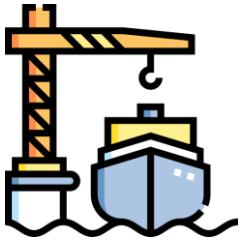
Launch of the MLA College - IME(I) Partnership

Directorate General of Maritime Administration

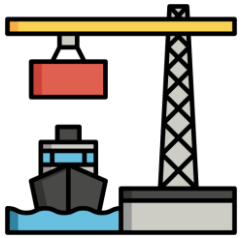
02nd July 2026

India’s Maritime Sector

INDIA’S MARITIME ECOSYSTEM



60+
SHIPYARDS
Small and Large

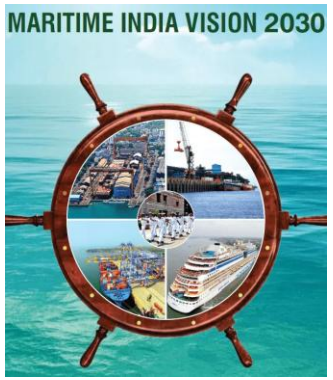


200+
PORTS
Major and Non-major

11,098
KM COASTLINE

1500+
VESSEL FLEET

3.2Lakh+
SEAFARERS



A UNIFIED NATIONAL MARITIME VISION

Blue Economy

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

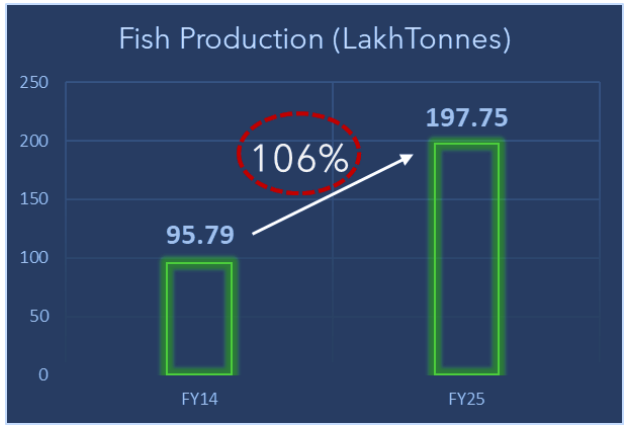
~4% Contribution to National GDP
Potential: 10% by 2047

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 **2nd** 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.

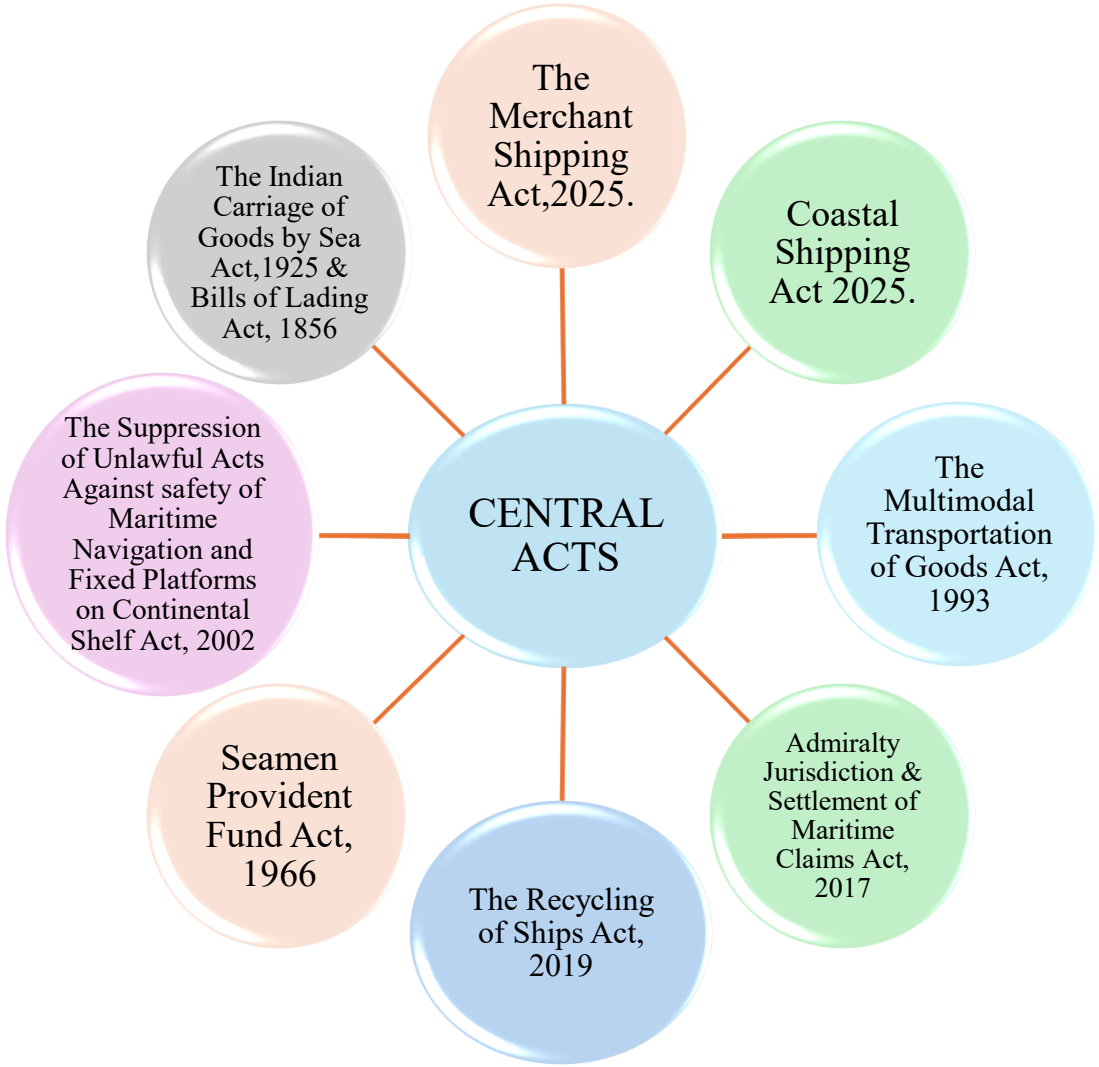
Marine Biotechnology & Deep Ocean

- **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.

National Regulatory Framework

Legislative Frameworks driving Maritime Ecosystem

New Maritime Legislative Reforms - 2025



Directorate General of Shipping → Transitioning to → **Directorate General of Maritime Administration**

Maritime Transformation – 2 Foundational Pillars

Technology & Sustainability

Technology Integration - Digital Platforms

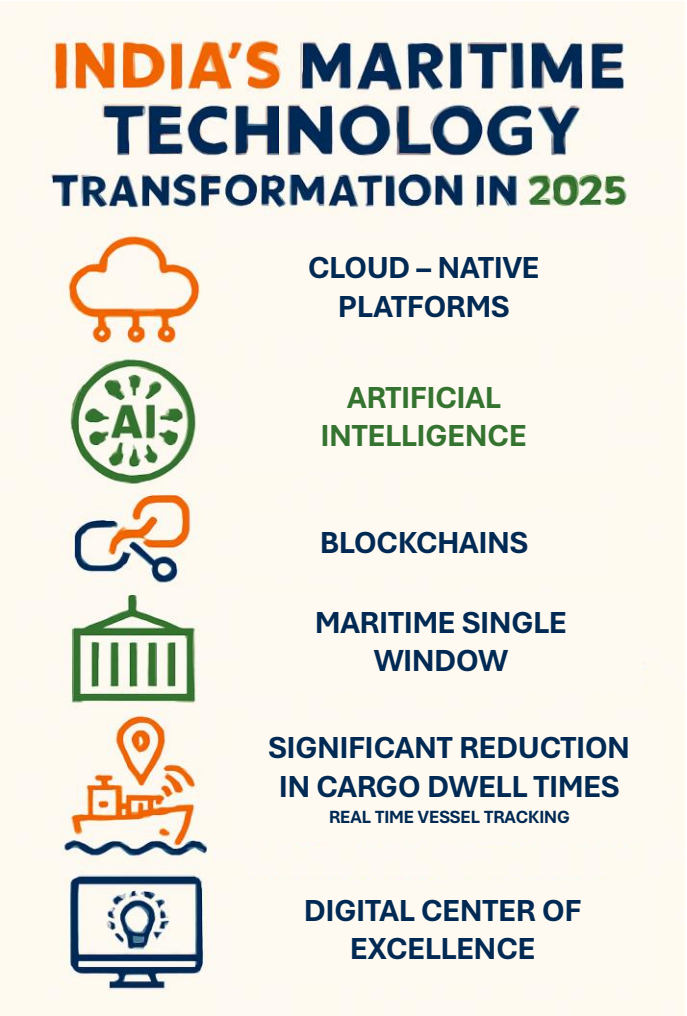
1. Flagship platforms: e-Samudra, SAGAR SETU, Maritime Single Window (MSW).
2. e-Samudra integrates 60+ maritime services (MTO registration, shipbuilding aid).
3. AI-powered exams & simulations for seafarer training.
4. Real-time vessel/cargo monitoring via Command & Control Centre.
5. Digital Centre of Excellence (DCoE) promotes AI, IoT, blockchain.
6. Reduced cargo dwell time; enhanced port efficiency.
7. Swachh Sagar Portal

