



# Workshop on Protection and Indemnity Insurance

By Directorate General of Shipping

19th June 2026 | Kochi



# The India Opportunity

## Demographic Dividend



### India's Young Nation Advantage

300M+ new workforce entrants expected by 2050, unmatched globally.

**1.44B**

Population



### Peak Working Population

India supplies ~25% of incremental global workforce.

**65%**

Under 35 years

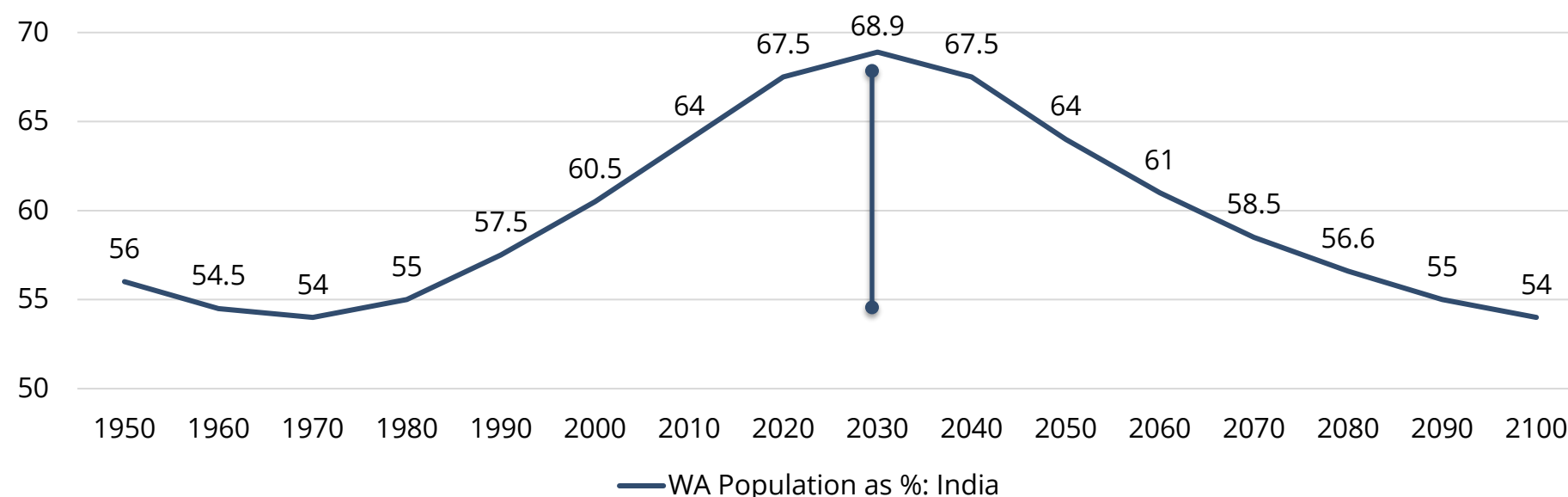


### Crew Capital Of The World+

270,000 Indian Seafarers employed on Global fleets

**~40M**

Trained Labor Force



**India's young population presents a once-in-a-generation opportunity to accelerate growth and shape the nation's future.**

# JAM Trinity - Inclusion as the Foundation of India's Growth Story

India's digital payments transformation is built on a foundational architecture comprising three key pillars: Pradhan Mantri Jan-Dhan Yojana (Jan Dhan), Aadhaar, and mobile connectivity, collectively known as the JAM Trinity

**₹49.09L Cr**

DBT transfers  
cumulative

**₹4.31L Cr**


Govt savings from  
leak reduction

**2,707 Cr**

Aadhaar auths  
FY 2024-25

**39.98 Cr**

RuPay cards  
issued




**P** PM Jan Dhan Yojana

**57.71 Cr**  
bank accounts opened

**₹2.94L Cr**  
total deposits (Mar 2026)

**14.72 Cr → 57.71 Cr**  
account growth since 2015

*Launched Aug 2014 · World's largest financial inclusion drive*



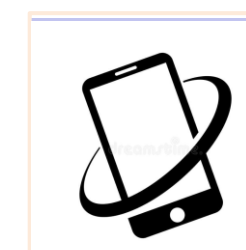
**A** AADHAAR

**144 Cr+**  
Aadhar number generated

**2,707 Cr**  
auth transactions FY25

**Biometric-Based**  
Secure Identity Platform

*Near-instant verification · Portable identity for every resident*



**M** Mobile Connectivity

**125.87 Cr**  
Wireless Subscribers (Dec 2025)

**85.5%**  
households own a smartphone

**99.9%**  
districts with 5G coverage

*5.18L 5G base stations installed · 85% population covered*

**JAM Trinity has redefined governance by enabling direct, efficient, and inclusive access to benefits for all.**

# UPI: A Radical Innovation



*In 2016, the National Payments Corporation of India launched the Unified Payments Interface (UPI), a system that fundamentally simplified how money moves in India.*

## 216 Banks

(with UPI in 2021)



## 691 Banks

(with UPI in January 2026)



**81%**

Share of all retail digital transactions in India



**₹28.33 Lakh Crore**

Value processed in January 2026



**21.70 Billion**

Transactions in January 2026 alone



**49%**

India's share of global real-time payment transactions



**UPI**

World's largest real-time payment system by volume (IMF)



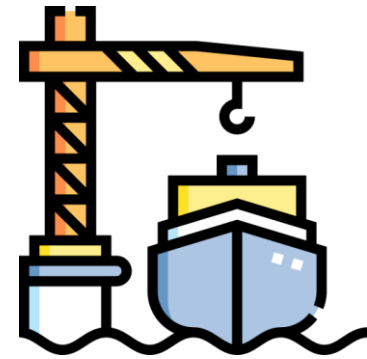
**Under 10 Years**

Time taken to build a world-leading payments ecosystem

# India's Maritime Sector



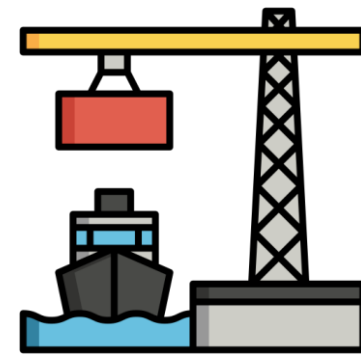
## INDIA'S MARITIME ECOSYSTEM



**60+**

**SHIPYARDS**

Small and Large



**200+**

**PORTS**

Major and Non-major

**11,000+**

**KM COASTLINE**



**1500+**

**VESSEL FLEET**

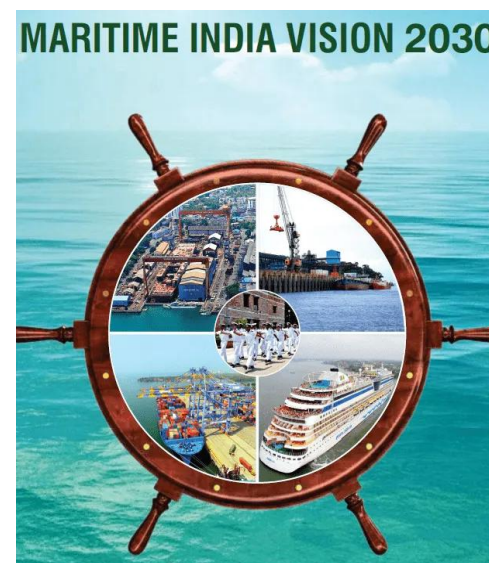


**3.2Lakh+**

**SEAFARERS**



**A UNIFIED  
NATIONAL  
MARITIME VISION**



# The India Opportunity Maritime Sector



**2**

Indian Ports in Global top 30 as per 'Container Port Performance Index'

Mundra & Visakhapatnam , 2023

**Top 3**

In trained manpower, with >320,000 Active Indian Seafarers

**0.9** days

TAT ahead of many leading maritime nations (JNPA),2022

**16<sup>th</sup>**

Largest ship building sector globally with rapid capability expansion,2024



**2<sup>nd</sup>**

Rank in global ship recycling, 2024

**9<sup>th</sup>**

Rank in Liner Shipping Connectivity Index, Q1 2026

# Blue Economy



The Blue Economy constitutes 95% of India's trade volume and 65% of India's trade value

~4%

Contribution to National GDP

Potential: 10% by 2047

95%

India's Trade by Volume via Sea

70% by value

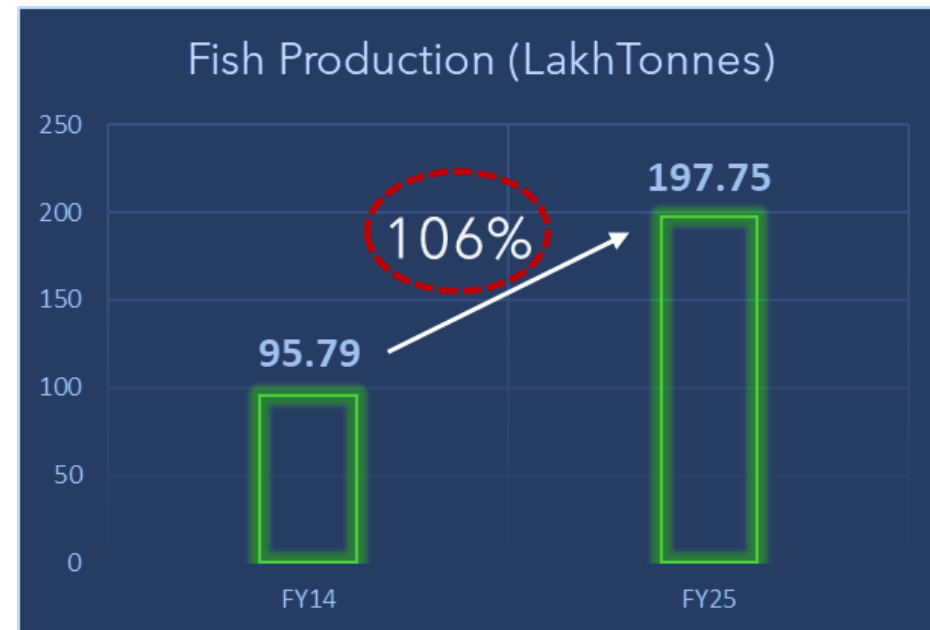
₹80L Cr

MIV 2030 + Amrit Kaal Vision Roadmap

Combined policy investment

Strategic investments in the Blue Economy could raise this contribution from 4% to 10% of GDP by 2047

