Innovative Financing for Coastal and Marine Ecosystems

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ADB's Ocean Finance Framework

Healthy Oceans Action Plan to scale up investments and technical assistance to $5 billion between 2019 and 2024

Ecosystem and Natural Resource Management

- Ecosystem management and restoration
- Sustainable fisheries management
- Sustainable aquaculture

Sustainable Coastal and Marine Development

- Coastal resilience
- Coastal and marine tourism
- Port and shipping
- Marine renewable energy

Pollution control

- Solid waste management
- Resource efficiency and Circular Economy
- Non-point source pollution management
- Wastewater management

Ocean Finance

Fertilizer Pollution Reduction

80 % of marine pollution originates onshore, the 3 most impactful being agriculture, ports and harbours, and aquaculture, which includes fish and shrimp farming- International Resources Panel, UNEP

ADB loan for Fertilizer pollution reduction

SMARTCHEM TECHNOLOGIES LIMITED

- Loan to Smartchem Technologies Limited (STL, India) to finance capital expenditures and R&D and training related to STL's **enhanced-efficiency specialty fertilizer** (EESF) business
- The use of EESFs promotes climate-resilient production through **reduction of water pollution** and improvement in soil management

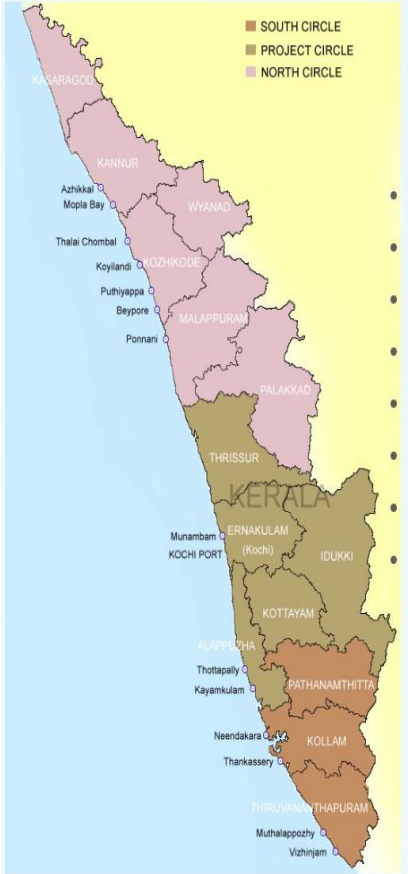
Green Port Terminal- ADB project

NHAVA SHEVA FREEPORT TERMINAL

$131m loan from ADB and LEAP

- The project upgrade will result in efficiency improvements and reduce the average **berth stay of vessels** to 0.94 days from 1.25 days.
- The project also includes the installation of **shore power**, which allows ships to run on electricity instead of diesel engines while docked, reducing localized pollution
- 30% of its power requirements from **renewable sources** by FY2028
- ADB had undertaken a detailed **port process mapping** for JNPT to improve logistics processes

Kerala's fisheries assets



A brief outline of the fishery details of Kerala state is given below

- 590 Kms Coastline
- 222 Fishermen Villages
- 9.00 Lakh Fishermen Population
- 1.31 Lakh Fishermen Families
- 5,504 Registered Mechanised Crafts
- 23,673 Registered Traditional Crafts
- About 6.00 Lakh Metric Tonnes Marine Fish Production
- About 20 - 25% Share in India's Total Marine Fish Production

Thai Union- Sustainable Shrimp Value Chain Project

- Loan to support Thai Union's permanent WC needs for procurement, processing, and exports of sustainable shrimp in Thailand
- Project supports **Thai Union's commitment to reach 100% of sustainable shrimp by 2030**, from a baseline of 59% in 2024

- Sustainable shrimp is defined as shrimp that either meets **Global Sustainable Seafood Initiative** (GSSI)-recognized standards, such as ASC or BAP, or is sourced from an ASC-administered **Aquaculture Improvement Project** (AIP)

- Participation in an AIP requires continual progress toward ASC accreditation

- Farming practices required by certifications and AIP are consistent with improved resilience, including:
  - use of high-quality post-larvae
  - measurement of animal welfare indicators
  - measurement of survival rates and implementation of biosecurity controls
  - measurement of water quality (nitrogen, phosphorous, and oxygen)
  - use of high-quality feed and strict feeding protocols to optimize feed uptake

Plastic Pollution Reduction

Kerala generates about 450 tonnes of plastic every day, and around 70% of which ends up in the sea.

- Plastic Waste Management Rules (CPCB, 2016)
- Extended Producer Responsibility(**EPR,** GOI)
- **Suchitwa Sagaram** project (Kerala, 2017)
- Integrated Coastal Zone Management Project (WB)

ADB's Blue loan support for plastic pollution reduction

INDORAMA VENTURES

- Loan to support the Indorama group's $300m investment plan to expand its **PET recycling** capacity in India, Indonesia, Philippines, and Thailand
- ADB also supported the Thai government to develop regulatory standards and testing/certification capacity to allow recycled PET in food packaging in Thailand

Sustainable finance for the processing industry

Kerala's investment sinks for sea food sector

- Investments driven by the **Vizhinjam Port** (IKGS 2025)
- **Mega Seafood Park** at Cherthala (KSIDC)

Number of seafood processing plants in Kerala

Office	Kerala
Freezing Plants	117
Fresh/Chilled Fish Handling Centre	7
Live Fish Handling Centre	3
Dried/Salted Fish Handling Centre	7
Pre Processing	123

Data source : MPEDA

UNEP FI best practices for sustainable finance for sea food sector

Wild capture fisheries

- Transparency & traceability
- Low impact fishing methods
- Biological sustainability