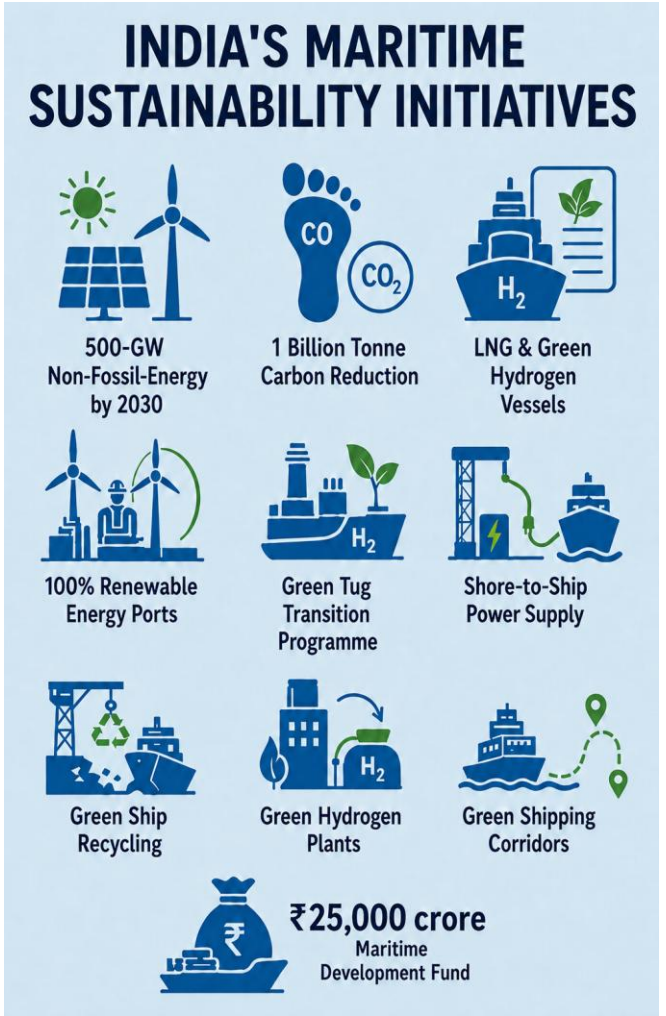
Sustainability Initiatives - Green Shipping Agenda

1. Targets: 500 GW non-fossil energy (2030), 1 billion-ton carbon cut, net-zero by 2070.
2. Policies encourage LNG, green hydrogen, biofuel vessels.
3. Mandates shore power, waste, and renewable port integration.

Sustainability Initiatives - Key Programmes

1. Harit Sagar Guidelines support 100% renewable energy, AI/IoT logistics in ports.
2. Green Tug Transition: 50% hybrid/electric tugs by 2030.
3. Green hydrogen plant at Deendayal Port scaling to 10 MW; 5 million tonnes by 2030 goal.





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.**

- DECARBONIZE OUR OCEANS
- SECURE OUR ENERGY FUTURE
- STRENGTHEN MARITIME COMPETITIVENESS
- BUILD SUSTAINABLE ECONOMIC GROWTH

National Maritime Decarbonization Policy Framework

PILLAR 1: GREEN SHIPPING

- Lifecycle-based decarbonization of India's fleet
- Energy-efficient, fuel-flexible and low- to zero-emission vessels
- Green ship certification and incentives
- Lifecycle emissions accounting and transparency

PILLAR 2: GREEN PORTS

- Port-led decarbonization through clean energy integration
- Electrification, shore power and energy efficiency in operations
- Sustainable infrastructure and green logistics
- Positioning Indian ports as competitive, low-carbon gateways

PILLAR 3: GREEN SHIP RECYCLING

- Safe, environmentally sound and circular ship recycling
- Alignment with Hong Kong Convention
- Strengthening worker safety
- Enhancing material recovery and resource efficiency

PILLAR 4: GREEN FINANCE

- Mobilising affordable and long-term capital for green maritime projects
- Blended finance and risk-sharing mechanisms
- ESG-aligned investments
- Incentivising clean technologies and innovation

PILLAR 5: GREEN SKILL DEVELOPMENT

- Preparing future-ready maritime workforce and institutions
- Training for new technologies, alternative fuels and digitalisation
- Strengthening capacity for safety, sustainability and compliance
- Supporting seafarer transition and career progression

PILLAR 6: GREEN FUELS

- Promoting a safe and phased transition to alternative marine fuels
- LNG, biofuels, methanol, ammonia, hydrogen and other future fuels
- Developing bunkering infrastructure and reliable supply chains

PILLAR 7: GREEN TECHNOLOGY

- Accelerating adoption and indigenisation of advanced maritime technologies
- Digitalisation, automation, AI/IoT and data-driven decision making
- Innovation sandboxes, pilot projects and collaborative R&D
- Enhancing efficiency, safety and competitiveness

PILLAR 8: POLLUTION PREVENTION

- Strengthening waste management and port reception facilities
- Promoting circular economy and resource efficiency
- Ensuring MARPOL compliance and environmental standards
- Cleaner operations to protect marine ecosystems
- Preventing marine pollution and building a sustainable blue economy

Alternative Fuels in Maritime

	LNG	BIOFUEL	METHANOL	AMMONIA	HYDROGEN
					
TECHNOLOGY READINESS	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
EMISSIONS POTENTIAL	Lower CO_2 emissions than conventional fuels	Lower lifecycle GHG emissions	Lower emissions potential (when green methanol used)	High energy density than hydrogen	Highest gravimetric energy density
KEY ADVANTAGE	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
ENERGY DENSITY (MJ/L)	21.2	~ 30–37*	15.7	12.7	8.5
STORAGE CONDITIONS	Cryogenic −162 °C	Ambient (varies by fuel)	Ambient (up to 65 °C)	Refrigerated −33 °C	Cryogenic / Compressed −253 °C / >250 bar
RELATIVE TANK SIZE (for same energy as MDO)	1.8 times	~ 1.2 – 1.5 times*	2.5 times	3 times	5–7 times
FLAMMABILITY RANGE (% v/v in air)	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	• Cryogenic storage requirements; methane slip; higher storage volume than conventional fuels	• Extreme low-temperature handling; • Gas leakage; fire and explosion risks
BIOFUELS	• Feedstock availability; fuel quality consistency; compatibility with existing engines and fuel systems	• Oxidation, microbial growth, fuel degradation and storage management
METHANOL	• Lower energy density requiring larger fuel tanks; higher fuel cost; limited bunkering infrastructure	• Highly flammable; toxic if ingested or inhaled; nearly invisible flame during combustion
AMMONIA	• Limited commercial availability; storage and distribution challenges; engine technology still evolving	• Highly toxic vapours; personnel exposure risks; leak detection and emergency response requirements
H_2 HYDROGEN	• Low volumetric energy density; large storage requirements; immature bunkering ecosystem; high production cost	• Highly flammable; leakage due to small molecular size; cryogenic storage and material embrittlement concerns

KEY REQUIREMENTS

- Temperature and pressure management systems
- Fuel containment and leak detection mechanisms
- Safe bunkering procedures and emergency response plans
- Crew competency, training and certification
- Continuous monitoring and risk management

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.

Green Ports : Driving Sustainable Maritime Growth

Cleaner Ports, Greener Operations, Sustainable Future

WHAT IS A GREEN PORT?

- Ports designed and operated with minimal environmental impact.
- Integration of clean energy, efficiency and circular economy practices.
- Focus on reducing emissions, conserving resources and enhancing community well-being.

SUSTAINABLE INDICATORS FOR GREEN PORTS

Green Port Index (GPI)
Measures overall environmental performance of ports.

Port Readiness Level (PRL)
Assesses preparedness for green and sustainable port operations.

Shore Power Readiness Indicator (SPRI)
Measures readiness for Onshore Power Supply (OPS) infrastructure

Environmental Ship Index (ESI)
Evaluates environmental performance of visiting ships.

PORT EMISSION SCOPES

SCOPE 1 – Direct Emissions
- Port equipment & vehicles
- On-site fuel combustion
- Port owned vessels

SCOPE 2 – Indirect Emissions (Energy)
- Purchased electricity
- Steam / heating / cooling consumed at port

SCOPE 3 – Other Indirect Emissions
- Ships at berth & in port
- Cargo handling activities
- Waste & water treatment
- Employee & visitor travel
- Upstream & downstream logistics

Measuring, Monitoring & Mitigating Across All Three Scopes is Key to a Low-Carbon Port Ecosystem

SHORE TO SHIP POWER (ONSHORE POWER SUPPLY)

Electricity supplied from the shore to berthed ships, allowing engines to be switched off and eliminating fuel combustion while docked.