## Fisheries & Aquaculture

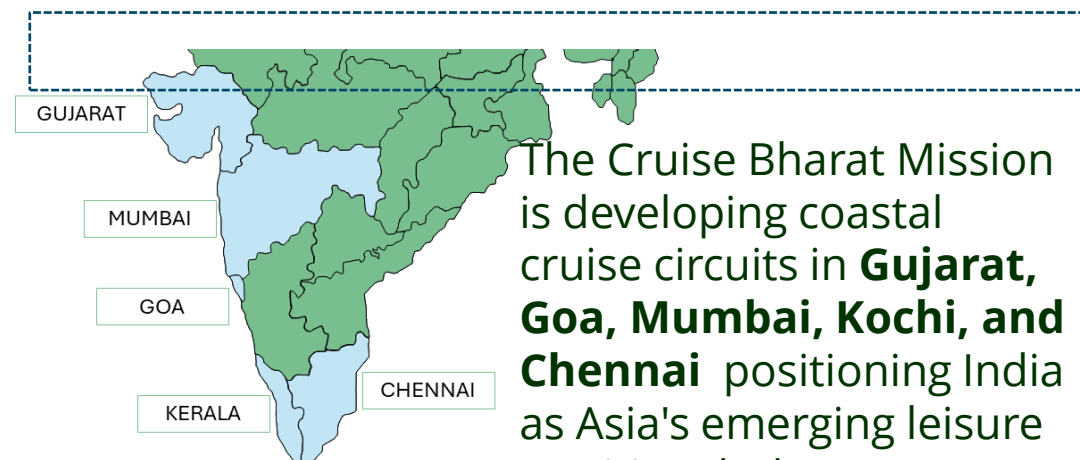


- India is the world's **2<sup>nd</sup>** largest fish producer, contributing **8%** to global fish output
- Seafood exports have more than doubled in a decade from **₹30,213** crore in 2013-14 to **₹62,408** crore in FY 2024-25
- The Fisheries sector has created **58 lakh** employment opportunities, supporting approximately **3 crore** fishers and fish farmers at the primary level.

## Coastal & Cruise Tourism



India's coastal tourism sector is projected to grow to **₹1.2 lakh crore**, with the government identifying **13** coastal districts for priority development.



The Cruise Bharat Mission is developing coastal cruise circuits in **Gujarat, Goa, Mumbai, Kochi, and Chennai** positioning India as Asia's emerging leisure maritime hub.

## Marine Biotechnology & Deep Ocean



- Samudrayaan:** India is developing crewed submersibles to reach **6,000 m**, enabling a first-of-its-kind manned deep-sea research station.
- India's 6,000 m **deep-sea station** aims to set a global benchmark, envisioned as a permanent international research hub by 2047, akin to the International Space Station
- India's **333** cultivable seaweed species position it strongly for expansion, with current ~1% global production highlighting a significant opportunity to scale up in marine biotech, pharmaceuticals, and biofuels.

# Indian Maritime Heritage



## Birth of Maritime India

- With over 10,000 km coast-line, nature ordained **India** to be a **Maritime Nation**
- Indian ships dominated surrounding seas for over **4,000 years** until the 7th century A.D, so profoundly that they gave the ocean its name: the **Indian Ocean**.



## Lothal : The First Dockyard

- Archaeologists have found a brick basin at **Lothal**, built during the Indus Valley Civilization in about 2300 B.C.
- Part of a major trade route linking Sindh (Harappan cities) and Saurashtra
- World's earliest known dockyard built at Lothal



## Ships & Sailors in Ancient Texts

- **Rig Veda** mentions ocean voyages
- '**Sataritra**' – ships with 100 oars; '**Samudra**' – vast oceans explored
- Early sailors used star navigation, monsoon winds, and seasonal weather knowledge to travel long distances.



## Maritime Power of Ancient Time

- **The Mauryan Empire** had an organized naval department managing ports, shipbuilding, and maritime security efficiently.
- Indian goods like spices, textiles, and gems shaped consumption patterns in powerful ancient civilizations.

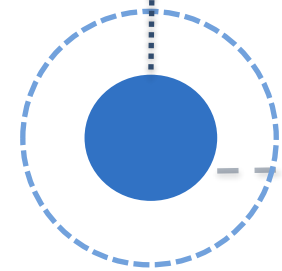


# Indian Maritime Heritage



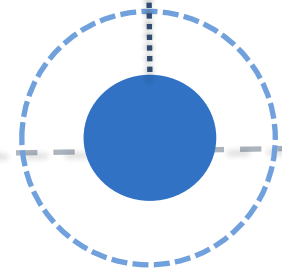
## 1891–1906

- First Indian shipping ventures (Purushanti, Tata Line, Bengal Steamship, Swadeshi Shipping) struggled under colonial pressure.



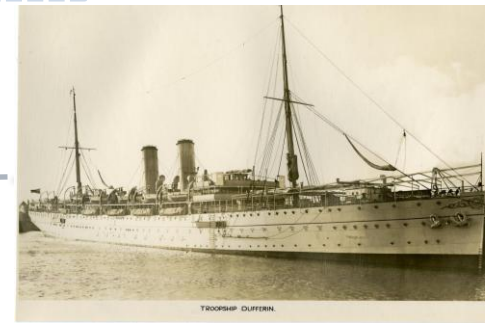
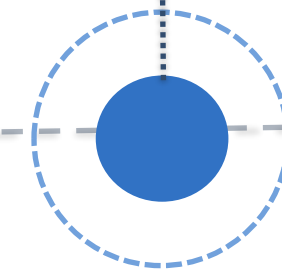
## 1930–1945

- Formation of INSOA, Maritime Union; Indian shipping expanded despite restrictions and WW-II losses.



## 1950s–1970

- Shipping corporations became government-owned; coastal shipping reserved; expansion to Africa & Asia routes.



## 1919–1927

- Scindia Steam Navigation founded; S.S. Loyalty sailed to UK (1919)
- Birth of modern Indian shipping; training institutions like TS Dufferin established.

## 1946–1961

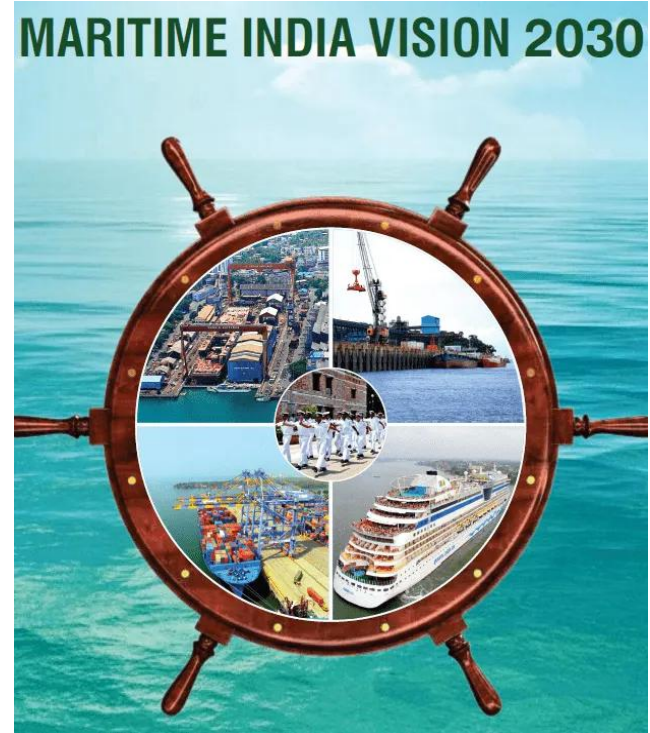
- New companies, shipyards, and training institutes established; Shipping Corporation of India (1961) formed; industry crossed 1 million GRT.

## 1970 onwards

- Evolution of maritime education from TS Dufferin → TS Rajendra → TS Rehman; focus on skilled manpower.

- **Ms. Victoria Alexandrina Drummond**- First Lady Marine Engineer
- **M.T. Swarna Krishna** – First vessel in the world with all women officers

# Maritime India Vision 2030 and Amrit Kaal Vision 2047



## Maritime India Vision (MIV) 2030

**Target:** Position India as a **Top Seafaring Nation with over 20% share of the global seafarer workforce.**

**Chapter 10 envisions achieving this by:**

### Promoting research and innovation

in maritime education, training methodologies, and emerging maritime technologies.

