COASTAL STATE WORKSHOP- ANDHRA PRADESH

Directorate General of Shipping |
Ministry of Ports, Shipping and Waterways

6th November 2025

PILLAR 1

Maritime Safety and Casualty Response

1 | Objective and Agenda

Six Pillars of Coastal State Workshop

Coastal state workshops are proposed to be organized to advance welfare, ship recycling, shipbuilding, and repair initiatives in collaboration with State Maritime Boards.

The Coastal State Workshops will be structured around six key pillars-

i. **Pillar 1** – Maritime Safety and Casualty Response

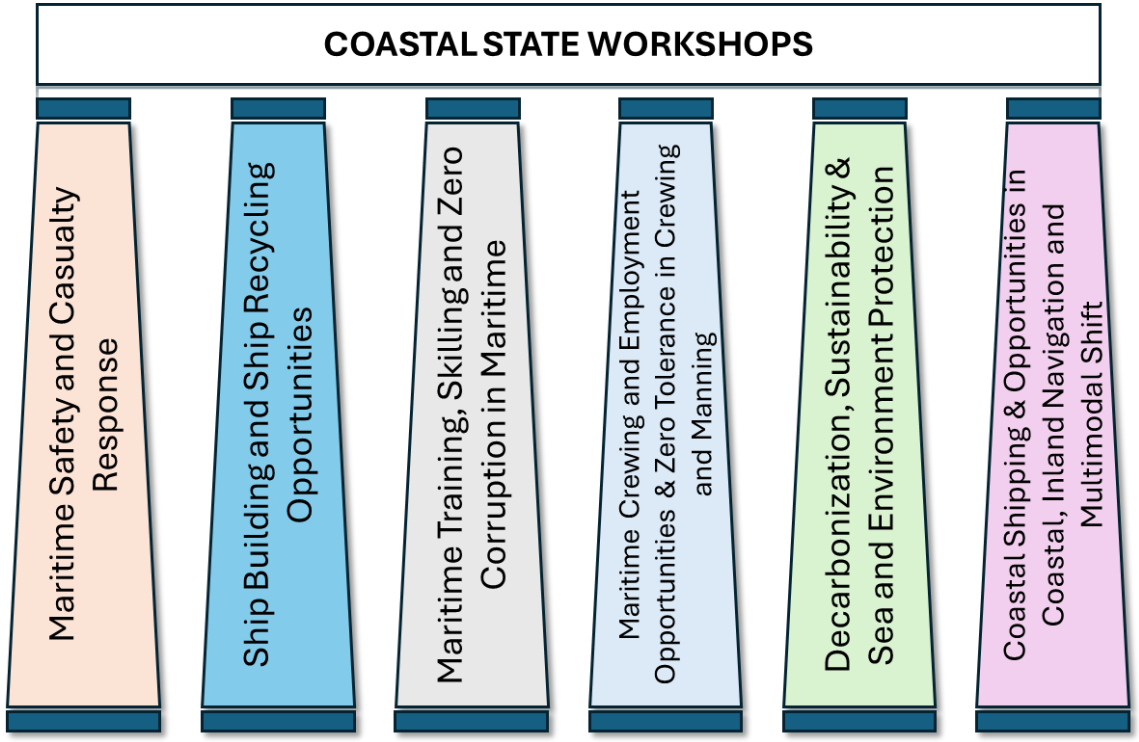
ii. **Pillar 2** – Coastal States- Ship Building and Ship Recycling Opportunities

iii. **Pillar 3** – Maritime Training, Skilling and Zero Corruption in Maritime

iv. **Pillar 4** – Maritime Crewing and Employment Opportunities & Zero Tolerance in Crewing and Manning

v. **Pillar 5** – Decarbonization, Sustainability & Sea and Environment Protection

vi. **Pillar 6** –Coastal Shipping & Opportunities in Coastal, Inland Navigation and Multimodal Shift



Pillar 1 – Maritime Safety and Casualty Response

Enhance Safety Governance

Standardize Reporting & Coordination

Build Legal & Technical Capacity

Promote Equipment & Compliance Upgradation

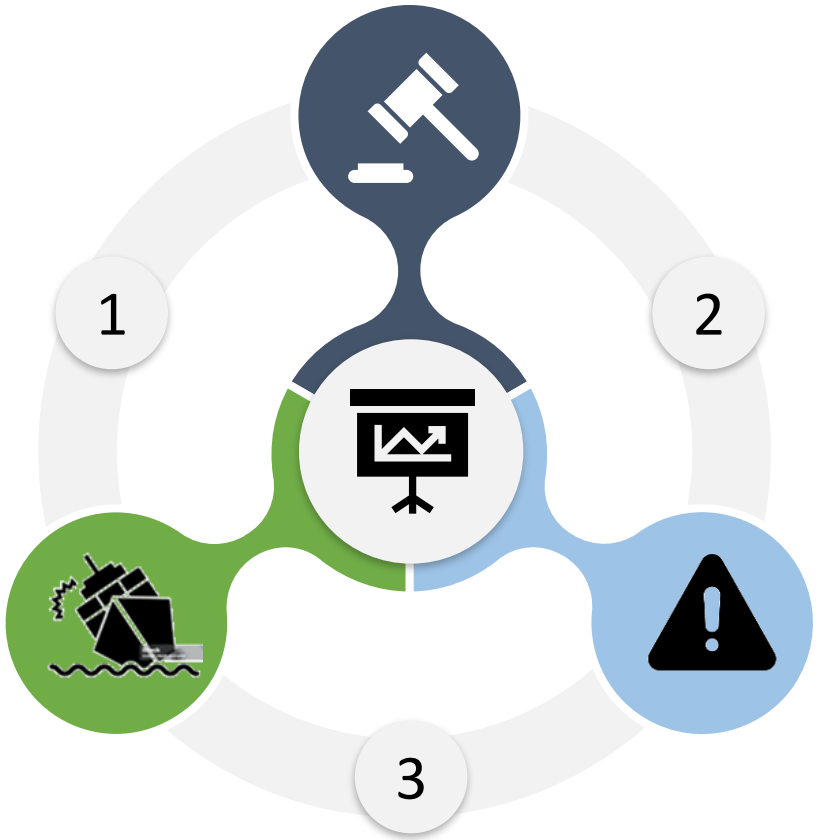
Strengthen Cyclone & Disaster Preparedness

Facilitate Stakeholder Awareness & Coordination

Agenda for the Workshop

Fishing Vessel Collisions & Safety Awareness

- Overview of collision trends (2023–2024)
- Reporting delays
- Equipment gaps (AIS/VHF)
- Awareness on COLREGs and safe navigation practices



Maritime Casualty Legal Advisory & Institutional Roles

- Legal framework under Merchant Shipping Act 2025 and Admiralty Act 2017
- Claims procedures
- Insurance and liability systems; inter-agency coordination

Cyclone Preparedness and Port Disaster Response

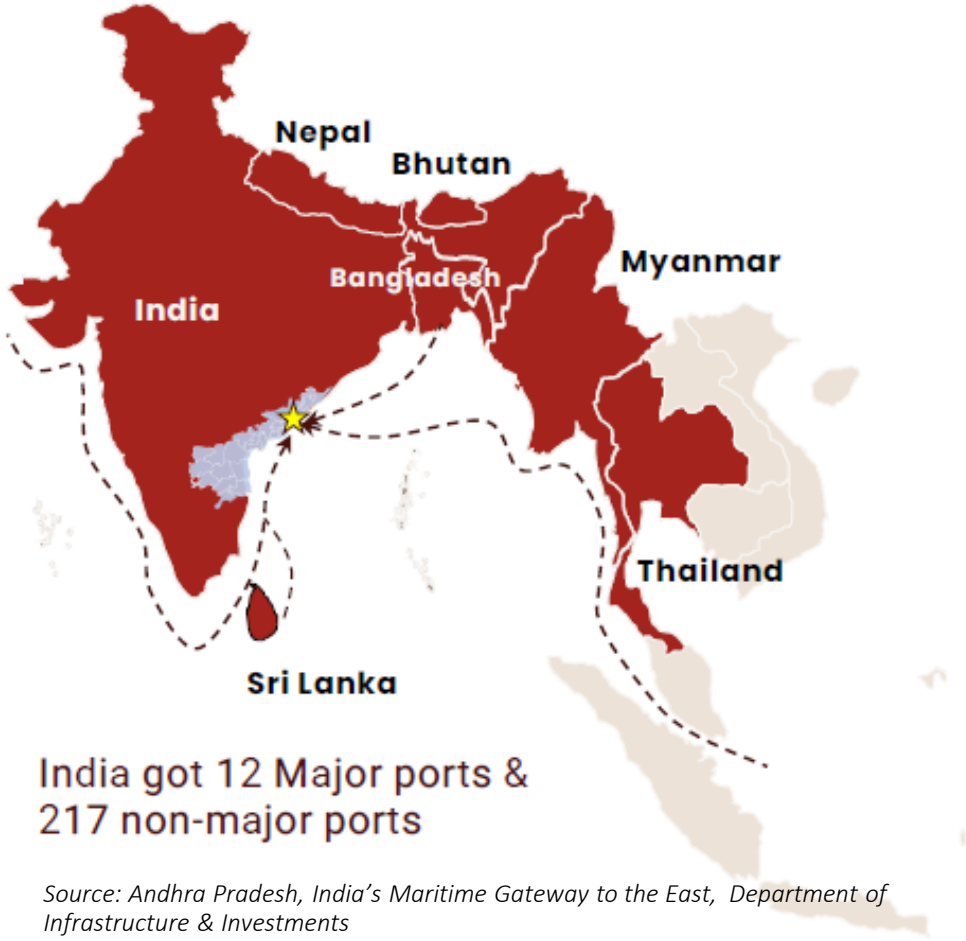
- Implementation of DGS SOP
- SITREP procedures & communication protocols
- Case of Cyclone Montha (2025)

1 Andhra Pradesh Maritime Profile

Andhra Pradesh: Major Maritime State on India’s East Coast

Andhra Pradesh: Major Maritime State on India’s East Coast

- Coastline: 1,053 km (~9.5% of India’s total coastline)
- Vital role in regional trade, fisheries, and coastal livelihoods
- Key gateway for cargo movement on eastern seaboard
- Anchor for India’s “Port-led Development”

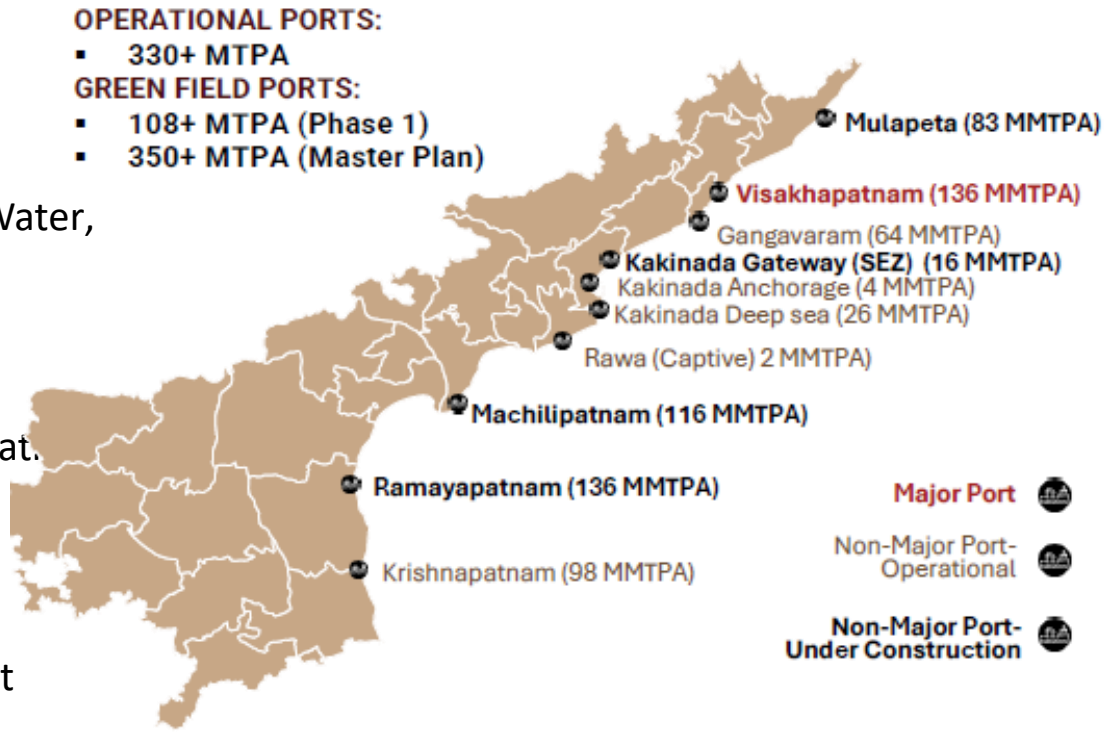


Source: Andhra Pradesh, India’s Maritime Gateway to the East, Department of Infrastructure & Investments

Ports and Coastal Infrastructure

Ports and Coastal Infrastructure

- One major port: Visakhapatnam Port
- Expanding network of non-major ports (public & private sector)
- Operational Ports: Visakhapatnam, Gangavaram, Kakinada Deep Water, Kakinada Anchorage, Krishnapatnam, Machilipatnam, Mulapeta, Ramayapatnam
- Ports Under Development: Nizampatnam, Bhavanapadu, Kalingapat
- Handles ~12% of India's national cargo throughput
- Supports domestic coastal & international shipping
- Strong hinterland connectivity via Golden Quadrilateral and freight corridors

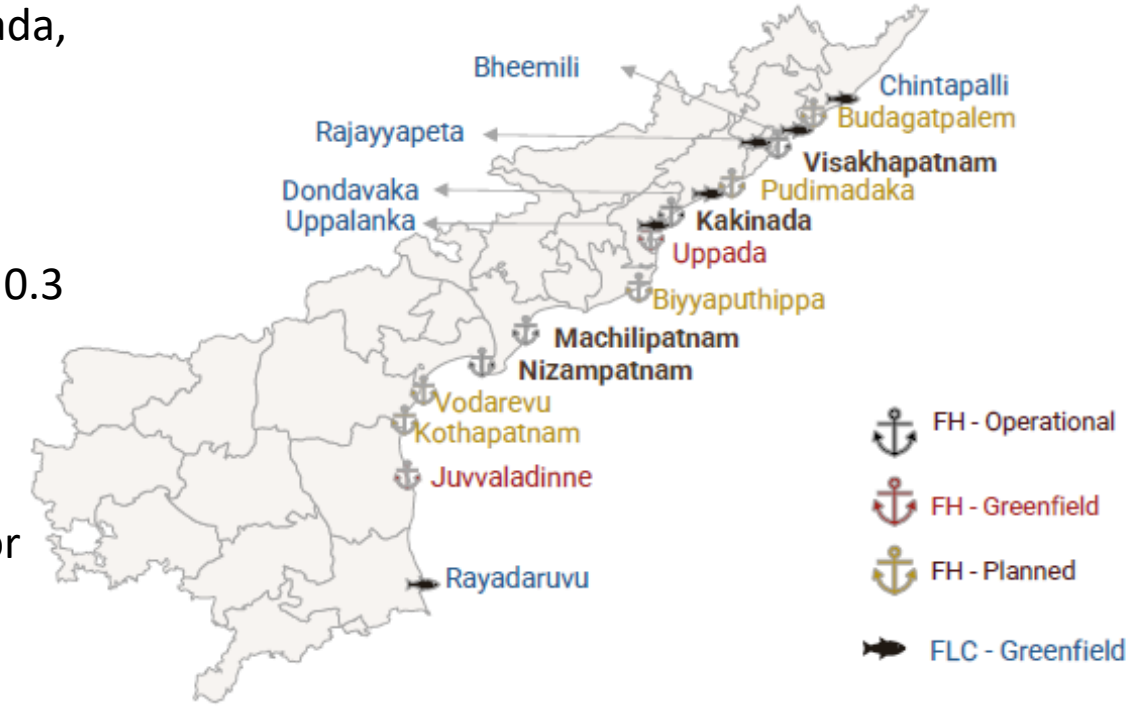


Source: Andhra Pradesh, India's Maritime Gateway to the East, Department of Infrastructure & Investments

Ports and Coastal Infrastructure

Fishing Harbours and Coastal Communities

- 4 operational fishing harbours: Visakhapatnam, Kakinada, Machilipatnam, Nizampatnam
- 350 fish landing centres along coastal districts
- Marine fish production: ~0.3 MMTPA from harbours + 0.3 MMTPA from landing centres
- Coastal fishing community: ~6.3 lakh people
- Overlapping zones between fishing activities and major vessel routes increase collision risks



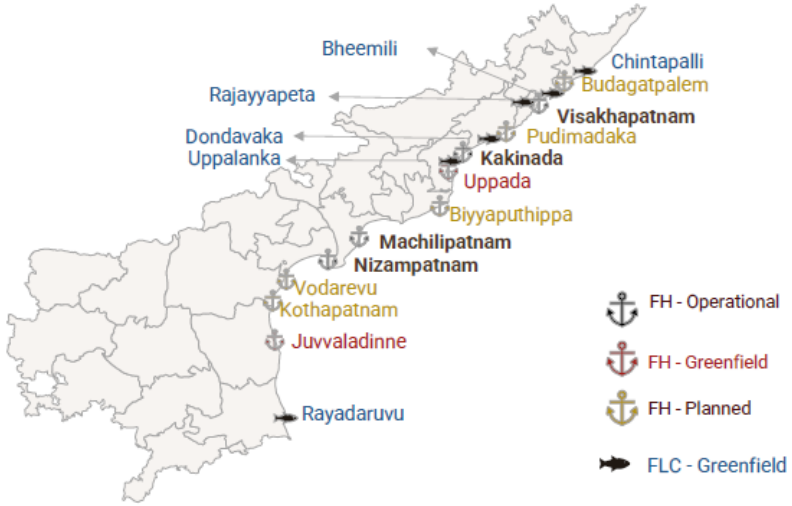
Source: Andhra Pradesh, India's Maritime Gateway to the East, Department of Infrastructure & Investments

Maritime Trade and Economic Significance

Fishing Harbours and Coastal Communities

- Port-led industrialisation: Clusters & logistics parks around Kakinada, Krishnapatnam, Ramayapatnam
- High cargo throughput: Significant volumes at non-major ports, ongoing expansion
- Blue economy integration: Unified maritime development integrating fisheries, ports, and coastal tourism

AP is supporting 6.3 Lakh fishermen population through modern fishing harbors



4 Operational Fishing Harbours produce marine catch of 0.3 MMTPA

Harbour	Production (MMTPA)
Visakhapatnam	1,20,240
Kakinada	68,507
Machilipatnam (Under Upgradation)	40,749
Nizampatnam (Under Upgradation)	48,942

350 Fish Landing Centres further produce catch of another **0.3 MMTPA**

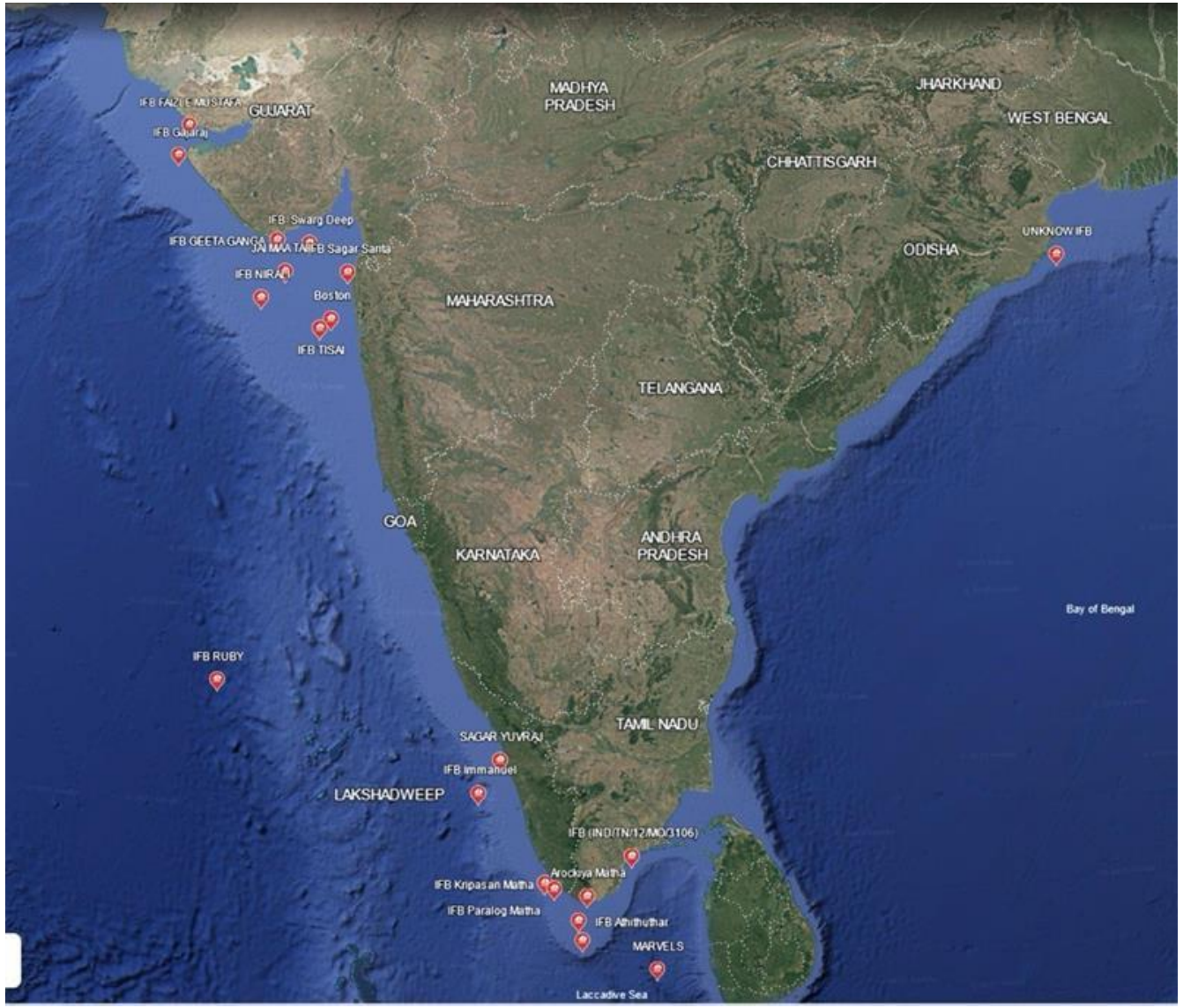
Agenda 1

Fishing Vessel Collisions & Safety Awareness

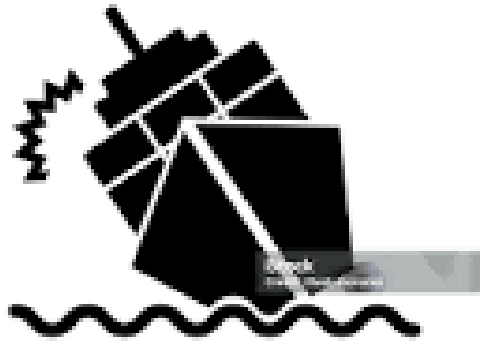
Location of Collision between 2023-2025

Total Number of Collision

28



DATA INSIGHTS



28

Total Number of Collision

Annual Distribution

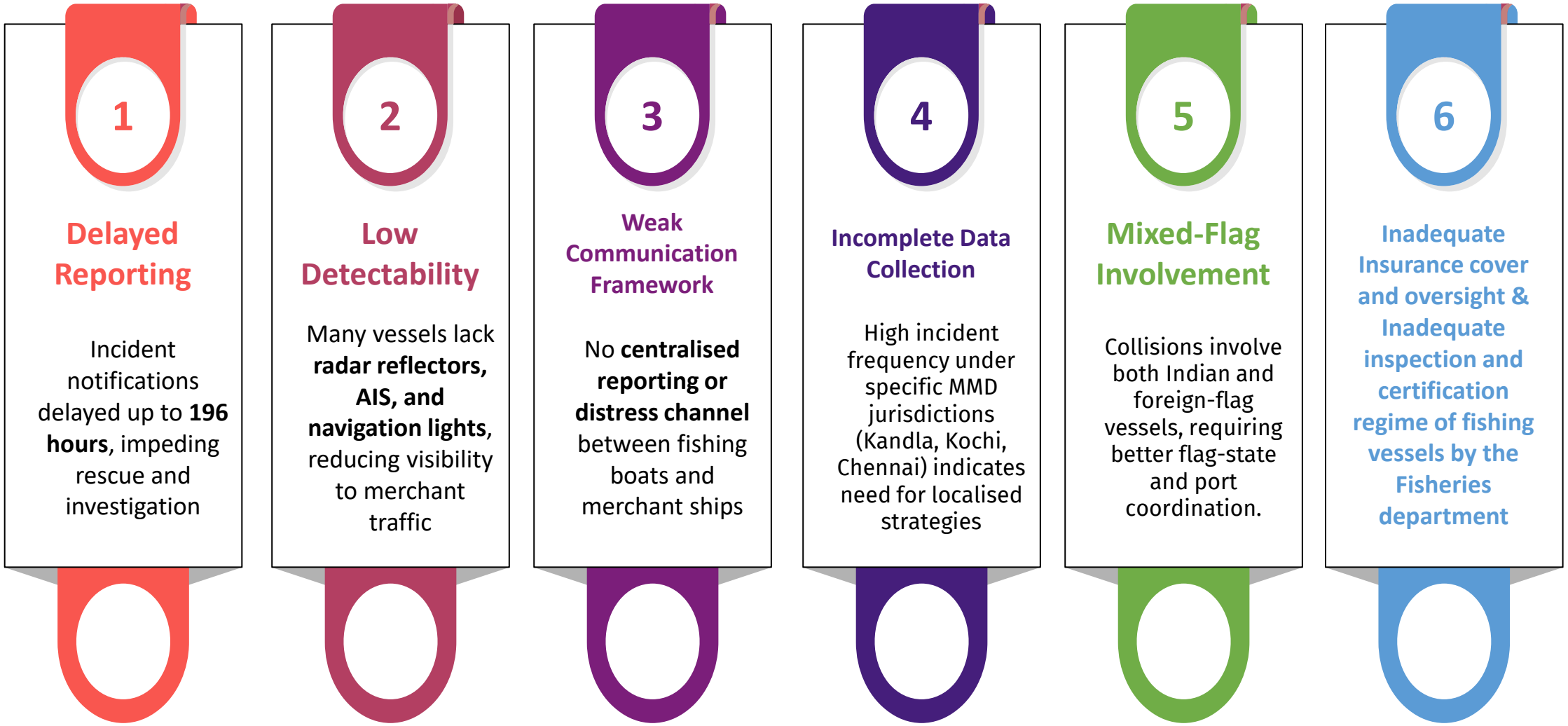
2023	2024	2025
8	11	9

Flag of Collided Vessel

Indian	ROW
16/28	12/28

Note : Data insight of 2025 (Jan to Oct)