WHY IT MATTERS

- Cuts CO_2, NOx, SOx and Particulate Matter emissions in port zones
- Improves air quality and ESG scores for Indian ports
- Supports compliance with IMO CII, GHG & Green Port Index

POSSIBLE FINANCING OPTIONS

- Blended finance → govt + MDBs + private capital
- Green/blue bonds → earmarked for OPS infrastructure
- PPP models → private players co-invest in OPS roll-out

IMPLEMENTATION STATUS IN INDIAN PORTS

Kamarajar Port
500 kW, 400V, 50-60 Hz in Coal Berth 1 & 2

VO Chidambaranar Port
305 kW, 400V 60Hz in VOC Berth 2 & 3

Jawaharlal Nehru Port Authority
SPS used for Tugs. SPS for all terminals planned (45MVA; INR 600 crore expected)

Paradip Port
Newly commissioned. Delivered full load power to MV APJ Indrani at CB1 Berth.

GREEN TUG TRANSITION PROGRAM (GTTP)

- Initiative of **MoPSW** for transition of harbour tugs to green propulsion.
- Targets progressive replacement of **diesel-powered tugs.**
- Applicable to **~400 harbour tugs** operating across **Indian ports.**
- Implemented through **Approved Standard Tug Designs & Specifications (ASTDS-GTTP).**
- Initial focus on **battery-electric tugs,** with provision for **hybrid, methanol** and **hydrogen.**

PHASED IMPLEMENTATION FRAMEWORK

PHASE 1 (2024-27)
- Induction of battery-electric green tugs at Major Ports.
- Deployment based on ASTDS-GTTP.

PHASE 2-3 (2028-33)
- 30%-60% of operational tug fleet to be ASTDS-GTTP compliant.
- Introduction of alternate fuels and hybrid technologies.

PHASE 4-5 (2034-40)
- 100% transition of harbour tugs at Major Ports.
- Nationwide adoption aligned with vessel life / charter cycles.

Towards a Low-Carbon, Efficient and Resilient Port Ecosystem

Clean Energy | Energy Efficiency | Circular Economy | Climate Action | Sustainable Growth

Building Green Ports Today for a Sustainable Tomorrow

IMO – DNV Study on Potential Demand and Pricing of Alternative Fuels

Strong Alternative Fuel Demand Potential

- Alternative marine fuel demand projected to reach **42–65 PJ by 2035**
- Demand could increase to **113–293 PJ by 2047**
- Growth expected to be driven by increasing adoption of low and zero-carbon fuels in shipping

India's Strategic Bunkering Opportunity

- India's location along major East-West trade routes provides strong potential as a regional bunkering hub
- Opportunity is driven by vessels already calling at Indian ports rather than passing traffic alone
- Container vessels identified as the most promising early adopters of alternative fuels

Fuel Transition Pathway

- Biofuels and methanol expected to lead early adoption
- Ammonia expected to play a larger role in the long term as infrastructure, supply chains and safety frameworks mature
- Methanol identified as the most suitable starting fuel for initial bunkering deployment

Potential Bunkering Hubs

- Mundra, JNPA, Chennai and Tuticorin identified as key demand centres
- Supported by nearby production and hydrogen hub locations including Deendayal (Kandla) and Tuticorin
- Hub-and-spoke bunkering model recommended for efficient fuel supply

Phased Development Roadmap

- **2026–2030:** Establish pilot bunkering ecosystem
- **2030–2035:** Scale proven bunkering clusters
- **2035–2047:** Position India as a regional alternative fuel bunkering hub integrated with international Green Shipping Corridors

India Green Corridors Pre-Feasibility Study

By Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping

Key Outcomes

- Assessed 14 Indian ports across inland, coastal and international shipping segments
- Screened **230+ potential routes** and identified a **first suite of 40 Green Shipping Corridors**
- Corridor portfolio includes:
  - 8 Inland Waterway Corridors
  - 8 Coastal & Domestic Corridors
  - 8 Deep-Sea International Corridors
  - 8 Strategic Opportunity Corridors
  - 8 Emerging Corridors
- E-ammonia identified as the most credible scalable fuel pathway for early corridor deployment
- VOC, Kandla, Paradip and Mundra identified as leading corridor anchor ports
- Gujarat and Odisha emerged as key green fuel production hubs supporting future corridor development

Consortium Incubation Workshop conducted on May 28, 2026 at New Delhi

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, utilisation and export**, with a target of **5 MMT annual production by 2030**, supporting decarbonisation 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 acosystem 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 Nm³/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 m³)
- 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
- **H_2 Hydrogen Derivatives** : Mission to export through maritime corridors

PORT INIRASTRUCTURE 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**

RENEWABLE ENERGY
ABUNDANT & LOW COST

→ GREEN FUEL PRODUCTION
HYDROGEN • AMMONIA
METHANOL • BIOFUELS

→ STORAGE & INFRASTRUCTURE
SAFE • RELIABLE • SCALABLE

→ BUNKERING & PORTS
WORLD-CLASS FACILITIES

→ MARITIME FUEL EXPORTS
FUELLING GLOBAL SHIPPING

India is not just preparing for Green Fuels — it is preparing to Fuel The World.

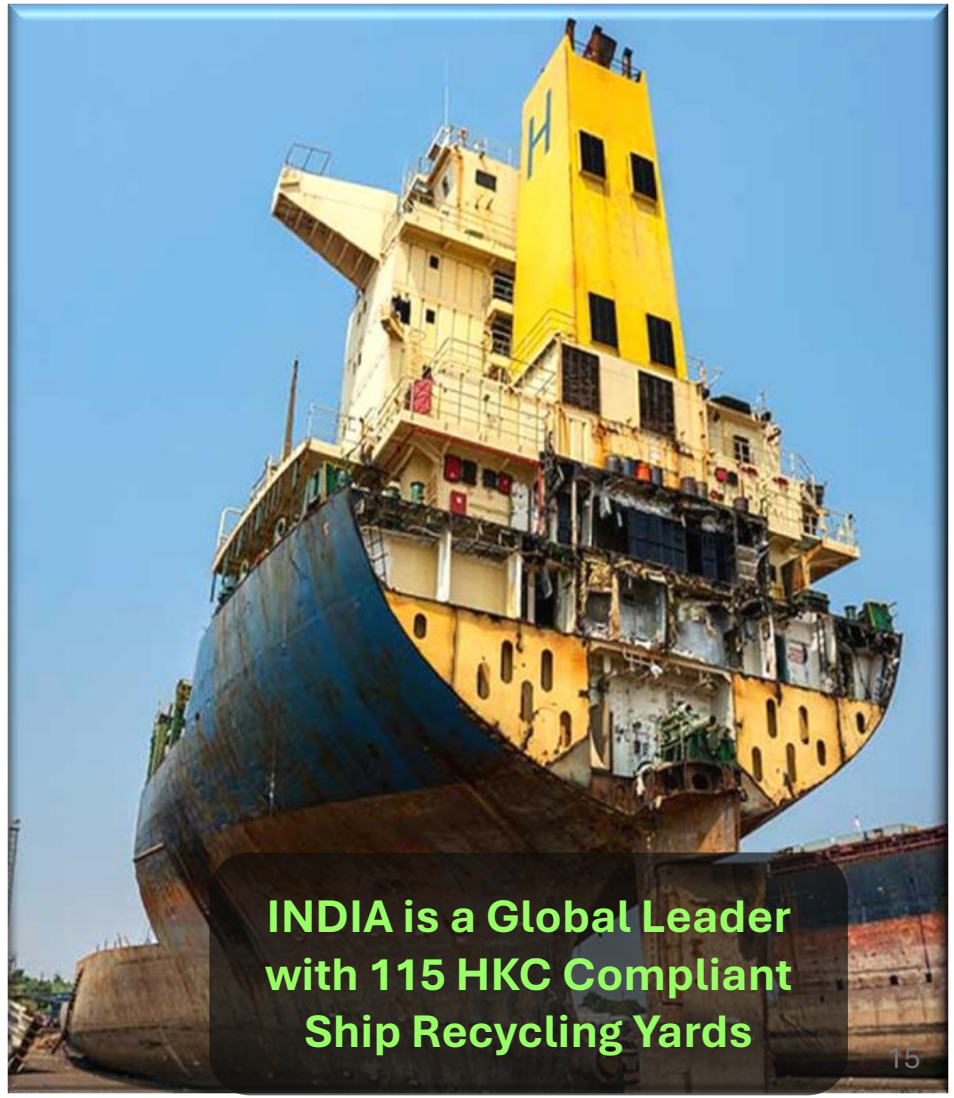
Energy Security | Economic Growth | Environmental Leadership | Global Partnerships

Ship Recycling

- Process of dismantling end-of-life ships to recover **steel and other valuable materials**.
- India is a **global leader**, with Alang–Sosiya in Gujarat being the **world's largest ship recycling cluster**.
- Governed internationally by the **Hong Kong Convention (HKC)**, which entered into force on **26 June 2025**.
- Integral to the **circular economy**, reducing the demand for virgin raw materials. 97-98% Materials recoverable