### Strengthening maritime education and training

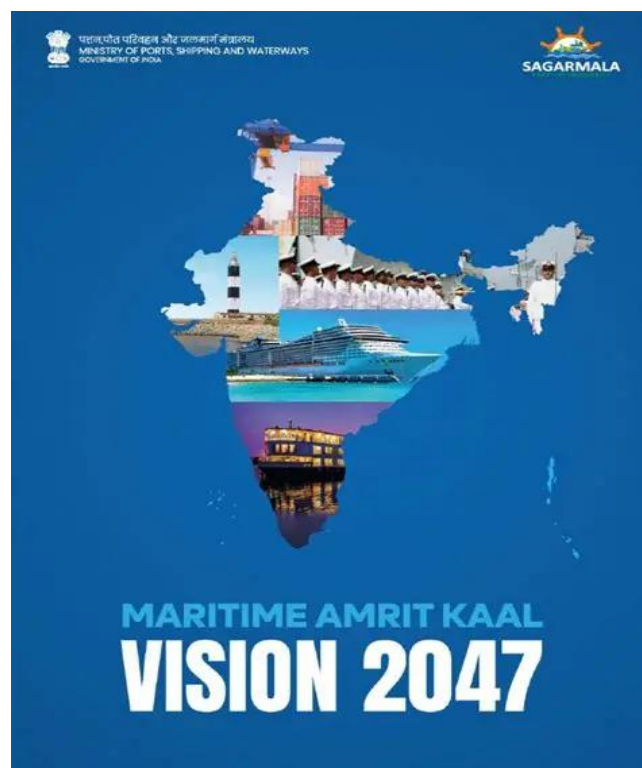
to ensure globally competitive, industry-ready seafarers.

### Building a robust, seafarer-centric ecosystem

covering training, certification, employment, welfare, and career progression.

### Encouraging port-led capability development

to support skill creation, training infrastructure & employment opportunities.



## Maritime Amrit Kaal Vision (MAKV) 2047

**Theme 7 envisions :**

### Focus on world-class education, research & training facilities

to position India as a global maritime leader

### Emphasis on next-gen digital/tech training

for smart ports, automation & blue economy clusters.

### Holistic maritime professional development

across seafarers, port employees & allied services.

### Long-term vision: integrated ecosystem

for continuous skill upgradation, R&D, and global faculty/student exchanges.



# 36% Growth in Indian Tonnage from 2015

## 1609 Ships

Indian-flagged vessels  
as of May 2026

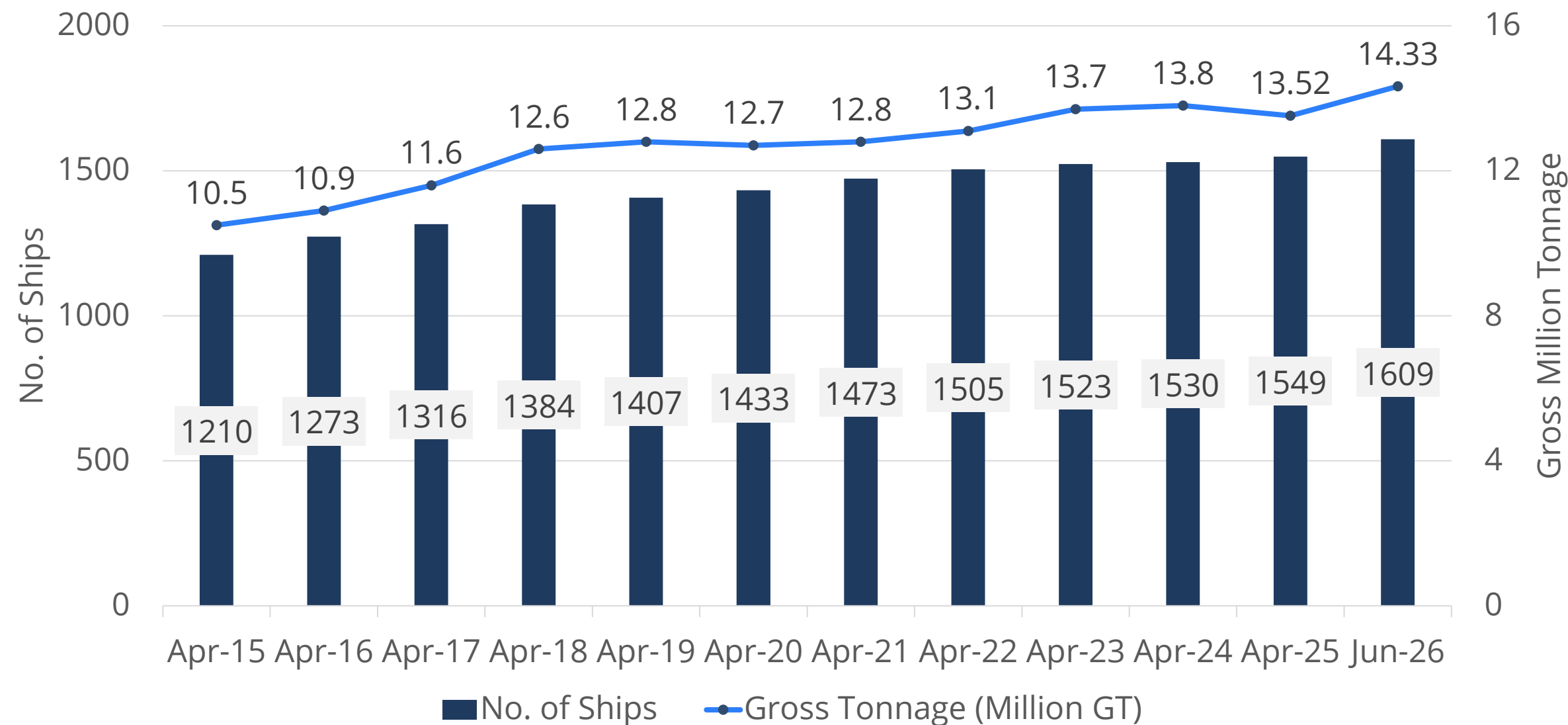
## 14.33M GT

Total fleet GT- up from  
10.5M GT in 2015 till  
June 2026

## ~1% Global Share

India's share of world  
ocean-going tonnage

### Indian Tonnage Position 2015- June 2026



As the sector expands its **role in trade and energy security**, demand for maritime insurance is rising. However, a significant portion of marine insurance particularly **P&I** and **specialized risks** continues to be **serviced by international markets**, indicating a measured **opportunity for enhancing domestic capacity**.



# Every Voyage Depends on Four Critical Layers of Insurance Protection

## HULL & MACHINERY (H&M)

Covers physical damage to the vessel storms, collisions, groundings, machinery failure. Excludes war & terrorism.

Global premium: USD 9.67B (2024)\*.

## WAR RISK INSURANCE

Separate policy covering H&M exclusions: missile strikes, drone attacks, mines, piracy. Subject to 7-day cancellation clause. Additional War Risk Premium (AWRP) levied for designated High Risk Areas.

## CARGO INSURANCE

Covers goods in transit against loss, damage, and theft. Taken by cargo owners or shippers. Largest segment globally at 57.3% of total marine premium.

Global premium: USD 20.5B (2024)\*.

## PROTECTION & INDEMNITY (P&I)

Third-party liabilities: crew injury/death, cargo damage, oil pollution, wreck removal, collision, fines. There are two types of P&I Insurance. A mutual club model and a Fixed Premium Model. **90%** of the world's **ocean-going tonnage**, covering **60%** of the **world fleet** is insured by the **International Group of P&I Clubs (IG P&I)**

# P&I Insurance: Backbone of Maritime Liability Protection

Given its statutory mandate under the Merchant Shipping Act, 2025 and alignment with international conventions, P&I insurance serves as a fundamental requirement for vessels calling at Indian ports, forming a critical part of the maritime liability framework.

## Mandatory P&I Certification

As per Section 188, MS Act 2025 for oil tankers >2,000 tonnes (CLC, 1992 basis)

## >95% Dependency on Foreign Clubs

Annual P&I premium outflow of USD 45-60M entirely to foreign clubs

## 23 Non IG P&I insurers

Approved by DGS under Rule 2(e) of Port Entry Rules, 2012

## New India Assurance (NIA) as authorized

Non-IG provider with coverage up to USD 15 million.  
Risk structure: 10% retained (NIA), 4% GIC Re, 86% Hydor AS (Norway)

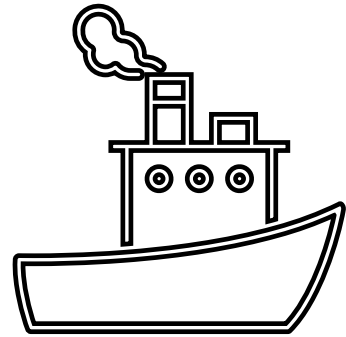
# Role of P&I Insurance in Salvage Operations

Role in salvage operations	Critical areas of involvement	Operational importance	<p><b>P&amp;I insurer acts as the primary liability partner, particularly when cases move from salvage to regulatory and environmental implications</b></p>
<p>P&amp;I insurer covers liability exposures during salvage, while Hull &amp; Machinery insurers handle property salvage.</p> <p>Provides security under SCOPIC/LOU and supports Special Casualty Representative</p> <p>Coordinates with salvors, authorities, correspondents, lawyers and pollution experts.</p> <p>Manages crew, pollution and third-party claims</p>	<p>Pollution risk and bunker removal</p> <p>Port-of-refuge requirements and security demands</p> <p>Criminalisation/detention issues</p> <p>Wreck removal obligations</p>	<p>Ensures timely funding and security</p> <p>Enables informed casualty response</p> <p>Supports environmental protection and dispute reduction</p> <p>Provides access to specialised global response networks</p>	