Gaps and Issues Identified



Fishing Vessel Collisions – Recommended Actions

1. Unified Reporting Protocol

Establish a **single-window system via MRCC** for reporting collisions and near-miss incidents

2. Mandatory Navigational Equipment

Enforce fitting of radar reflectors, VHF sets, and navigation lights on all mechanised and motorised fishing vessels

3. Capacity Building for Fishermen

Conduct regular safety workshops through Fisheries Departments and Port Authorities on navigation, communication, and emergency response

4. Integrated Vessel Database

Link fishing vessel registries with DG Shipping's central database for traceability and real-time coordination with MMDs and ICG

5. Zone-Based Monitoring

Deploy coastal radar and AIS tracking in high-traffic areas, especially the Visakhapatnam–Kakinada corridor, for enhanced surveillance

6. Foreign-Flag Coordination

Strengthen enforcement of COLREGs and establish joint investigation mechanisms for foreign vessel incidents

7. Inspection and Certification

Establish Inspection regime and issuance of certificates to the fishing vessels to ensure compliance with base safety requirements

Agenda 2

Maritime Casualty Legal Advisory

Purpose and Intent

To establish an **integrated legal and operational framework** for managing marine casualties at the **state level**, ensuring clarity, coordination, and accountability

1. Clarify Legal Framework

Define the legal basis and procedural structure governing marine incidents

2. Define Institutional Roles

Specify responsibilities of **central, state, and port authorities** for effective coordination

3. Guide Stakeholders

Provide direction to **shipowners, operators, and coastal communities** on reporting, documentation, and claims

4. Standardize Coordination Protocols

Ensure **uniform implementation** and consistent accountability across coastal states

Objectives and Scope

To define the **legal, technical, and operational framework** for effective marine casualty management at the **state level**

Preparedness Standards	• Establish minimum benchmarks for **technical readiness, response infrastructure**, and coordination capacity across state and district levels
Role Clarification & Stakeholder Mapping	• Define responsibilities of **DGS, State Maritime Boards, ICG, Ports, SDMAs, SPCBs, and Fisheries Departments**. • Recognise the role of **shipowners, insurers, and P&I Clubs** in liability and compensation.
Incident Reporting & Communication	• Standardise **reporting formats** and create **real-time communication channels** linking DGS, MRCCs, and State Crisis Management Groups
Insurance & Liability Regimes	• Apprise coastal state authorities about **mandatory insurance**, **liability limits**, and **compensation procedures** under national laws and international conventions (MSA 2025, CLC, IOPC).
Multi-Agency Coordination & Enforcement	• Define escalation mechanisms and ensure **synchronized action** among maritime, environmental, and disaster-management agencies.

Legal Framework – Admiralty Act, 2017

Provides the **legal foundation for instituting and adjudicating maritime claims** following marine incidents. **Key Provisions (Section 4)** – Recognised Maritime Claims

1. Wreck Removal Costs

- Covers expenses for **raising, removing, recovering, or rendering harmless** a wrecked, stranded, or abandoned vessel.
- Subject to limitation under the **LLMC Convention, 1996**

2. Salvage Services

- Compensation for salvage operations, including special compensation for preventing or mitigating environmental harm.

3. Environmental Damage

- Claims for **damage or threat of damage** to the environment, coastline, or related interests.
- Includes costs of **preventive or remedial actions** and **third-party losses** arising from the incident.

Insurance and Liability Framework

Ensure **financial accountability and compensation** for maritime incidents through a structured multi-layered insurance regime

Key Components

- **Protection & Indemnity (P&I) Insurance:**
  Mandatory for vessels >300 GT; covers **third-party liabilities** — death, injury, pollution, wreck removal, and cargo damage.
- **Hull, Machinery & Freight Insurance:**
  Covers **direct physical and operational losses** to vessels.
- **Domestic P&I Club Development:**
  Initiative to create **sovereign coverage** and reduce reliance on foreign insurers.

International Alignment

In line with global conventions:

- **LLMC 1976** – Limitation of Liability for Maritime Claims
- **CLC 1992** – Civil Liability Convention
- **Bunker Oil Convention 2001**
- **Wreck Removal Convention 2007**

Claims and Adjudication

Processed through **High Courts with admiralty jurisdiction**, ensuring **transparency and timely resolution**.

Technical and Legal Preparedness of Coastal States

Ensure coordinated **technical readiness** and **legal compliance** for effective marine casualty management

Key Institutional Roles:

- **State Maritime Boards / Port Authorities**
  - Maintain **incident registers**
  - Coordinate with **DGS** and ensure **harbour safety**

- **State Disaster Management Authority (SDMA)**
  - Aligning coastal disaster management plans with Plan for Marine Incidents and Emergency Response by jointly working with DGS

- **Indian Coast Guard (ICG)**
  - Lead **pollution control** and **oil spill response** under **NOS-DCP**

- **State Pollution Control Boards (SPCBs)**
  - Oversee **shoreline protection**, **waste management**, and **post-incident monitoring**

- **Fisheries and Local Administrations**
  - Facilitate **early reporting** and **mobilisation of coastal resources**

Claims, Compensation, and Role of Nodal Authorities

Claims Framework

(Under Admiralty Act & Merchant Shipping Act, 2025)

Affected parties may file claims for:

- **Loss of life or personal injury**
- **Damage to property or cargo**
- **Environmental degradation and remediation costs**
- **Wreck removal and salvage expenses**
- **Economic losses** due to disruption of port or fishing activity

Adjudication and Compensation

- Claims filed before **High Courts with admiralty jurisdiction**
- **Priority of settlement** follows the Admiralty Act hierarchy
- Pollution-related claims addressed through **IOPC Fund** and international compensation conventions

Nodal Authority: Directorate General of Shipping (DGS)

- **Coordinates** central and state response during maritime incidents
- **Oversees** deployment of pollution-control resources
- **Ensures** statutory compliance in reporting and insurance
- **Supervises** claim settlement and post-incident legal actions

Agenda 3

Disaster preparedness and Response in Indian Ports

Cyclone Coordination Framework and Objectives

Central Coordination:
The **Directorate General of Shipping (DGS)** acts as the **nodal authority** during cyclone events.
Ensures real-time communication among:

- **IMD**, **Indian Navy**, **Indian Coast Guard (ICG)**, **MRCC**
- **DGH**, **OISD**, **Port Authorities**, and **Shipping Companies**

Framework Objectives:

1. **Timely Dissemination** of IMD weather advisories to all maritime stakeholders
2. **Real-Time Coordination** through the **DGComm Centre** for unified response
3. **Mandatory Preparedness Actions** by ports and operators as per approved SOPs
4. **Regular SITREP Reporting** to monitor evolving situations
5. **Inter-Agency Review Meetings** chaired by the Director General of Shipping
6. Compliance with **MoPSW Cyclone Preparedness Checklist** and **Casualty SOP**

Standard Operating Procedures (SOP) for Cyclones
DGS, 2021

Provide a structured operational framework for **early warning, coordination, monitoring, and post-event reporting** during cyclonic events

Key SOP Actions:

- **Weather Warnings:**
  - **DGComm Centre** circulates **IMD advisories** to shipping companies, ports, Maritime Boards, DGH, ONGC, and OISD.
  - Parallel alerts sent to **ICG**, **MRCC**, and **Navy**.
- **Local Coordination:**
  - **Principal Officers (POs)** designate **MMD Surveyors** as local coordinators.
- **Port & Operator Roles:**
  - Ports issue vessel advisories; **ICG enforces compliance** if necessary.
- **High-Risk Vessels:**
  - Identification of **non-propelled, passenger, arrested, or low-powered vessels** for priority sheltering.
- **SITREP Reporting:**
  - Issued **every 12 hours**; increased to **6–8 hours** for severe cyclones.
- **Coordination Meetings:**
  - **DG Shipping** chairs meetings with **oil companies, ports, INSA, ICCSA, MASSA, FOSMA, MANSASHIP**, and government agencies.
- **Emergency Towing Vessels (ETVs):**
  - Mobilised to **strategic locations** for rapid salvage and rescue readiness.
- **Standing Orders & Enforcement:**
  - Reviewed **every six hours**; vessels within **50–70 NM** of cyclone path monitored by **ICG**.
- **Action Taken Reports:**
  - Ports submit detailed reports on **marine, land, personnel, and infrastructure safety** post-event.

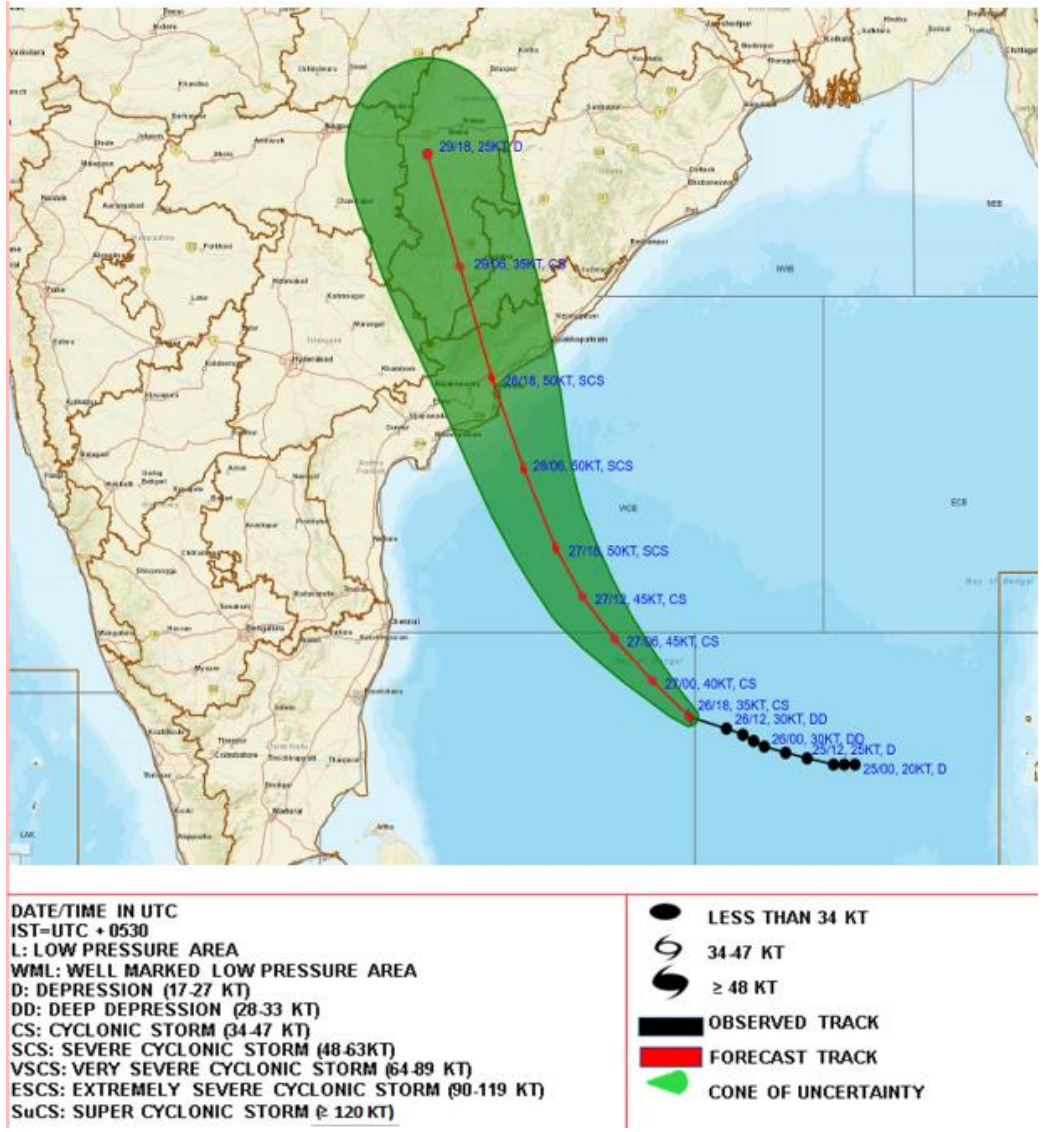
Case Study — Cyclone Montha (October 2025)

Initial Response

- Early warning issued by IMD for a developing depression in the Bay of Bengal.
- DGS convened coordination meeting on 25 Oct 2025 (1800 hrs IST) with all major and non-major east coast ports, ONGC, OISD, RIL, ICG, IN, MoPSW, and maritime associations (INSA, MASSA, FOSMA, ICCSA, MANSASHIP).
- Preparedness checklist circulated via DGComm Centre for early SOP compliance.

Situation Updates

- **7 SITREPs** issued by DGComm Centre; frequency increased from **12-hourly to 8-hourly** as cyclone intensified.
- Continuous updates shared with all stakeholders; IMD's **National Bulletins Nos. 9 & 38** tracked on landfall day.



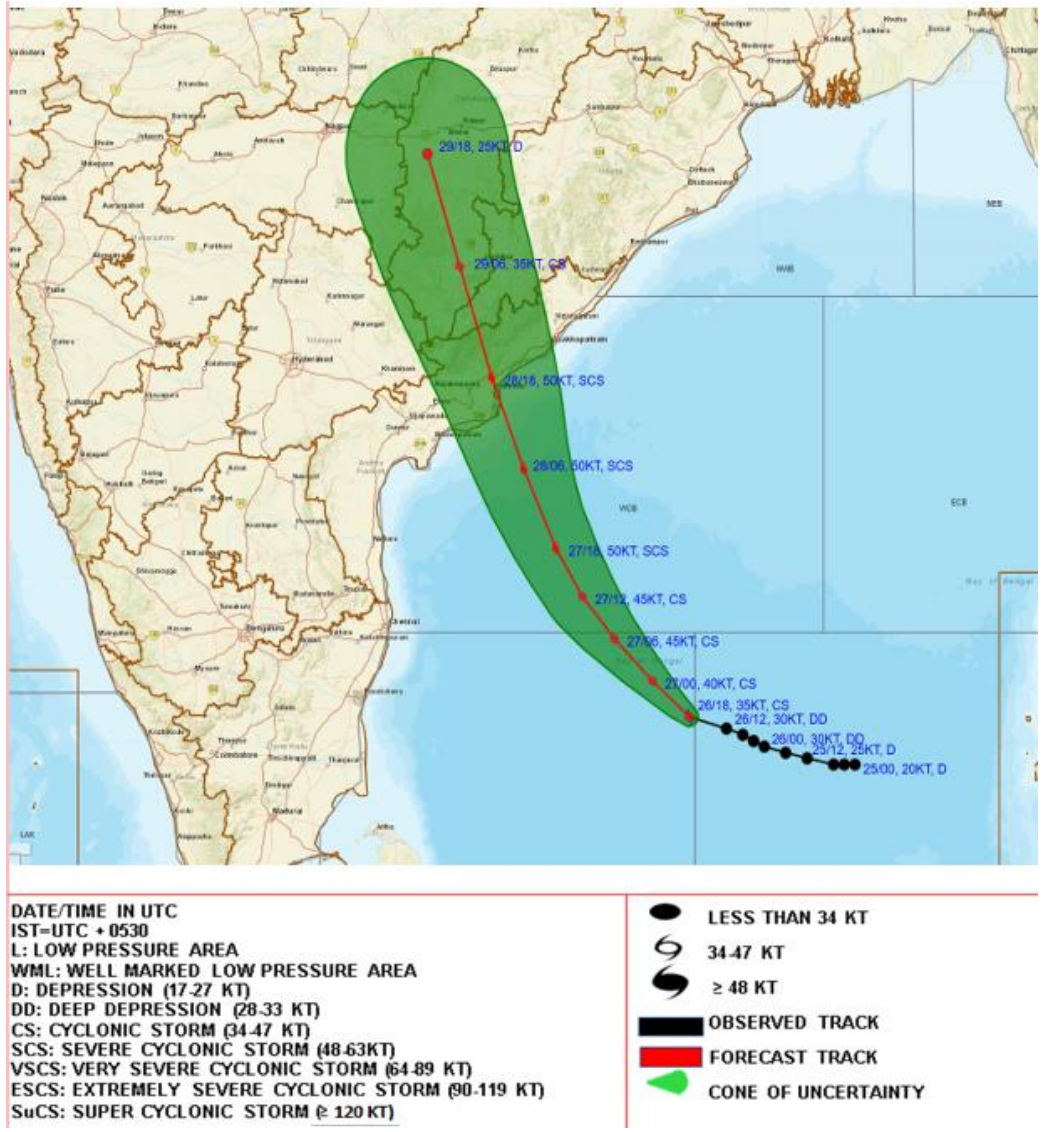
Case Study — Cyclone Montha (October 2025)

Coordination and Actions

- **Round-the-clock liaison** maintained by DGComm with **ports, ICG, IN, and MRCC Chennai**.
- Ports executed **cyclone protocols**, suspended operations, evacuated personnel, and filed **Action Taken Reports**.
- **Offshore installations** monitored by **DGH and OISD**; non-critical operations suspended.
- **Emergency Towing Vessels (ETVs)** placed on alert and mobilised as needed.

Key Observations

- No major casualties or pollution incidents.
- **Timely coordination and SITREP dissemination** ensured strong operational readiness.
- Demonstrated **effectiveness of DGS Cyclone SOP** and integration with **NDMP protocols**.



Safety in Port Operations — Entry into Enclosed Spaces

Recent fatal incidents at Indian ports involving **stevedores and excavator operators** highlighted unsafe entry into **oxygen-deficient and methane-rich cargo spaces**.
Investigations revealed lapses in **access marking, coordination, and procedural compliance**.

Mandatory Safety Measures (as per DGS Circular):

- **Access Control**
  - Enclosed cargo spaces to remain **locked**; entry only upon **authorisation by ship staff**.
- **Marking & Identification**
  - All access points (**booby hatches, ladders**) must be **numbered and clearly identified**.
- **Interface with Shore Personnel**
  - Cargo briefings to cover **restricted areas and emergency procedures**.
- **Medical Equipment & Training**
  - Maintain **oxygen resuscitators** onboard; ensure **crew trained in first aid and CPR**.
- **Briefing of Shore Workers**
  - Mandatory **safety induction** on confined-space hazards before work begins.
- **Emergency Support**
  - Ports to provide **ambulance and trauma services** at operational berths.
- **Training & Recordkeeping**
  - Maintain **updated records of authorised stevedores** and ensure **mandatory training** on enclosed-space entry.

Integration with National and International Frameworks

Ensure that India's maritime disaster preparedness and cyclone response mechanisms operate in full alignment with national mandates and international maritime protocols

Aligned Frameworks

- **National Disaster Management Plan (NDMP-2019)** —
Provides the overarching national framework for **disaster prevention, preparedness, and coordinated response**.

- **DGS Disaster Management Plan & SOP for Cyclones (2021 & 2022 Updates)** —
Establishes **maritime-specific procedures** for cyclone monitoring, early warning, and coordinated action.

- **IMD Cyclone Warning SOP (2021)** —
Standardises **four-stage alerts**: *Pre-Cyclone Watch*, *Cyclone Alert*, *Cyclone Warning*, and *Post-Landfall Outlook* for uniform communication across agencies.

- **IMO & WMO Protocols (WWMIWS Framework)** —
Ensure **global coordination** under the **Worldwide Met-Ocean Information and Warning Service**, enabling ships to **receive and transmit storm data** as per **SOLAS obligations**.

Expected Outcomes

Expected Outcomes

Implementation of workshop recommendations and inter-agency coordination will lead to

1. Enhanced Safety at Sea

Reduction in fishing vessel collisions and improved navigation safety in high-traffic maritime zones

2. Legal and Administrative Clarity

Clear understanding of agency roles, claims procedures, and enforcement responsibilities

3. Improved Data & Communication Systems

Centralized reporting platform, AIS integration, and digital linkage of fishing vessel registries

4. Strengthened Disaster Preparedness

Port and coastal readiness aligned with DGS Cyclone SOPs and NDMP guidelines

5. Stakeholder Sensitization

Awareness among fishing communities, port authorities, and vessel operators on safety and casualty management

6. Institutional Coordination

Stronger real-time linkages between **DGS**, coastal states, and central agencies for unified maritime response

PILLAR 2- Ship Building and Ship Recycling

Contents

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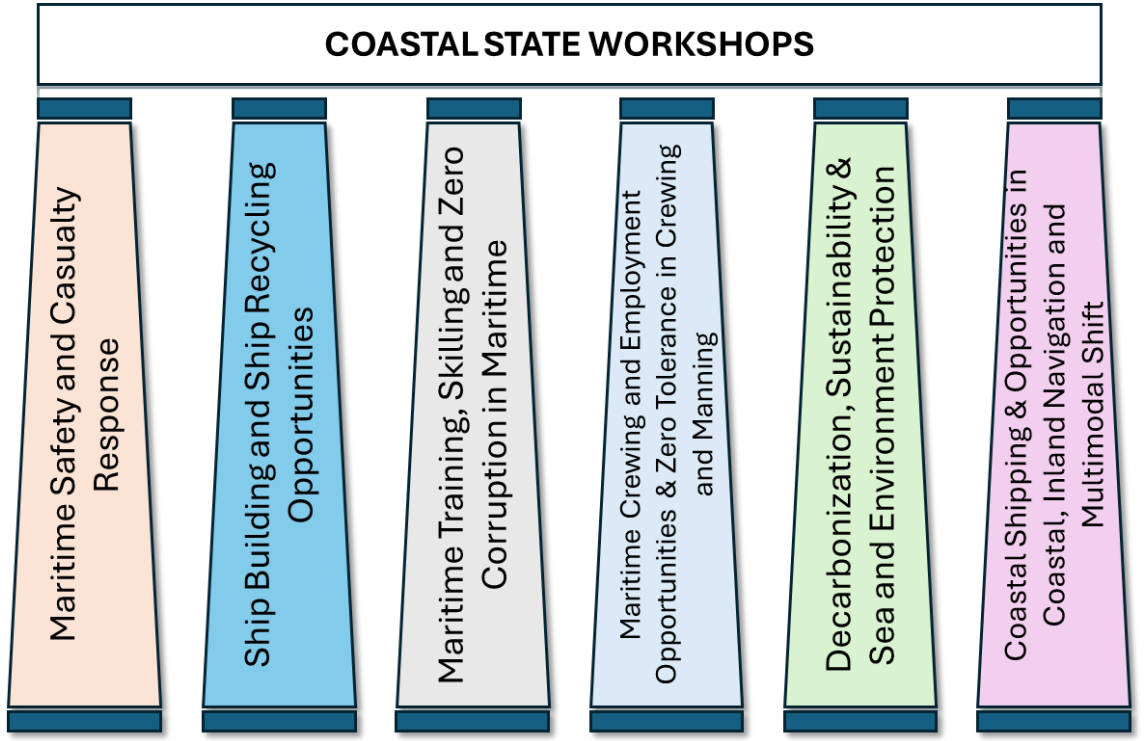


FOUR PILLAR APPROACH FOR SHIPBUILDING AND MARITIME SECTOR

Total Allocation

₹69,725 Cr.