India's Role & Importance

- Handles **30% - 35% of global ship recycling tonnage** annually. (~500 vessels annually)
- Provides **20 - 25% of India's ferrous scrap requirement**, reducing dependence on imports.
- India is the **only country with 100+ HKC Compliant Recycling Yards.** Supplies input material for the **Green Steel ecosystem**, boosting India's low-carbon transition.
- Generates **direct employment for 15000+ workers** and **indirect livelihood opportunities** for thousands more in logistics, scrap processing, and allied services.
- Strengthens India's position in **global maritime sustainability.**



Four Pillar Approach

Cabinet approves ₹ **69,725** crore Package to Revitalize India's Shipbuilding and Maritime Sector

01

Shipbuilding Financial Assistance scheme

Allocation: ₹24,736 crore

- Overcome cost differential vis-a-vis foreign shipyards.
- Credit note for new builds against ship scrapping in India
  ₹ 4001 crore allocated
- Establish National Shipbuilding Mission

02

Maritime Development Fund

Allocation: ₹25,000 crore

Enable long-term financing to maritime sector through equity & debt-based funding:

- Maritime Investment Fund
- Interest Incentivization Fund
- Credit Guarantee Fund

03

Shipbuilding Development Scheme (SbDS)

Allocation: ₹19,989 crore

- Greenfield cluster creation
- Brownfield capacity expansion to **4.5 million GT**
- Risk outlay for shipyards
- Setting up of India Ship Technology Centre (ISTC) as Apex body under IMU

04

Legal, Policy and Process Reforms

- Demand aggregation
- Large Ships as infrastructure
- Taxation issues
- Flagging reforms

Data Source : PIB Press Release 24 SEP 2025 3:08PM

Ship Recycling Credit Note

- Introduced under **Ship Building Financial Assistance Scheme**
- Incentivizes ship owners to **recycle in India** and **build new ships in Indian shipyards**

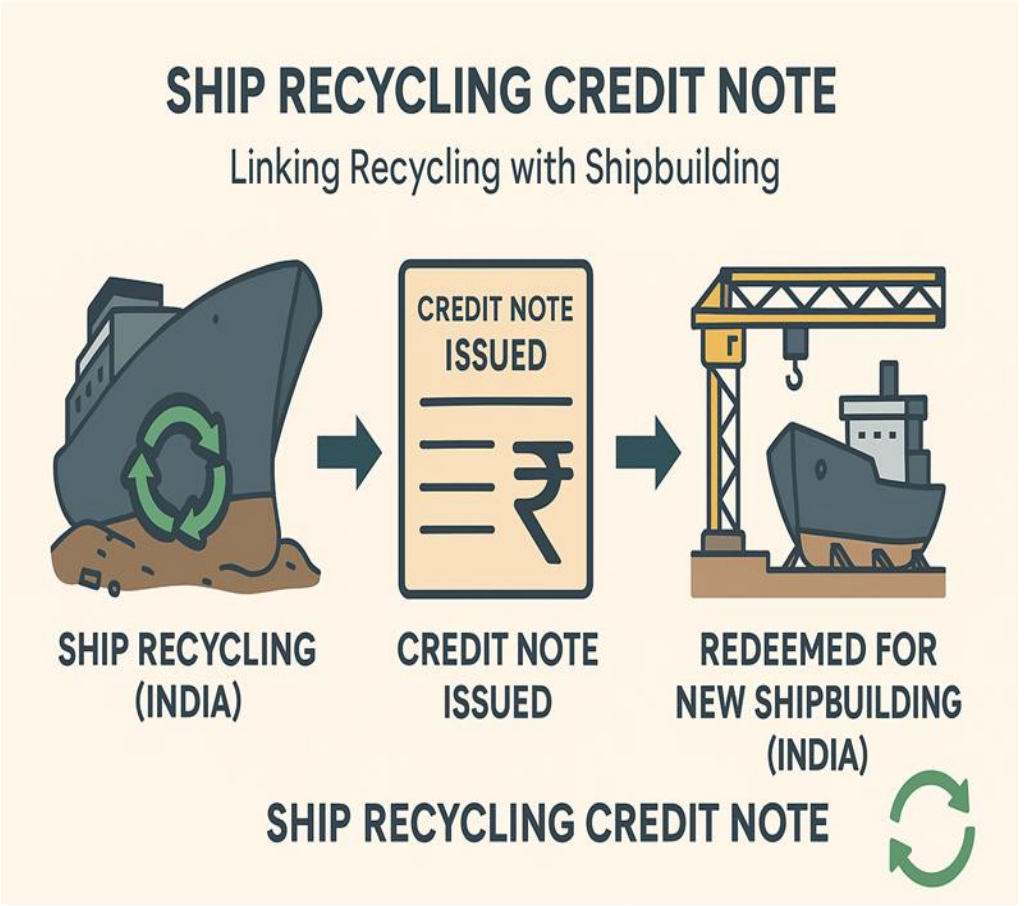
Allocation of : ₹ 4,001 crore
(under SBFA)

How It Works

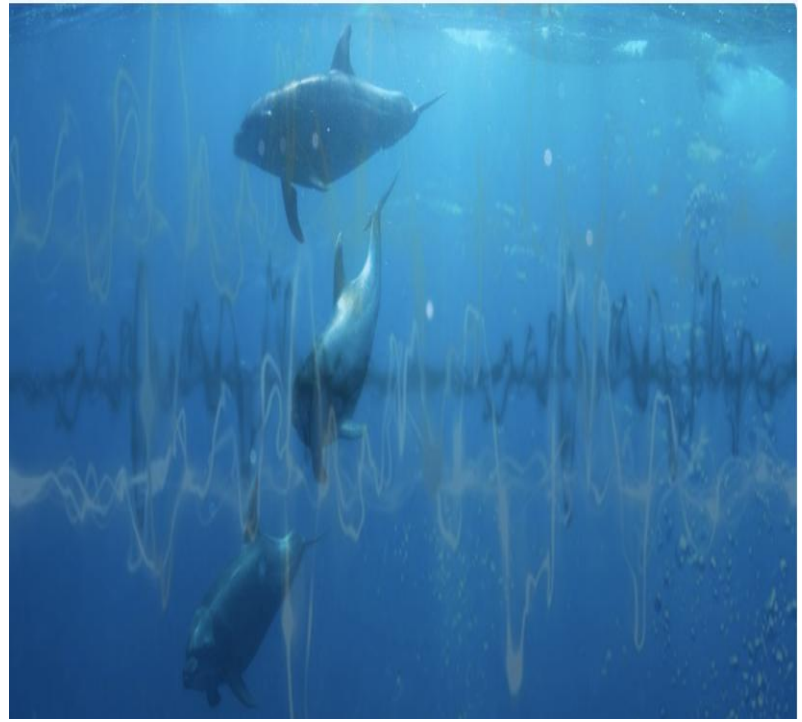
- When a vessel is recycled in a certified Indian yard, the ship owner receives a **Credit Note for 40% of scrap value.**
- The Credit Note remains valid for 3 years.
- The credit note can be redeemed up to 5% of the fair price of the new vessel being built in an Indian shipyard

Benefits

- Encourages **safe and HKC compliant ship recycling** in India
- Provides direct **business boost for Indian shipyards**
- Attracts **new players** to India's ship recycling and shipbuilding ecosystem
- Strengthens India's **circular economy** : recycling feeds into new shipbuilding
- Positions India as a leader in **Green and Sustainable Maritime Growth**



IMO Led Projects



GloLitter :

Tackling Plastics and Marine Litter

Green Voyage 2050 :

Advancing IMO GHG Reduction Strategies

GloNoise :

Reducing Underwater Radiated Noise Pollution

Just Transition in Maritime

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

Digitalization in Maritime

DIGITAL MARITIME SERVICES & GOVERNANCE

e-SAMUDRA
- Integrated digital platform
- 15 modules | 60+ maritime services
- Paperless governance & seamless service delivery

MARITIME SINGLE WINDOW (MSW)
- Single window for all maritime clearances
- Integration with ports, customs, PHO & immigration
- Reduced documentation & clearance time

LICENSE & CHARTERING PORTAL
- End-to-end digital chartering approvals
- Foreign flag charter permissions
- Faster approvals & transparency

24×7 GRIEVANCE REDRESSAL SYSTEM
- Real-time grievance lodging & tracking
- Automated workflow & resolution monitoring

CRISIS RESPONSE MANAGEMENT MODULE
- Digital platform for maritime emergencies
- Integrated coordination with DGS, Navy, Coast Guard, MEA & stakeholders

RPSL DIGITAL MODULE
- Automated licensing, inspections & compliance
- Integration with MTIs & stakeholders
- Transparent monitoring & reporting

HUMAN CAPITAL & KNOWLEDGE ECOSYSTEM

DIGITALISATION IN MARITIME TRAINING
- LMS, simulators & immersive learning
- Centralised attendance system
- AI-enabled adaptive learning
- Digital Training & Assessment Records (TAR)