# Towards an Indian P&I Entity

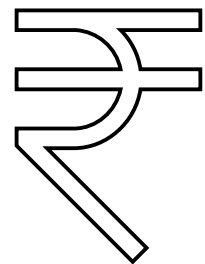


## Challenges faced in the Insurance Segment



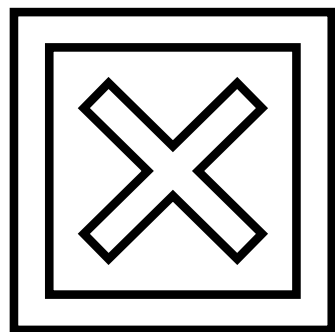
01

Indian Ocean-going fleet is covered by IG P&I Clubs



02

Coastal Fleet is dependent on Fixed Premium Non-IG P&I Companies



03

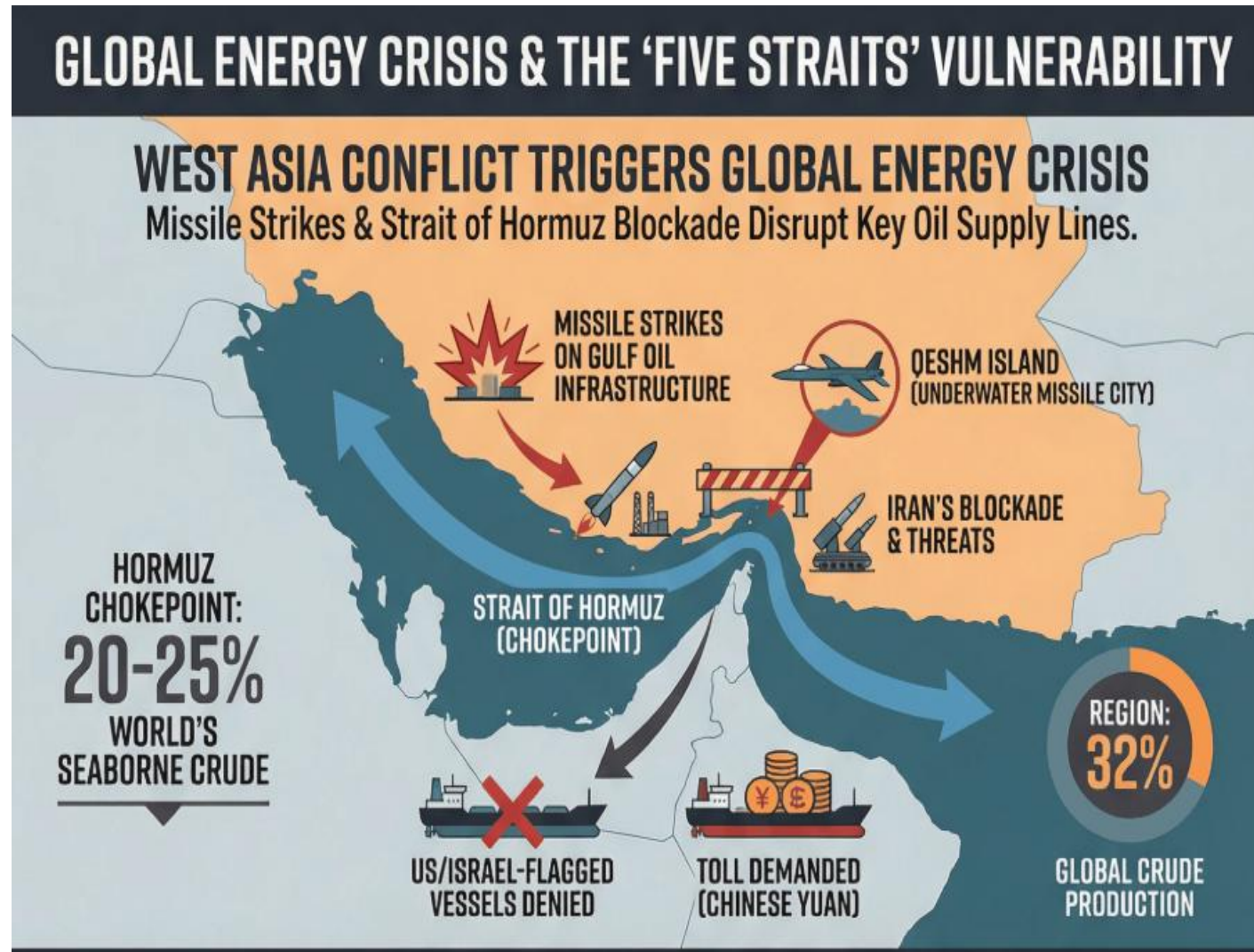
**Dedicated Indian P&I Service Company does not exist**

## Feasibility Study for Establishing Indian P&I Entity

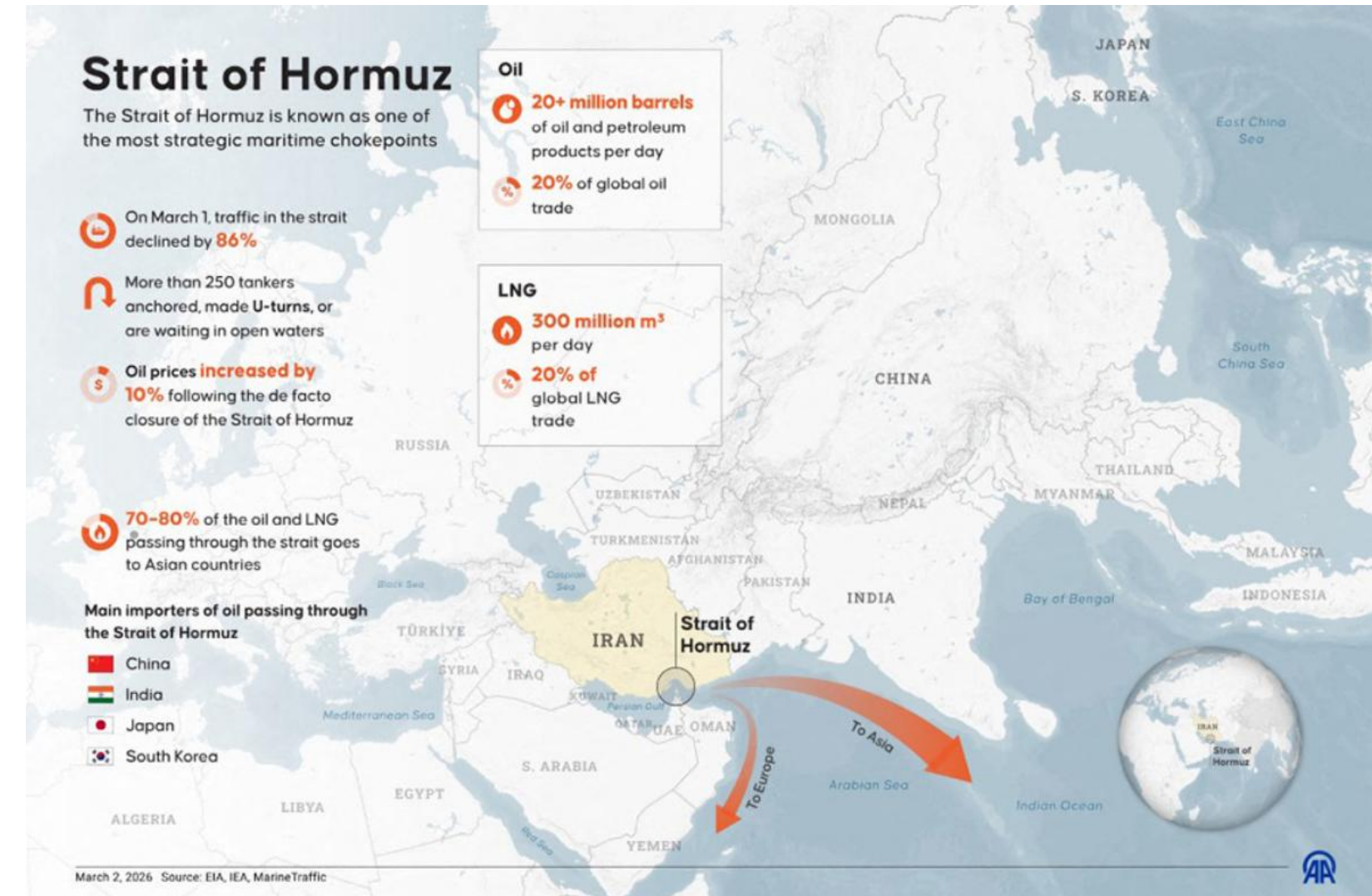
- DGS had appointed M/s Ace Insurance Brokers to perform the Feasibility Study for Establishing Indian P&I Entity based on Mutual or Fixed Premium basis
- The intent is to Establish a Domestic Indian P&I Club to provide sovereign liability coverage for ocean going and coastal vessels, supported by domestic reinsurance and regulatory facilitation

- Based on the Feasibility Study the P&I Entity is Technically and Financially feasible.
- The Indian P&I Entity can be established with a **Fixed premium model** at inception and scaled to mutual model eventually.

# Middle East Conflict (Strait of Hormuz)- Impact on Maritime Trade



Source: ndtv.com



Source: EIA, IEA, Marine Traffic

- Before the conflict, Strait of Hormuz carried ~20% of global seaborne crude to Asia; during the conflict, flows were rerouted mainly via the Suez–Red Sea route, with Malacca remaining the busiest.
- As on March 1, traffic in the strait declined by 86% and Oil Prices increased 10%
- Disruptions in key chokepoints have driven volatility in war risk premiums, with repricing for high-risk zones
- 7-day cancellation clauses on standard war risk and along with additional war risk premium dependent on area or the voyage have increased uncertainty for charterers and shipowners

# Middle East Conflict (SOH)- Impact on Maritime Insurance Market

Heightened geopolitical uncertainty in the Middle East has materially impacted maritime insurance markets, particularly for vessels transiting the Persian Gulf and adjoining strategic sea lanes.