01

Shipbuilding Financial Assistance scheme

Allocation: ₹24,746 crore

(Shipbreaking Credit Note – 4,001 Cr)

02

Maritime Development Fund

Allocation: ₹25,000 crore

(Maritime Investment Fund – ₹20,000 crore
Interest Incentivisation Fund – ₹5,000 crore)

03

Shipbuilding Development Scheme

Allocation: ₹ 19,989 crore

(Capacity & capability development and credit risk coverage)

04

Legal, Policy and Process Reforms

COMPONENTS OF SHIPBUILDING DEVELOPMENT SCHEME

Capacity & Capability Development

₹ 19,989 Cr.

03

Shipbuilding Development Scheme

(Capacity & capability development and credit risk coverage)

01	₹ 9,930 Cr.	Capital support for greenfield capacity expansion
02	₹ 8,261 Cr.	Capital assistance to existing/ brownfield shipyards towards the expansion of production capacity
03	₹ 305 Cr.	Capability development initiatives: set up the India Ship Technology Centre (ISTC)
04	₹ 1,443 Cr.	Shipbuilding risk coverage: Pre-Shipment Insurance, Post-Shipment Insurance and Vendor Default Insurance
05	₹ 50 Cr.	Administrative Expenses

Period of Validity of Scheme – 10 years (Till 31st March 2036

WHY SHIPBUILDING IS CRITICAL?

Mother Industry for Heavy Engineering

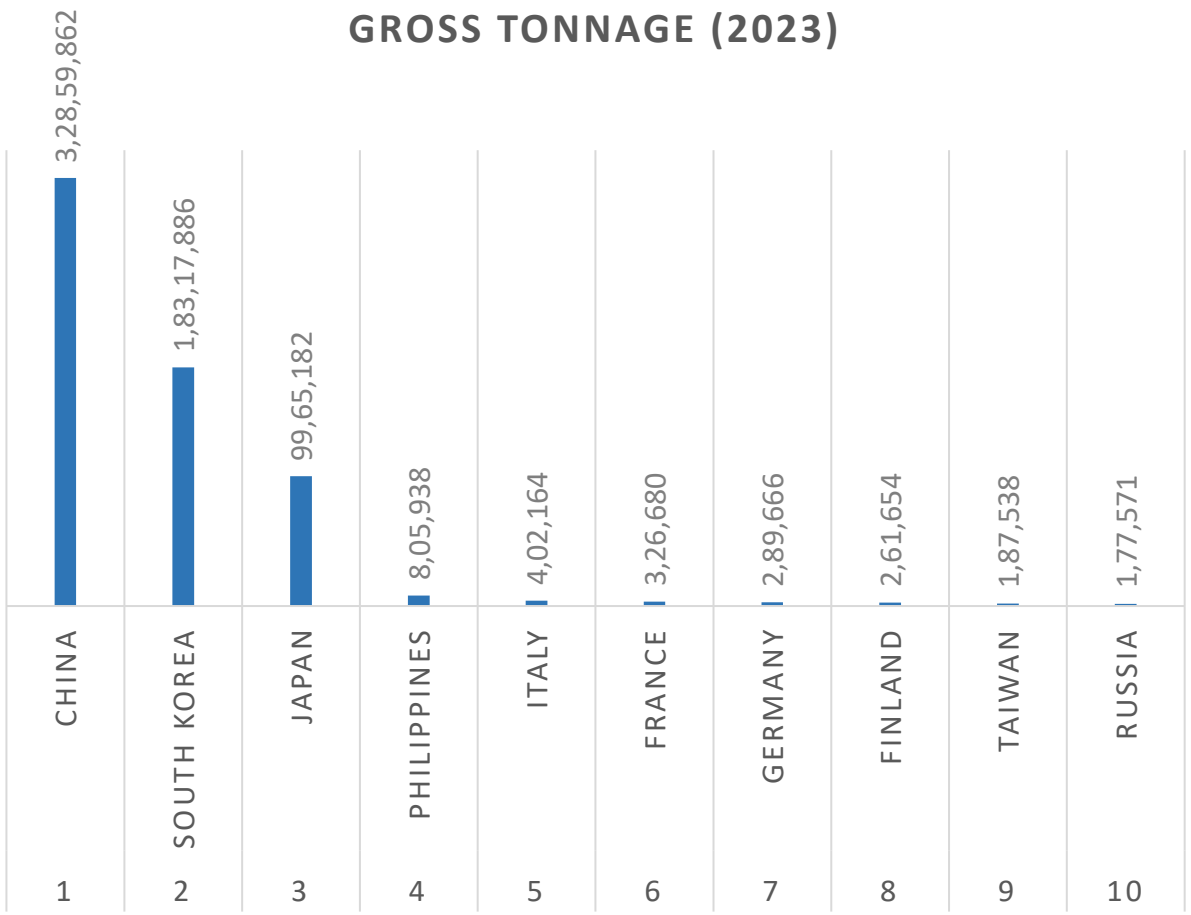
Employment Generation

Creation of Strategic Assets

Increasing Indian Tonnage in Energy imports

Reduce Dependability & Outflow of FOREX

GLOBAL SHIPBUILDING SCENARIO



- ✓ Global ship building market is estimated ton be approx. USD 70 Billion.
- ✓ Primary dominance is shown by China, South Korea and Japan.
- ✓ India currently ranks 16th among global shipbuilding nations

Vessel Type	Approx. Share of Global Orders (2024)
Container Ships	~38–40%
Gas Carriers (LNG/LPG)	~15–18%
Tankers	~20–22%
Bulk Carriers	~18–20%
Passenger & Cruise	~5%

SHIPBUILDING SCENARIO IN INDIA

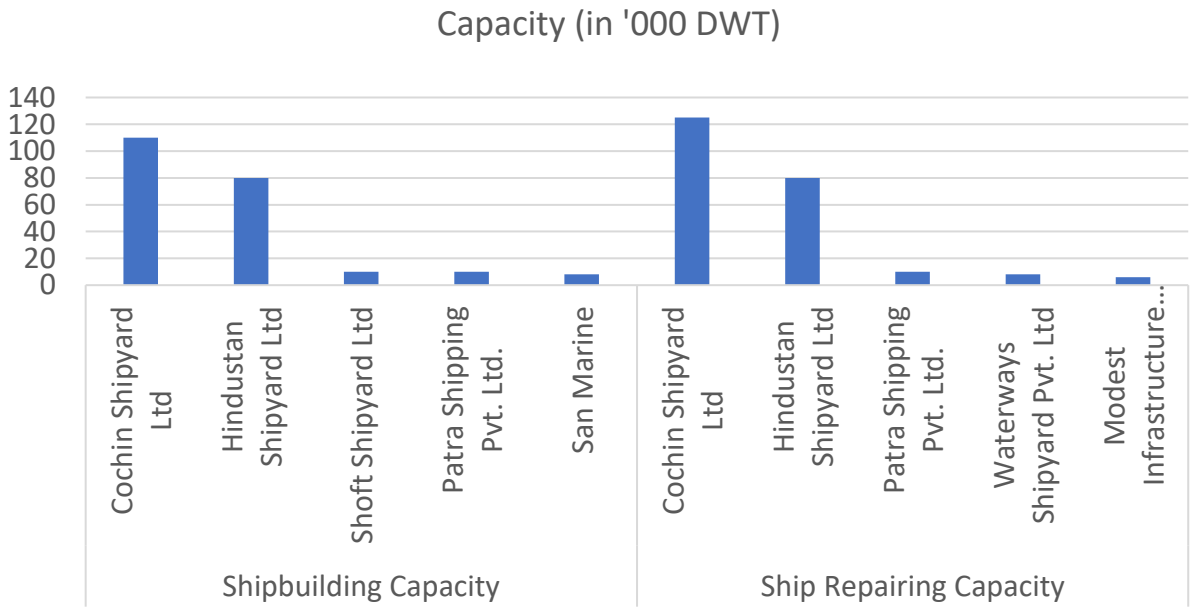
30,000 GT

Annual Tonnage Produced

53*

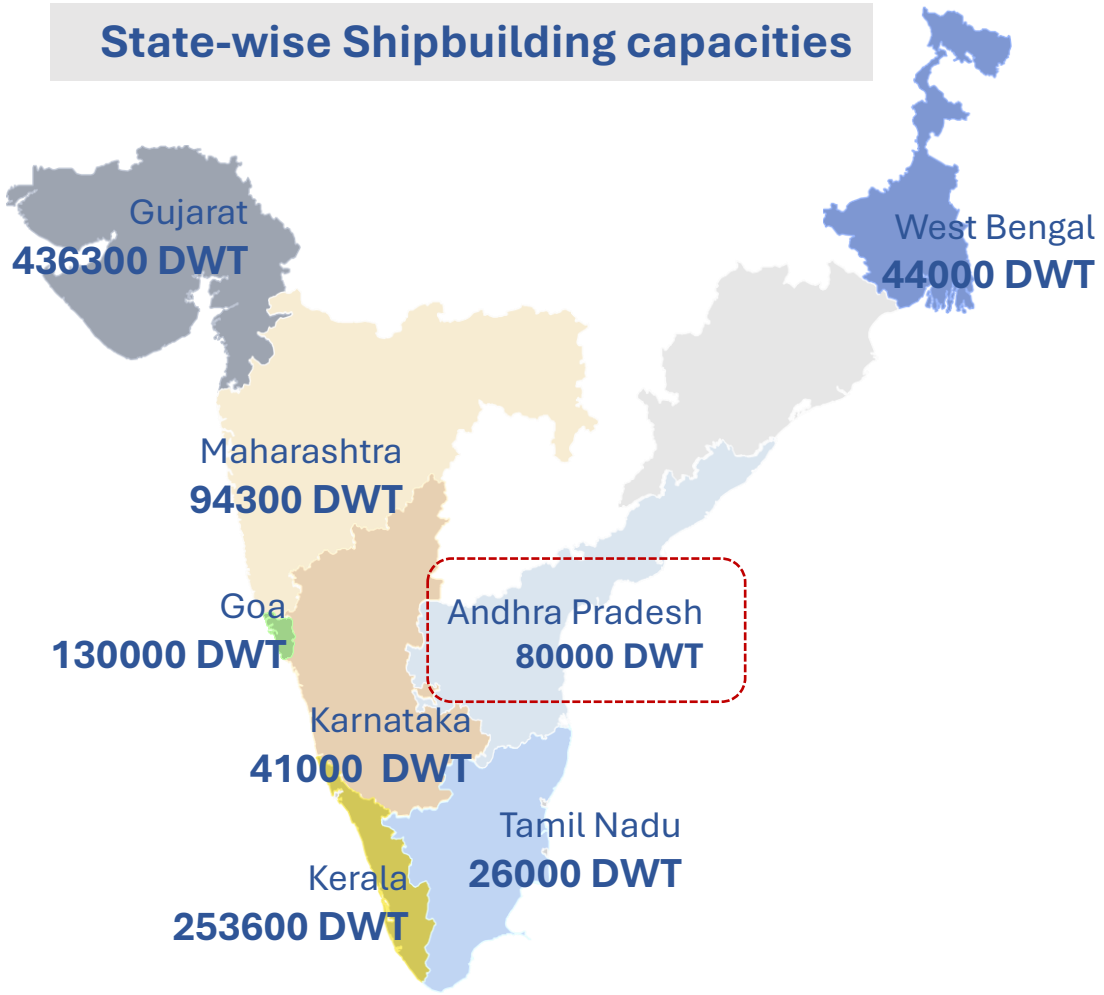
Total Number of Shipyards

*Annual Report, MoPSW

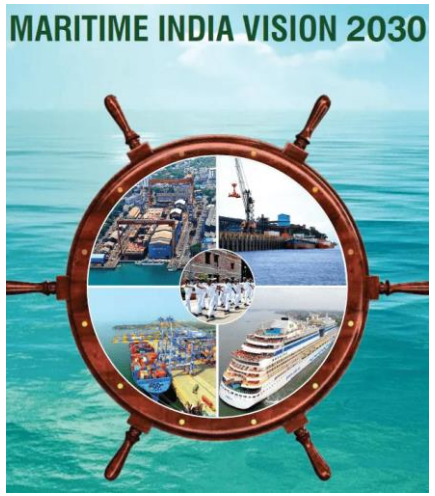


*Top 5 Reporting companies

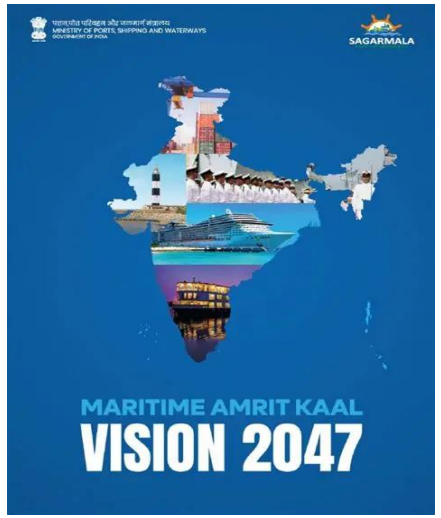
State-wise Shipbuilding capacities



National Vision for Shipbuilding



MIV 2030	TARGETS	MAKV 2047
Top 10	Global Ranking	Top 5
0.6 Mn GT	Annual Production	4.5 Mn GT
20+ Lakh jobs	Employment Generation	1.5 Crore jobs
₹3 Lakh - 3.5 Lakh Cr	Investment Required	₹75 Lakh - 80 Lakh Cr



MARITIME INFRASTRUCTURE IN ANDHRA PRADESH

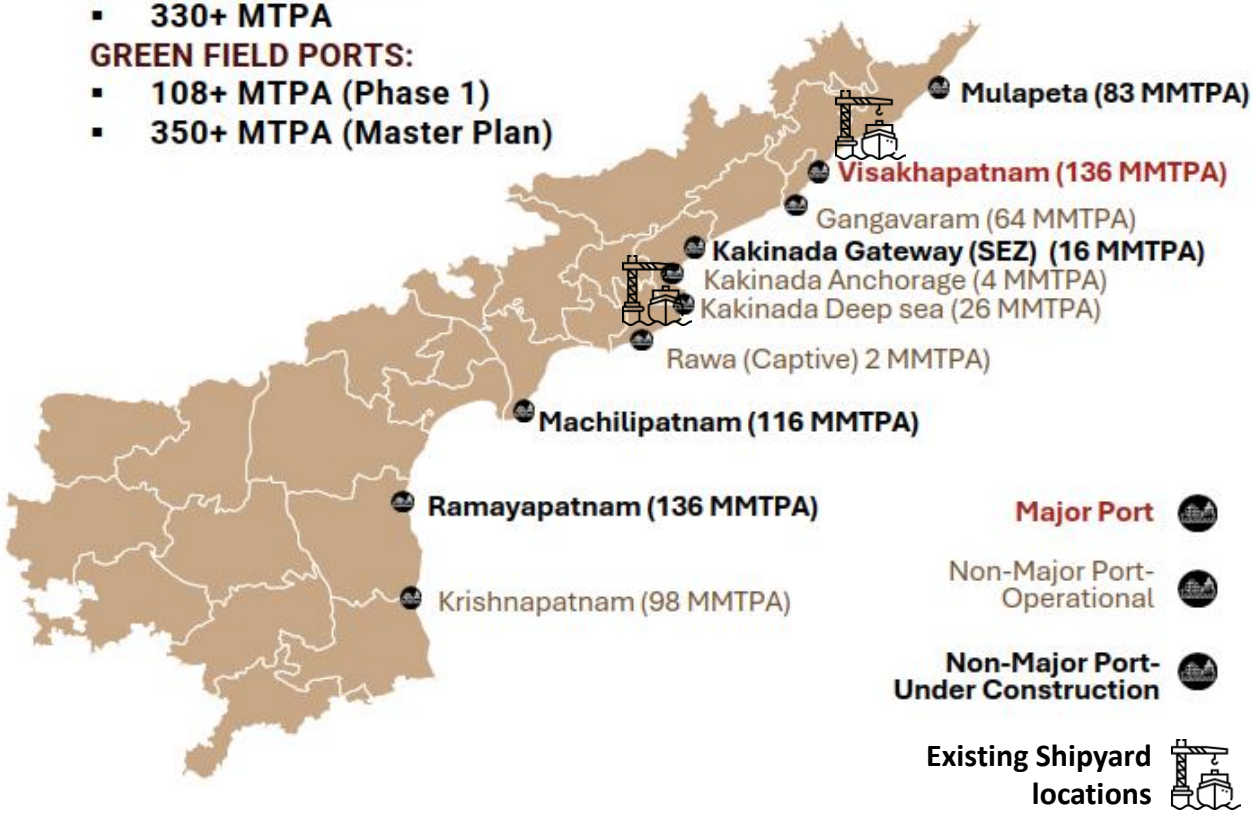
1 MAJOR PORT

5 OPERATIONAL NON-MAJOR PORTS

4 GREENFIELD PORTS UNDER CONSTRUCTION

OPERATIONAL PORTS:
- 330+ MTPA

GREEN FIELD PORTS:
- 108+ MTPA (Phase 1)
- 350+ MTPA (Master Plan)



AP contributes **~25%** of India's existing port capacity
AP ranks **2nd in Cargo handling** from non-major ports (**118 MMTPA**)

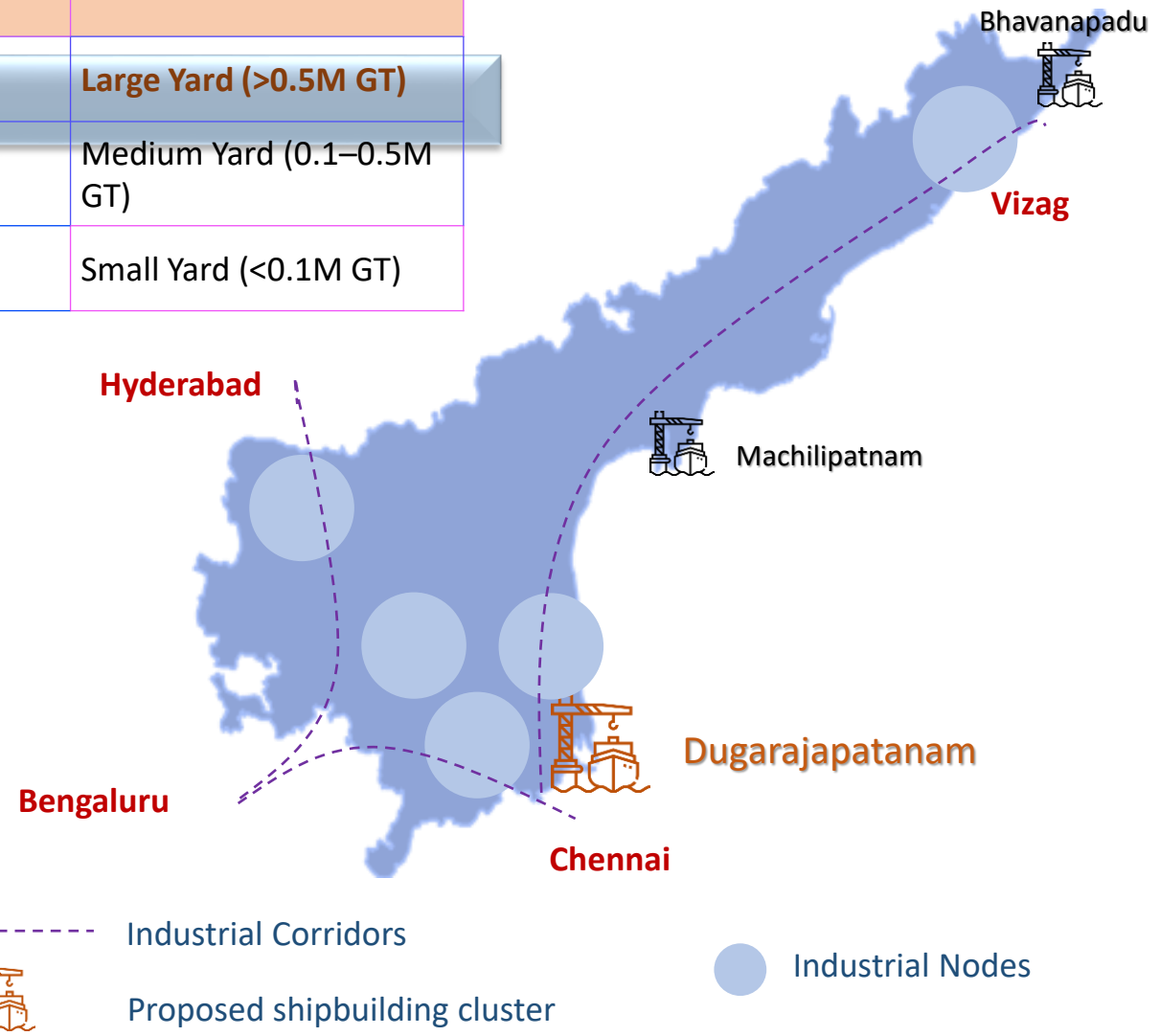
1.6 Lakh+ Km
Total Road length

9,000+ Km
Total Rail length

SHIPBUILDING CLUSTER DEVELOPMENT

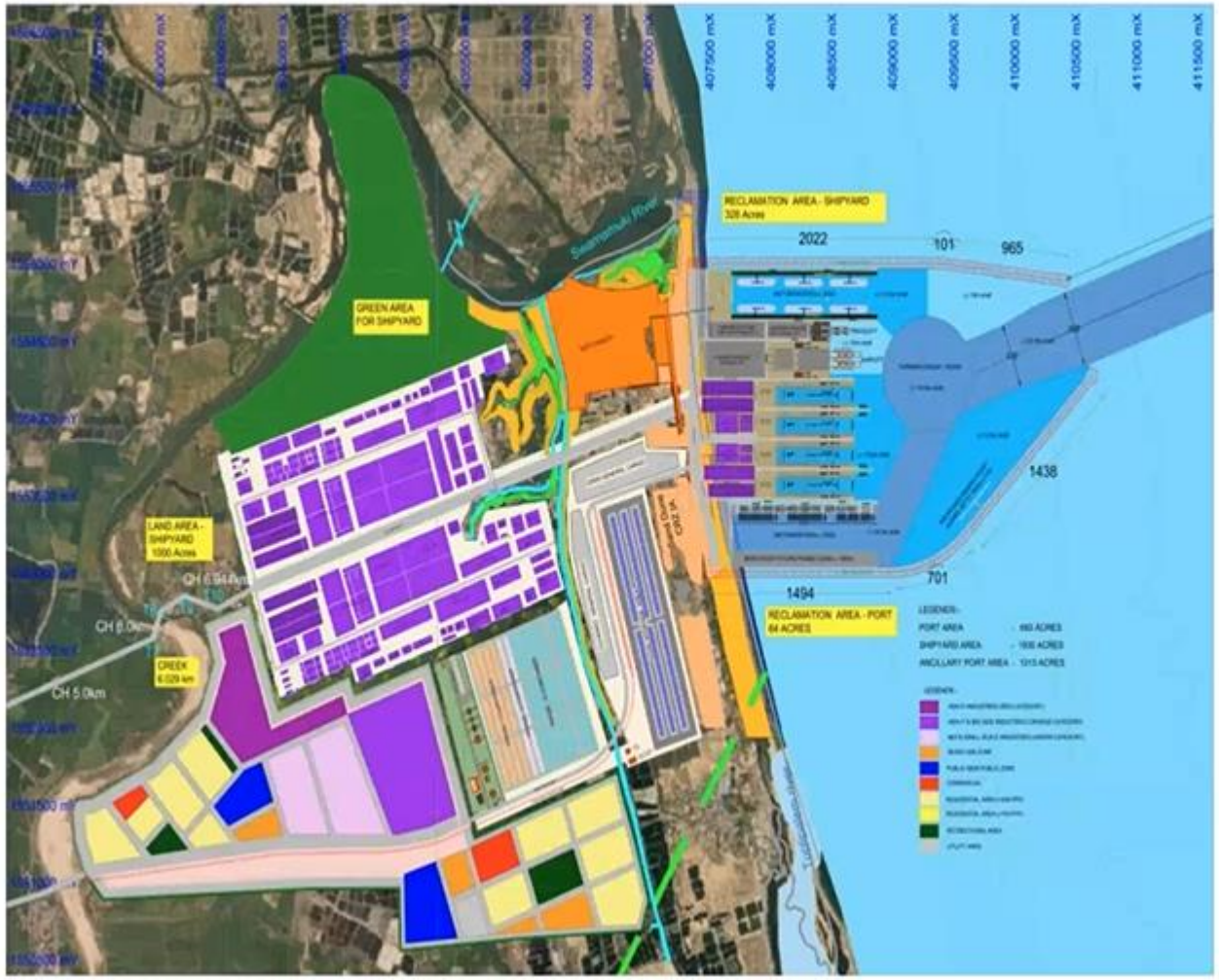
Site	Land Area	Draft Depth	Recommended Yard Size
Dugarajapatnam	**2,000 acres**	**Deep (>14m)**	**Large Yard (>0.5M GT)**
Machilipatnam	~500 acres	Moderate (~10m)	Medium Yard (0.1–0.5M GT)
Bhavanapadu	~300 acres	Shallow (~8–10m)	Small Yard (<0.1M GT)