EXAMINATION REFORMS
- End-to-end digital exam lifecycle
- Online registration & eligibility check
- CBT / hybrid exams with online proctoring
- Digital certificate validation

TRAINING ECOSYSTEM PLATFORM
- Integrated cloud-based training ecosystem
- Faculty development & LMS integration
- Simulator integration
- Skill development & competency enhancement

MARITIME KNOWLEDGE CLUSTER (MKC)
- National knowledge-sharing platform
- Research, innovation & collaboration
- Industry–academia–government partnership

SMART MARITIME INFRASTRUCTURE & FUTURE TECHNOLOGIES

INTEGRATED VESSEL TRAFFIC MANAGEMENT SYSTEM (iVTMS)
- Implemented across all major ports
- AIS, Radar, VHF, CCTV & weather integration
- Real-time vessel traffic monitoring & safety enhancement

JUST-IN-TIME ARRIVAL
- Synchronises vessel arrival with berth availability
- Reduces fuel consumption & emissions
- Improves berth utilisation & efficiency

DIGITAL TWIN TECHNOLOGY
- Real-time virtual model of port operations
- Pilot implemented at VOC Port, Tuticorin
- Supports predictive decision-making & optimisation

LRIT
- Long Range Identification & Tracking
- Enhanced maritime domain awareness
- Vessel monitoring & casualty reporting support

GEOSPATIAL PLATFORM
- GIS-enabled monitoring for port security & sustainability
- Supports ISPS compliance & safety initiatives

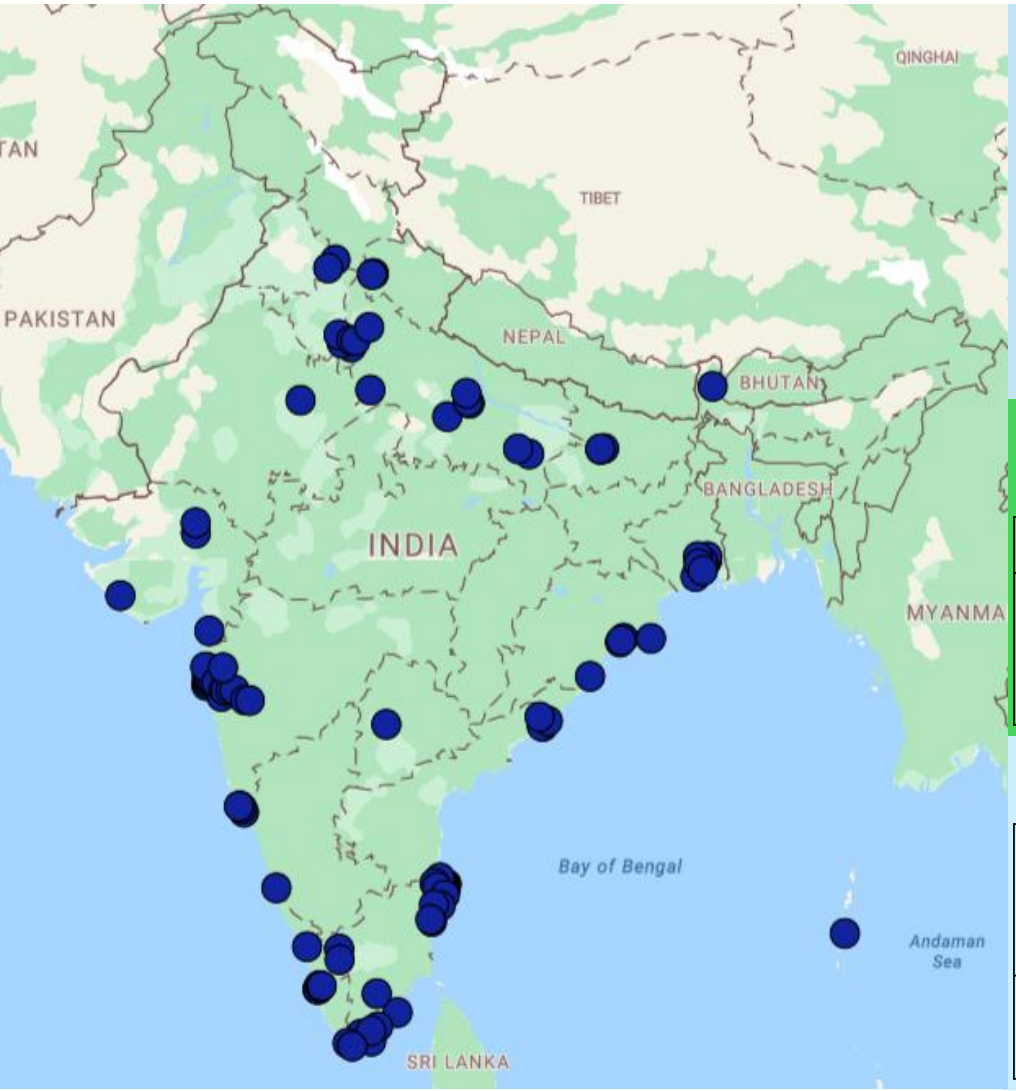
INDIA GLOBAL MARITIME SAFETY PORTAL (IGMSP)
- AI-enabled maritime safety platform
- Safety analytics, incident reporting & knowledge repository
- 200+ safety learning videos

SWACHH SAGAR PORTAL
- Port Reception Facilities (PRF)
- Electronic BDN & Ballast Water Reporting
- Single Use Plastic Reporting
- MARPOL Compliance Monitoring
- Cleaner Ports, Cleaner Oceans

SHIP RECYCLING PORTAL
- HKC implementation platform
- Yard licensing & IHM management
- Inspection & compliance monitoring
- IMO reporting integration
- Sustainable ship recycling ecosystem

COMPREHENSIVE SHIPBUILDING PORTAL
- Industry directory
- Innovation centre
- Technical library
- Training & certification
- Shipbuilding ecosystem support
- Strengthening Make in India

Maritime Training Institutes in India



81 + 36 + 35 = 176

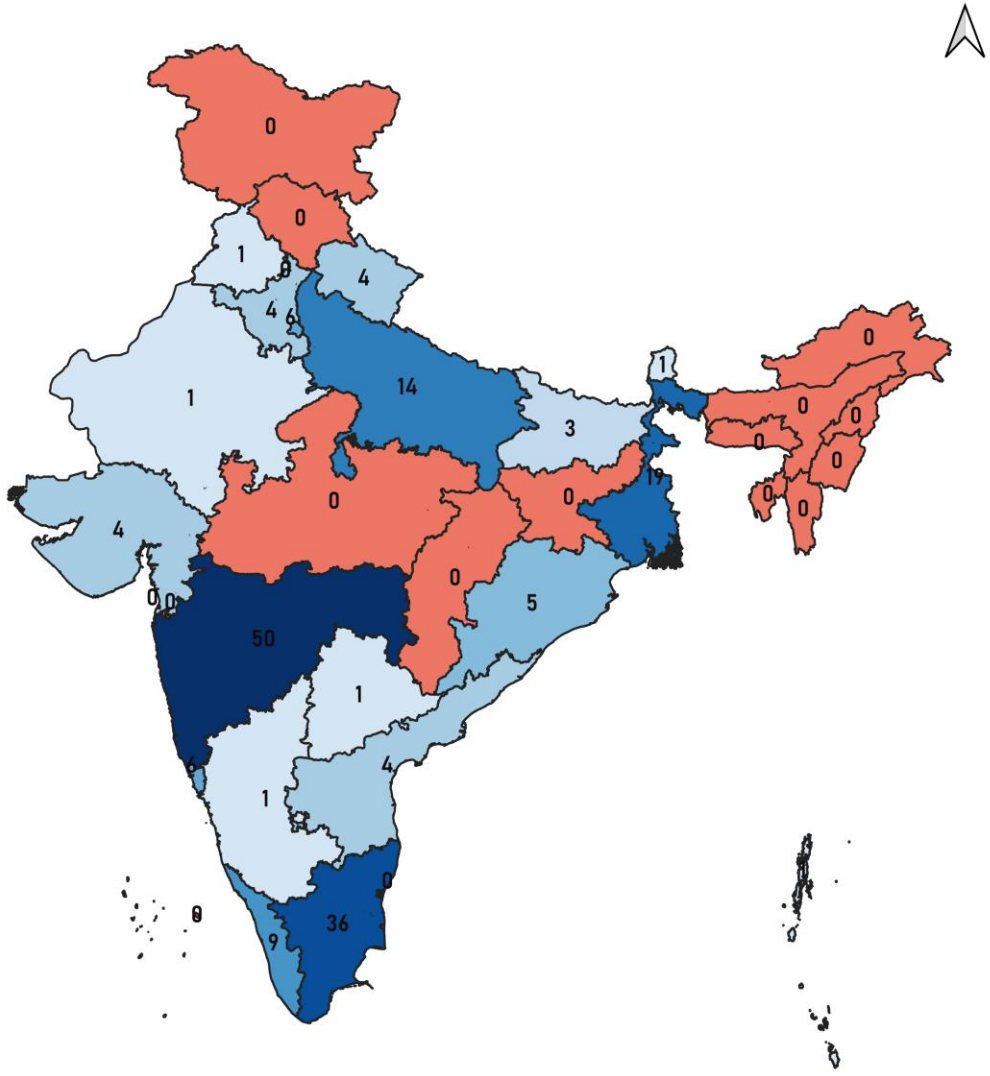
PRE – SEA INSTITUTES	POST - SEA INSTITUTES	PRE+POST INSTITUTES	TOTAL

PRE - SEA

Total Courses	8 Courses
Total Approved Intake (2025)	Officer - 9,636 Rating - 14,081 Total - 23,717