Phase	Hull War Risk Premium	Market Response
<b>Pre-Conflict Baseline</b>	0.10% – 0.25%	Stable annual cover
<b>Escalation Phase</b>	~1.0%	Voyage-based repricing
<b>Peak Conflict Period</b>	3.0% – 10.0%	Severe volatility, capacity tightening
<b>Current Position (2026)</b>	0.4% – 0.8%	Elevated but stabilising

- Premiums remain structurally above historical norms despite moderation from peak levels.
- Insurance pricing now reflects persistent geopolitical risk in critical maritime corridors.
- Increased transit costs directly affect tanker, container and bulk shipping economics.
- Selective underwriting, rerouting decisions and schedule adjustments continue across operators.
- Energy-import dependent economies, including India, remain exposed to freight and logistics cost escalation.



# Inception of the Bharat Maritime Insurance Pool (BMIP)

Launched 12 May 2026 by Dept. of Financial Services, Ministry of Finance. Cabinet approved on 18 April 2026

**USD 1.5B**  
Total Pool Capacity

**₹12,980 Cr**  
Sovereign Guarantee  
(≈ USD 1.4B)

**USD 100M**  
Claims Threshold  
Pool's Own Resources

## First policies issued under BMIP

- **H&M War Policy:**  
M/s Hoger Offshore & Marine Pvt Ltd
- **Marine Cargo War Policy:**  
M/s Vedanta Sterlite Copper Ltd (cable wire imports) and M/s Balrampur Chini Mills Ltd

**Coverage Scope for Indian flagged or controlled vessels or vessels destined to or starting from India:**



**01**

**Hull & Machinery**



**02**

**Cargo**



**03**

**P&I Liability**



**04**

**War Risk**

# Functionality of BMIP: Governance, Underwriting & Claims

## Governing Body

- Oversees pool functioning
- Approves invocation of sovereign guarantee
- Ministry of Finance representation
- Senior DFS officials

## Underwriting Committee

- Prudent, consistent underwriting
- Technically sound risk assessment
- Reviews risks ceded to pool
- Ensures actuarial discipline

## GIC Re — Pool Administrator

- Submits performance returns
- Manages reinsurance arrangements
- Operational day-to-day management
- Reports to Governing Body

## How Claims shall be settled

### Claim Lodged

Policy issued by Pool member insurer

### Pool Resources & Reinsurance

Claims up to USD 100M: serviced by pool's accumulated reserves, member contributions and reinsurance arrangements

### Sovereign Guarantee

Claims above USD 100M: contingent backstop invoked after exhaustion of all pool resources

# Beyond Insurance: The Strategic Role of P&I Club (1/2)

## 1. Risk Hedging

- 1. Proactive Mutual Sharing:** Emphasize the club's role in distributing volatile maritime risks across the pool, stabilizing premium calls (mutuality) despite market fluctuations.
- 2. Tailored Reinsurance Frameworks:** Detail how the club utilizes the International Group (IG) pooling agreement and Hydra reinsurance to hedge against catastrophic, high-value claims (e.g., massive oil spills or wrecks).
- 3. Predictive Loss Prevention:** Move from reactive claims handling to proactive risk hedging by using historical data to warn members of emerging geographical or technical risks before they materialize.

## 2. Behavioural Competency Framework (Safety First)

- 1. Cultivating a "Just Culture":** Encourage open correspondence where crew members can report near-misses without fear of retribution, shifting the focus from blame to collective learning.
- 2. Human Factors Integration:** Align club advice with modern behavioural frameworks (e.g., OCIMF's Human Factors approach) to address the root psychological causes of maritime accidents.
- 3. Soft Skills & Leadership Training:** Support members with guidelines on bridge resource management (BRM) and psychological safety, ensuring "Safety First" is an active behaviour, not just a slogan.

# Beyond Insurance: The Strategic Role of P&I Club (2/2)



## 3. Standardization of Inspection Regimes

- 1. SIRE 2.0 Integration:** Provide clear, updated guidance to help members transition seamlessly to digitalized, human-centric vetting regimes like SIRE 2.0, minimizing vetting failures.
- 2. Micro-Learning & Visual Media:** Develop and distribute bite-sized safety videos and interactive media that can be easily digested by crews during onboard safety meetings.
- 3. Harmonized Pre-Vetting Checklists:** Standardize P&I condition surveys with international inspection standards to reduce the administrative "survey fatigue" on ship staff.

## 4. Vessel-Land Interface & Digitization (Safe Passage for Seafarers)

- 1. Unified Digital Portals:** Implement high-level digital platforms for instant, transparent correspondence between ship masters, shore management, and P&I correspondents during port calls.
- 2. Smart Port & Berth Risk Assessment:** Use digital mapping and real-time data sharing to brief vessels on specific land-interface risks (e.g., mooring hazards, local regulatory traps, or security threats).
- 3. Digital Health & Safe Passage:** Leverage telemedicine and digital port-clearance protocols to ensure seafarers have rapid, uninterrupted access to medical care and smooth crew changes.

# Safety First - Suraksha Sarvapratham



**DGS is focused on promoting safety on vessels and is set to launch a campaign called the Suraksha Sarvpratham, ensuring that the seafarers are able to discharge their duties in a risk-free manner.**

To reduce accidents and minimize risks aboard ships.

Detailed documentation of incidents that occur at sea and during port operations.

Systematic recording and analysis of incidents will help identify patterns, understand root causes, and implement preventative strategies.

Instill a culture of safety among seafarers.

Web-based learning management systems for training.

Free online courses will be developed.

To create a safer working environment for seafarers by reducing the frequency and severity of accidents at sea and in ports.

Comprehensive incident documentation, strict adherence to safety protocols, and innovative AI-based safety videos--- to establish Safety Culture

# Indian Global Maritime Safety Platform

## Purpose

To establish a unified digital platform that improves maritime safety, promotes risk-free professional practices, and aligns with international standards and India's maritime vision.

## Objective

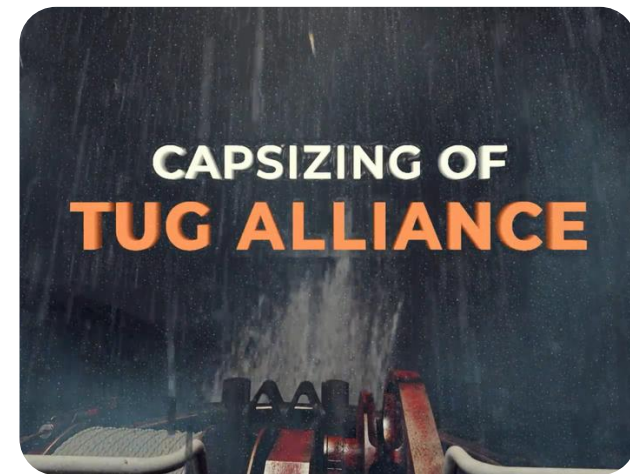
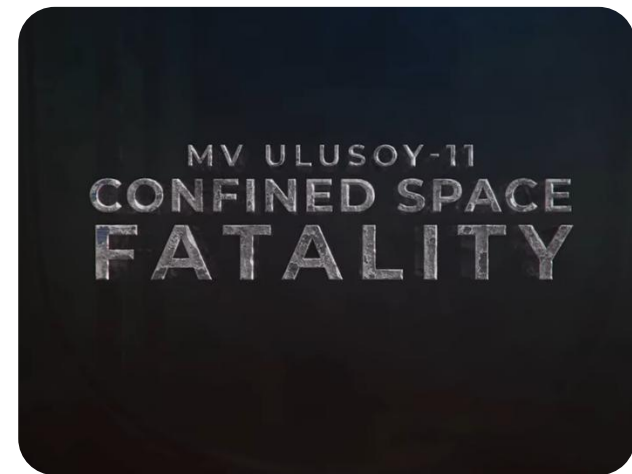
- 01 Deliver real-time safety dashboards and analytics across devices.
- 02 A multilingual repository for circulars, advisories, and IMO guidelines.
- 03 Host 30–40 animated safety videos over 3 years, integrated into a learning system.
- 04 An AI-driven maritime incident database using tools like Power BI/Tableau.
- 05 Support the “Zero Incident” vision through training, compliance, and real-time monitoring.



# Safety Video Series



The Casualty Safety Video Series is a key safety awareness initiative of the Directorate General of Shipping aimed at reinforcing the principle that safety at sea is non-negotiable. The series is designed to sensitise seafarers to real-world operational risks through structured analysis of past marine casualties.