- ~2,000 acres on AP's coast, 85 km from Tirupati airport, direct rail and road links to Nellore, Chennai, Hyderabad, Bangalore, and Vijayawada
- Draft exceeds 14 meters, ideal for world-class shipbuilding of large ocean-going vessels



SHIPBUILDING CLUSTER DEVELOPMENT

Dugarajapatanam Maritime Cluster Master Plan



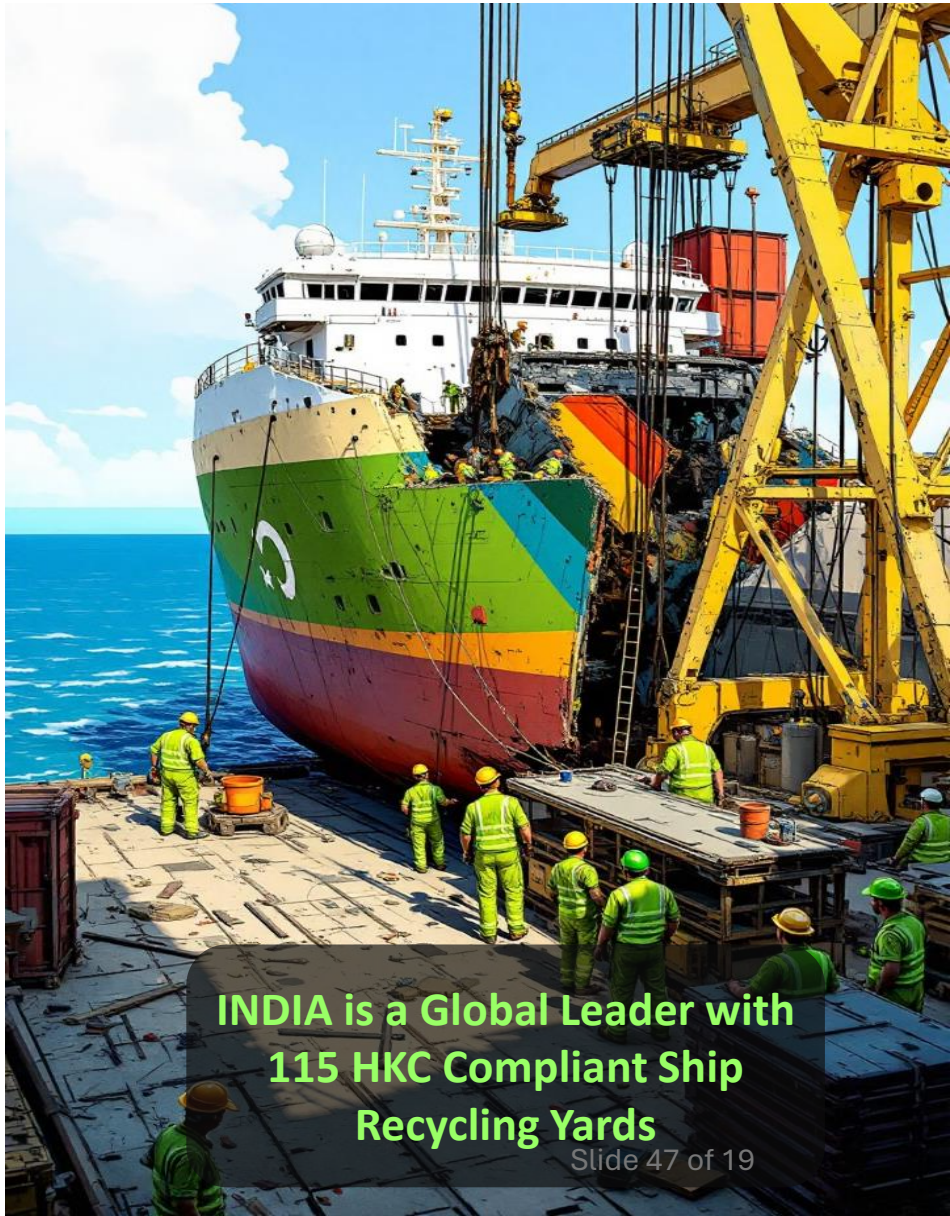
- 2,000-acre integrated port-shipyard-industrial ecosystem uniquely designed for global-scale shipbuilding
- **₹29,254 crore** indicative investment (~USD 3.29 billion) committed
- Located at convergence of CBIC (Chennai-Bengaluru) and VCIC (Visakhapatnam-Chennai) industrial corridors
- Proximity to Krishnapatnam and Nellore ports provides multimodal logistics network

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 came into force on **26 June 2025**.
- Integral to the **circular economy**, reducing the demand for virgin raw materials. 97-98% Materials recoverable

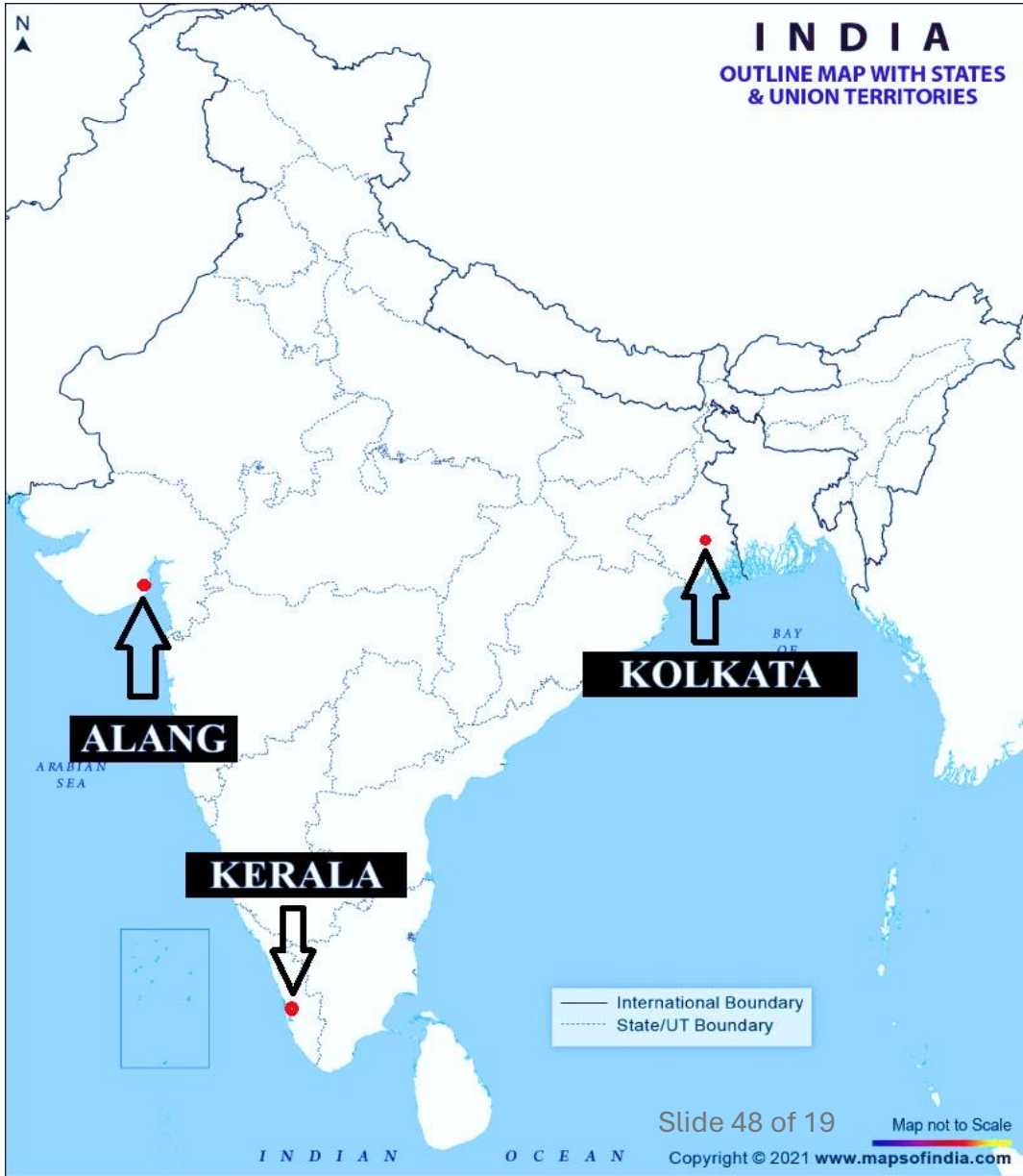
India's Role & Importance

- Handles **30% - 35% of global ship recycling tonnage** annually. (~800 vessels anually)
- 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.**



Ship Recycling Yards in India

Yard	Total Number of Plots	Operational Plots	HKC Compliant yards
Alang, Bhavnagar (Gujarat)	153	131	115
Steel Industries Limited (Kerala)	1	1	0
Amar Iron Udyog, Kolkata (West Bengal)	1	1	0



Regulatory Framework for Ship Recycling in India

1

Ship Breaking Code, 2013

Consolidated guidelines for hazardous waste disposal, worker safety, and environmental protection. (Superseded by Ship Recycling Act)

2

Recycling of Ships Act, 2019

Mandates facility certification and prohibits hazardous materials in line with HKC standards.

3

Ship Recycling Rules, 2021

Provides a comprehensive legal framework for governing ship recycling activities.

4

Ship Recycling Regulation (To be Notified)

Being developed to ensure both Indian and foreign ships comply with international standards.

Entry into Force of HKC

- Hong Kong Convention (HKC) entered into force on 26 June 2025.
- Sets legally binding global standards for environmentally sound and safe ship recycling.
- India plays a central role as home to the world's largest ship recycling cluster at Alang (153 yards ; 115 HKC Compliant)
- A one-day workshop marking the enforcement was held at Bhavnagar on 30 June 2025.

Adoption by IMO, 2009

Accession by India, 2019

Notification of National Authority December 2020

Framing of Ship Recycling rules, 2021

Notification of Ship Recycling Regulations, July 2025

Enactment of Ship Recycling Act, February 2021

Entry in force of HKC 26th June, 2025

Infrastructure and Compliance Standards

HKC & ISO-Aligned Facility Standards

- Impermeable aprons and zero-discharge drainage
- Oil–water separators and hazardous-waste sheds
- Ship-lift/drydock containment systems
- Real-time environmental monitoring
- Emergency-response & worker welfare systems

Technology Components for HKC-Compliant Yards :

Component	Function	HKC Requirement
Ship-Lift/Drydock	Safe containment & handling	Prevents leakage & contamination
Digital Material Tracking	Waste traceability	Ensures transparency (MEPC 210(63))
Plasma Cutting & Robotics	Safer dismantling	Improves worker safety
VR-Based Training	Worker drills	Meets HKC Annex 1 standards

Ship Recycling Concentration and Limitations

- India leads globally in ship recycling with HKC entering into force but **98% capacity is concentrated in Gujarat**.
- This geographic imbalance introduces several structural constraints.

Challenges:

1.Geographical Imbalance

- Vessels must be towed 800 - 1000 nautical miles to Alang.
- Increases towing costs by ~25% and exposes ships to higher navigational risks.

2.Capacity Saturation & Land Constraints

- Alang–Sosiya nearing full utilisation.
- Limited coastal land, environmental buffer zones, and waste-handling limits restrict expansion.

3.Regional Development Gap

- East coast states (Andhra Pradesh, Odisha, Tamil Nadu) have ports and labour, however underutilized.

4.Compliance Scalability

- HKC enforcement will require **distributed compliant capacity** across both coasts.

Regional Diversification Benefits:

1. **Regional Diversification & Resilience** : Distributes national capacity; lowers risks.
2. **Industrial Integration** : Links recycling output to **steel & manufacturing hubs** in Andhra, Odisha, and Tamil Nadu.
3. **Employment Generation** : 3,000 - 5,000 direct and 20,000+ indirect jobs per new yard.
4. **Circular Economy Integration** : Supplies certified scrap to **EAF/DRI plants** under India's Green Steel Policy.

Environmental & Economic Opportunities

India's Maritime Gateway to the East

Parameter	Current (National)	Potential (with East-Coast Expansion)
Annual Recycling Capacity	6.2 million GT	+1.5 million GT (+25%)
CO_2 Emissions Avoided	20 million tonnes/year	+4–5 million tonnes/year
Steel Scrap Supplied	4–5 million tonnes/year	+1 million tonnes/year
Jobs (Direct + Indirect)	1.7 lakh	+30,000
GDP Contribution	₹30,000 crore/year	₹45,000 crore by 2030

Why Andhra Pradesh is Strategic Candidate

Parameter	Details
Coastline	1053 km – the third-longest in India after Gujarat and Tamil Nadu
Ports	6 operational ports (> 330 MTPA capacity) + multiple greenfield projects under development
Industrial Corridors	Vishakhapatnam–Chennai Industrial Corridor (VCIC), Chennai–Bengaluru Industrial Corridor (CBIC), Hyderabad–Bengaluru Industrial Corridor (HBIC) link ports to industrial hinterlands
Potential Shipyard Site	Duggirajupatnam (Nellore district): ~ 900 acres, 2 km waterfront, 18 m depth, adjacent to port and corridor infrastructure
Renewable Energy Base	≈ 9 GW installed RE capacity – adequate for green-yard operations
Human Capital	~ 38 million working-age population; strong IMU and ITI presence

Incentive Type	Description
Fiscal	Net SGST reimbursement, stamp-duty exemptions and reduced industrial-power tariffs.
Infrastructure	Single-window clearances, priority coastal land allocation and long-term concessional leases for maritime projects.
Skill & R&D	Dedicated funds for maritime training, research collaboration with IMU and IRS and CSR-linked skill grants.
Green Energy	Electricity-duty waiver and RE purchase obligations for shore-power and yard operations.

Skill Development & Capacity Building

In alignment with the **National Skill Development Policy** and **Hong Kong Convention (HKC)** provisions, a **Maritime Recycling Training Centre (MRTC)** may be established in partnership with:

- **IMU Visakhapatnam**
- **Classification Societies / Recognised Organisations**
- **Industrial Training Institutes (ITIs)**

Proposed Training Modules:

- Safe dismantling techniques and plasma-cutting operations
- Hazardous-waste handling and occupational-health practices
- Emergency-response and rescue operations
- Supervisor-level HKC compliance and documentation
- Digital traceability and incident-reporting systems

Integration & Outcomes:

•Linked with **Skill India** and **NSQF accreditation** for national recognition.

•Creates a sustained pipeline of **HKC-certified workforce** for upcoming east-coast yards.

•Strengthens India's **maritime skill ecosystem** and ensures international compliance readiness.

Ferrous Scrap Development Fund

A central fund managed by the **Ship Breaking Scrap Committee** under the Ministry of Shipping, aimed at driving **safe, sustainable, and welfare-linked ship recycling**.
It supports both Central and State-level interventions, primarily focused on yard infrastructure, worker welfare, environmental safety, and skilling.

Purpose of the Fund

- Channel ship recycling-linked revenue into **visible welfare outcomes**
- Supplement State Maritime Boards efforts in developing Ship Recycling cluster
- Improve overall **eco-system quality** around ship recycling operations

Focus Areas:

Yard Infrastructure Upgradation
(capital expenditure only)

Welfare Projects
Worker housing, sanitation, trauma & medical response units, fire safety

Skill Development
Structured training, certification, and capacity building

Environmental Infrastructure
ETPs, incinerators, hazardous waste yards

Community & Social Facilities
Crèches, canteens, rest zones, gender-focused spaces

Secondary Steel Sector Support
(as approved)

Research & Consultancy
Safety protocols, green practices, ESG studies

Other activities
(as approved by the Committee)

How it Works:

DPRs to be prepared by State Maritime Boards → Grants released post Committee approval & MoPSW clearance → Monitored by DGS; utilisation certificates & audits mandatory → Non-recurring capital grants only: no O&M funding

Ship Building - 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
- 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 2.0 (SBFA 2.0)**
- Incentivizes ship owners to **recycle in India** and **build new ships in Indian shipyards**

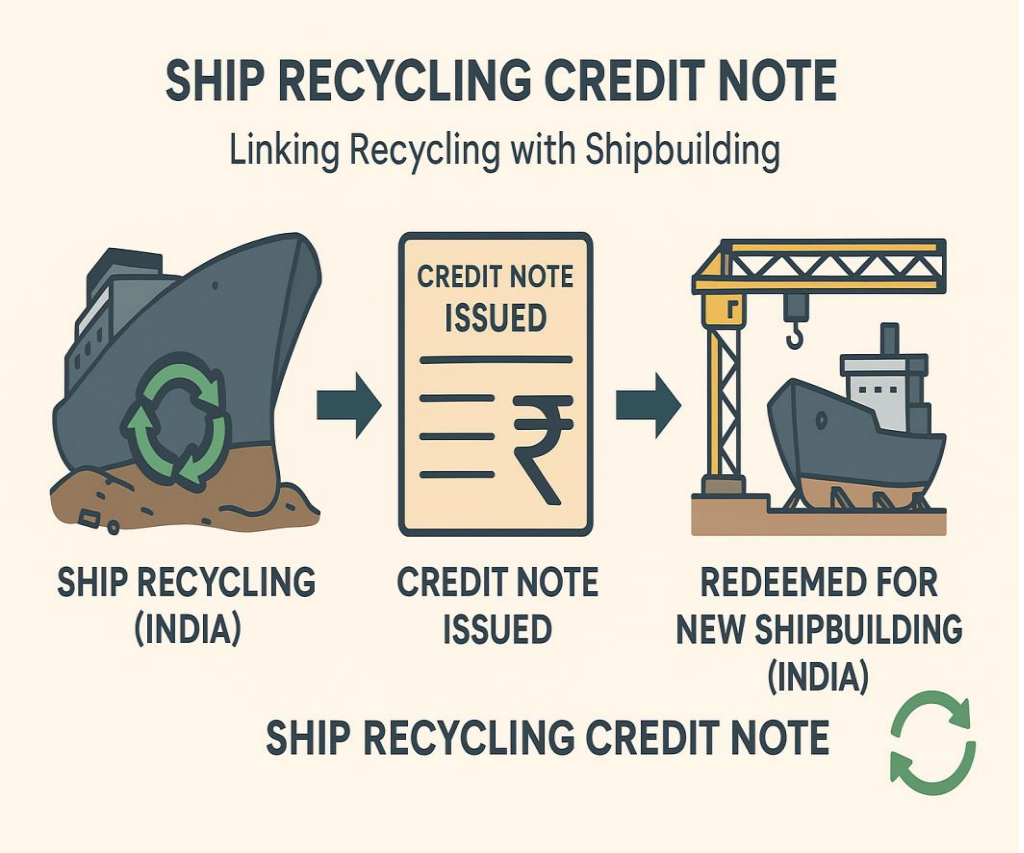
Allocation of : ₹ 4,001 crore
(under SBFA)

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 until the owner builds a new vessel/ ship in an Indian shipyard
- Redeemed as **financial assistance/ subsidy** under SBFA 2.0

Expected 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**



Suggestive Implementation Roadmap

Phase	Tentative Timeline	Indicative Activities	Supporting / Advisory Agencies
I – Feasibility & Site Finalisation	0 – 6 months	Identification of potential sites, hydrographic and CRZ/HTL mapping, Environmental Impact Assessment (EIA) and preliminary stakeholder consultations	APMB (Lead) with support from DGS, APPCB
II – PPP Structuring & Investment Mobilisation	6 – 12 months	Development of PPP/concession framework, preparation of RFP, investor consultations and alignment with state industrial-policy incentives	APMB (Lead) with advisory inputs from MoPSW and DGS
III – Infrastructure Development	12 – 36 months	Yard construction, waste-chain and shore-power systems, internal logistics and worker-facility creation	Selected Concessionaire under APMB oversight
IV – Certification & Initial Operations	36 – 48 months	ISO 9001/14001/45001/30000 implementation, HKC authorisation process	APMB (Lead) with DGS and Recognised Organisations (IRS, LR, ClassNK)
V – Expansion & Cluster Integration	48+ months	Integration with ship-repair, shipbuilding and green-steel initiatives; scaling of training facilities	APMB (Lead) with industry and academic partners

Way Ahead

- To position Andhra Pradesh as modal coastal state for Green Maritime Industrialization

The **Andhra Pradesh Maritime Board**, with its institutional framework and proactive maritime policy, is well placed to explore the establishment of an **HKC-compliant Ship Recycling Facility** as part of the state's broader maritime-industrial development agenda.

Indicative Strategic Next Steps :

- **Feasibility & Environmental Assessments** : Identify optimal sites and conduct EIA/CRZ mapping.
- **Policy Integration** : Embed ship recycling into Andhra's maritime and industrial policy framework.
- **Stakeholder Engagement** : Consult potential concessionaires, ship recyclers and steel manufacturers.
- **Skill Development** : Collaborate with IMU Visakhapatnam, IRS Academy & ITIs for certified workforce pipeline.
- **National Alignment** : Maintain coordination with DGS and MoPSW for compliance templates and certification protocols.

