



EAS XIAMEN, CHINA
6-8 NOVEMBER
CONGRESS2024

WOW¹⁹
2024厦门国际海洋周
World Ocean Week in Xiamen

PEMSEA Blue Carbon Program 2024 Updates

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MISSION

To foster and sustain healthy and resilient coasts and ocean, communities, and economies across the Seas of East Asia through integrated management solutions and partnerships

COUNTRY PARTNERS



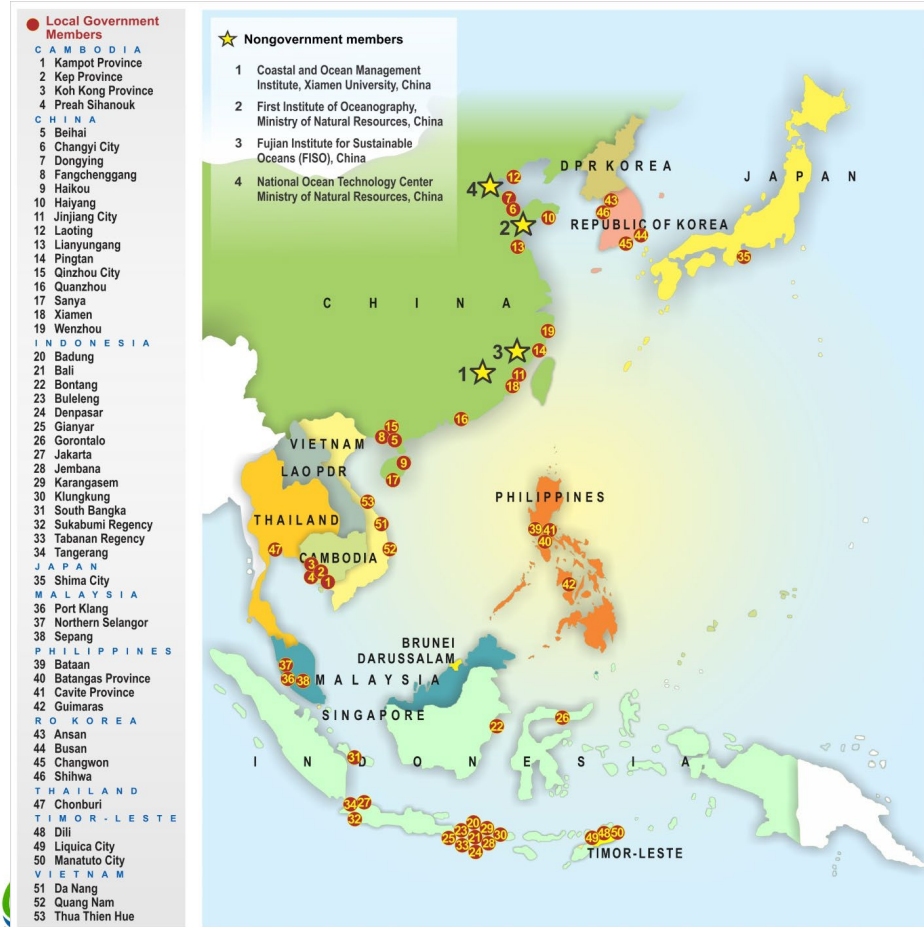
NON-COUNTRY PARTNERS



Maritime Collaborators



PEMSEA networks of learning centres and local governments



PEMSEA Blue Carbon Program

Objectives

- Support the conservation and improvement of coastal blue carbon ecosystems and optimize its contribution to GHG emissions reduction and coastal resilience to climate change
- Improve local government and community access to financial mechanisms which may support the scaling up of blue carbon ecosystem management