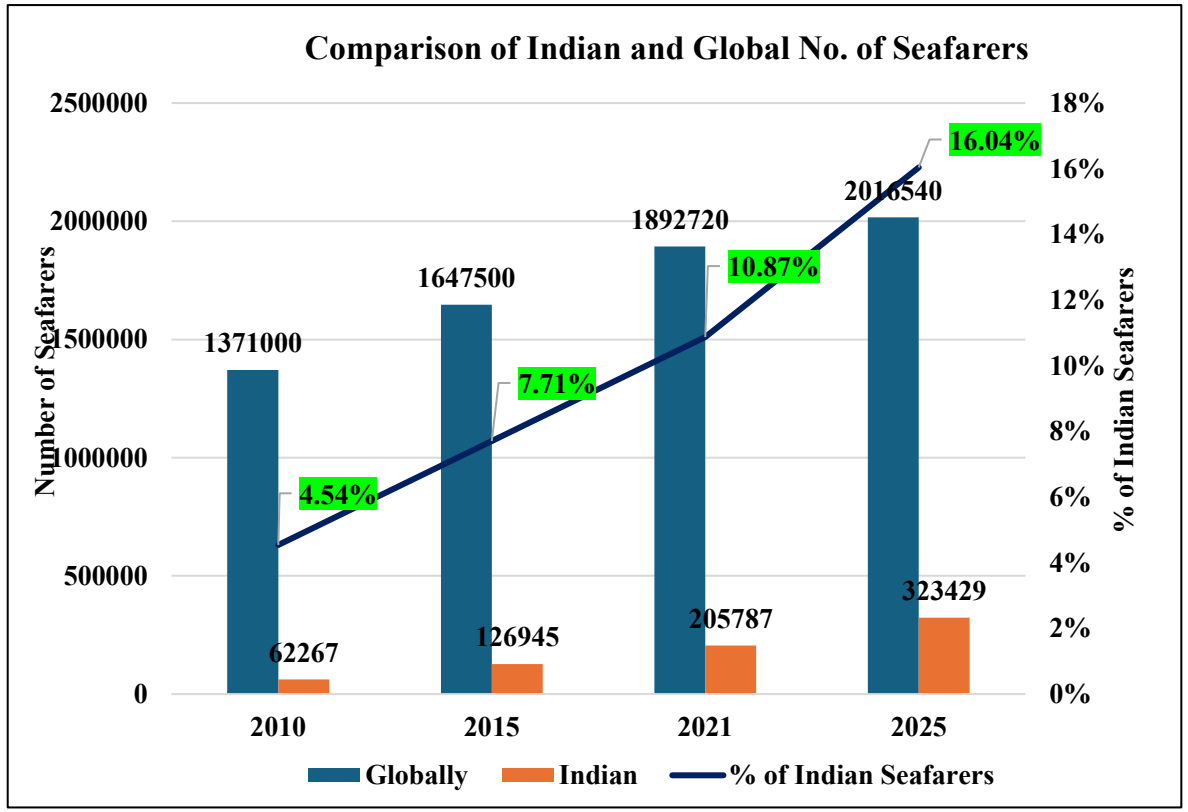
POST - SEA

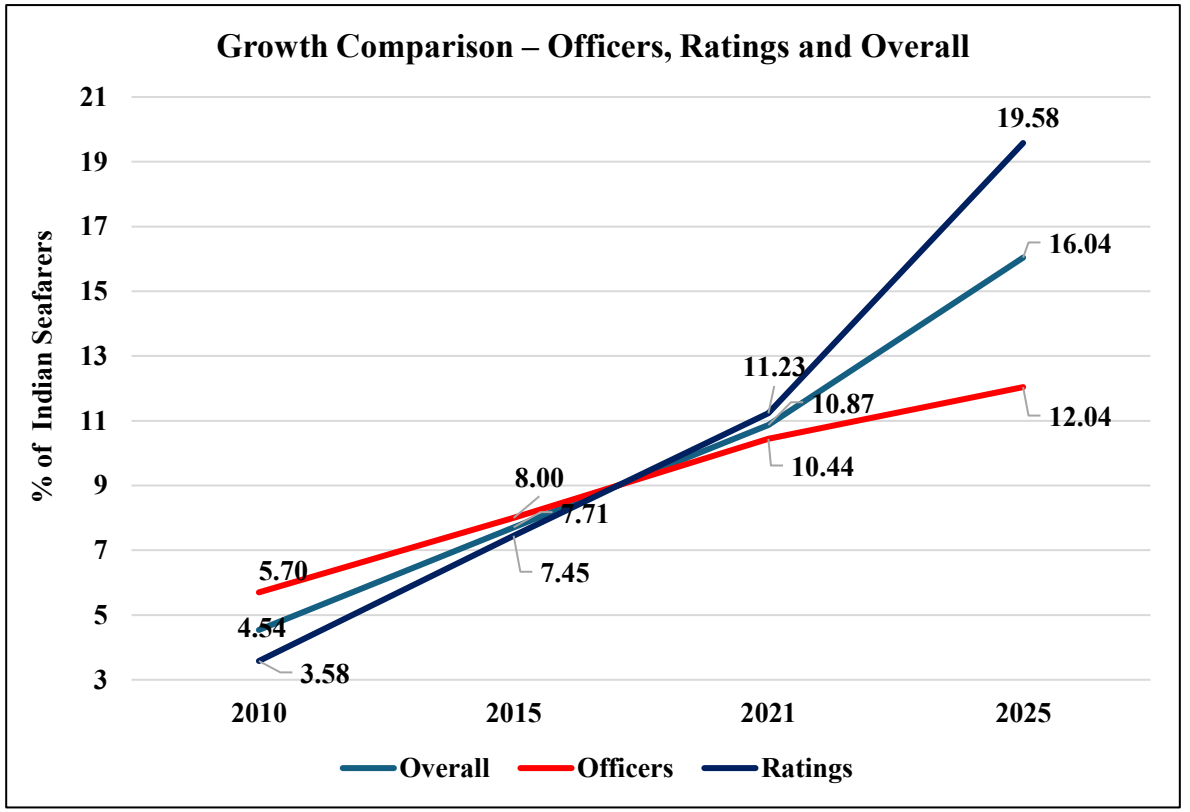
Total Courses	Modular - 52 Simulator - 20 Competency - 17
Total Approved Intake (2025)	22,264



Global Position

India's share of the global **seafarer** workforce has risen consistently over time by **4.54 %** in 2010 to **16.04 %** of global workforce.





India's share of the global **ratings** exhibits the fastest and most pronounced growth, increasing sharply from **3.58 %** in 2010 to **19.58 % of the ratings** in 2025.

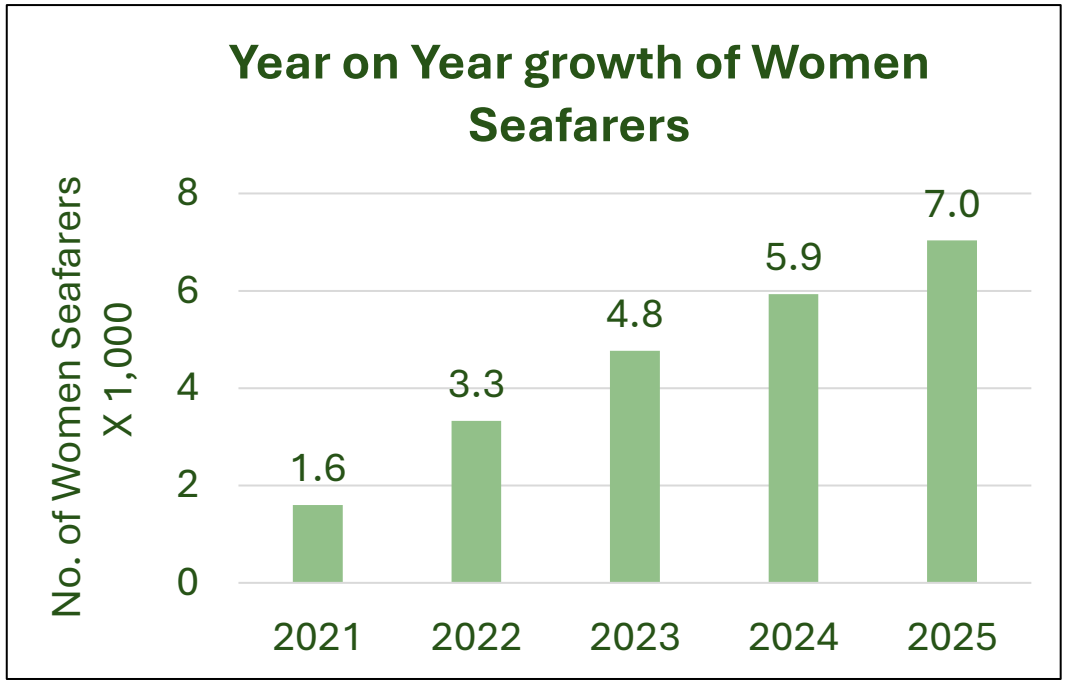
India's share of the global **officers** share has grown more gradually, rising from 5.70% in 2010 to **12.04% of the officers** in 2025

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



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.

