



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

# Growth, Investment and Opportunities in India's Port Sector

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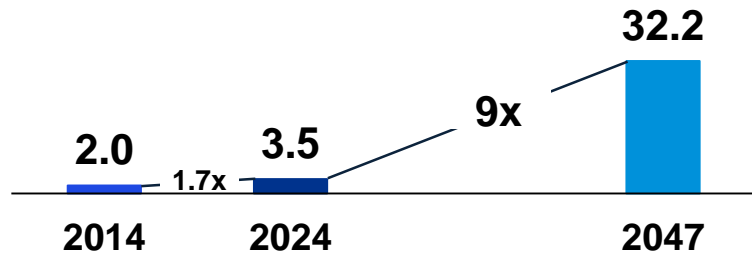
April 2026

An aerial photograph of a busy shipping port. The foreground is dominated by rows of stacked shipping containers in various colors, including red, blue, green, and white. Some containers have logos like 'KAITIC' and 'HYUNDAI' visible. In the middle ground, there are several large gantry cranes used for loading and unloading ships. The background shows a wide body of water, likely a harbor or bay, with more port infrastructure and a city skyline in the distance under a clear blue sky with some light clouds.

# Sector Overview

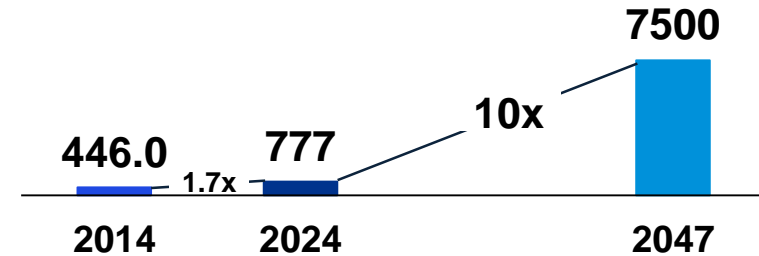
# India's Global Position in Trade and Maritime Growth

GDP (USD trillion)

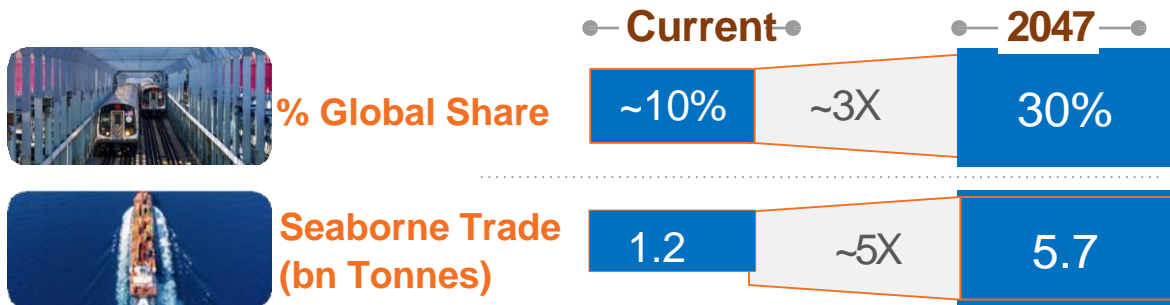


Increase in EXIM Trade from ~USD 1.1 Tn to ~USD 10 Tn by 2047

Exports (USD Billion)



## Seaborne Trade



Country / Port System	Total Throughput (MMT)
China (All Ports)	~17,600 MMT
United States (All Ports)	~2,360 MMT
Australia (All Ports)	~1,709 MMT
India (Major + Non-Major Ports)	~1,602 MMT
Singapore (National Port System)	~623 MMT
Netherlands (Port of Rotterdam)	~436 MMT

India's overall Estimated Port Traffic by 2047: 7,000+ MMT

# India Maritime Sector



## Ports

- Total Ports: **231**
  - i. Major Ports: **12+2**
  - ii. Other than Major Ports: **217**
- Cargo Handling Ports: **80**
  - i. Exim Ports: **58**
  - ii. Non- Exim Ports: **22**



## Shipping

- Indian flagged vessels: **1,591**
- Seafarers: **3.18 lakh**
- Lighthouses: **203**