Aquaculture

- Promotion of Natural Capital
- Biosecurity (Aquaculture Stewardship Council)
- Feed -alternatives to existing feedstock

Waste Minimization, Resilience

Ocean Aquaculture

- **Equity investment** in Australis Holdings Inc (AHI) to finance working capital requirements and capital expenditures to increased production of **barramundi** in **ocean- based farming systems** in Viet Nam
- **$3m grant** to research and development on **seaweed** production
- Ocean-based aquaculture **is less vulnerable** to drought and extreme rainfall and may be more adaptive to sea-level rise, higher temperatures, marine heat waves, and ocean acidification
- The project **supports ocean-based barramundi and seaweed aquaculture** as a climate-resilient, nature-based solution to climate change
- Promotes production of barramundi **as low carbon, high-quality protein**

Ocean Finance- tourism

BANK OF MALDIVES

- **Loan-cum-Grant support** for on-lending to tourism companies locally owned by Maldivian residents
- On-lending will focus on climate adaptation interventions, including **coastal resilience, marine ecosystem preservation and restoration, and desalination plants**
- Supporting economic recovery and expanding access to finance for the **tourism sector** which contributes **~70% to the GDP**

Unconventional instruments- Carbon Credits

Mangrove Conservation

Why Traders Should Lean In

India has 4,900+ sq km of mangroves and over 1,000 sq km ripe for restoration—enough to generate 20–25 million tonnes of CO_2e offsets every year.

Opportunities to watch:

- FinTech platforms tokenising blue carbon credits.
- ESG-listed companies investing in coastal restoration.
- Blended finance models combining public risk coverage with private capital.

This isn't just conservation—it's the next frontier of climate finance.

Mangroves could well be the *blue gold* of the ESG economy—an asset class where nature and markets meet. They don't just stand guard against the sea; they offer compounding returns in resilience, biodiversity, and carbon capital. And like all good investments, those who spot the value early are the ones who stand to gain the most.

*Excerpts from a capital market intermediary's investor client brochure on opportunities in mangrove conservation

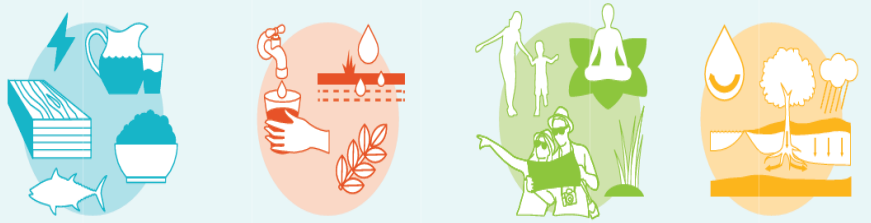
- **Projects in India**
  - MISHTI project, Odisha (combined with MNREGA)
  - Odisha Silvo fishery project
  - Integrated Coastal Zone Management Project- Bhitarkanika & Baitarani Delta
  - Kerala- Mangrove man of Kochi, Kannur Kandal project
  - Mangrove Coalition- mixed sector initiative
  - Corporate efforts- Tata Power, Tata Steel

Unconventional approaches- Blended finance

- **Blended finance**
  - Concessional Debt
  - Guarantees
  - Grants
  - Technical Assistance

Unconventional approaches- Insurance

SERVICES PROVIDED BY MARINE COASTAL ECOSYSTEMS



PROVISIONING SERVICES
including providing food, freshwater, fuelwood, energy, carbon sequestration, biodiversity

REGULATING SERVICES
including resilience services, regulation of water and soil quality

CULTURAL SERVICES
including recreation, tourism, spiritual and religious enrichment

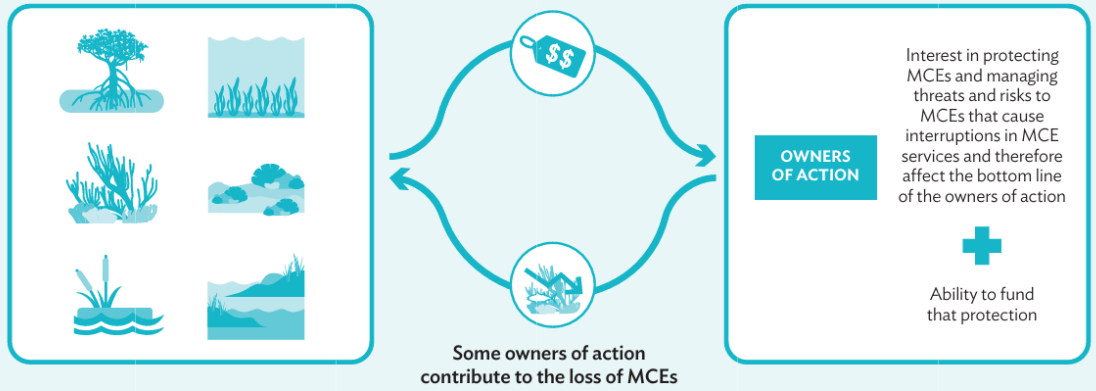
SUPPORTING SERVICES
including soil formation, water cycling, nutrient cycling

Coral Reefs:
Their ecosystem services worldwide are valued at $2.7 trillion per year (ICRI and GCRMN 2021).

Mangroves:
They likewise provide a total of around $2.7 trillion worth of ecosystem services per year ($194,000 per hectare) (Saintilan et al. 2020).

OWNERS OF ACTION AS POSSIBLE PARTICIPANTS IN MCE INSURANCE

"Owners of action" benefit from the services provided by MCEs and are aware of their price tag and the financial impacts of interruptions in these services.



Some owners of action contribute to the loss of MCEs