

# Maritime Efficiency

## Opportunities and Obstacles



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# Global Competitiveness

**2**

Indian Ports in Global top 30 Ports (Mundra & Visakhapatnam), 2023

(No Indian Port in Top 30 in 2015)

**0.9** days

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

(4 days in 2015)

**Top 3**

In trained manpower, 2025 with >3.2 Lakh Indian Seafarers

(1.2 lakh Seafarers in 2014)

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

Rank in global ship recycling, 2024

(3<sup>rd</sup> rank in 2017)

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

Largest ship building sector globally with rapid capability expansion, 2024

(23<sup>rd</sup> Rank in 2016)

**41<sup>st</sup>**

Rank in World Competitiveness Index, 2025

(71<sup>st</sup> Rank in FY 2015)

**14<sup>th</sup>**

Rank in Liner Shipping Connectivity Index, 2024

(30<sup>th</sup> Rank in 2014)

**38<sup>th</sup>**

Rank in Logistics Performance Index, 2023

(54<sup>th</sup> Rank in 2014)



# Contribution of the Blue Economy

Towards Viksit Bharat 2047

## India and its Blue Economy

**95%**

By trade volume

**65%**

By trade value

## India's Infrastructure Leverages

**12**

Major Ports

**200+**

Non-major Ports

**11,098 km**

Total length of India's coastline

## India's Vessel Advantage



India has 1,520+ merchant vessels with 13 mn+ GT capacity



India ranks 18<sup>th</sup> globally in flag registration and 19<sup>th</sup> globally in carrying capacity

***India is emerging as the leader of the Blue Economy in the world with multiple initiatives focusing on infrastructure, business and the overall economy***

Port-led Development

Ports for Prosperity

Policy reforms driving EoDB, modern infrastructure and multi-modal logistics

# India's Vision for the Maritime Sector

## MARITIME INDIA VISION 2030



### Maritime India Vision (MIV) 2030

Target: India to be a **Top Seafaring Nation** with >20% share of global seafarers.

- Interventions:
  - Establish **simulation centres** at large ports for crane & operations training.
  - UNCTAD Port Management Programme with Indian universities.
  - **International joint training** (e.g., Rotterdam Human Port Capital, Antwerp Global Training Institute).
  - Vocational "Hire & Train" model with NSDC.
  - Drive **research, faculty development & global academic partnerships**.



### Maritime Amrit Kaal Vision 2047

- Focus on **world-class education, research & training facilities** to position India as a **global maritime leader**.
- Emphasis on **next-gen digital/tech training** for smart ports, automation & blue economy clusters.
- Holistic **maritime professional development** across seafarers, port employees & allied services.
- Long-term vision: integrated ecosystem for **continuous skill upgradation, R&D, and global faculty/student exchanges**.



# Maritime Efficiency: Opportunities & Obstacles



## Improving Operations

Towards a ***Greener***  
Shipping Sector

## Enhancing Efficiency

Towards a ***Digital***  
Shipping Sector

## Safety Solutions

Towards a ***Safer***  
Shipping Sector



An aerial photograph of a port area. On the left, there are several rows of stacked shipping containers in various colors (blue, red, white, green). In the center, a large yellow gantry crane is positioned over a large cargo ship. The ship is docked at a pier, and its deck is visible. The water is a deep blue-green color. The sky is clear and blue. The text "Improving Operations Towards a Greener Shipping Sector" is overlaid in white on a semi-transparent dark blue background.

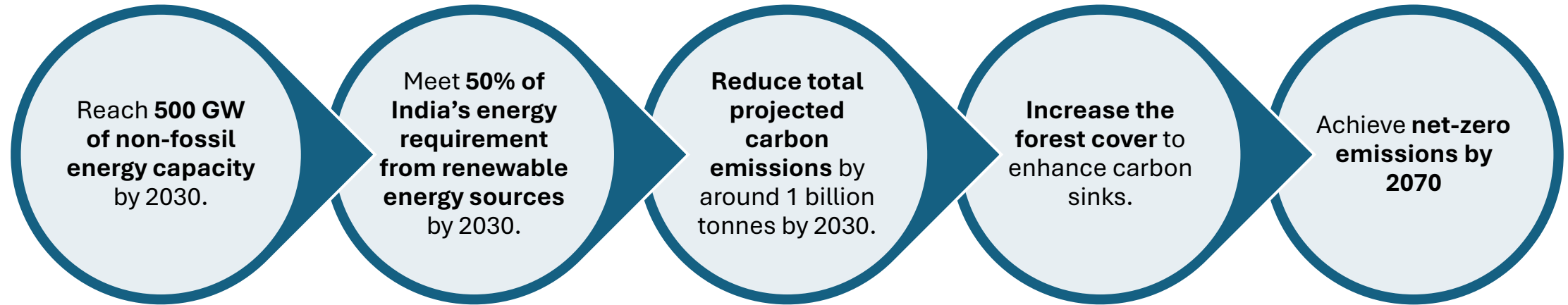
# Improving Operations Towards a Greener Shipping Sector



# India's Panchamrit Action Plan



*The Panchamrit action plan is a five-fold strategy proposed by India to address climate change.*







# 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.



# Indo-Danish Partnerships in Green Maritime



## Indo Danish Centre of Excellence

A flagship effort in this transformation, established under the 2024 Maritime Cooperation MoU. This Centre is operational through India's National Centre of Excellence for Green Ports and Shipping (NCoEGPS), with TERI as the knowledge partner.