## Waterways

- No. of operational NWs: **32 (Length 5,155 km)**
- Annual Cargo growth in the past decade: **21%**
- Cargo modal share: **2%**

**Employment Generated (Direct + Indirect) across Ports, Shipping & Waterways : ~74,00,000**



# Progress, Reforms and Action Plan

## Ports

# Ports Sector - Overview

Indian Coast Line  
~11,000 km

Major Ports  
12+2 (under development)  
(Vadhvan and Galathea Bay)

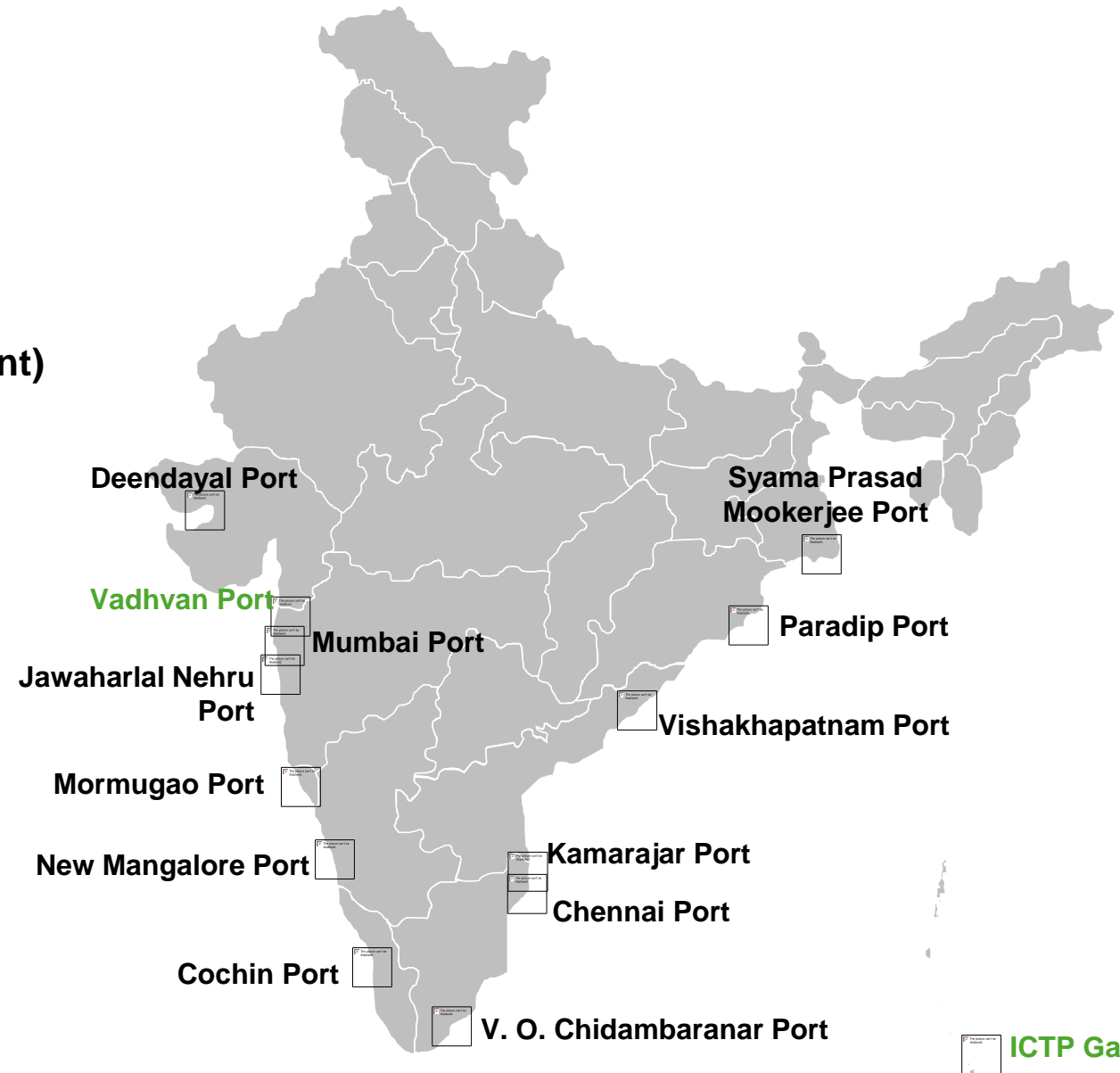
Non-Major Ports  
217

Cargo handling  
Ports 80  
(58 EXIM + 22 Non-EXIM)