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

PILLAR 3

Training, Skilling and Zero Corruption in Maritime

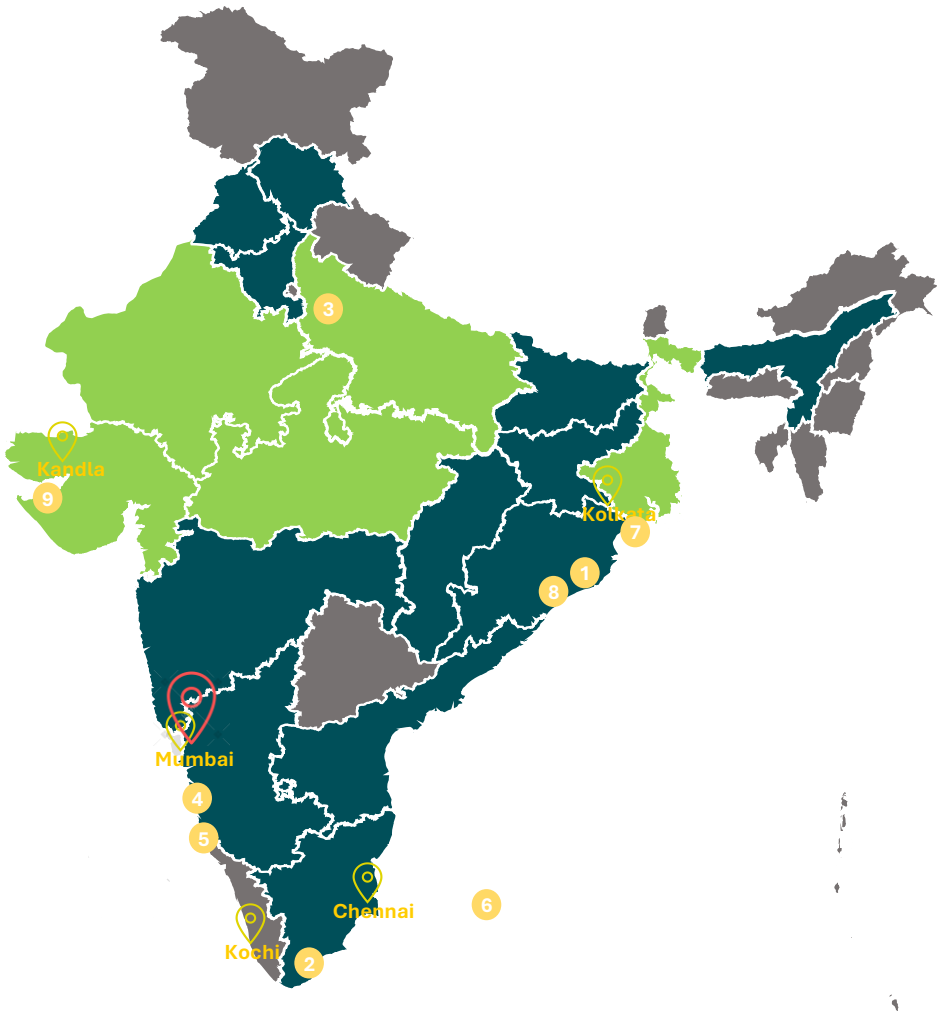
Directorate General of Shipping (DGS)

The **Directorate General of Shipping (DGS)** is India's central authority for merchant shipping, under the **MoPSW which** serves as the central administrative body for **regulating and developing India's maritime sector**.

Our Responsibilities

- Safety of life and ships at sea.
- **Promotion of maritime education and training**, in coordination with the International Maritime Organization (IMO).
- Regulation of **employment and welfare of seamen**.
- Development of **coastal shipping and augmentation of shipping** tonnage.
- Examination and certification of Merchant Navy Officers.
- Supervision and control of allied offices under its jurisdiction.

Our Footprint across India



Directorate Office MMDs 1.Vishakhapatnam 2. Tuticorin 3. Noida 4. Goa 5. Mangalore 6. Port Blair 7. Haldia 8. Paradip 9. Jamnagar

Training Branch - DGS

Administration of all MTI's	Approval, regulation, and oversight of MTI's, ensuring seafarer training meets STCW and international standards through policies, accreditation, inspections, and compliance monitoring.
MTI Module	Online system for managing courses, records, and certifications, ensuring compliance with DG Shipping and STCW standards. New Module is being developed, as the old module built on an outdated stack, struggles with data volumes, usability, integration, and scalability.
CIP Improvement	Detailed evaluation by RO or MMD under a three-year cycle with Initial, Annual, and Renewal inspections as per QMS standards.
STCW Compliance Board	A strategic advisory body to DGS that strengthens governance in maritime training, reviews MTI compliance with STCW standards, and meets bi-weekly for evaluations.
MTI Exit examination + Ratings Exit Examination	Initiatives like Learning Management System (LMS), Web based simulator, Centralized Attendance System (CAS), Faculty Development Program (FDP) are initiated to ensure efficient learning and examination process.

Rationale for the Coastal State Workshop – DGS & Govt. of AP

Seafarers - 12% to 20%

India aims to raise its **12%** share of global seafarers to **20% by 2030**, with Andhra Pradesh playing a key role through youth engagement and maritime career awareness in coastal areas.

Trade and Coastal Strength

With a **vast coastline and major ports** handling **95%** of India's trade, Andhra Pradesh's port expansion and infrastructure can strongly support national maritime and training vision.

Strategic State Advantage

Andhra Pradesh, with **major ports**, **shipyards**, and **growing training institutions**, can **strengthen its maritime policy** to attract **investment in shipbuilding, port-led skilling, & coastal logistics.**

Skilling Potential

The state offers strong potential to expand **maritime skilling and training aligned with DGS quality standards**, integrating state skill departments and **ITIs** with DGS-approved courses to build a unified maritime ecosystem.

Collaborative Governance

The workshop strengthens **DGS–APMB** coordination, with Andhra Pradesh supporting through a joint group to enhance monitoring, transparency, and digital compliance in training.

National Vision Alignment:

By aligning with DGS and Maritime India Vision 2030, **Andhra Pradesh can lead in developing a skilled, ethical, and globally employable seafaring workforce.**

Vision and Focus Areas of the Directorate General of Shipping

National Alignment

Align state-level maritime skilling initiatives with ***Maritime India Vision 2030*** and the **Maritime Amrit Kaal Vision 2047** to build a unified national approach.

Transparency & Governance

Promote a **corruption-free training ecosystem** through **e-Governance, digital monitoring**, and data-driven oversight of maritime institutes.

Innovation & Collaboration

Foster **industry–academia partnerships**, encourage **technological innovation**, and adopt **modern training methods** including simulation and e-learning.

Human Element & Ethics

Strengthen the **human element** by focusing on **quality skilling, welfare, ethics, and professionalism** among seafarers and training providers.

Workshop Objectives and Expected Coordination Mechanism

Integrity and Compliance

Reinforce **zero tolerance toward malpractice and corruption** in maritime training, certification, and institutional governance through **digital oversight and accountability mechanisms.**

Joint Institutional Framework

Establish a structured **coordination mechanism between DGS and the Government of Andhra Pradesh** for joint planning, monitoring, and implementation of maritime training and skilling initiatives.

Career Promotion & Awareness

Promote the **Merchant Navy as an aspirational career path**, especially among coastal youth, through targeted awareness campaigns and counselling initiatives.

Global Skill Alignment

Enhance the **employability of seafarers** by aligning state-level training programs with **emerging international maritime standards and technologies.**

State-Level Collaboration:

Strengthen coordination for **awareness drives, youth outreach, and integration** with national programs such as **Skill India Mission** and **Maritime India Vision 2030**

Coordination between DGS and Andhra Pradesh State

The **Directorate General of Shipping (DGS)** is exploring the establishment of a **structured coordination framework** with the **Government of Andhra Pradesh and Andhra Pradesh Maritime Board (APMB)** to strengthen maritime training, skilling, and institutional oversight across the state.

Uniform Standards

Working towards ensuring that all maritime training institutes in the state operate in accordance with **DGS's regulatory approvals, inspection protocols, and quality assurance framework**.

Joint Monitoring

Exploring mechanisms for **coordinated inspections, data exchange, and performance tracking** between DGS and APMB to uphold high standards of safety, integrity, and competence in training delivery.

Capacity Building & Awareness

Considering **joint initiatives such as workshops, faculty training, and outreach programs** to promote maritime careers, enhance skill awareness, and strengthen ethical training practices.

Integrity & Governance

Collaborating to prevent fraudulent practices in maritime training, certification, and placement through improved oversight and transparent systems.

Through this collaboration, **DGS would provide technical and regulatory guidance**, while **APMB would support state-level implementation, infrastructure, and policy alignment** in line with national maritime standards and vision.

Integration of ITI Ecosystem with Maritime Training

MTI's in Andhra Pradesh

Name of the MTI	Location	Type	Pre/Post
Vizag Himt	Visakhapatnam	Post	Post
Behara Institute Of Maritime Training	Visakhapatnam	Pre	Pre
Praveenya Institute Of Marine Engineering & Maritime Studies	Visakhapatnam	Pre	Pre
BIMT VIZAG	Visakhapatnam	Post	Post

1. Introducing Maritime Modules in ITIs:

Explore the inclusion of maritime-focused skill modules such as basic seamanship, marine safety, welding, and electrical maintenance within Industrial Training Institutes (ITIs) across coastal districts of Andhra Pradesh.

2. Creating Career Pathways:

Develop structured linkages between ITI vocational programs and DGS-approved maritime courses, allowing students to transition from general trades to seafaring and port-related careers.

3. Faculty Development & Standardization

Organize faculty orientation and capacity-building programs to align teaching practices, course content, and assessment methods with DGS quality and competency standards.

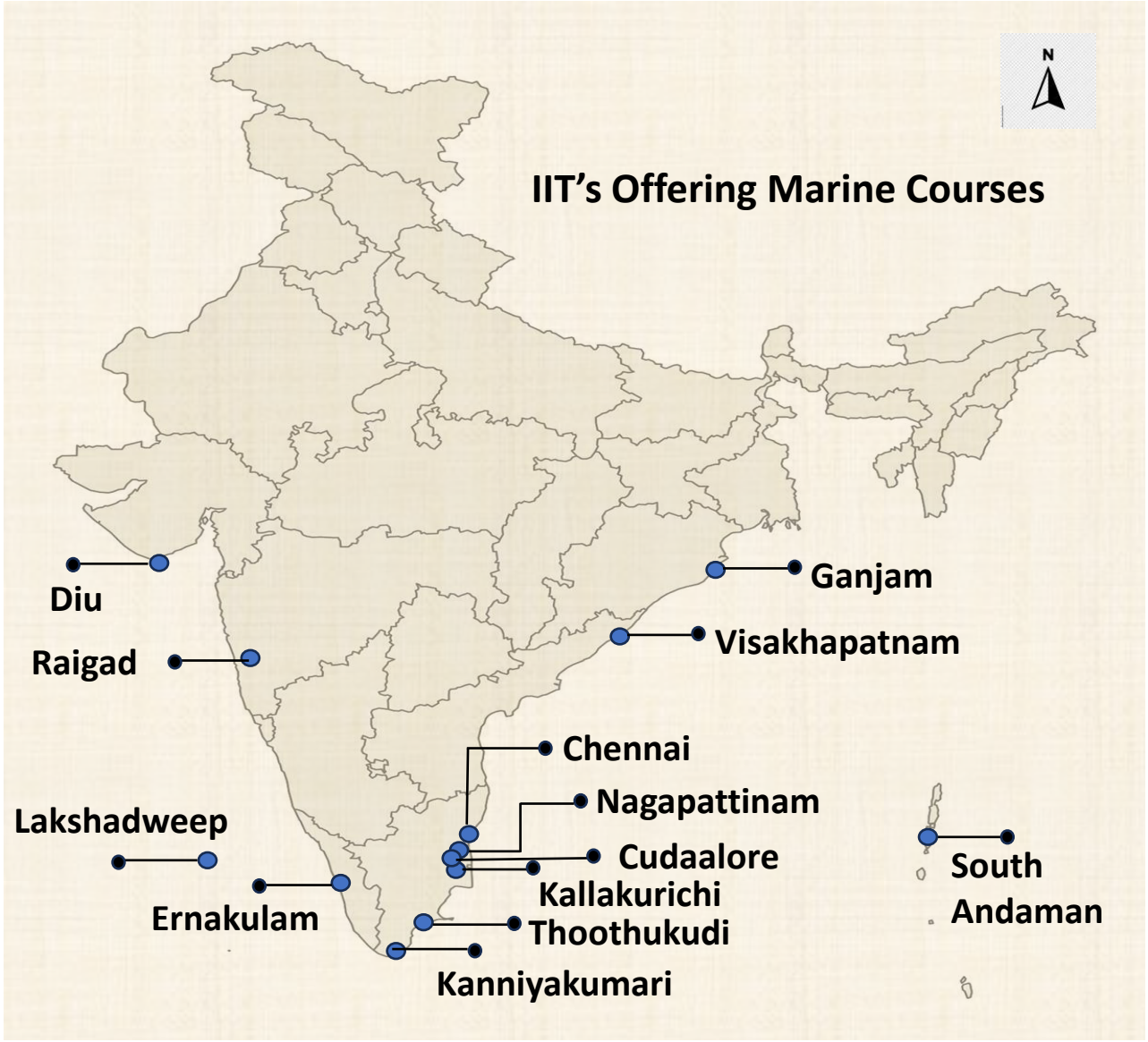
4. State–Central Coordination:

Encourage coordination between AP State Skill Development Corporation (APSSDC), AP Maritime Board, and DGS for curriculum design, certification alignment, and recognition of maritime vocational skills.

5. Outcome & Impact:

Enable coastal youth to access maritime careers through locally available skill infrastructure, ensuring industry relevance, employability, and contribution to India's global seafarer pool.

ITI's Offering Marine Courses under Craftsmen Training Scheme (CTS)



- The integration of the ITI ecosystem with maritime training aims to introduce maritime-focused modules in ITIs, create clear career pathways into seafaring and port-related roles, and align teaching standards with DGS guidelines.

- Through coordination between DGS, AP Maritime Board, and APSSDC, the initiative enhances faculty capacity, ensures curriculum alignment, and enables coastal youth to access industry-relevant maritime careers.

ITI's Offering Marine Courses under Craftsmen Training Scheme (CTS)

Sr. No.	District Name	Name	Name Of Course	Duration	Entry Qualification	NSQF LEVEL	Seating Capacity	Enrolment (2024-25)
1.	SOUTH ANDAMANS, Andaman And Nicobar Islands	Government Industrial Training Institute	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	20	20
			Marine Fitter (NSQF)	2 Years	10th Passed	4	40	20
			Vessel Navigator (NSQF)	2 Years	10th Passed	4	40	20
2.	VISAKHAPATNAM, Andhra Pradesh	Central Institute of Fisheries Nautical Engg. Training Unit	Marine Fitter (NSQF)	2 Years	10th Passed	4	20	20
			Vessel Navigator (NSQF)	2 Years	10th Passed	4	20	20
3.	ERNAKULAM, Kerala	Central Institute of Fisheries Nautical and Engineering Training	Marine Fitter (NSQF)	2 Years	10th Passed	4	20	20
			Vessel Navigator (NSQF)	2 Years	10th Passed	4	20	20
4.	LAKSHADWEEP DISTRICT, Lakshadweep	Dr B R Ambedkar ITI	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	40	40
5.	RAIGAD, Maharashtra	Anjumane Waseeul Taleem Edu.Trust Raigad	Marine Fitter (NSQF)	2 Years	10th Passed	4	20	20
6.	GANJAM, Odisha	Govt Industrial Training Institute, Berhampur	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	60	20
7.	CHENNAI, Tamil Nadu	Central Institute Of Fisheries Nautical & Engineering Training Institute	Marine Fitter (NSQF)	2 Years	10th Passed	4	20	20
			Vessel Navigator (NSQF)	2 Years	10th Passed	4	20	20
8.	CUDDALORE, Tamil Nadu	Government Industrial Training Institute, Cuddalore	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	40	40
9.	KALLAKURICHI, Tamil Nadu	Government Industrial Training Institute, Sankarapuram	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	40	38
10.	KANNIYAKUMARI, Tamil Nadu	Government Industrial Training Institute, Nagercoil	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	40	37
11.	NAGAPATTINAM, Tamil Nadu	Goverment Industrial Training Institute,Nagapattinam	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	40	21
12.	THOOTHUKKUDI, Tamil Nadu	Government Industrial Training Institute,,Thoothukudi	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	40	25
13.	THOOTHUKKUDI, Tamil Nadu	Govt. ITI, VEPPALODAI	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	40	28
14.	DIU, The Dadra And Nagar Haveli And Daman And Diu	Govt Industrial Training Institute, Ghoghala	Marine Engine Fitter (NSQF)	1 Year	10th Passed	3.5	20	18

Pathways to Join Merchant Navy

Education Level	Course / Route	Eligibility	Duration & Training Focus	Career Path / Progression
After 10th Standard	**GP Rating Course** (General Purpose Rating)	10th pass with 40% aggregate and 40% in English. Age: 17.5–25 years.	**6 months** – Basic seamanship, firefighting, first aid, survival, and engine room safety.	Starts as **Ordinary Seaman (Deck)** or **Wiper (Engine)** → **Able Seaman / Bosun / Officer** through DGS-approved competency exams.
After 12th (Science Stream)	**Deck Cadet** (Navigating Officer)	10+2 (PCM) with 60% aggregate and 50% in English.	**B.Sc. Nautical Science (3 years)** or **Diploma in Nautical Science (DNS, 1 year)** leading to B.Sc. (Applied Nautical Science).	Starts as **Deck Cadet** → **Third Officer** → **Second Officer** → **Chief Officer** → **Master (Captain)** after DGS/IMO exams.
After 12th (Science Stream)	**Engine Cadet** (Marine Engineering)	10+2 (PCM) 60% or Degree in Mechanical/Marine Engineering.	**B.Tech Marine Engineering (4 years)** or **GME (1-year pre-sea)** for Mechanical Engineers.	Starts as **Junior Engineer (JE)** → **Fourth** → **Third** → **Second Engineer** → **Chief Engineer** after competency exams.
After Diploma	**Lateral Entry** (Deck or Engine Side)	Diploma in Nautical, Marine, or Mechanical/Shipbuilding Engineering.	**Lateral Entry:** DNS/B.Sc. Nautical Science or 2nd Year Marine Engineering (DGS-approved institutes).	Fast-track route to join as **Deck/Engine Cadet**, progressing to **Officer/Engineer** ranks.
After Degree	**Electro-Technical Officer (ETO)**	B.E./B.Tech. in Electrical, Electronics, or Instrumentation.	**4 months Pre-Sea ETO Course (DGS approved)** – Electrical & automation systems training.	Starts as **Trainee ETO** → **ETO** → **Senior ETO / Chief Electrical Engineer**.
	Graduate Marine Engineer (GME)	B.E./B.Tech. in Mechanical or Naval Architecture.	**1-year Pre-Sea GME Course (DGS approved)** – Marine systems and machinery training.	Starts as **Trainee Engineer** → **Fourth** → **Third** → **Second** → **Chief Engineer** after sea service and exams.

Basic Courses for Entry into Merchant Navy

- As per **STCW 2010 Convention** and **DGS Circular 12/20**, all seafarers irrespective of rank or department must complete **five mandatory basic safety courses** before joining a ship.

- These courses ensure every seafarer is trained to handle emergencies, operate safely, and protect life, property, and the marine environment.

Sr. No	Course Name	Purpose & Outcome
1	**Personal Survival Techniques (PST)**	Trains seafarers to **survive at sea during emergencies**, including ship abandonment and rescue procedures.
2	**Fire Prevention and Fire Fighting (FPFF)**	Equips trainees to **prevent, control, and extinguish onboard fires** safely and efficiently.
3	**Elementary First Aid (EFA)**	Enables seafarers to **provide immediate medical care** in case of accidents or health emergencies onboard.
4	**Personal Safety and Social Responsibilities (PSSR)**	Develops awareness of **safe working practices, teamwork, and shipboard discipline**.
5	**Security Training for Seafarers with Designated Security Duties (STSDSD)**	Prepares seafarers to **recognize and respond to shipboard security threats** in line with the ISPS Code.

Skill Development and Training for Safe Operations

"While compliance with standards is essential for serving on board ships, the skills and competence of seafarers can only be adequately underpinned, updated and maintained through effective **Maritime Education, Training , Assessment and reliable Certification of their Competency**"

- Koji Sekimizu (Ex- Secretary-General of IMO)

Who is a Competent \Seafarer?

Continuous Skill Upgradation

Regular **refresher & revalidation courses** as per STCW and DGS norms.

Includes **Advanced Fire Fighting, PSC&RB, Tanker Familiarization**, etc.

Focus on **competency-based and simulation training** for real-time learning.

Encourages adaptability to **emerging technologies and alternate fuels**.

Emerging Areas in Maritime Skilling

Green and Alternate Fuel Competencies

LNG (Liquefied Natural Gas)
Safety in bunkering, cryogenic handling, and fuel transfer

Methanol & Ammonia
Training for low-emission fuels, safe handling, and toxicity management.

Hydrogen
Understanding storage, flammability risks, and new firefighting procedures. Supports to reduce ship emissions.

Technology-Driven Training

Simulator-Based Learning
- Full-mission simulators for navigation, cargo handling, and engine operations.
- Enables realistic, risk-free training and emergency decision-making.

Digital Competency
- Training on ECDIS, voyage management, and shipboard digital systems.
- Builds skills in data handling, communication, and system automation.

Automation & Smart Ships
- Familiarization with Integrated Bridge Systems (IBS), remote monitoring, and AI tools.
- Prepares crew for smart, semi-autonomous, and connected vessels

Curriculum Modernization

Upgrade MTIs with **digital simulators, e-learning, and cyber safety modules**.

Include **green technology and automation** in course syllabus.

Collaborate with **industry, DGS, IMU, and classification societies** for advanced training content.

Transparency and Zero Tolerance for Fraud

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

Expected Outcomes of the Workshop

Roadmap for Maritime Skilling in Andhra Pradesh	Transparent & Corruption-Free Training Ecosystem	Improved Compliance and Employability
• Define a state-level maritime skilling strategy aligned with Maritime India Vision 2030 and Maritime Amrit Kaal Vision 2047. • Identify priority skill areas in port operations, shipbuilding, and seafaring. • Integrate ITIs and state skilling institutions with DGS-approved maritime training.	• Reinforce zero tolerance for fraud in training, certification, and placement. • Develop a DGS–APMB coordination framework for institute monitoring and digital oversight. • Use helplines and awareness campaigns to promote transparency and accountability.	• Strengthen institute compliance with DGS regulations and quality standards. • Enhance industry linkages for practical training and global employability. • Build a competent and ethical seafaring workforce from Andhra Pradesh.

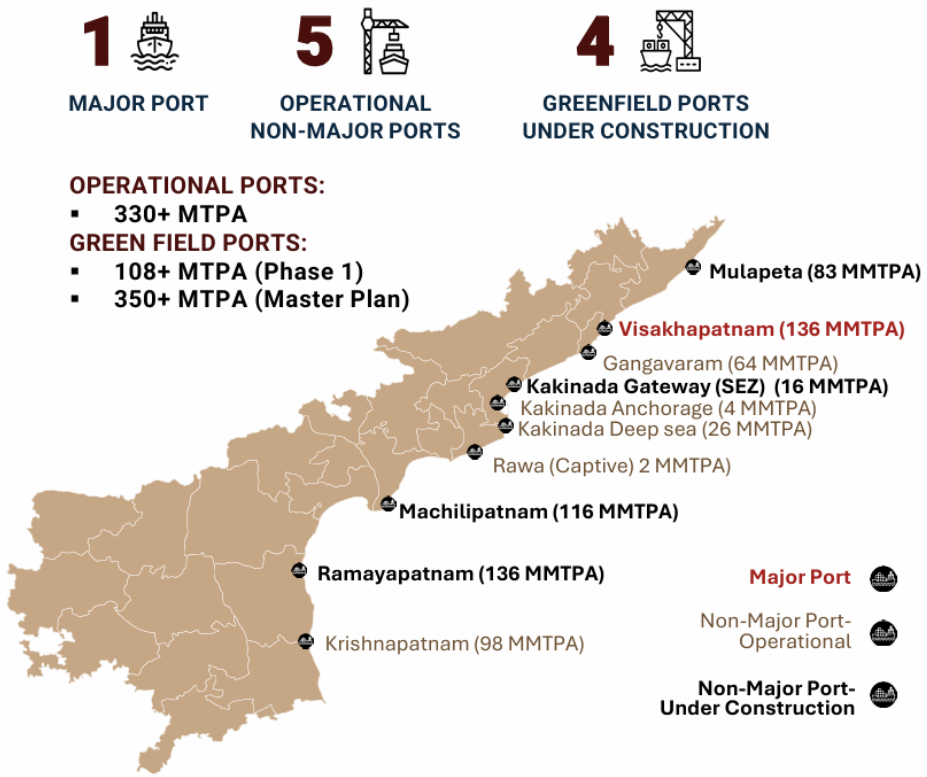
PILLAR 4-
Maritime Crewing and Employment Opportunities in Maritime Domain

What Andhra Pradesh Offers

Ports in Andhra Pradesh

Andhra Pradesh, with a 1,053 km coastline, is a major maritime hub on India's east coast, anchored by ports like Visakhapatnam, Gangavaram, Krishnapatnam, and Kakinada. These ports handle 350+ million tonnes of cargo annually, driving trade, logistics, ship repair, and offshore operations. With new greenfield ports and industrial corridors, the state is emerging as a gateway for global trade and blue economy growth.