## National Portal for Green Ports & Shipping

- Went live in February 2025 — serving as India's single digital platform for best practices, tools, and capacity building.

## Green Voyage 2050:

- India was selected as a pioneer lead country under IMO's GreenVoyage2050 programme, with pilot projects on alternative fuels already underway.

## National Guidelines for Alternative Fuel Bunkering

At the Kochi Green Fuels Workshop in August 2025, both nations reaffirmed collaboration and agreed on clear deliverables — from finalizing National Guidelines on Alternative Fuel Bunkering by end-2025, to developing training modules on methanol and ammonia handling, and identifying two to three pilot Green Corridor routes.



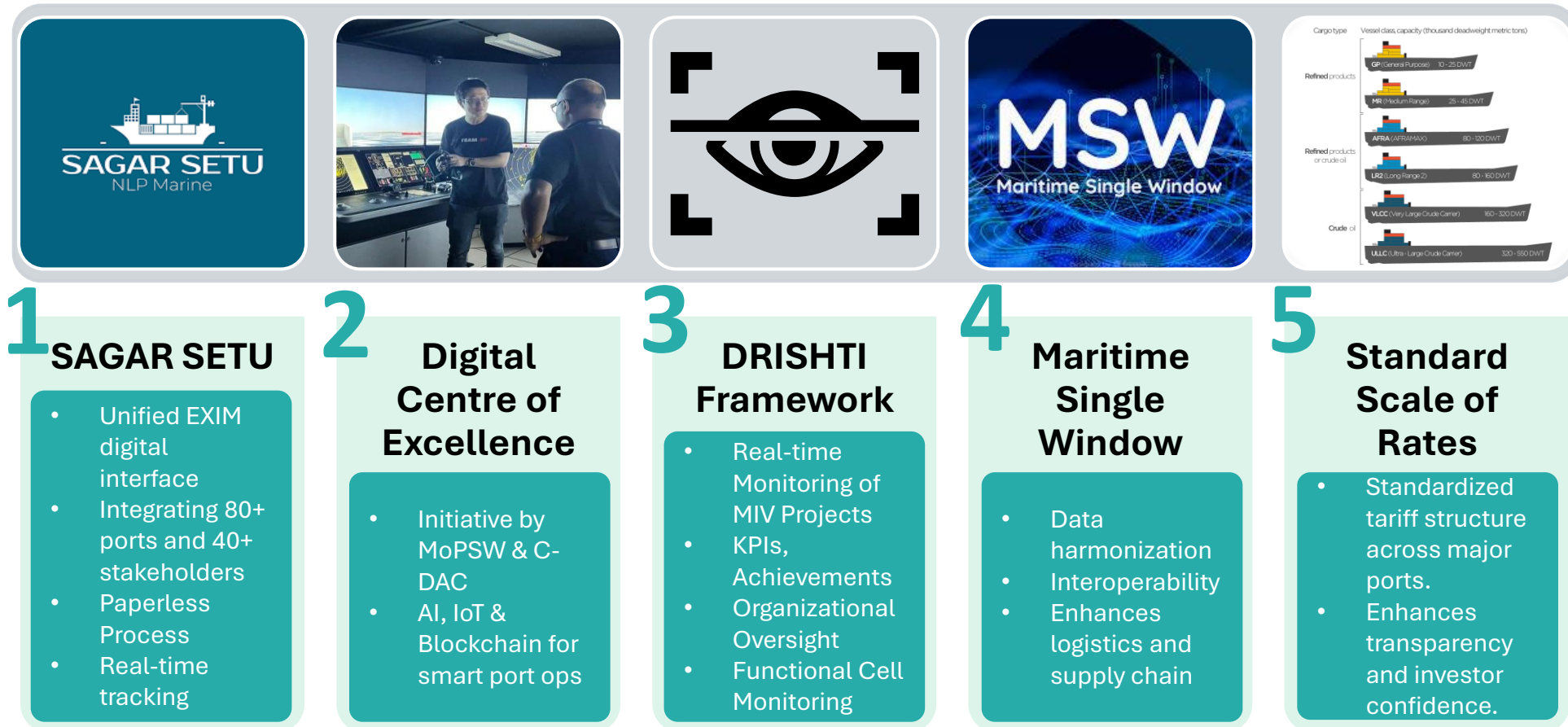
An aerial photograph of a port area. On the left, there are several large stacks of colorful shipping containers (red, blue, white, and orange) arranged in neat rows. In the center, a large yellow gantry crane is positioned over a ship. The ship is docked at a pier, and its deck is visible. To the right of the ship, there is a body of water with a small boat moving across it, leaving a wake. The overall scene depicts a busy and organized shipping operation.