Photo by TNC



PEMSEA Blue Carbon Program Roadmap

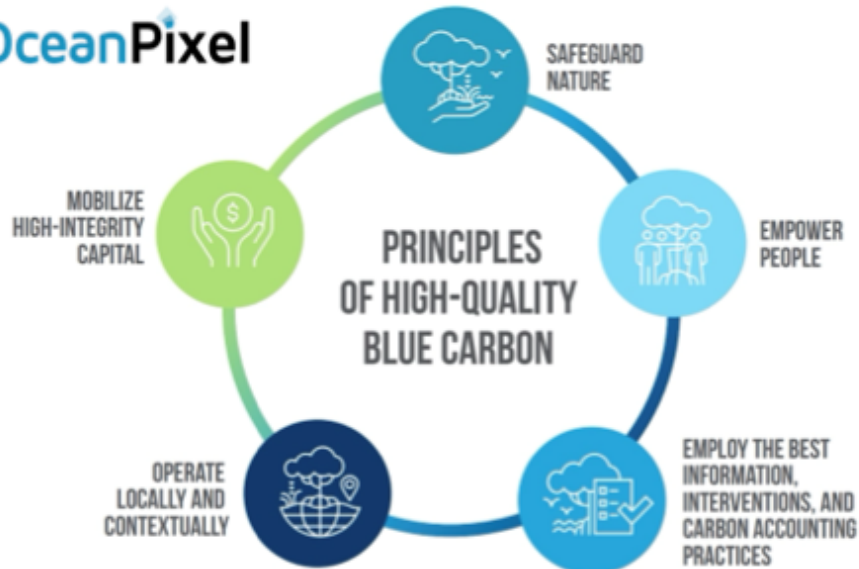
	BC Standardized Accounting Methodology	Supply	Demand	Certification
Immediate (2023-2024)	<p>Target: Standard BC accounting methodology developed</p>	<p>Targets:</p> <ul style="list-style-type: none"> • Baseline survey of BCEs in (#) sites (inventory) • BCE accounting done in BCE accounting done in (#) sites using standards 	<p>Target: Policy and market research conducted</p>	<p>Targets:</p> <ul style="list-style-type: none"> • Business plan developed • Core team trained (assessment, certification, management)
Medium-term (2025-2028)	<p>Target: Approved BC Accounting Standards used in sites</p>	<p>Targets:</p> <ul style="list-style-type: none"> • BCE accounting done in at least (#) sites using BC Accounting Standards • Models for co-benefits arrangements 	<p>Target: Partnerships with private sector and sites forged/projects developed</p>	<p>Target: Certification system established</p>
Long-term (2029-2033)	<p>Target: PEMSEA BC Accounting Standards recognized/accredited as voluntary standard in (#) countries</p>	<p>Targets:</p> <ul style="list-style-type: none"> • BCE Accounting done in (#%) of PEMSEA sites • (#) PEMSEA sites in registry 	<p>Target: (#) private sector partners in registry</p>	<p>Target: PEMSEA Certification System operational</p>

Supply study findings

- In the EAS region, **BCEs are deemed important ecologically, economically, and socially.**
- However, these BCEs are **threatened by various anthropogenic activities** (e.g., logging, aquaculture, coastal development, tourism, pollution, climate change).
- **Various forms of protection** (e.g., MPAs, LMMAs, OECM and ICM sites, local regulations/ ordinances) have been implemented to help manage and protect these BCEs, but their **effectiveness and enforcement can still be improved.**

Supply Study findings

- There are four primary category of gaps and challenges:
 - **governance and enforcement challenges**
 - **capacity and resource constraints**
 - **environmental and climate change impacts**
 - **data and knowledge gaps.**
- **All respondents expressed interest in developing and implementing BC projects**
- Current BC projects focus on **BCE conservation, research, monitoring, restoration,** and participation in **carbon market.**
- **BCE restoration, conservation, and assessments received the highest interest,** followed by **carbon crediting and trading.**



Thematic Analysis (Prelim)

Strategic Importance

- BC improves ESG reporting r
- ESG investment meets organizational strategies

Characteristics

- ROI
- Growth
- Institutional Stability

Opportunities

- Investment Types, Volume and Time Period
- Ease and Cost Variables

Varied Perceptions

- How to align blue initiatives with CSR?
- Regulation Compliance

Investment Practices

- Preferences for Investment
- Institutional Portfolios

Benefits

- Innovative & Technological Advancements
- Resilient & Transparent

Preferences

- Feasibility studies of financial instruments needed
- Credible Financial Institutions Ownership

Challenges

- Lack of Awareness and Capacity
- Vague Feasibility

Key Interview Excerpts / take-aways (Prelim)

- Revenues from Blue Carbon credits alone is still a risk
- Need for an **integrated approach** when deploying capital
- Consider **wider blue economy** + ecosystem services
- **Socially-inclusive** BCE Project design
- **Involve Private Sector on the on-set**
- **Standardizing Natural Asset Valuation** enable NbS & NCS
- Practice **Natural Capital Accounting**
- **Guarantee & insurance instruments** improve investability
- Fundraising for **USD50-100M** easier than USD500k to <10M
- **Continue exploring** emerging mechanisms and instruments

Blue Carbon Accounting Methodology

Comparative study in East/SEA

- VERRA standard vis a vis Ch, RoK, Jpn, Indo, Phil
- Comparative analysis: focus, measurement, ecosystem & carbon pools, gaps, consideration for harmonization, computation inputs & methods, field data collection, field sampling specification, verification, certification
- Considerations for harmonization, key take aways & practices

Focus

VERRA	Japan	Korea	MNR	China Xiamen	Indonesia	Philippines
Carbon Crediting	Carbon Crediting	Reporting and Inventory	Monitoring and Management	Carbon Crediting	Reporting and National Inventory	Monitoring and Conservation

- VERRA and Japan prioritize carbon crediting for global markets, while Korea emphasizes national GHG reporting.
- China combines monitoring (MNR) and carbon crediting (Xiamen University), while Indonesia and the Philippines focusing on national inventory and community-based monitoring.