Category	Key Ports	Description
Major Port	Visakhapatnam Port	One of India's largest and most diversified ports; handles bulk, liquid, and container cargo; also a ship repair and cruise tourism hub.
Non-Major / Private Ports	Gangavaram, Krishnapatnam, Kakinada Deep Water, Kakinada Anchorage, offshore oilfields	High-capacity ports with world-class facilities for cargo handling and logistics integration.
Upcoming / Greenfield Ports	Ramayapatnam, Machilipatnam, Kakinada Gateway, Mulapeta	Under development to expand state maritime capacity.



AP Port-wise Status of Seafarer Abandonment Cases

According to the ILO/IMO Joint Database on Foreign Abandonment of Seafarers-

Sr. No.	Vessel Name	Flag State	Port of Abandonment	Number of Seafarers with Nationalities	Case Status
1	Buena Ventura I	Panama	Gangavaram	Philippines (17); Romania (5)	Resolved
2	Qian Tai 1	Liberia	Kakinada	China (8); Myanmar (13)	Resolved
3	Evangelia M	Liberia	Kakinada	Philippines (21)	Disputed
4	Theoxenia	Panama	Kakinada	Ukraine (19)	Inactive
5	Glory 1	Panama	Visakhapatnam	Montenegro (1); Ukraine (3)	Resolved

According to the ILO/IMO Joint Database on Indian Abandonment of Seafarers-

Sr. No.	Vessel Name	Location	Total Seafarers Onboard	No. of Indian Seafarers	Case Status
1	Diamond*	Vishakhapatnam	21	1	Resolved
2	Glory 1	Vishakhapatnam	19	15	Resolved
3	MV DARSHANI PREM	Kakinada	15	15	Disputed

*Date received from the E-Governance

Maritime Landscape in Andhra Pradesh – Mercantile Marine Department (MMD)

MMD Vishakhapatnam

Operational and acts as the **primary regulatory and certification hub** for the east coast, facilitating thousands of seafarers trained in Andhra Pradesh.

- **Jurisdiction:** Northern coastal Andhra Pradesh and parts of Odisha

MMD Kakinada

Proposed to become functional soon; the **office building and infrastructure are already completed.**

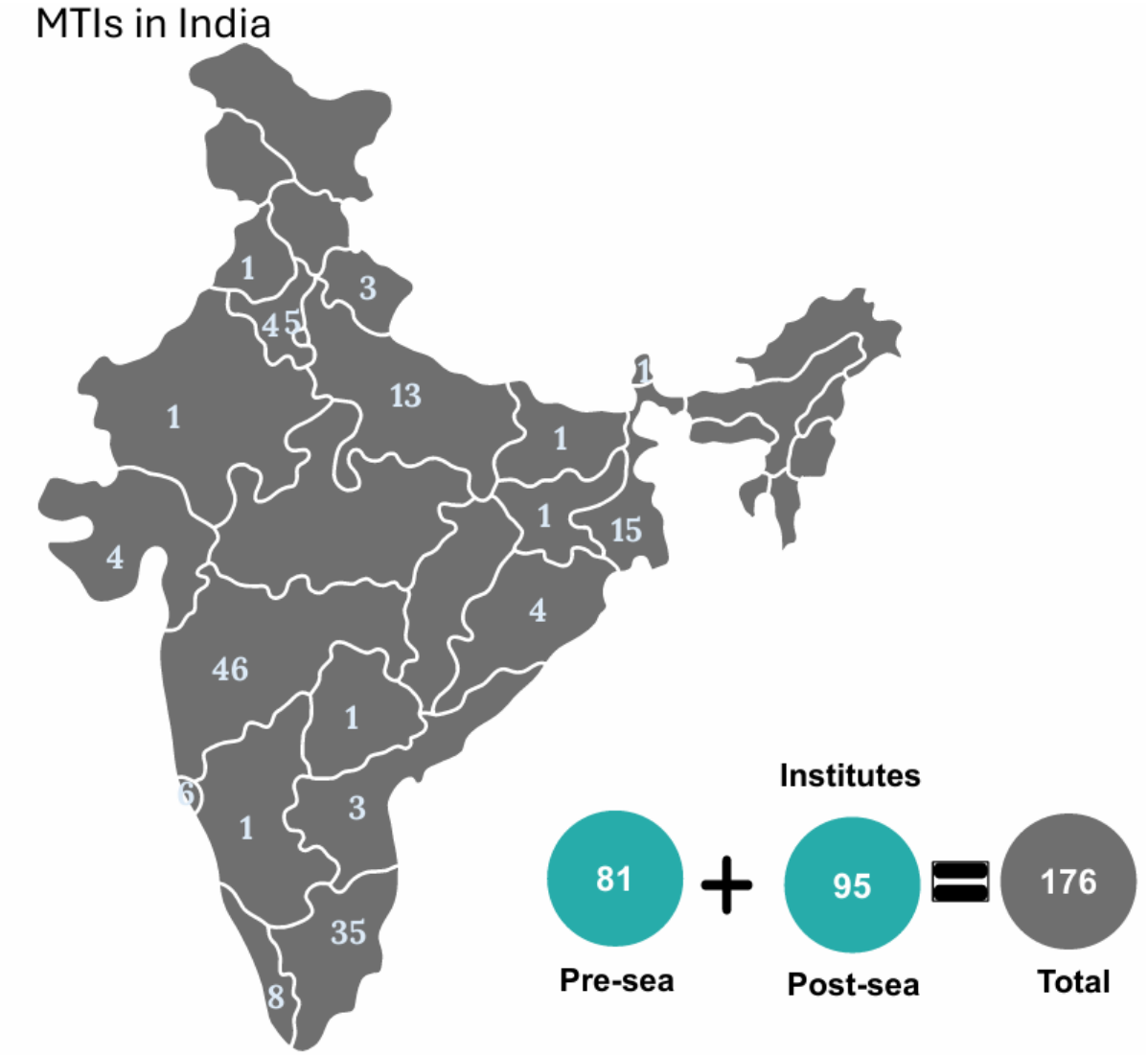
Aims to decentralize maritime administration and make services more accessible to seafarers and ship operators in southern Andhra Pradesh.

Functions

- Conducts **ship surveys and inspections** to ensure compliance with international conventions (SOLAS, MARPOL, Load Line).
- Oversees **seafarer certification**, including exams for Certificates of Competency (CoC) and Proficiency (CoP).
- Handles **registration of ships**, investigation of marine casualties, and enforcement of maritime safety regulations.
- Monitors **Maritime Training Institutes (MTIs)** and ensures adherence to DGS standards.

- Will conduct local **vessel safety surveys and compliance checks** for coastal and harbor crafts.
- Will assist in **document verification, certification, and grievance facilitation** for seafarers.
- Will support the **licensing and monitoring of RPSL companies** and training institutions.
- Will strengthen **coordination with port authorities** at nearby non-major ports.

Maritime Landscape in Andhra Pradesh – Maritime Training Institutes (MTI)



MTIs in Andhra Pradesh

- There are 4 DG Shipping-approved MTIs in Andhra Pradesh, with 2 post-sea training MTIs and 2 pre-sea course
- Behera Institute of Maritime Training, with intake of 240 for general course and 80 for certification course
- PRIME with intake capacity of 40 cadets
- On an average, there are 2,500 seafarers that the state produces each year.
- Andhra Pradesh may explore the possibility of having more MTIs to accommodate the growing number of youth getting enrolled in the Merchant Navy.

Maritime Landscape in Andhra Pradesh – Recruitment and Placement Services License (RPSL) Companies

Andhra Pradesh contributes **nearly 6% of India's total seafarers**, reflecting strong port-led growth and employment potential. The limited presence of active RPSL operators indicates a **need for greater compliance support and capacity building** in the state.

According to the Directorate General of Shipping Database-

Valid RPSL Companies in Andhra Pradesh

- Srisai Oilfield Equipments & Marine Services Private Limited
- Seasworth Marine Private Limited

Few Invalid RPSL Companies in Andhra Pradesh-

- Oscar Maritime And Offshore Pvt. Ltd.
- Vision Maritime Private Limited
- Galilee Sea Services Private Limited
- V and G Marine Services LLP

Awareness and monitoring initiatives

- Prevent **fraudulent recruitment** and exploitation of aspiring seafarers
- Promote **ethical and transparent recruitment practices**
- Ensure engagement **only with licensed and verified RPSL operators**

Maritime Events in Andhra Pradesh

MILAP 2026- ITF Seafarers' Expo in Mumbai

MILAP 2026 will be held in **Mumbai from 29th January to 31st January, 2026**

The Expo is a three-day, open-air event which will welcome seafarers and their immediate families to join us in a lively and entertaining setting. While the atmosphere will be festive and fun, the Expo's core mission is to inform, connect, and support seafarers—empowering them with knowledge about their rights and promoting their overall wellbeing. Our aims are to:

- educate seafarers about the benefits of joining a trade union and being a part of the ITF family
- encourage seafarers to play a more active role in defending their rights in the workplace
- support affiliates representing seafarers to be stronger in the FOC campaign
- undertake a positive campaign highlighting the important role of seafarers in global trade

Other Major Events

Event	Key Takeaways
CII PORTS & LOGISTICS CONFERENCE 2025- October 2025	Focus on the skilling, logistics, shipbuilding, allied industries, & port infrastructure
Road-show & Workshop – PORTCON 2025- September 2025	Showcase Visakhapatnam as the city of prominence and promise of exponential growth in maritime sector
East Coast Maritime & Logistics Summit 2025- September 2025	Develop port-led economy with plans for logistics, civil aviation varsities, fishing harbour or port every 50 km
Vizag Skill Sail 2025 – Skill Development Conclave- August 2025	Strengthening maritime skill development while promoting sustainable port innovations
Second BIMSTEC Ports Conclave- July 2025	Diverse issues such as harmonising customs procedures, cruise tourism, digital integration, green shipping, etc
Stakeholder Consultation on Andhra Pradesh's Maritime, Logistics & Infrastructure Development- March 2025	Evaluate infrastructure requirements, logistics for ports and allied industries, EXIM trade, warehousing and cold storage and e-commerce logistics

Potential Opportunities

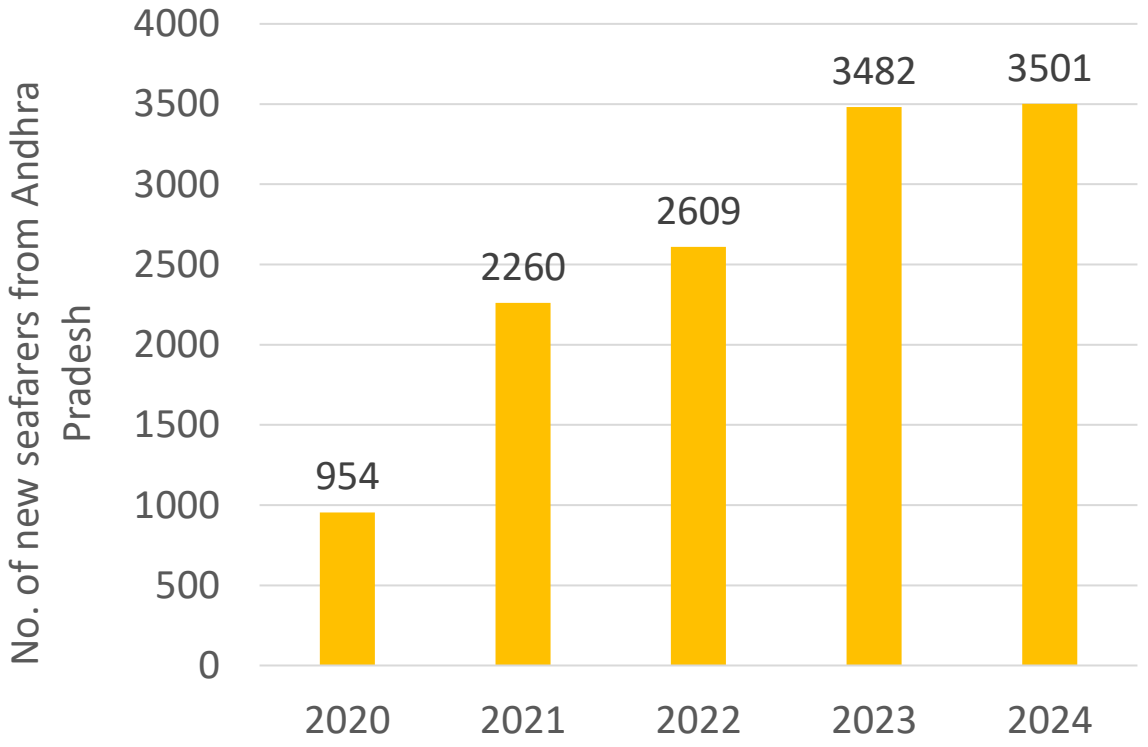
Seafarer Ecosystem in Andhra Pradesh

As of June 2024, Andhra Pradesh ranks **sixth** among Indian states in seafarer supply, contributing around **5.9% of India's total seafaring workforce**. The state's maritime talent pool has shown steady growth at a rate of **38.41% from 2020,** reaching a cumulative strength of **39,399 seafarers**.

With rising seafarer numbers, the **demand for Maritime Training Institutes (MTIs)** is expected to increase.

The existing and new MTIs shall also prioritize on-

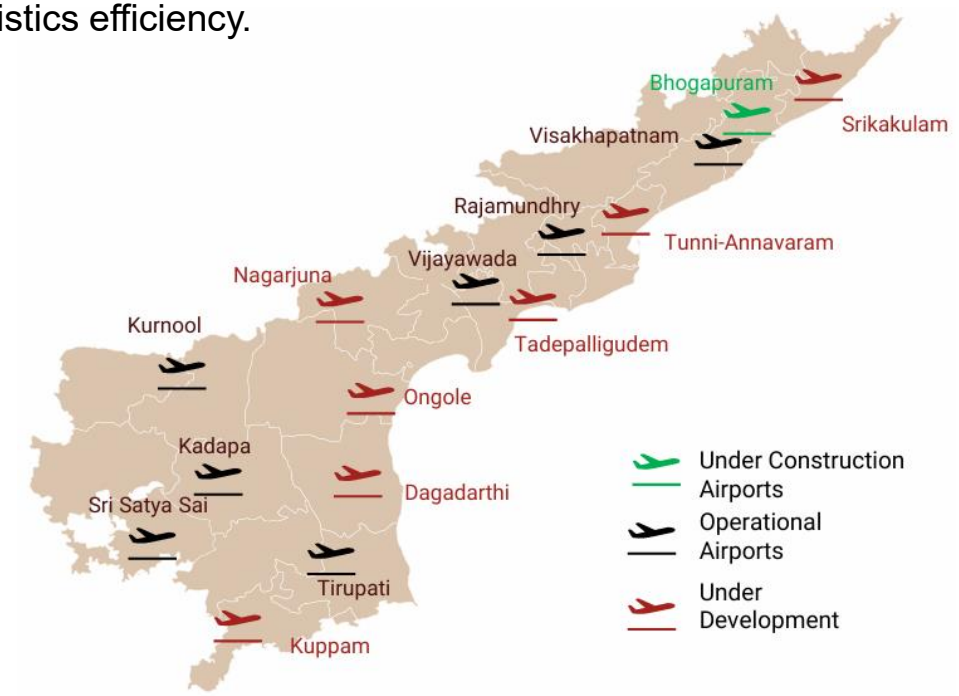
- Equipped with **modern simulators and digital training tools**
- Supported by **qualified and industry-experienced faculty**
- Focused on producing **competent, future-ready seafarers** aligned with emerging technologies and global standards



Potential of the Maritime Industry in Andhra Pradesh

Connectivity of Andhra Pradesh

- **Air Connectivity:** Excellent air connectivity for crew travel, logistics, and international deployment with 7 operational airports, 1 under construction, and 7 more under development
- **Road and rail connectivity** through Visakhapatnam-Chennai Industrial Corridor, Chennai-Bengaluru Industrial Corridor and Hyderabad-Bengaluru Industrial Corridor further enhance logistics efficiency.



Maritime-related Sectors in Andhra Pradesh

- Visakhapatnam serves as the primary maritime employment and training hub, with multiple MTIs, port operations, and ship-repair facilities
- Priority sectors identified include:
  - Ports and Maritime Services (operations, logistics, bunkering)
  - Fisheries & Aquaculture (coastal and deep-sea fishing, cold-chain logistics)
  - Tourism and Cruise Operations (home-porting potential)
  - Construction & Port-linked Industrial Development
- Kakinada is emerging as India's second largest oil and gas exploration area, after Bombay High, thereby creating immense opportunities of employment, deployment of vessels and creation of onshore and offshore jobs.

Seafaring Skills and Education in Andhra Pradesh

Education to local students	Attract students from other states	Adopt latest curriculum
• Potential to emerge as a key centre for seafarer education and training • Provide accessible, high-quality education to local youth, particularly from coastal and port-adjacent communities • Career awareness drives, financial assistance, and preparatory training to attract local population into Merchant Navy	• Promote its MTIs as institutions of national repute offering advanced facilities, competent faculty, and globally recognized certifications • Create a diverse learning environment through partnerships with schools, universities, and maritime bodies to attract students from other states and enhance the visibility of Andhra Pradesh	• Adopt latest curriculum with next-generation technologies and international best practices • Make future-ready seafarers with competent in green shipping, and decarbonization • Partnerships with leading shipping companies, classification societies, and international academies to provide for the global workforce

Andhra Pradesh may explore options to attract RPSL companies and shipping lines to ensure that graduates not only receive quality education but also have access to relevant, high-paying, and safe employment opportunities.

Leverage Andhra Pradesh economy to build alternate career pathways

Andhra Pradesh may build a conducive environment for seafarers who have completed their on-sea careers and help them reintegrate with on-shore careers post retirement.

Port and Terminal Management

- Operations, cargo handling, safety management, and vessel traffic coordination roles in Visakhapatnam, Krishnapatnam, Kakinada ports etc.

Maritime Education and Training

- Servce as instructors, trainers, and mentors at Maritime Training Institutes (MTIs), helping shape the next generation of seafarers with practical, sea-based knowledge

Ship Management and Crewing

- Managerial and technical positions in crew management, ship operations, safety auditing, and compliance in RPSL companies

Marine Surveying and Classification

- Roles in ship survey, marine inspection, and statutory certification processes, leveraging their hands-on operational expertise

Logistics, Supply Chain, and Port-based Industries

- Leadership roles in coastal shipping, logistics parks, and multimodal transport hubs

Maritime Entrepreneurship

- Entrepreneurship through incubation and financial support for startups in ship repair, marine equipment services, green shipping technologies, and coastal tourism

Seafarers' Welfare

Seafarer Welfare & Insurance in Andhra Pradesh

- Andhra Pradesh **does not currently have a state-specific welfare or insurance scheme** for seafarers.
- Seafarers are covered under **national-level initiatives** by:
  - **Directorate General of Shipping (DGS)**
  - **Seafarers' Welfare Fund Society (SWFS)**
- These provide **financial aid, medical assistance, scholarships, and death compensation** to registered seafarers.
- With major ports at **Visakhapatnam, Krishnapatnam, Gangavaram, and Kakinada**, the state has strong potential to:
  - Launch a **dedicated welfare and insurance scheme** for seafarers.
  - Align it with **national welfare frameworks** and the **state's maritime development strategy**.
  - Ensure **comprehensive coverage** for health, safety, and employment security of the seafaring community.

Case Study: Goa Welfare / Pension Scheme for Seafarers, 2023

- **A state government initiative by the Home Department, Government of Goa, designed to provide financial security to retired seamen.**
- **Eligible Beneficiaries:**
  - **Must be an Indian citizen and a bona fide resident of Goa (by birth or parentage).**
  - **Retired or medically invalidated seafarer, aged 60 years or above.**
  - **Minimum 10 years (120 months) of sea service; up to 6-month break allowed.**
  - **Widows of deceased seafarers eligible if Goan residents for 15+ years and annual income below ₹1.2 lakh.**
- **Financial Assistance: A monthly gross pension of ₹2,500/- directly through Direct Benefit Transfer (DBT)**
- **Aim: To help retired seafarers and, on compassionate grounds, the widows of deceased seamen, maintain a decent standard of living during their retirement.**

Seafaring as a lucrative career for youth in Andhra Pradesh

With a growing talent pool that ranks sixth nationally, contributing approximately 5.9% of India's total seafaring workforce (39,399 seafarers as of June 2024), Andhra Pradesh possesses immense human capital potential

Strategies to realise the full potential of the human capital of the state

- Addressing governance challenges, particularly the prevalence of fraudulent recruitment, unregistered crewing agents, and exploitation of aspiring seafarers
- Aggressively expand its ethical recruitment network, given the current presence of only 2 valid RPSL companies against several invalid ones
- Strengthening regulatory oversight through the existing MMD Visakhapatnam and operationalizing the proposed MMD Kakinada
- Establishing a dedicated state-specific welfare and insurance scheme an area currently lacking and adopting successful models such as the comprehensive Goa Welfare/Pension Scheme
- Build a conducive environment for on-shore employment opportunities post retirement of the seafarers

Coastal State Workshops
Pillar 5 – Decarbonization & Sustainability

Directorate General of Shipping

6th November 2025 | Coastal State Workshops, Andhra Pradesh

Coastal State Workshops

Coastal state workshops are proposed to be organized to advance welfare, ship recycling, shipbuilding, and repair initiatives in collaboration with State Maritime Boards.

The Coastal State Workshops will be structured around six key pillars :

i. **Pillar 1** : Maritime Safety and Casualty Response

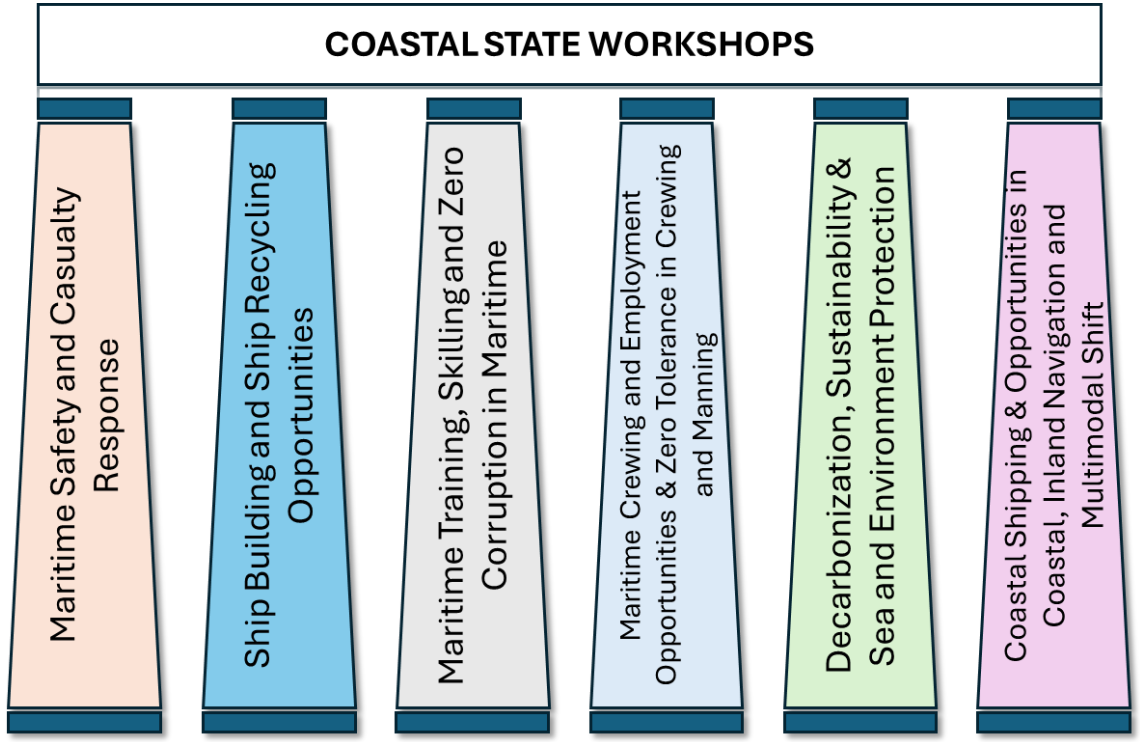
ii. **Pillar 2 :** Coastal States- Ship Building and Ship Recycling Opportunities

iii. **Pillar 3** Maritime Training, Skilling and Zero Corruption in Maritime

iv. **Pillar 4** : Maritime Crewing and Employment Opportunities & Zero Tolerance in Crewing and Manning

v. **Pillar 5** : Decarbonization, Sustainability & Sea and Environment Protection

vi. **Pillar 6 :** Coastal Shipping & Opportunities in Coastal, Inland Navigation and Multimodal Shift



It is proposed that the SWFS may contribute to such coastal state workshops from the funds budgeted towards the crew welfare events (Rs. 20 lakh/annum split as Rs. 5 lakhs/quarter) to foster interaction and joint projects, strengthening the maritime domain through focused discussions and capacity-building engagements.