Scan the QR Code for

**Safety Video Series-  
Directorate General of  
Shipping**

## Objectives

- Promote a strong safety culture onboard ships
- Highlight lessons learnt from past marine casualties
- Enhance risk awareness during shipboard operations
- Encourage strict adherence to safety procedures and best practices

# E-Navik Modules



## 24 x7 Grievance Redressal Module

1. Dedicated platform for stakeholder grievances (seafarers, shipping companies, etc.)
2. Automated logging, tracking, and resolution of complaints
3. Ensures transparency, accountability, and swift response

## Crisis Response Module

1. Critical tool for handling maritime emergencies
2. Real-time registration and management of crises by authorized officials
3. Coordination with relevant agencies for a unified response
4. Enhances readiness, minimizes risks, and ensures safety

## Maritime Training Institute (MTI) Module

1. Centralized system for MTI approvals, seafarer profile generation, and certification updates
2. Ensures compliance with the latest training regulations
3. Improves the quality of seafarer education and certification

## Recruitment and Placement Services License (RPSL) Module

1. Oversees licensing and regulation of seafarer recruitment and placement agencies
2. Streamlines the application and renewal process for RPS licenses
3. Monitors and enforces compliance to prevent malpractices

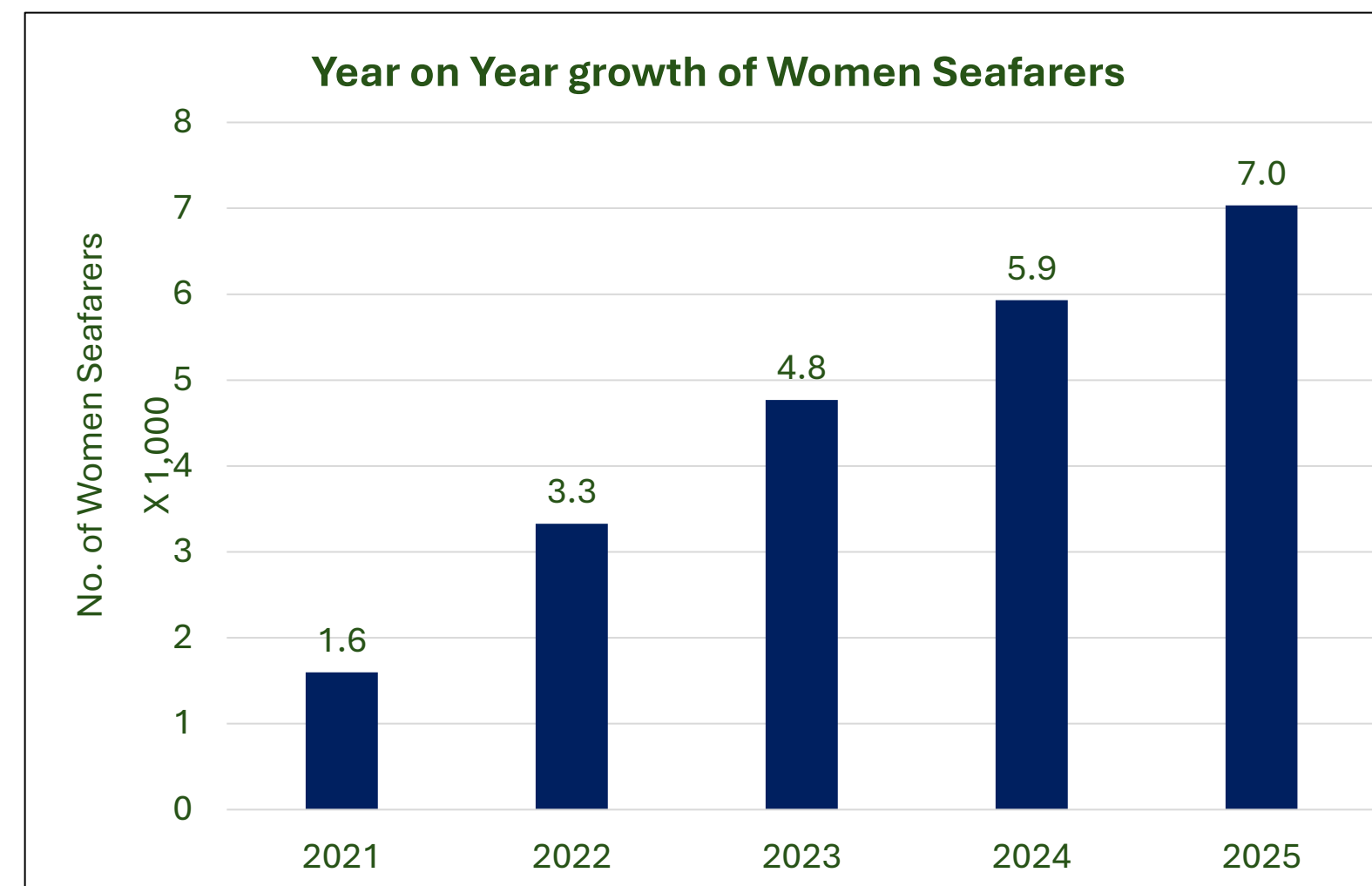
# Gender Inclusivity for Seafarers

## Sagar Mein Samman

- Introduced under DGS Order 18 of 2024 to promote gender-inclusive maritime workforce.
- Establishes policy-backed norms for women's safety, equal opportunity, and career advancement.
- Strengthens governance through industry-wide compliance standards and workplace reforms aligned with IMO and UN SDG-5.
- Implemented in collaboration with MUI, supporting a joint framework to empower and protect women seafarers.

Initiatives of DG Shipping to promote women seafarers : ₹1,00,000 are offered via the Maritime Training Trust

**Sagar Mein Samman** enhance India's maritime regulatory framework by setting structured standards for inclusivity, and safety across the crewing ecosystem



Registered women seafarers increased by **739% from 1,699 in 2015 to 14,255 in 2024** reflecting significant progress in gender inclusion and transformation within the Indian maritime sector.

# Holistic Wellness For Seafarers

## Sagar Mein Yog

- Introduced under DGS Order 19 of 2024, focusing on mental, physical, and emotional well-being of seafarers.
- Standardizes wellness practices across training institutes via MoU with NUSI.
- Helps reduce stress, fatigue, and medical emergencies enhancing safety compliance.
- Integrates structured wellness modules into Pre-Sea, At-Sea, and Post-Sea stages

**Sagar Mein Yog** enhance India's maritime regulatory framework by setting structured standards for wellness across the crewing ecosystem.



[LMS Link](#)

# Ensuring Zero Tolerance in Crewing



- DG Shipping upholds a strict Zero Tolerance policy against corruption, fraud, and unethical practices in all operations.
- Robust systems are implemented to ensure transparency, accountability, and integrity in recruitment and welfare processes:
  - Strict monitoring of RPSL agencies
  - Digital verification mechanisms
  - Clear compliance guidelines
- Awareness initiatives conducted to educate stakeholders on:
  - Identifying corrupt and fraudulent practices
  - Avoiding illegal payments and middlemen
  - Rights and protections of seafarers
  - Reporting mechanisms and grievance redressal
- Strong grievance redressal framework:
  - 24x7 support channels
  - Time-bound resolution of complaints
  - Whistleblower protection measures
- Continuous audits and inspections to:
  - Detect irregularities
  - Enforce compliance standards
  - Strengthen systemic quality assurance
- DG Shipping ensures that quality and integrity go hand-in-hand, creating a corruption-free ecosystem for seafarers' welfare.



DG Shipping Reaffirms Zero Tolerance Towards Fraud and Exploitation of Indian Seafarers #dgshipping



Beware of Fake Indian Seafarers Jobs | 5 Red Flags Explained by DG Shippi...



Seafarers' Rights—Know and Protect Yourself | Capt. Nitin...

# 24 x 7 Grievance Redressal System



**DGS System to provide a single digital platform for 24x7 effective lodging, tracking, and resolution of seafarer grievances.**

## Aim

- Streamlined and transparent grievance management
- Enhanced accountability and efficiency
- Timely redressal of issues
- Centralized database for analytics and improvement

## Current Status

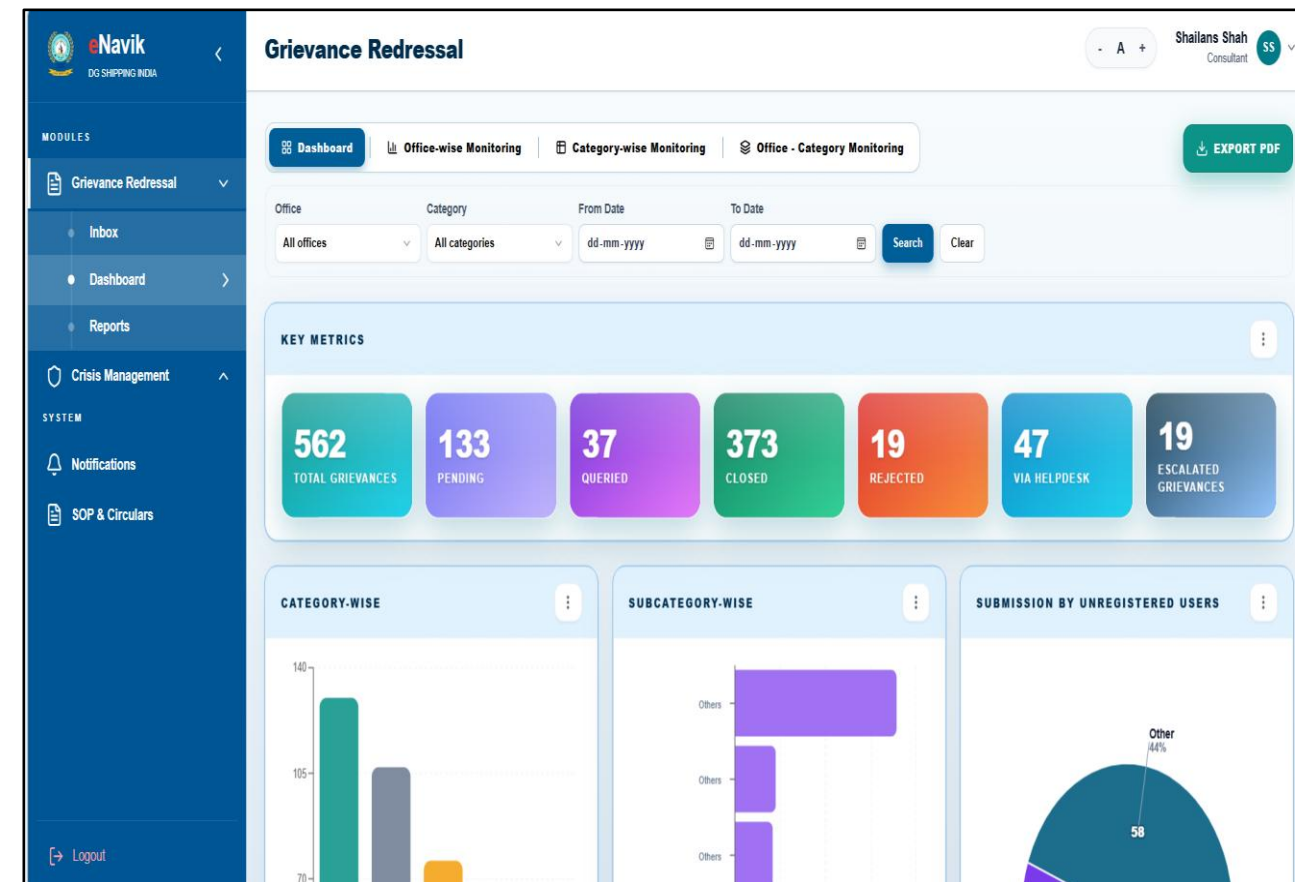
- eNavik Portal has went live for beta release on 15.05.2026. (<https://beta-enavik.dgma.gov.in/>)
- Extensive Social Media Campaign is currently ongoing since 15.05.2026 and will be live till 23.06.2026
- Go-live is expected for August 2026

