and promoted in collaboration with national and local governments, coastal communities, investors, private sector organizations, the EAS Sustainable Business Network, World Ocean Council, CTI and/or IUCN. **2021-2022** • Investment projects developed (including feasibility studies, financing mechanisms, business plans, and partnership arrangements) and implemented, facilities commissioned, monitored and evaluated.
6. 2 An Ocean Investment Facility established in the East Asian Seas region, identifying, developing and promoting blue economy investment projects.	• Capacities of, and support services to, national and local governments in the technical, financial, social, economic and investment aspects of blue economy investments enhanced	**2018** • Work program prepared to initiate the development of the Ocean Investment Facility and Funds, including fund(s) governance, management, investment selection criteria, ESG safeguards and key elements of fund modalities. **2019–2020** • Application of innovative financing mechanisms pilot-tested in Partner Countries, including a blue carbon finance scheme and an ICM Bond. • Inputs from potential partners and investors secured and proposals developed for funding to establish and capitalize one or more sector-based Ocean Investment Funds (e.g., climate change; pollution reduction; ecotourism) in partnership with donors and investors. • Agreements signed with partners and investors to capitalize one or more sector-based Ocean Investment Funds or to link PEMSEA's Ocean Investment Facility with existing sector-based funds. • Ocean Investment Facility and Funds launched. **2021–2022** • Ocean Investment Facility fully operationalized, developing, promoting and facilitating investment projects supporting SDS-SEA implementation in collaboration with PEMSEA Partner Countries, local governments, regional organizations.
6.3 Socio-economic and ecological benefits and changes in ecosystem health and resilience resulting from blue economy investment realized and shared with regional and international partners for further scaling up investments.	• Improved awareness and understanding of blue economy investments and benefits derived resulting in increased investment projects in project pipeline.	**2019–2020** • Baseline studies conducted at investment project sites using agreed governance, partnership, socio-economic, ecological and other impact indicators to define baseline conditions. **2021–2022** • End-of-project evaluations conducted to identify and evaluate changes, benefits and impacts of investment projects using agreed indicators. • Knowledge products developed and disseminated to identify and evaluate the gaps, impacts and benefits (social, economic and ecological) derived from application of financing mechanisms for blue economy investment, and recommend opportunities for improvement.