Total Capacity  
2,771 Million Metric Tonnes

Total Berths at Major Port  
283

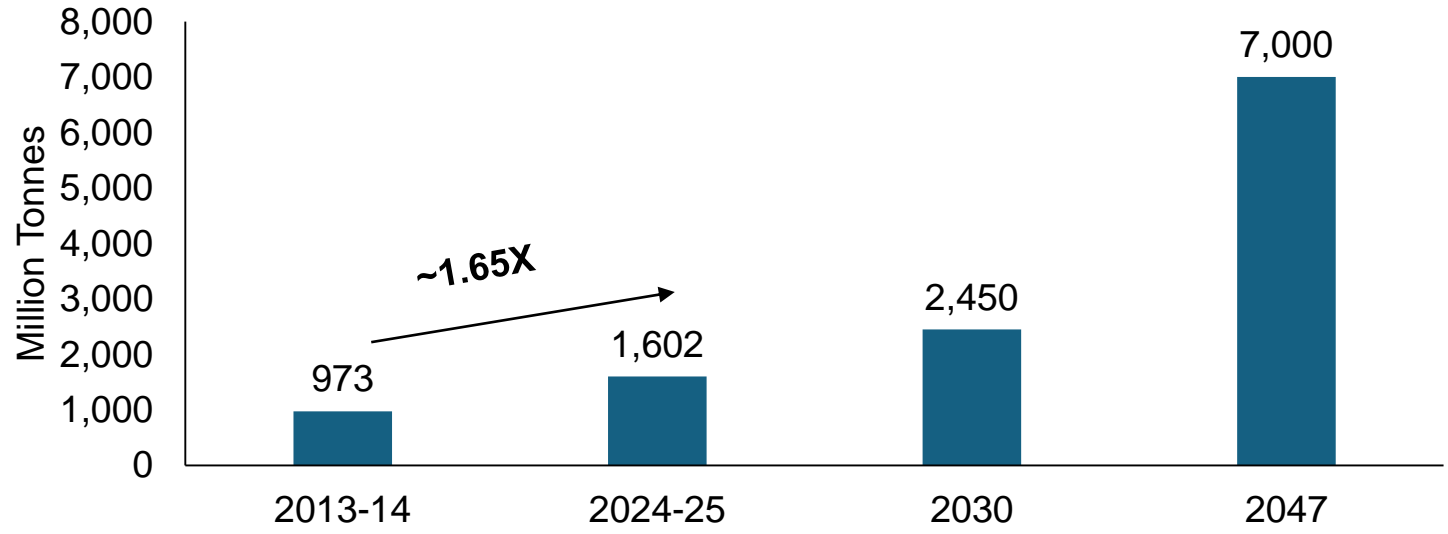
Total PPP & Captive  
Berths at Major port  
121