**REGISTER YOUR GRIEVANCES THROUGH**

**E-NAVIK PORTAL**

**TOLL FREE NO: 1800-889-7768**

Swipe to know more >>>



**24x7 Grievance Redressal Module**

**ALWAYS ON. ALWAYS RESPONSIVE.**

**24x7 GRIEVANCE REDRESSAL MECHANISM**

Toll-Free Number (Domestic): 1800-889-7768 | International (US Toll-Free): +1-888-988-0256 | WhatsApp Number: +91 8655856830 | Dgcomm Casualty No: 8657549760

Website: [beta-enavik.dgma.gov.in](https://beta-enavik.dgma.gov.in) | Email: [enavik.24x7@gov.in](mailto:enavik.24x7@gov.in) | Email: [support.dgs@gov.in](mailto:support.dgs@gov.in)

@dgshipping\_IN | @dgshipping\_india | @dgshippingIndia | @DGShipping-India | @dgshippingIndia

# Ensuring Zero Tolerance in Training



Raising issue over the Call/SMS/WhatsApp

**Helpline** between 09:00 AM – 06.00 PM

Escalation mechanism for resolving query

**Follow-up**  
Support and right guidance

Analysis & Correction and recurrence

## Efforts to provide awareness through Social Media



# Training Ecosystem



**The Training Ecosystem Vision** aims to establish a unified, cloud-based digital platform with its components supporting the objectives outlined in MIV-2030 and AKAM-2027, thereby strengthening maritime education and training.

## Key Features

- Integration of 7 critical modules (e.g., Faculty Development, LMS, Web-Based Simulators) into one cohesive system.
- Real-time oversight and advanced technology for secure, transparent processes.

## Current Status

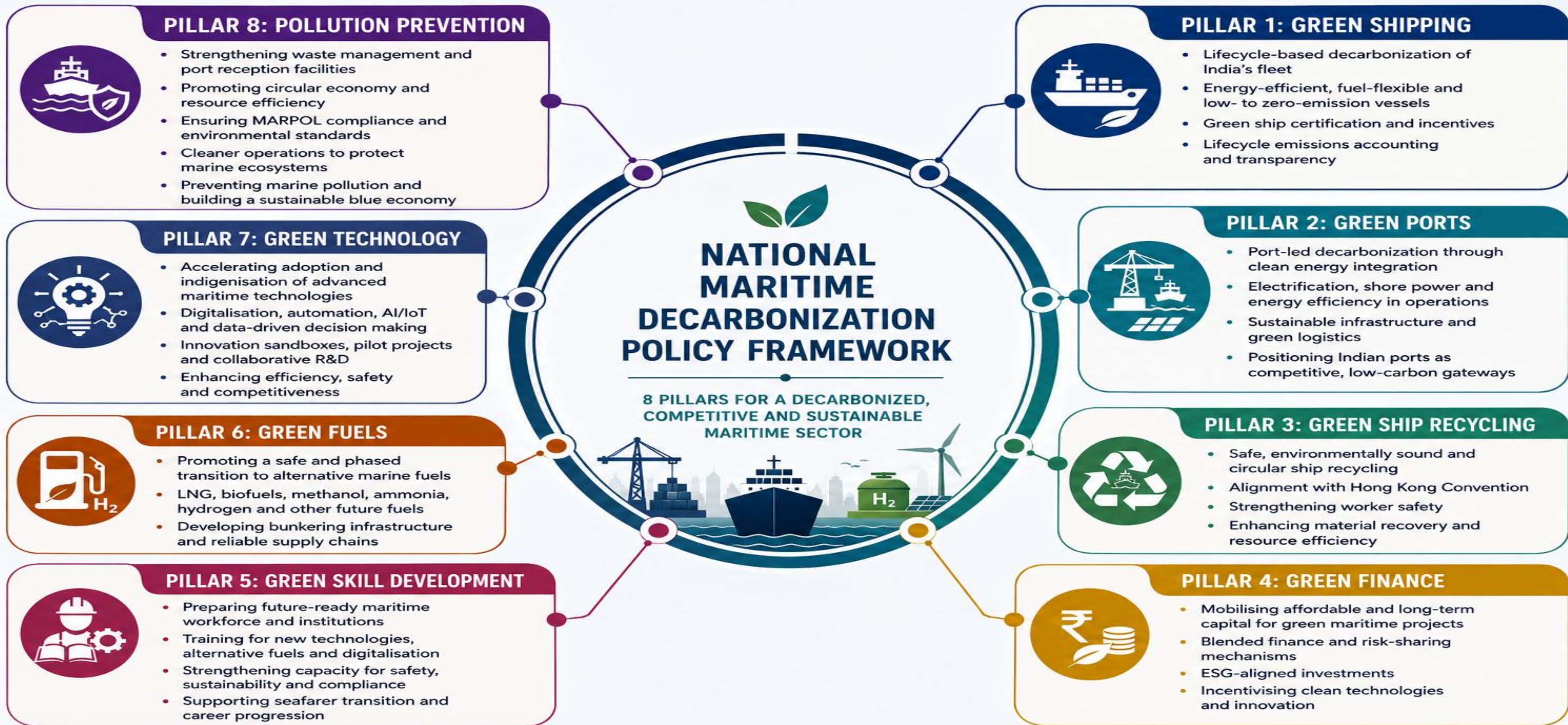
- The RFP was published on 13th April. Multiple queries have been received from seven vendors in response to the RFP. Response for the queries received is being prepared.

## Outcome of the Training Ecosystem RFP

- Selection of a Master System Integrator to deliver an integrated training ecosystem, improving maritime training, skilling, certification, and overall efficiency.



# National Maritime Decarbonization Policy Framework



# Imperative for Maritime Energy Transition

## CURRENT REALITY

- Maritime transport contributes ~3% of global GHG emissions
- IMO Net-Zero Framework is driving global maritime decarbonization
- Increasing regulatory, commercial and financial pressures
- Continued dependence on fossil fuels exposes the sector to energy security and price volatility risks
- Growing demand for sustainable and future-ready maritime transport solutions

## WHY TRANSITION?

- Reduce greenhouse gas emissions
- Enhance energy security
- Improve long-term competitiveness of shipping
- Support sustainable economic growth
- Enable transition towards Zero and Near-Zero (ZNZ) emission fuels



## KEY MESSAGE

Alternative fuels are not merely an environmental requirement but a **strategic pathway** towards a **resilient, competitive and sustainable maritime sector.**

# Alternative Fuels in Maritime





	LNG	BIOFUEL	METHANOL	AMMONIA	HYDROGEN
<b>TECHNOLOGY READINESS</b>	Mature technology and in use today	Renewable and derived from sustainable feedstocks	Liquid at ambient conditions – easy to handle	Zero carbon at point of combustion	Zero carbon fuel – only water as by-product
<b>EMISSIONS POTENTIAL</b>	Lower CO <sub>2</sub> emissions than conventional fuels	Lower lifecycle GHG emissions	Lower emissions potential (when green methanol used)	High energy density than hydrogen	Highest gravimetric energy density
<b>KEY ADVANTAGE</b>	Transitional fuel towards lower carbon future	Can be used in existing engines with blends	Engine technology maturing rapidly	Toxic and requires stringent safety measures	Low volumetric energy density; storage challenge
<b>ENERGY DENSITY (MJ/L)</b>	21.2	~ 30–37*	15.7	12.7	8.5
<b>STORAGE CONDITIONS</b>	Cryogenic –162 °C	Ambient (varies by fuel)	Ambient (up to 65 °C)	Refrigerated –33 °C	Cryogenic / Compressed –253 °C / >250 bar
<b>RELATIVE TANK SIZE (for same energy as MDO)</b>	1.8 times	~ 1.2 – 1.5 times*	2.5 times	3 times	5–7 times
<b>FLAMMABILITY RANGE (% v/v in air)</b>	5–15 (Methane)	Varies (low–moderate)	6–36.5	15–28	4–75