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

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

LMS Link

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

Ensuring Zero Tolerance in Training

Raising issue over the Call/SMS/WhatsApp

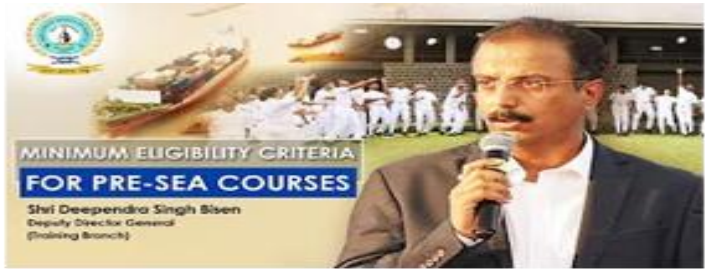
Helpline 24x7

Escalation mechanism for resolving query

Follow-up
Support and right guidance

Analysis
& Correction
and recurrence

Efforts to provide awareness through Social Media



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

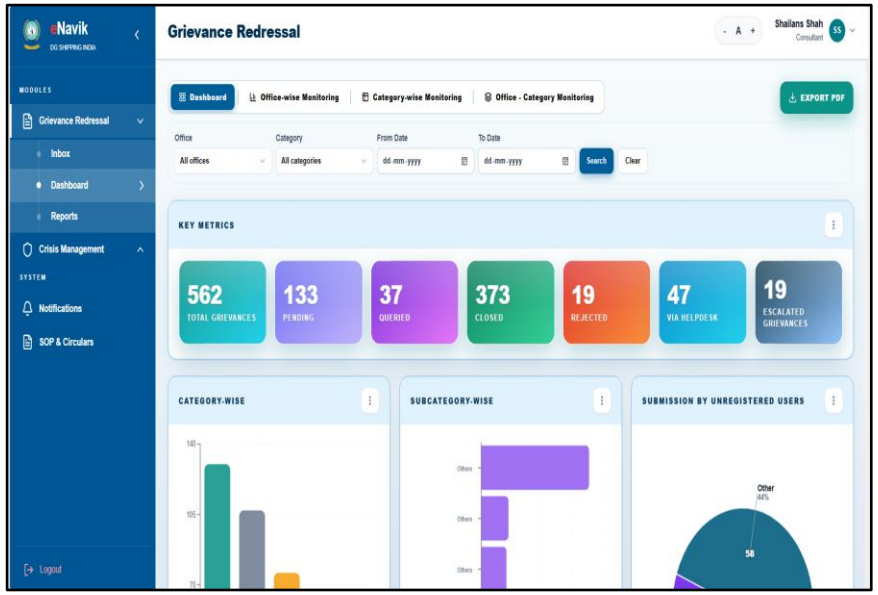
DGS System to provide a single digital platform for 24x7 effective lodging, tracking, and resolution of seafarer grievances.

Aim

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

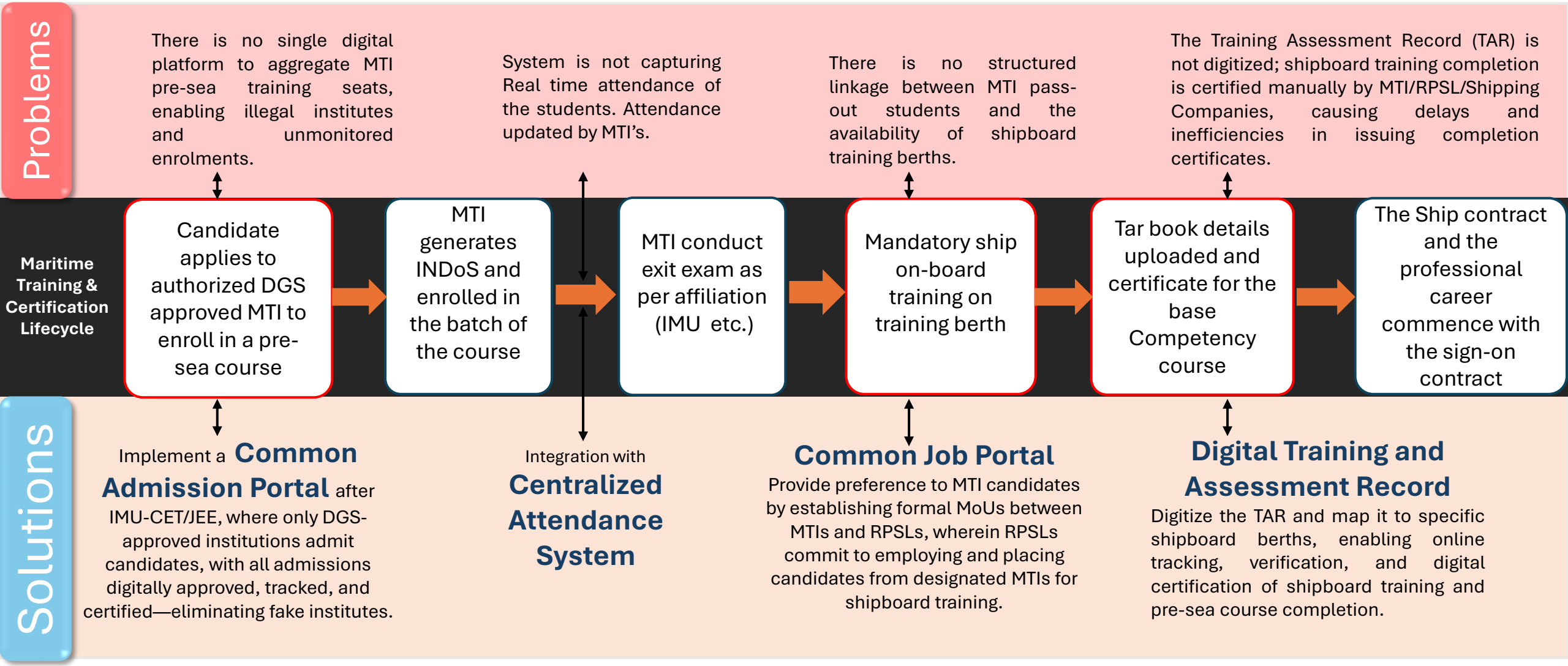
Current Status

- 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



24x7 Grievance Redressal Module

Maritime Training & Certification Lifecycle



STCW Compliance Board

- The Merchant Shipping (STCW) Rules 2026 introduce updated national standards for training, certification, and watchkeeping of seafarers, fully aligned with the latest IMO and STCW Code amendments.
- These rules strengthen competency requirements, integrate new safety and anti-harassment training mandates effective from 2026, and ensure Indian seafarers meet globally harmonized qualification benchmarks.