Measurements

VERRA	Japan	Korea	China		Indonesia	Philippines
			MNR	Xiamen		
CH ₄ , N ₂ O, CO ₂	CO ₂	CH ₄ , N ₂ O, CO ₂	CH ₄ , N ₂ O, CO ₂	CH ₄ , N ₂ O, CO ₂	CH ₄ , CO ₂	CO ₂
GHGEmissions (from biomass and soil) Verified Carbon units, buffer Uncertainty	CO ₂ absorption Atmospheric CO ₂ Certainty	Carbon Stock CO emissions Uncertainty	Carbon Stock CH ₄ emission Uncertainty	Carbon Stock CH ₄ emissions Uncertainty	Carbon Stock	Carbon Stock
t CO ₂ e/ha/yr	t CO ₂ /yr	t CO ₂ /ha	t CO ₂ /ha	t CO ₂ /ha	t CO ₂ /ha	t CO ₂ /ha



Ecosystems and Carbon Pools

VERRA	Japan	Korea	China		Indonesia	Philippines
			MNR	Xiamen		
<p>Tidal Wetlands Seagrass Meadows Mangrove Forests Herbaceous Vegetation in Wetlands</p>	<p>Mangroves Tidal Flats Seagrass Seaweed Aquaculture</p>	<p>Tidal Marshes Seagrass Meadows Coastal Wetlands</p>	<p>Mangrove Seagrass Coastal Salt Marsh Cultured algae and bivalve molluscs</p>	<p>Mangroves</p>	<p>Mangroves and seagrasses</p>	<p>Mangroves and Seagrasses</p>
<p>Aboveground (tree and non tree) Belowground Litter Dead wood Soil Wood Products</p>	<p>Submarine soil and deep sea as organic matter derived from grass algae. Seawater as persistent dissolved organic matter released from grass algae.</p>	<p>Biomass Dead organic matter Soil Carbon</p>	<p>Biomass (aboveground, belowground) Dead Organic Matter (dead wood + litter) Sediment Cultured Algae and Bivalve molluscs</p>	<p>Biomass (aboveground, belowground) Dead wood Soil organic carbon</p>	<p>Aboveground biomass, belowground biomass, soil organic carbon, dead wood, litter</p>	<p>Aboveground biomass Belowground biomass Soil organic carbon</p>

Takeaways and Best Practices

- VERRA:
 - Comprehensive methodologies for baselines, monitoring, and verification.
 - Stringent verification and certification processes.
 - Advanced computational methods and multi-GHG measurement approaches.
- Japan (Jblue):
 - Advanced technologies: acoustic surveys, underwater drones.
 - Inclusion of diverse ecosystems: seaweed, aquaculture.
 - CO2 absorption and atmospheric CO2 measurement methods.
- Korea:
 - Detailed protocols for national GHG reporting and inventory.
 - Sophisticated data collection techniques: core sediment sampling, advanced analytical methods.
 - Comprehensive GHG measurement (CH4, N2O, CO2).

Takeaways and Best Practices

- China:
 - Advanced use of remote sensing and GIS data.
 - Comprehensive carbon pool measurements: biomass, soil carbon, dead organic matter.
 - Robust monitoring and management of blue carbon sinks.
- Indonesia:
 - Alignment with national climate objectives, rigorous QA/QC procedures.
 - Comprehensive sampling methods: detailed guidelines for plot sizes and core depths.
 - Integration of blue carbon data into national inventories.
- Philippines:
 - Community-based monitoring and conservation-focused practices.
 - Detailed field data collection guidelines: soil core sampling, water quality measurements.
 - Conservation strategies balancing carbon accounting with ecosystem preservation.



Next steps

- Discuss with stakeholders at EAS Congress/World Ocean Week in Xiamen 2024, Nov 6-8, 2024
- Forge strategic partnerships & mobilize resources to refine activities especially on developing regional accounting methodology



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Blue Synergy for a Shared Future: One Sustainable and Resilient Ocean

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中华人民共和国自然资源部
Ministry of Natural Resources of the People's Republic of China

厦门市人民政府
Xiamen Municipal People's Government



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