\* Varies depending on feedstock and fuel type

 Multiple fuel pathways for a net-zero future

 Safety, infrastructure and regulation are critical

 Collaboration across the entire maritime ecosystem is essential

 Enabling a resilient, competitive and sustainable maritime sector

 Choice of fuel depends on route, vessel type, infrastructure & availability

# Alternative Fuel Transition : Challenges and Safety Considerations



## SHIPS AND PROPULSION SYSTEMS

- New fuels, new engines
- Retrofit and newbuild solutions



## PORTS AND BUNKERING INFRASTRUCTURE

- Dedicated storage & handling
- Safe bunkering operations



## FUEL PRODUCTION AND SUPPLY CHAINS

- Scalable production
- Reliable & resilient supply chains



## REGULATORY AND SAFETY FRAMEWORKS

- Standards, guidelines & certification
- Risk-based safety management

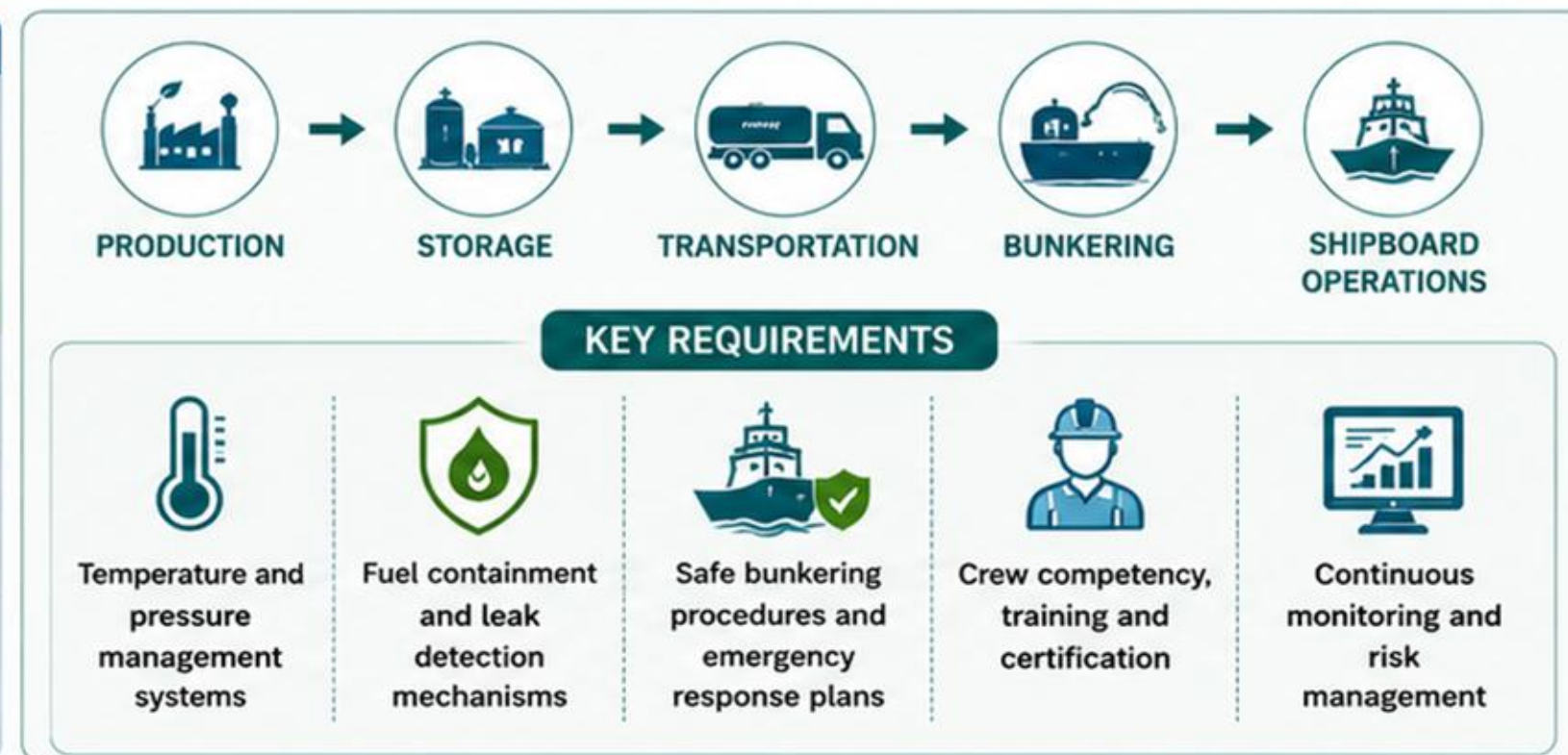


## MARITIME TRAINING AND COMPETENCY DEVELOPMENT

- Skilled & competent workforce
- Training, drills & certification



FUEL	KEY CHALLENGES	KEY SAFETY CONSIDERATIONS
LNG	<ul style="list-style-type: none"> <li>• Cryogenic storage requirements; methane slip; higher storage volume than conventional fuels</li> </ul>	<ul style="list-style-type: none"> <li>• Extreme low-temperature handling;</li> <li>• Gas leakage; fire and explosion risks</li> </ul>
BIOFUELS	<ul style="list-style-type: none"> <li>• Feedstock availability; fuel quality consistency; compatibility with existing engines and fuel systems</li> </ul>	<ul style="list-style-type: none"> <li>• Oxidation, microbial growth, fuel degradation and storage management</li> </ul>
METHANOL	<ul style="list-style-type: none"> <li>• Lower energy density requiring larger fuel tanks; higher fuel cost; limited bunkering infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Highly flammable; toxic if ingested or inhaled; nearly invisible flame during combustion</li> </ul>
AMMONIA	<ul style="list-style-type: none"> <li>• Limited commercial availability; storage and distribution challenges; engine technology still evolving</li> </ul>	<ul style="list-style-type: none"> <li>• Highly toxic vapours; personnel exposure risks; leak detection and emergency response requirements</li> </ul>
HYDROGEN	<ul style="list-style-type: none"> <li>• Low volumetric energy density; large storage requirements; immature bunkering ecosystem; high production cost</li> </ul>	<ul style="list-style-type: none"> <li>• Highly flammable; leakage due to small molecular size; cryogenic storage and material embrittlement concerns</li> </ul>



## KEY MESSAGE

The transition to alternative fuels is not merely a fuel replacement exercise. It requires coordinated development of **infrastructure, regulations, safety systems** and **human competencies** to enable a safe, secure and sustainable maritime energy transition.



# Just Transition in Maritime



*Human element is of paramount importance in the maritime industry as human skills, judgement and welfare drive maritime safety.*

## Just Transition: Putting People at the Core of Decarbonisation

**Decarbonisation is not only a fuel shift. It is a workforce shift.**

 ~3.23 lakh Indian seafarers (as of 2025) –  
~12% of global maritime workforce

- ✓ Alternative fuels introduce **new safety risks**
- ✓ New technologies demand **new competencies**
- ✓ Transition must **protect jobs, safety and dignity**



### Skills & Training

- Large-scale upskilling for green fuels
- Modernised STCW standards
- Investment in maritime training infrastructure



### Safety & Standards

- Health-and-safety-first approach
- Handling ammonia, hydrogen, low-flashpoint fuels
- Alignment with MLC 2006 & global labour norms



### Equity & Inclusion

- Avoid widening global skills gaps
- Support developing maritime nations
- Promote diversity & gender inclusion




**A green transition must also be a fair transition.**

# National Green Hydrogen Mission – Green Hydrogen Hubs






*The National Green Hydrogen Mission (NGHM) aims to position India as a global hub for green hydrogen production, utilization and export, with a target of 5 MMT annual production by 2030, supporting decarbonization and energy transition.*




## Deendayal Port Authority (Kandla) – Western Hub

- **1 MW** green hydrogen plant commissioned (electrolyser-based) 
- **3,400 acres** land allocated for Green Hydrogen / Ammonia projects
- **3.5 MMTPA** jetty compatible for Green Ammonia handling
- **Port Readiness Level 6 (7)** for green fuel / methanol bunkering 
- Advancing methanol bunkering ecosystem and alternative fuel transition 
- Western gateway for green fuel production + bunkering + export corridors

## Paradip Port Authority – Eastern Hub




- **₹797 crore** Green Hydrogen / Ammonia jetty approved 
- **4.0 MTPA** handling capacity for green energy cargo
- Development includes jetty, storage, pipelines and handling systems
- Implemented under PPP / BOT 
- Designed to connect eastern hydrogen clusters to global markets model
- Anchor hub for bulk handling, storage and export logistics 

## V.O. Chidambaranar Port (Tuticorin) – Southern Hub

- **10 Nm<sup>3</sup>/hr** Green Hydrogen pilot plant commissioned (Apr 2025) at cost of **INR 3.87 Crore** 
- Pilot supports port operations (lighting, EV charging)
- **205.72 acres** land allocated for GH2 / Ammonia projects 
- Developing Green Methanol Bunkering Facility (2 × 750 m<sup>3</sup>)
- Emerging as green fuel + digital + renewable integrated port 
- Southern hub for pilot deployment, innovation and green bunkering

# India as a Net Green Energy Exporter & Bunkering Destination




## STRATEGIC ADVANTAGE

-  Long coastline with major ports on **East-West shipping lanes**
-  Abundant renewable energy for **green hydrogen, ammonia, methanol**
-  Cost advantage in solar + wind production, **lowering fuel export price**

## FUEL EXPORT READINESS

-  **Green Ammonia** : Kandla supply to Singapore (L&T-Itochu JV)
-  **Green Methanol** : VOC Port bunkering hub under development
-  **Hydrogen Derivatives** : Mission to export through maritime corridors

## PORT INFRASTRUCTURE TRANSFORMATION

-  Dedicated **Green Bunkering Terminals** (VOC Port, Kandla, JNPA)
-  Upcoming **Green Shipping Corridors**: Tuticorin – Kandla – Singapore – Rotterdam
-  Integration of **renewable power, storage & safety systems**

## ECONOMIC & DIPLOMATIC IMPACT

-  Reduces **dependency on oil imports**
-  Positions India as **fuel supplier** to global shipping lines
-  Enhances maritime influence under **Global South leadership**



## POLICY BACKING

-  Supported by **National Green Hydrogen Mission & National Maritime Decarbonization Framework**
-  Incentivized by **Harit Sagar & MIV 2030**
-  Aligned with **Make in India & Energy Security Vision 2047**





# Thank You