Upcoming Pilot Coastal State Workshop in Andhra Pradesh

6th November 2025

Andhra Pradesh

India's Maritime Gateway to the East

Key Highlights :

- 1,053 km coastline – 3rd longest in India
- ₹16 lakh crore GSDP (2024–25) with 13% YoY growth
- 21 Billion USD worth of exports (6th largest in India)
- ₹10+ lakh crore investments secured in the last year
- #1 in Ease of Doing Business with 93+ clearances via single-window portal (21 days)
- 6 operational ports (330 MMT) + 4 greenfield ports (354 MMT)
- 9 GW renewable capacity, targeting 16 GW by 2029
- 3 industrial corridors (VCIC, CBIC, HBIC) and 50+ clusters
- 3 national waterways covering 978 km
- 38 million working-age population, strong technical workforce

Duggirajupatnam Shipbuilding Cluster:

- **5,000+ acres** identified for mega shipyard & allied industries
- **~18 m natural depth**
- **~2 km waterfront**
- Direct access to **VCIC** and **southern hinterland corridors**

- Ideal location for integrated **Shipbuilding–Repair–Recycling–Decarbonization** cluster

Green Shipping – The Big Picture

- Shipping is the **backbone of global trade** – carrying 80% of goods worldwide.
- Shipping contributes to ~3% of global CO_2 emissions.
- Green Shipping = *making ships, ports, and supply chains cleaner, smarter, and future-ready.*
- It's not just about compliance — it's about **staying competitive in a low-carbon economy.**
- **Vision & Commitments:**
  - Aligned with *Maritime India Vision 2030 & Maritime Amrit Kal Vission 2047*.
  - Supports IMO's **Net Zero 2050** ambition.
  - Anchored in India's **Panchamrit Pledge** – 500 GW non-fossil capacity by 2030, Net Zero by 2070.

"The future of shipping is green — by necessity, not by choice."

Green Shipping Initiatives

NPSC metrics include **Green Port Index (GPI), Port Readiness Level (PRL), Smart Port Shore Power Index (SPSPI), Environmental Ship Index (ESI), and GHG Emissions Inventory** to benchmark sustainability and readiness of Indian ports

With the Hong Kong Convention now in force, India leads globally with 115 compliant yards at Alang.

Structured Roadmap for decarbonization

Guidelines for LNG, Biofuels, Methanol, Ammonia

Structure to rate ships on their environmental performance, linked to age norms.

Use of clean shore electricity by ships while berthed at port, reducing fuel burning.

India's Marine Plastic Pollution & Waste Discharge

A Growing Maritime Concern

- **Among Top Global Contributors** to marine plastic leakage due to mismanaged coastal waste (~ **3.5 million tonnes of plastic waste)**
- Fishing nets, single-use plastics and microplastics persist in ocean ecosystems for decades

Maritime Impact

- **Navigational hazard** due to floating debris in shipping channels
- **Plastic ingestion and entanglement** harming marine species
- **Increased maintenance & dredging cost** at ports due to litter accumulation

IMO Global Action – RegLitter & Marine Plastic Initiatives

- Recognises ship-based & fishing-related waste
- **IMO RegLitter** initiative to regulate discharge of plastic and waste from ships (Asia Region Specific)
- Focus on fishing gear marking, port reception facilities & marine litter reporting

DGS as RegLitter National Focal Point

- DGS designated as **National Focal Point** to Participation in IMO working groups on **marine plastic regulation & garbage discharge (MARPOL Annex V)**
- Need for national maritime strategy on plastic waste under NGSP & Blue Economy policy

Way Forward for India

- Mandatory **Port Reception Facilities** for plastic & ghost nets
- Integration with **fisheries departments & coastal states**
- National monitoring protocol for **sea-based litter discharge**

Waste Management and Disposal

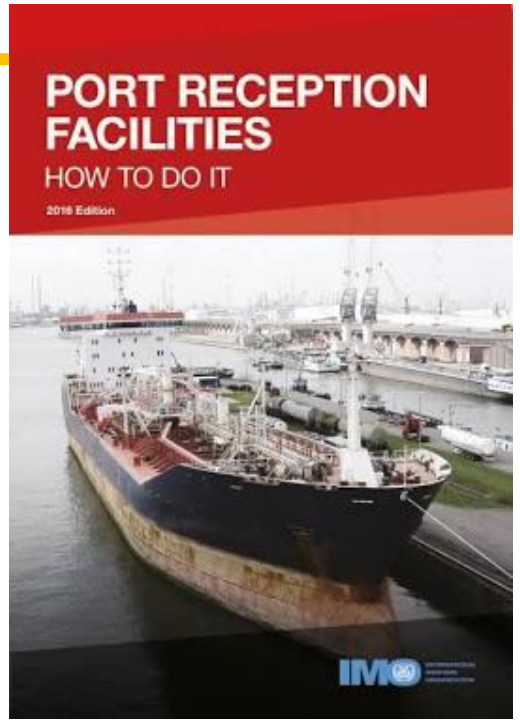
Key Points:

- Ports generate multiple waste streams - oily residues, sewage, garbage, plastics, e-waste, hazardous waste.
- **LADFG ("ghost gear")** adds to marine debris; recovery and recycling encouraged under IMO-FAO GloLitter & Swachh Sagar.
- Major ports: structured segregation, licensed disposal vendors, digital tracking via Swachh Sagar Portal.
- Non-major & fishing harbours: need certified facilities and digital integration.
- Coordination among ports, municipalities & fisheries bodies can extend circular-economy practices for total coastal cleanliness.

MARPOL Annexes & Compliance:

- MARPOL governs oil, chemicals, sewage, garbage & air-emission control (Annex I–VI).
- Enforced by DGS through **Port State** & **Flag State** inspections.
- Major ports: strong inspection networks and vendor systems.
- Non-major ports: need trained manpower & real-time digital reporting.
- Closer coordination among DGS regions, SPCBs & State Maritime Boards will ensure uniform compliance.

Port Reception Facility (PRF)



- PRFs are the operational link to MARPOL Annex I–V obligations.
- Major ports: certified PRFs integrated with Swachh Sagar for transparency.
- Smaller ports: often partial facilities—focus on oily waste & garbage.
- **Harit Sagar Guidelines (2023):** all ports must install/ share certified PRFs & undergo annual audits.
- Coastal states (e.g., Andhra Pradesh): can develop **cluster-based PRFs** for cost efficiency & uniform compliance monitoring.

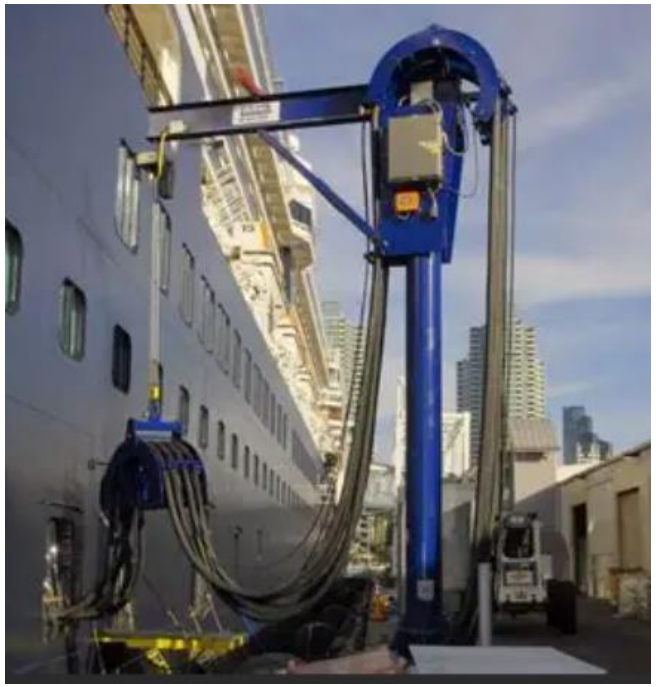
- **Mandatory Access:** All ships visiting Indian ports or anchorages within territorial waters must access the Swachh Sagar portal.
- **Data Submission:** Ships are required to provide details, including a full inventory of on-board ship-generated waste.
- **Vendor Connectivity:** When PRF is needed, the portal connects the ship's master/owner/manager/agent with all **approved vendors** at the port of arrival.
- **Negotiation & Finalization:** Enables negotiation with vendors to finalize a **suitable service provider**, along with the proposed **date and time for waste disposal**.

Advantages

- Advance Notifications
- Vendor Facilitation
- Seamless Disposal Planning

Shore to Ship

What is Shore Power?
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**

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)

Possible Financing options

Blended finance → *govt + MDBs + private capital.*

Green/blue bonds → *specifically earmarked for OPS infra.*

PPP models → *private players co-invest in OPS roll-out.*

Alternate Fuels for Maritime (1/2)

LNG

- **Current Use:** Operational for select Indian coastal and LNG carriers; IGF Code compliant
- **Infrastructure:** LNG terminals at **Dahej, Hazira, Kochi**; feasibility for bunkering at JNPA
- **Maritime Role:** Transition fuel till 2035 under IMO GHG transition
- **Limitation:** Methane slip & future carbon costs reduce long-term advantage

Biofuel

- **Marine Trials:** Successfully tested on marine engines
- **Supply Base:** Drop in Blends. Domestic production. **Blending with FAME, HVO**
- **Distribution:** Can use existing bunkering infrastructure without port redesign
- **Advantage:** Short-term compliance option for Indian fleet under CII/GHG without retrofits

Ammonia

- **Export Positioning: Kandla to produce green ammonia** (L&T + Itochu JV) for **Singapore bunkering**
- **Maritime Use:** Target fuel for deep-sea vessels (tankers, bulk carriers) post-2035
- **Challenges:** High Toxicity, safety standards, crew training, IMO safety code under development
- **Strategic Role:** India positioning as **future fuel exporter**, not just consumer

Methanol

- **Marine Use**: Dual-fuel methanol engines already ordered by global majors
- **Breakthrough: India's first Green Methanol Bunkering Hub** under construction at **VOC Port (Tuticorin)** – 750 m^3 terminal (SOPAN Group)
- **Production Shift:** India transitioning from coal-based brown methanol to green methanol (hydrogen + CO_2 capture)
- **Maritime Suitability:** Engine-ready (Maersk, MAN ES technology) – early adopter fuel under IMO
- **Role:** Likely first large-scale alternative fuel to enter Indian ports post-2030

Hydrogen

- **Port Pilot: VOC Port launched India's first Green Hydrogen Pilot Plant** (5 Sep 2025)
- **Use in Maritime:** Not direct – used to produce ammonia/methanol as bunkering fuels
- **Infrastructure Need:** Electrolysers, Liquefaction, port pipelines; **High CAPEX**

Long-Term Role: Backbone fuel for synthetic maritime fuels; export market focus

Alternate Fuels for Maritime (2/2)

Shipping today contributes around **3% of global CO_2 emissions**. The IMO has locked in a target of **net-zero by 2050** → which means fuels like HFO and MDO are on their way out.

For India, the next 25 years are about **switching the fuel mix**:

Fuel	Demand in 2030	Demand in 2050
Hydrogen	**0.026 MT**	**0.3 MT**
Ammonia	**0.025 MT**	**4.4 MT**
Methanol	**0.037 MT**	**0.272 MT**
LNG	**0.66 MT**	**0.3 MT** (to be replaced by bio/e-LNG).

India can produce these fuels cheaper than almost anyone.
Green Hydrogen cost by 2030:
India $1.5–2.0/kg.
Middle East: $2.0–2.5/kg.
Europe/East Asia: $3.0–6.0/kg.
This is the base case for India becoming **the lowest-cost Global hub for Green Maritime Fuels and an Energy Surplus Nation.**

Nuclear – Long Term Option

- **Current Readiness :** No commercial maritime Nuclear vessel. Only Indian Navy operates Nuclear vessels.
- **No policy framework** yet for nuclear fuel for maritime.
- **Strategic Potential :** Ultra long endurance fuel, zero CO2 emission
- **Financial : Very High CAPEX** Estimate **$700-900 million per vessel (3x cost of LNG vessel)**
- **No IMO civilian Nuclear code** (under development)

Swachh Sagar Portal

India's digital platform for clean seas and maritime decarbonization. Developed and Managed by IRS on behalf of DGS.

Port Reception Facility

- Module for vessel waste declaration, vendor linkages and disposal coordination

Fuel Consumption Reporting

- Enables MARPOL Annex VI fuel consumption reporting for vessels.

Single Use Plastics

- Enables ships to report plastic usage and disposal via SEP plans, ensuring compliance with National sustainability mandates

E- BDN & Bunker Suppliers

- Central database of approved bunker suppliers with electronic BDN records for transparency and fuel quality assurance

Ballast Water Reporting

- Real time Ballast Water data submission by all ships and compliance oversight

India as a Net Green Energy Exporter & Bunkering Destination

From energy importer to future maritime fuel hub

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 & NGSP**
- Incentivized by **Harit Sagar & MIV 2030**
- Aligned with **Make in India & Energy Security Vision 2047**

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

Environmental Assessment & Ecosystem Management

EIA: Mandatory under *EIA 2006* & *CRZ 2019*; assesses air, water, sediment, biodiversity, fisheries impacts.

- Modern EIAs now include fishing-route mapping & species-distribution zones.
- Integration with **Swachh Sagar** & **Green Port Index (GPI)** enables real-time monitoring.

Marine Ecology & Biodiversity:

- Rich coastal habitats—mangroves, seagrass, estuaries, coral remnants.
- Key AP zones: *Coringa Sanctuary*, *Nizampatnam Turtle Beaches*, *Machilipatnam–Yanam Breeding Grounds*, *Kakinada Wetlands*.
- Promote **"Working with Nature"** for eco-friendly dredging & restoration.

Ecosystem-Based Management (EBM):

- Integrates ports, fisheries & conservation within one framework.
- Core pillars: *Integrated Planning*, *Spatial Mapping*, *Adaptive Management*, *Stakeholder Collaboration*.
- Aligns with ICZM, Harit Sagar & Blue Economy Policy for sustainable, resilient coastal growth.

Green Ports

Driving Sustainable Maritime Growth

Concept of Green Ports

- Ports designed & operated with minimal environmental impact.
- Integration of clean energy, efficiency, and circular economy practices.

Key Initiatives in India

- Harit Sagar Guidelines (2023): National framework for green port development.
- Proposed National Port Sustainability Code (NPSC): Metrics for emissions, energy, waste, and community impact.
- Onshore Power Supply (OPS): Cut ship emissions at berth by connecting to shore electricity.
- Waste & Plastics Management: Port reception facilities for MARPOL Annex V compliance.

Benefits

- Reduces GHG emissions & pollution.
- Improves air quality in port cities.
- Promotes India's Blue Economy & Green Economy transition.
- Aligns with IMO decarbonization goals & India's Viksit Bharat 2047 vision.

Sustainable Indicators for Indian Ports

Green Port Index (GPI)

Evaluates ports based on carbon footprint, alternative fuels adoption, energy efficiency, sustainable logistics, and waste management practices.

Port Readiness Level (PRL)

Assesses ports' preparedness for energy transition, digitalization, and compliance with global environmental regulations.

Shore Power Readiness Indicator (SPRI)

Measures infrastructure for cold ironing and renewable energy integration to reduce emissions from berthed ships.

Environmental Ship Index (ESI)

Incentivizes ship operators to reduce emissions through a rating system that evaluates NOx, SOx, and CO_2 emissions.

These indicators create a robust framework to measure and enhance the environmental performance of Indian ports. By institutionalizing them, India positions itself as a global frontrunner in green maritime logistics & unlocks access to international green shipping corridors and drive long-term net-zero ambitions.

GHG Emission Scope at Ports

Scope 1 : Direct Emissions

- From port owned/controlled sources
- Diesel generators, cranes, dredgers, tugs, vehicles, fuel machinery

Scope 2 : Indirect Emissions (Purchased Electricity)

- Power consumed but generated elsewhere (state grid)
- Lighting, pumps, reefer containers, terminal operations
- Coal-based power grid

Scope 3 : Other Indirect Emissions (Value Chain)

- Ships at berth using auxiliary engines
- Trucks, trains, barges transporting cargo
- Business travel, investments, waste treatment

Green Tug Transition Program

To replace/retrofit conventional diesel-powered tugs with *green tugs* powered by **alternative fuels** (like LNG, methanol, hydrogen, or hybrid-electric systems).

- At least **50% of all tugs in major ports to be green tugs by 2030**.
- 100% transition by 2047

Current Status

~ 400 + tugs are operating in Indian Waters (Coastal & Offshore Tugs)
~ 45% of tugs are 20 + years
~ 20% of tugs are 30 + years

Problem

Older tugs generate higher emissions and operate with lower efficiency compared to modern green tugs.

Opportunity and Way Forward

- Replacing / retrofitting old fleet
- Deployment of hybrid & green-fuel powered tugs
- Incentivize adoption of LNG, Methanol, Hydrogen & Electric tugs

Key Opportunities for Andhra Pradesh

Topic / Agenda	Opportunity Focus for AP
Waste Management & Circular Economy	Build **cluster-based PRFs** (Kakinada–Machilipatnam–Nizampatnam); full **Swachh Sagar** integration across APMB ports; tie **used oil/plastics/metal** to **SEZ recyclers**; set up **Port–Municipal–Fisheries Cells** for LADFG recovery & marine-litter recycling.
Strengthening MARPOL Compliance	Consider a **State MARPOL Facilitation Cell** under APMB; run **IMU Vizag–led certifications** on Annex I–VI, BWM, spill response; **integrate APPCB data** with DGS for real-time analytics.
Port Reception Facilities (PRFs)	**Upgrade** PRFs at Krishnapatnam, Gangavaram, Kakinada to **multi-waste** (incl. plastics, sewage); design **modular PRFs** for Ramayapatnam from day one; use **cluster/hub-and-spoke** logistics; align audits with **Swachh Sagar**.
Shore Power (OPS)	Phase-I **OPS pilots** at Krishnapatnam & Kakinada; connect to **APTRANSCO green power** (solar+wind) for zero-emission berthing; extend OPS to **cruise/passenger jetties** (Vizag/Kakinada) to boost tourism; use **PPP/green finance**.
Green Fuels & Clean-Energy Hubs	Leverage **AM Green Kakinada** (2→5 MTPA ammonia; Rotterdam MoU) as export hub; stand up **biofuel/methanol bunkering** at Krishnapatnam & Gangavaram; create **coastal green-energy corridor** via SEZ storage & pipelines; align with **NGSP**.
Environmental Management & Biodiversity	Operationalise **Environment Cells** in all ports; stream **CAAQMS/STP/ETP** data to **GPI & Swachh Sagar**; adopt **spatial mapping** for Coringa, Nizampatnam turtles, Machilipatnam–Yanam fisheries; apply **Working with Nature**; run **community drives** (Sagar Swachhta Saptah).

Key Opportunities for Andhra Pradesh

Topic / Agenda	Opportunity Focus for AP
EBM & Marine Spatial Planning (MSP)	Embed **EBM** in APMB master planning; do **state-level MSP** to map fishing zones, migratory corridors, sensitive habitats; create **APMB–APPCB–Fisheries–Forest** data-sharing; use **EIA + sensors** for adaptive routing/dredging; formal **stakeholder co-management**.
Institutional Strengthening & Digital Governance	Launch **IEMS-AP** to unify DGS/MoPSW/APPCB/APMB data; continuous **capacity building** on MARPOL/OPS/green fuels; set up **Sustainability Division** in APMB for ESG, funding & stakeholder coordination.
Financing & Partnerships	Tap **Green Port Fund, FSDF, carbon credits/RECs**; pursue **IMO GreenVoyage 2050, GMF, GIZ, World Bank**; build **IIT-Tirupati/Andhra Univ/IMU Vizag** R&D programs for low-carbon port design & waste valorisation.
RE & Energy Efficiency for Green Ports	Deploy **rooftop/ground/floating solar**, hybrid **open-access PPAs**; install **BESS** and **port microgrids** for OPS & reefer peaks; electrify **yard equipment** (e-RTG, e-RMG, tractors); meter & report to **GPI** (kWh-from-RE, CO_2e/berth-hour).
AP Priority Actions	**Phase I:** (Krishnapatnam, Kakinada) 10–20 MWp PV + 10–30 MWh BESS tied to OPS & e-yard pilots. **Phase II:** (Gangavaram, Ramayapatnam) hybrid PPA + floating solar. **Tourism focus:** green feeders+BESS for cruise OPS; **cluster PPA** for PRFs & fishery cold chains.

Key Opportunities for Andhra Pradesh

Topic / Agenda	Opportunity Focus for AP
Training, Capacity & Skills	Create **MSTF-AP** with **IMU Vizag/DGS**; short courses on **MARPOL, PRFs, spill response, OPS, green fuels, circular economy, digital governance**; partner institutes for **simulation labs & field demos**; expand **community awareness** & blue-carbon projects.
Cross-cutting: Cruise & Tourism	Market **OPS-ready** clean berths; pair with **coastal biodiversity experiences** (Coringa mangroves, turtle seasons); publish **ESG metrics** to attract cruise lines and premium logistics.

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

पत्तन, पोत परिवहन
एवं जलमार्ग मंत्रालय
MINISTRY OF
PORTS, SHIPPING
AND WATERWAYS

सत्यमेव जयते

PILLAR 6

Coastal Shipping and Opportunities in Coastal Segment and Inland Navigation and Multimodal Linkages

November 2025

पत्तन, पोत परिवहन
एवं जलमार्ग मंत्रालय
MINISTRY OF
PORTS, SHIPPING
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सत्यमेव जयते

Coastal State Workshop

Directorate General of Shipping

Pillar 6: Coastal Shipping and Opportunities in Coastal Segment and Inland Navigation and Multimodal Linkages

November 2025

State Profile

Snapshot of Andhra Pradesh's strategic Initiatives

Current Infrastructure

- **6 operational ports**, including Visakhapatnam (major port), Gangavaram, Kakinada (anchorage and deep sea), Krishnapatnam, and Ravva.
- **4 greenfield ports** under development: Ramayapatnam, Machilipatnam, Mulapeta, and Kakinada Gateway (PPP).
- **3 declared National Waterways**: NW-4, NW-40, NW-104 covering Krishna, Godavari, and other rivers.
- **900+ km of navigable inland waterways** being developed for cargo and tourism.
- **Multimodal connectivity** via 1.6 lakh km of roads, 9,000 km of rail, and expanding air network (7 operational airports + 1 greenfield airport at Bhogapuram).

Strategic Initiatives

- Development of **RO-RO and RO-PAX services** on Krishna and Godavari rivers.
- Integration of **fishing harbors** and **coastal cargo terminals** to support short-sea shipping.
- Creation of **AP Logistics Infrastructure Corporation (AP Link)** to unify logistics entities and enable last-mile connectivity.
- Inland waterways being positioned as a **green logistics spine**, reducing carbon footprint and logistics costs.

Opportunities

- **Modal shift** from road to water-based transport for bulk and container cargo.
- **Linking inland industrial zones** to ports via waterways and freight corridors.
- **Cruise and temple tourism circuits** along rivers to boost marine tourism.
- **Private sector participation** in developing terminals, jetties, and cargo handling infrastructure.