# Enhancing Efficiency Towards a Digital Shipping Sector



# Anchored in Innovation: Digital Reforms in Maritime India

Anchored in **Maritime India Vision 2030** and **Amrit Kaal Vision 2047**. Aims to transform India into a **global maritime powerhouse** through **technology**, **sustainability**, and **governance**.



# Digital Transformation and Governance

## Technological Interventions/adoption in the Maritime Training Sector

**Empowering trainers and trainees to achieve excellence beyond traditional boundaries**



**MTI Modules- 3 +  
helpline and  
escalation  
matrix**



**Learning  
Management  
System**



**Web based  
simulation**



**Digitization of  
Training and  
Assessment  
Record (TAR)**



**Centralized  
Attendance  
system CAS 2.0**



**Use of new analytics tools  
for insight building and  
effective decision making**



**Dynamic Batch  
sizing**



**Placement  
portal and  
authentic job  
portal**



**AI & Immersive  
technology  
strategy**



**Faculty  
development  
Program**



# Indo-Danish Partnerships in Digitalization



## Indo Danish Centre of Excellence

The Indo-Danish Centre of Excellence is now advancing work digital certification, and regulatory innovation, supported by a structured three-year work plan.

## Maritime Digital Transformation Workshop

Held in Mumbai in September 2025, our teams — from DGS, MoPSW, and DMA — reached consensus on a roadmap, marking a major milestone toward digital governance in the maritime sector.

## Maritime Cybersecurity Framework

Establishment of a dedicated Maritime Cybersecurity Unit under DGS, in collaboration with Denmark's CFCS, to conduct threat assessments, develop cyber regulations, and align with IMO best practices.

## Capacity Building & Joint Exercises

Launch of training programmes, cybersecurity audits, simulation exercises, and joint threat intelligence sharing between India and Denmark to build a resilient maritime cyber workforce.



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# Safety Solutions Towards a Safer Shipping Sector





# Safety and Security in the Maritime Industry



Charting India's maritime destiny through safe, secure, and sovereign seas — strengthening our global presence while ensuring sustainable, resilient, and inclusive ocean governance.

## Two guiding pillars of Guardians of the Sea

### Anchoring Excellence

- Strengthening maritime safety standards
- Empowering skilled and resilient seafarers
- Advancing digital and sustainable innovation
- Ensuring compliance through global best practices
- Fostering collaboration for secure and sovereign seas

### Navigating Safely

- Enhancing coastal and port security systems
- Promoting risk-based vessel inspections and audits
- Strengthening search and rescue infrastructure
- Leveraging technology for real-time maritime surveillance
- Building awareness and preparedness for safer seas



# Safety First – ‘Suraksha Sarvapratham’



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

To reduce accidents and minimize risks aboard ships.

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

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

Instill a culture of safety among seafarers.

Web-based learning management systems for training.

Free online courses will be developed.

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

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



# Indo-Danish Partnerships in Safety



## Collaboration via the Joint Working Group (JWG) and Centre of Excellence (CoE)

- Provides a platform to formalize safety practices, exchange knowledge, and implement best practices in maritime safety across ports and shipping.

## IMO-Aligned Safety Regulations

- India-Denmark cooperation emphasizes alignment with IMO conventions (SOLAS, MARPOL, ISPS), including integrating safety into digital and automated port operations.

## Threat Assessment for Ports & Shipping

- Denmark's CFCS conducts regular assessments to identify maritime threats such as accidents, cyber-physical risks, and operational vulnerabilities, which India can integrate into safety planning.

## Capacity-Building & Training Programs

- Joint initiatives focus on training port personnel and seafarers in emergency response, operational safety, and hazard management.

## Standardized Audits & Inspections

- The partnership supports harmonized safety audits for vessels and ports to ensure compliance with both national and international standards.

## Integrated Monitoring & Surveillance

- Combining India's National Maritime Domain Awareness Centre (NMDAC) with Denmark's monitoring frameworks enhances situational awareness for safer navigation and port operations.





**संगच्छध्वं  
संवदध्वं  
सं वो मनांसि  
जानताम्।**

*“Move together,  
speak together,  
may your minds  
be in harmony.”  
(Rigveda 10.191.2)*

**Thank You**