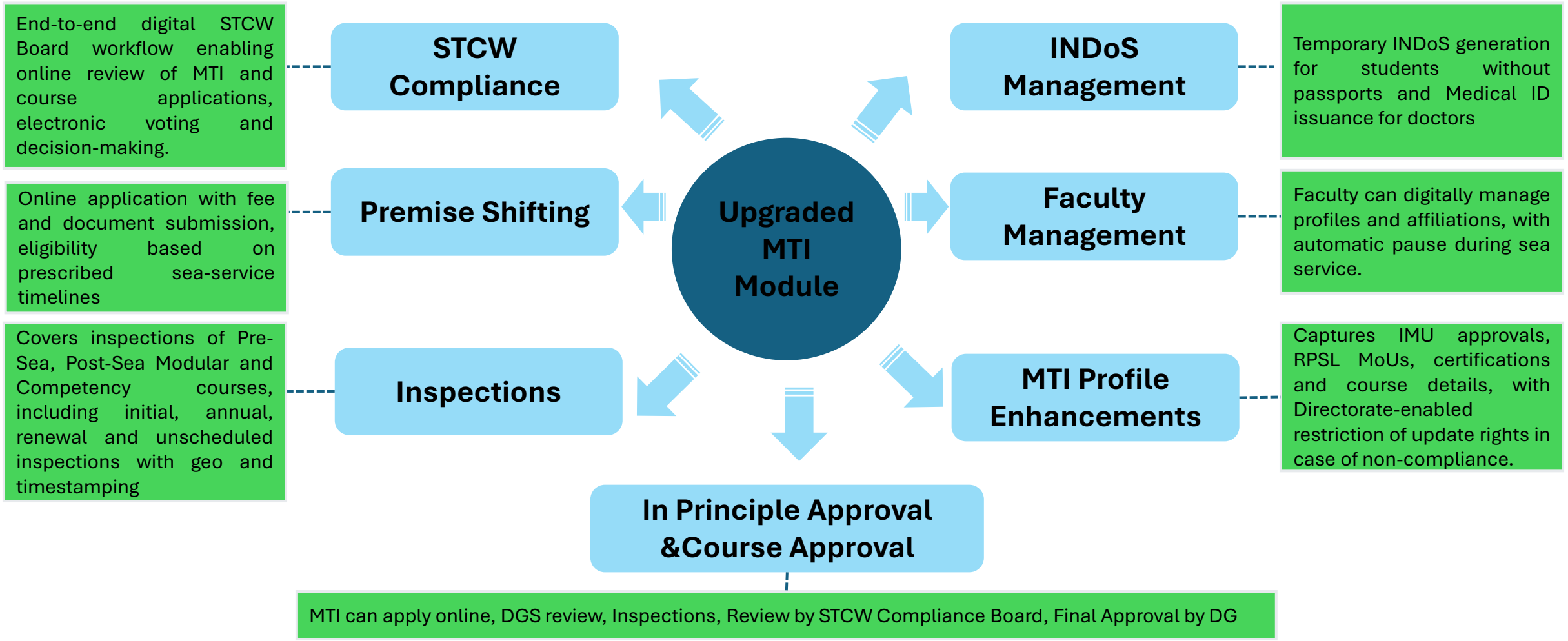
The new chapter includes the following key provisions:

- **Authority to Approve and Administer MTIs & Training Programs:** Establishes formal powers for approving MTIs, regulating their operations, and overseeing all STCW-related training activities.
- **Provisions for Suspension or Withdrawal of Approval:** Enables corrective action against MTIs that fail to meet prescribed standards, ensuring compliance and safeguarding training quality.
- **Constitution of an STCW Compliance Board:** Introduces a structured body responsible for monitoring adherence to STCW requirements and recommending disciplinary or corrective measures.
- **Action Against Unauthorized Institutions or Individuals:** Empowers authorities to take strict action against unapproved entities or persons conducting maritime training or examinations unlawfully.
- **Support from Police or Law-Enforcement Agencies**: Provides legal backing to seek assistance from law-enforcement bodies for investigations, enforcement, and closure of unauthorized activities.

- India has the opportunity to host the STCW Comprehensive Review Diplomatic Conference in 2031-32 where the 22 identified areas for revision around technological advancements, seafarer well-being, and operational flexibility shall be amended.

Maritime Training Institute Module

Aims to enhance efficiency, compliance, and transparency in the **Maritime Training Institutes (MTI)** ecosystem through digital automation and seamless integration.



Common Admission Portal

What is a Common Admission Portal ?

- **A single, centralized digital platform for all students seeking admission to DG Shipping–approved Maritime Training Institutes (MTIs).**
- Enables a **uniform, transparent, and merit-based** admission process for pre-sea maritime courses across India.
- Provides standardized **eligibility checks, online applications, document verification,** and **merit ranking.**
- **Ensures admissions only to approved MTIs, courses, and sanctioned intake capacities,** maintaining regulatory compliance.
- **Offers real-time visibility to DG Shipping** on admissions, seat allocation, and institute performance.

Stakeholder	Key Responsibilities
Students	Apply for courses, upload documents, track admission status
Maritime Training Institutes (MTIs)	Verify applications, manage course intake & batches, approve admissions
DG Shipping	Monitor institute-wise admissions, ensure compliance with approved intake capacity
Portal Administrators	Manage system operations, control user access

Examination/Assessment and Certification Reforms: CoC (Written and Oral)

End-To-End Digitized

1. User Registration
2. Eligibility Assessment
3. Seat Booking
4. Misconduct
5. Conduct of Examination
6. Evaluation & Re-evaluation
7. Data Storage
8. Question Bank & Question Paper

Objective

- To create a secure, transparent, fully digital examination system for the competency assessment and certification of seafarers

Scope

- Covers the full examination lifecycle: from registration to certificate issuance
- Includes both written and oral examinations in hybrid or CBT mode

Core Features

- Biometric verification, CCTV surveillance, online proctoring
- Encrypted question papers & scanned answer scripts and grievance redressal & feedback mechanisms from candidates

Impact

- Uniform candidate experience across all MMDs
- Improved exam integrity, operational efficiency, and transparency

Training Ecosystem

The Training Ecosystem Vision aims to establish a unified, cloud-based digital platform with it's 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.

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

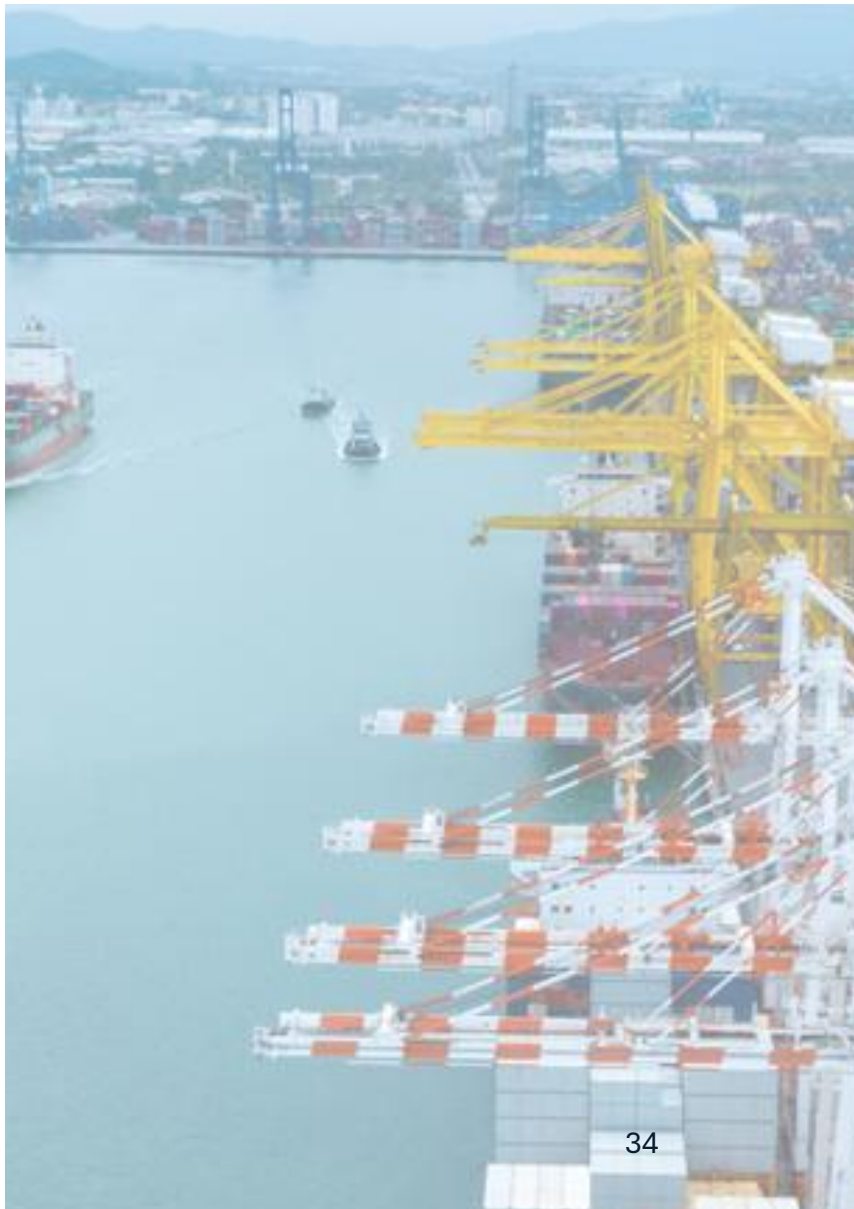
01 Deliver real-time safety dashboards and analytics across devices.

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.



Suraksha Sarvapratham

Safety First

DGS is focused on promoting safety on vessels and is set to launch a campaign called the Suraksha Sarvapratham, 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.

SAFER VESSELS | EMPOWERED SEAFARERS | SMARTER SYSTEMS | STRONGER SAFETY CULTURE | SAFETY FIRST, ALWAYS

संगच्छध्वं संवदध्वं सं वो मनांसि जानताम्।

"Move together, speak together, may your minds be in harmony."
(Rigveda 10.191.2)

सत्यमेव जयते
Ministry of Ports, Shipping & Waterways
Government of India

सागराः सुपन्थानः सन्तु