Policy & Incentives

- Maritime and logistics policies offer:
  - **100% SGST reimbursement for 10 years**
  - **Capital investment support**
  - **Stamp duty exemption**

State Profile

Maritime and Trade Profile

Key Initiatives/Investment/Infrastructure Plans

- AP is developing four major new greenfield ports: Mulapeta (Bhavanapadu) (Srikakulam), Ramayapatnam Port (Nellore), Machilipatnam Port (Krishna) and the Kakinada SEZ Port.
- Budgetary allocations: e.g., for FY 2025-26: Rs 100 crore for Mulapeta land acquisition; Rs 50 crore for Kakinada SEZ; Rs 150 crore for Machilipatnam; Rs 100 crore for first phase of Ramayapatnam
- Ramayapatnam ~ 52.91 % complete (deadline December 2025), Mulapeta ~ 27.69 % (target April 2026) as of March 2025.
- Combined cost is ~ ₹17,600–18,000 crore (Rs 17,689.26 crore cited) for this phase.
- Target capacity ~ 145 million tonnes per annum (MTPA) by 2030.

Investment and Employment potential

Investment Potential:

- 16,000 Cr+ (By 2030)
- US $20 billion (By 2035)
- 18,000 Cr+ (By 2047)

Employment Potential:

- 75,000+ (By 2030)
- 100000+ (By 2047)

Nodal Agency:
Andhra Pradesh Maritime Board

Key Targets & Metrics

- The state aims for a cargo handling capacity of approximately 145 million tonnes per annum (MTPA) by 2030 via the development of new greenfield ports.
- A longer-term target: to capture 20% of India's total cargo handled by ports by the year 2047.
- For the shipbuilding/repair sector under the Andhra Pradesh Maritime Policy-2024 (APMP-2024):
  - To grow the state's share in the national ship-building & repair sector to 25% by 2047
  - To establish a large ship-building & repair cluster at Dugarajapatnam (Nellore district) over ~2,000 acres, including core ship-yard units and ancillary industries. Expected investment ~₹26,000 crore, with direct employment ~5,000 and indirect ~30,000.
- Development of four major new greenfield ports – at Mulapeta, Ramayapatnam, Machilipatnam and Kakinada SEZ – with combined investment ~₹17,689 crore, targeting to unlock a US $20 billion Blue Economy by 2035.
- Inland waterways / coastal shipping targets: increase cargo moved via waterways from current ~8 million tonnes to ~14 million tonnes.
- Infrastructure density target: one port or fishing harbour every ~50 kilometres of coastline.

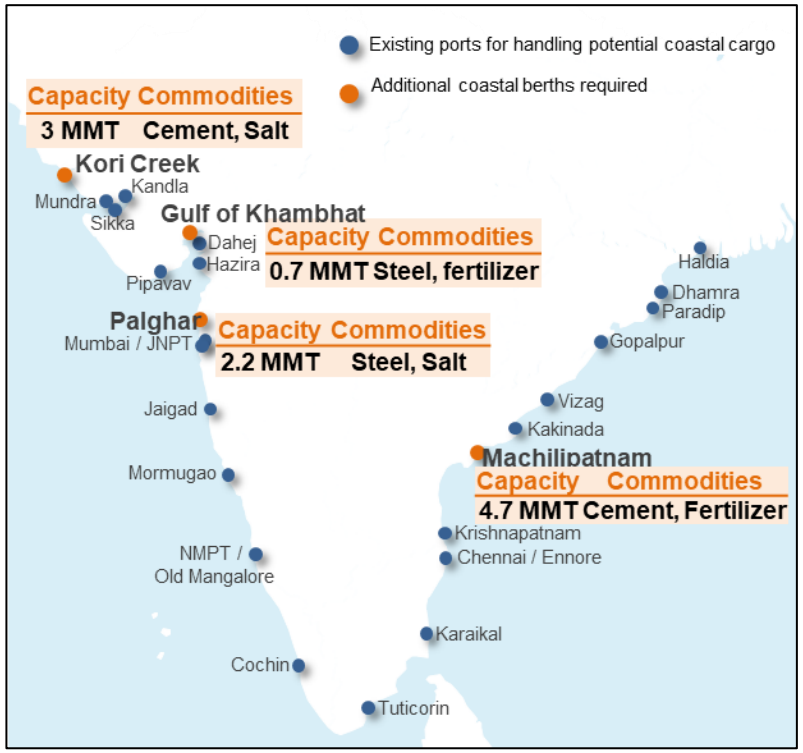
Coastal Cargo*

Interventions to boost Coastal Cargo: Coastal Berth Development

Prioritizing development of coastal berths at four Major ports and four greenfield locations can augment coastal potential by ~34 mn tons

Coastal berths development

- **Prioritise the planned coastal berths at JNPT, Chennai, Cochin & Old Mangalore port**
- 4 coastal berths may be looked at: **Gulf of Khambhat, Machilipatnam, Palghar, Kori Creek**



*Source: Asian Development Bank report, 2019

Key coastal berths, which are already planned/ under implementation

Coastal berths	Cargo potential (FY 25)	Status (as in 2019)	Project Cost [1]
JNPT/Mumbai	~10 MMTPA (Cement/Steel)	Coastal berth at JNPT under implementation	INR 1.7 Bn
Chennai	~2 MMTPA (Steel)	Coastal berth at Chennai under implementation	INR 0.8 Bn
Cochin/Kollam	~8 MMTPA (Tiles/Cement)	Coastal berth planned at Kollam	INR 0.18 bn
NMPT/Old Mangalore	~3 MMTPA (Cement/Foodgrain)	Coastal berth planned at Old Mangalore	INR 0.65 bn

New coastal berths at Gulf of Khambat, Machilipatnam, Palghar & Kori

Project Proponent	Ports/SDCL
Project readiness	Concept stage
Investment Size	~INR 5-10 billion (depends upon dredging & other location specific factors)

Coastal Cargo*

Connectivity projects

Rail & road connectivity to proposed coastal berths & Inland waterway need to be developed in conjunction with sea-side development

Other key connectivity projects

- **Rail connectivity to Machilipatnam port (in conjunction with coastal berth development)**
- Rail connectivity to Hazira port for coastal coal movement (if linkage rationalisation to MCL is undertaken)
- Road connectivity to new coastal berths at Palghar (in conjunction with coastal berth development)
- **Developing NW-4 for transportation of cement to Kakinada/Krishnapatnam ports**
- **Developing Nw-5 for transportation of coal and other cargo to East coast ports**

S.no	Infrastructure Projects	Implementing agency	Funding Source Identified (Yes/No)	Project Cost INR Bn	Project Readiness	Priority
1	Development of dedicated Machilipatnam Port Rail Connectivity from Pedana Station	Private	Yes	0.4	DPR to be prepared	Medium-term
2	Railway infrastructure connecting Hazira Port	Not decided	No	Not available	Project Conceptualization	Long term
3	Last mile approach road for Palghar coastal berth	Not decided	No	Not available	Project Conceptualization	Long term
4	Develop NW4 (from Vijayawada to Galagali on Krishna river) Kakinada- Vijayawada - Muktyala, Vijayawada to Thada	IWAI	No	70.02	Under implementation	Long term
5	Develop NW5 - Phase 1	IWAI	14.62	Steel, Coal	DPR being updated	Medium term
6	Develop NW 5 Phase 2	IWAI	NA	Steel, Coal	Project concept	Long term

*Source: Asian Development Bank report, 2019

Coastal Cargo*

Discussion Points: Key Enablers to support Coastal Shipping and IWT

- **Promoting multimodal movement**

➢**Streamlining operational & policy elements to ensure level playing field for all the modes**

- Freight subsidy is linked to rail distance (disincentive for other modes such as coastal / IWT
- Issues related delays in reimbursement of subsidy in coastal movement
- Address issue of higher GST (12%) on multimodal movement vis a vis single mode

➢ Movement of imports to port hubs (like Haldia/Kolkata) with IWT connectivity and then onward movement by barges

➢ Alignment of supply schedules and demand patterns for coastal districts to aggregate and plan for Scheduled services via containerized coastal movement

➢ Multimodal movement and optimization

Coastal movement share increase to 7% from current 0.5%
IWT movement for east and NE region increasing IWT share to ~2%
Overall modal optimization

Promote standardization through containerization of fertilizers

➢ **Containerized movement in coastal shipping can be 20-25% cheaper than bagged, jumbo bag based coastal movement**

• Making policy recommendations for leveling tariffs and promotion of containerized movement

➢ **"Bulk in -Bulk out" movement of fertilizers, and movement through automated (pumping) bulk loading of fertilizers in containers**

•Concept of "Bulk in-Bulk out" movement of fertilizers from ports and plants a way forward in reducing congestions at the ports/ plants, increasing turnaround time of ships / rakes, while saving on fertilizer subsidy through reducing the port charges, warehouse rent etc.

Road/Rail connectivity to Ports

➢ Connectivity gaps leads to increase in logistics and handling cost thereby increasing the overall transportation cost.

➢ Apart from ongoing Sagarmala projects, new 60 road connectivity and 61 rail connectivity projects have been identified after consultations with MOR, MORTH, State Maritime Boards, Port Authorities

➢ Comprehensive Port Connectivity Plan prepared by DPIIT

*Source: Industry Feedbacks

Coastal Cargo*

Discussion Points: Key Enablers to support Green Shipping

- Shift cargo from road/rail to sea to reduce emissions and logistics cost.
- Transition ships to green fuels and install Energy Saving Devices (ESDs) – requires funding support.
- Policy incentives for cargo movement on vessels meeting green compliance standards.
- 90% long-tenure loans for Hybrid Tugs at major ports to accelerate adoption.
- Regular provision of green shore power at ports for sustainable operations.
- Coastal & Inland Cargo Facilitation Center (CCFC) under IWAI – drive demand via outreach and collaboration with PSUs, trade bodies, private players, and rail/road ministries.
- Center for Marine Economy & Connectivity (IPA & RIS) – harmonize coastal shipping agreements with BIMSTEC countries to boost regional waterways movement.
- National Center for Excellence for Green Ports & Shipping (with TERI) – develop hydrogen hubs and green coastal vessels.

*Source: Industry Feedbacks

Coastal Shipping Act, 2025

An Overview of the Provisions and improvements

1. Simplified licensing

Moves the requirement for **Indian-flagged vessels** to obtain a general trading license for coastal operations, easing compliance burdens and promoting domestic participation.

2. Definition of coastal trade

Definition of '**Coasting Trade**' expands beyond goods and passenger carriage to include services like exploration, research, and other commercial activities (excluding fishing).

3. Integration of Coastal and Inland Waterways

Integrating **coastal and inland waterways** to create a **seamless multimodal transport network, reducing transshipment needs and improving efficiency.**

4. Database of coastal shipping

A **national database** is planned to be created for better real time information and support in better decision-making pertaining to coastal trading.

5. Strategic plan

Creation of **National Coastal and Inland Shipping** Strategic Plan biennially, aiming to improve route planning, forecast traffic, and foster sustainable growth

6. Revision in penalty and environmental standards

Penalties have been increased, and environmental standards have been included for enhanced compliances and promotion of sustainable growth

The Act promotes the use of **Indian-built vessels** and supports the domestic shipbuilding and repair industries, fostering self-reliance in the maritime sector

National Database for Coastal Shipping

The Vision

Current State	Interventions	The Desired State
Segregated Data based Processes Documents circulating in the trade system across various portals	**Digitize the Flow of Information in Coasting Trade**	**Automation** Digital clearance, licenses, trading, reporting, and KYC processes
Limited Access to Vessels, License details, Service Providers	**Reduce the Logistics Cost and Cost of Capital**	**Widened Logistics Ecosystem** National/ Global One Stop Shop type service availability integrating Coastal with National trade
Outdated Regulations Existing coastal shipping regulations may not reflect the operational realities of modern logistics, multimodal integration, or digital workflows.	**Align the Laws and Regulations**	**Legal Framework** Use of data and electronic documentation only
No Standardized Formats Lack of standardized wording and/or formatting	**Develop Digital SOPs**	**Interoperability across Systems** Seamless trade flows between different technology platforms and Government initiatives

National Database for Coastal Shipping

Current Digital Initiatives in the Indian Maritime System

Digitalization Push

Modernize ports, optimize cargo handling, reduce congestion, and enable paperless trade.

SAGAR SETU Platform

Unified digital system connecting 80+ ports and 40 stakeholders for EXIM operations and ease of doing business.

Digital Centre of Excellence (DCoE)

MoPS&W–CDAC partnership to drive AI, IoT, blockchain innovations under Maritime India Vision 2030 & Amrit Kaal Vision 2047.

DRISHTI Framework

KPI-based performance monitoring and transparency across ports.

Standardized Scale of Rates (SOR)

Harmonized port tariffs for cost optimization and digital integration.

Green Initiatives

"Gateway to Green" report – Paradip, JNPA, DPA as global hubs for green hydrogen (target: 5 MT by 2030).

Sagarmala Programme

Port modernization, connectivity, blockchain, IoT, automation for efficiency and transparency.

Innovation Ecosystem

Sagarmala Startup & Innovation Initiative (S2I2) to foster maritime tech startups and MSMEs.

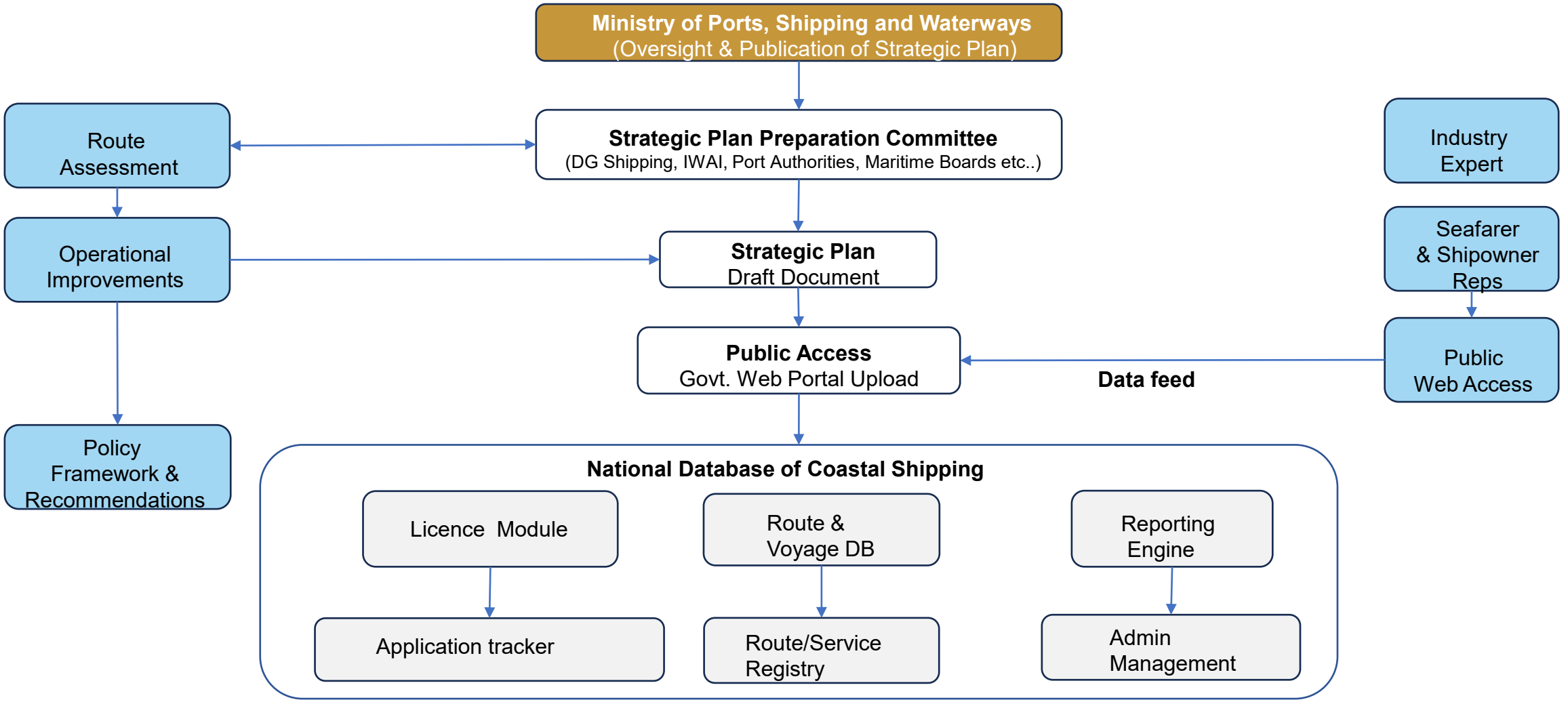
Collaboration Platforms

Partnerships with academia, research centers, and private sector for indigenous tech and global competitiveness.

The missing link in India's logistics Digital transformation is Coastal Trade — and it is now being integrated to unlock efficiency, sustainability, and regional connectivity

National Database for Coastal Shipping

The Proposed Setup (as per the Coastal Shipping Act, 2025)



National Database for Coastal Shipping

Our Line of Action- Stakeholders identification and Data Collection

Key Activities

- **Review existing maritime/ coastal shipping data sources and systems.**
- Identify and list all the concerned stakeholders in the Maritime ecosystem and coasting trade.
- **Assess data availability and readiness.**
- Prepare strategic options for data collection and synthesis.
- Evaluate data usage across the Stakeholder ecosystem.
- **Baseline data collection framework finalization**
- Align data strategy with National Coastal Shipping Database and also other national digital initiatives.

Maritime Ecosystem Stakeholders

Inland Waterways Authority of India	Major Port Authorities (12 nos.)	State Maritime Boards	Customs Department
Ministry of Ports, Shipping & Waterways	Ship Owners	Seafarers	Shipping Corporation of India
DMICDC	Indian Railways	CHAs/ Freight Forwarders	MeiTY
GSTN	MoRTH	Ministry of Commerce	NICDC

Explore avenues for MoU and Integration with **NLP-Marine/ ULIP** to include the major stakeholders in the ecosystem

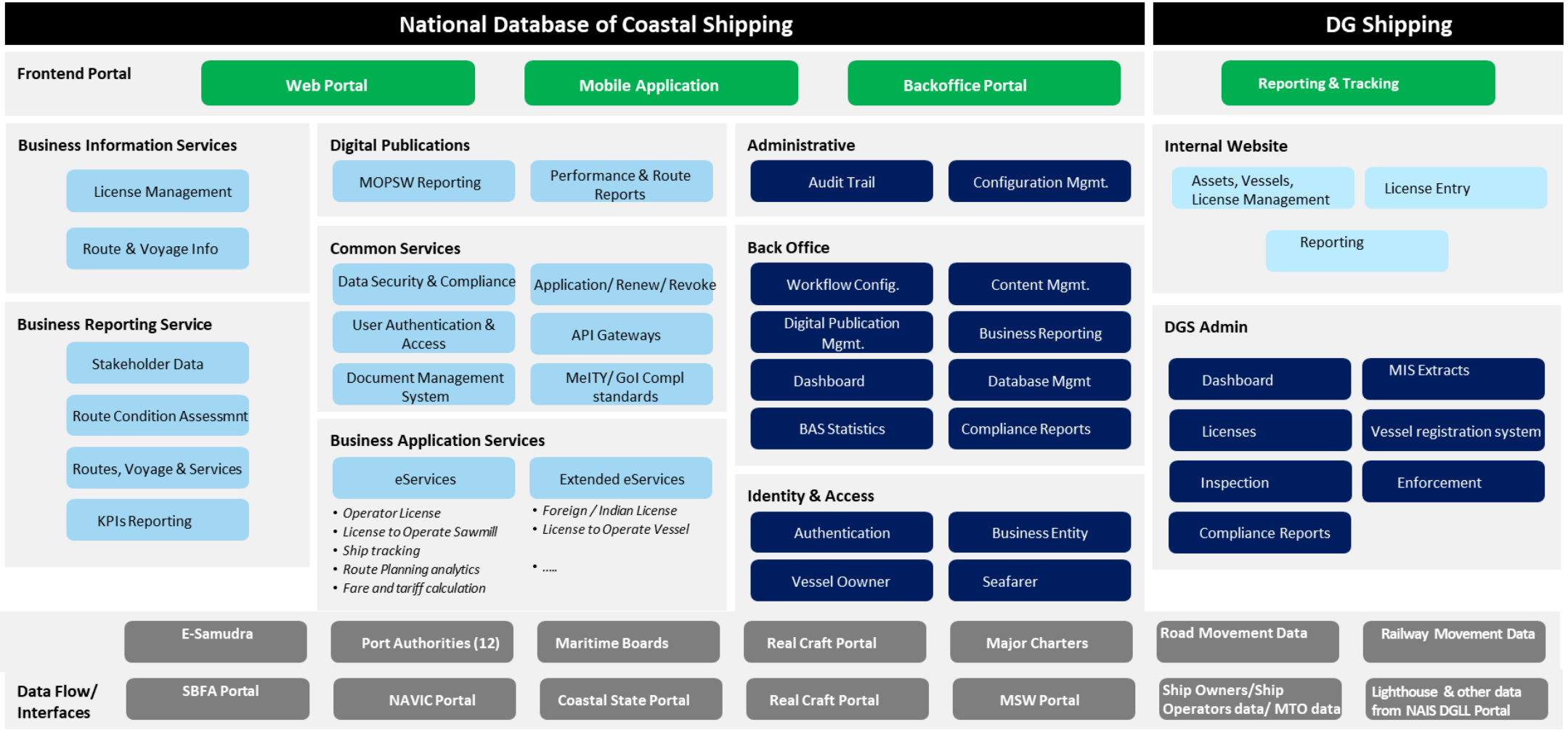
National Database for Coastal Shipping

Planned Data Points to be Integrated (Phase-I)

- Applications Received For Licence Under Section 4 (of the CS Bill)
- Licences Granted Under Section 4(of the CS Bill)
- Terms And Conditions Of The Licences So Granted
- Routes, Voyages And Services In The Coasting Trade Of India
- Requirement Of Applicants For Grant Of Licences Under Section 4(of the CS Bill)
- Expired And Revoked Licences Under Section 5(of the CS Bill)
- Information Reported To The Director-general Under Section 6 (of the CS Bill)
- Such Other Information As The Director-general May Deem Fit

National Database for Coastal Shipping

Tentative Functional Architecture of the Database



National Database for Coastal Shipping

Assessing the System / State readiness

Section	Description	Mandatory (Y/N)	Owner	Remarks
A. Governance & Sponsorship	Nodal authority designated (State Project Lead & Technical PoC)	Y		
	State participation in NDCS Steering/Working Groups	Y		
	Data-sharing agreement / MoU (scope, SLAs, security, IPR)	Y		
	Change-control alignment with NDCS	Y		
B. Legal, Policy & Compliance	Alignment with Coastal Shipping Act, 2025	Y		
	Information-security aligned to ISO 27001	Y		
C. Stakeholder & Process Readiness	Stakeholder map finalized (maritime board, minor ports, terminals etc.	Y		
	SOPs for State wise license/ voyage/ crew/ port-call data flows into NDCS	Y		
	Minimum stakeholder profiles prepared (≥10-15 key State stakeholders)	Y		
D. Data Inventory & Quality	Inventory: Licenses/Permissions (Coastal trade, SVL, passenger, special cargo, charter)	Y		
	Inventory: Vessel registry attributes (name, IMO, flag, GT/NT, build year, class, certificates)	Y		
	Inventory: Voyage/route data (ports of call, cargo types/quantities)	Y		
	Inventory: Crew-seafarer linkage to INDoS (where captured)	N		
	Quality: Completeness ≥ 98 % for mandatory fields	Y		
	Quality: Validity checks, deduplication, master-data alignment	Y		
	Data dictionary & lineage with update frequency & owner	Y		
E. Integration & API Readiness	Existing systems in use by the State	Y		
	Availability of APIs/			

National Database for Coastal Shipping

Interventions Sought from the State Government

- Nominate nodal officer and technical contact for NDCS integration
- Signing a data-sharing agreement or MoU with DG Shipping, if required
- Compliance with licensing and voyage processes aligned with the Coastal Shipping Act, 2025
- Provide access to complete inventory of vessel, license, and voyage data
- Provide access to Available Systems and necessary APIs for integration

THANK YOU

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