 Major Ports  
 Major Ports Under Development

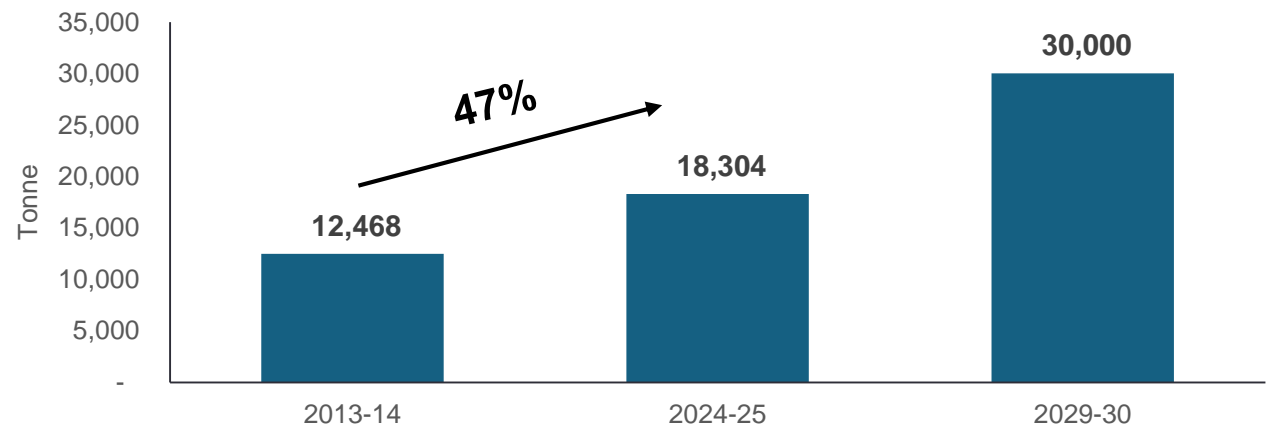
# Ports' Performance Indicators

Cargo Volume handled at Indian Ports (Million Tonnes)

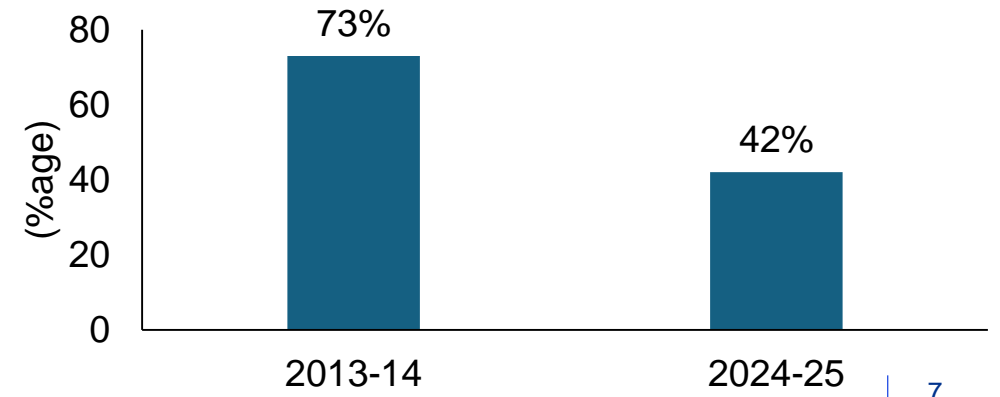


JNPA – Bharat Mumbai Container Terminal (BMCT)

Productivity (Output per Ship Berth Day)



Operating Ratio  
(Total Operating Expenses / Total Operating Revenue)



# Transformative reforms to promote port development



## FLAGSHIP PROGRAMS

- **Sagarmala program** – Port led development for robust economic growth
- **Harit Sagar** – Green Port Guidelines, 2023
- **Sagar Aankalan** – Guidelines for Indian Port Performance Index



## INVESTMENT FACILITATORS

- **Revised Model Concession Agreement** – Making sector attractive for PPP
- **Revised tariff guidelines** – Market autonomy in tariff fixation
- **Captive Policy, 2016 (under revision)** – Guidelines for awarding waterfront & land to Port Dependent Industries
- **Maritime Development Fund** – Financial assistance to India's Maritime sector



## ENABLING INITIATIVES

- **Major Port Authorities Act, 2021**
- **Indian Ports Act, 2025** – replaces the century-old Indian Ports Act, 1908, aims to create a **modern, unified framework for all ports.**
- **Port Land Policy, 2014 (under revision)** – Framework for how major ports lease & license land they own or manage
- **Digitization of operational processes** – NLP-Marine, Maritime Single Window, etc.
- **One Nation: One Port Processes To** standardize port processes across all the Ports

Investment Reforms

# Key Upcoming Large- Scale Projects

## KEY LARGE-SCALE PROJECTS

Strong pipeline of 48 investable projects in next 5 years, worth ~ INR 1,10,000 crore

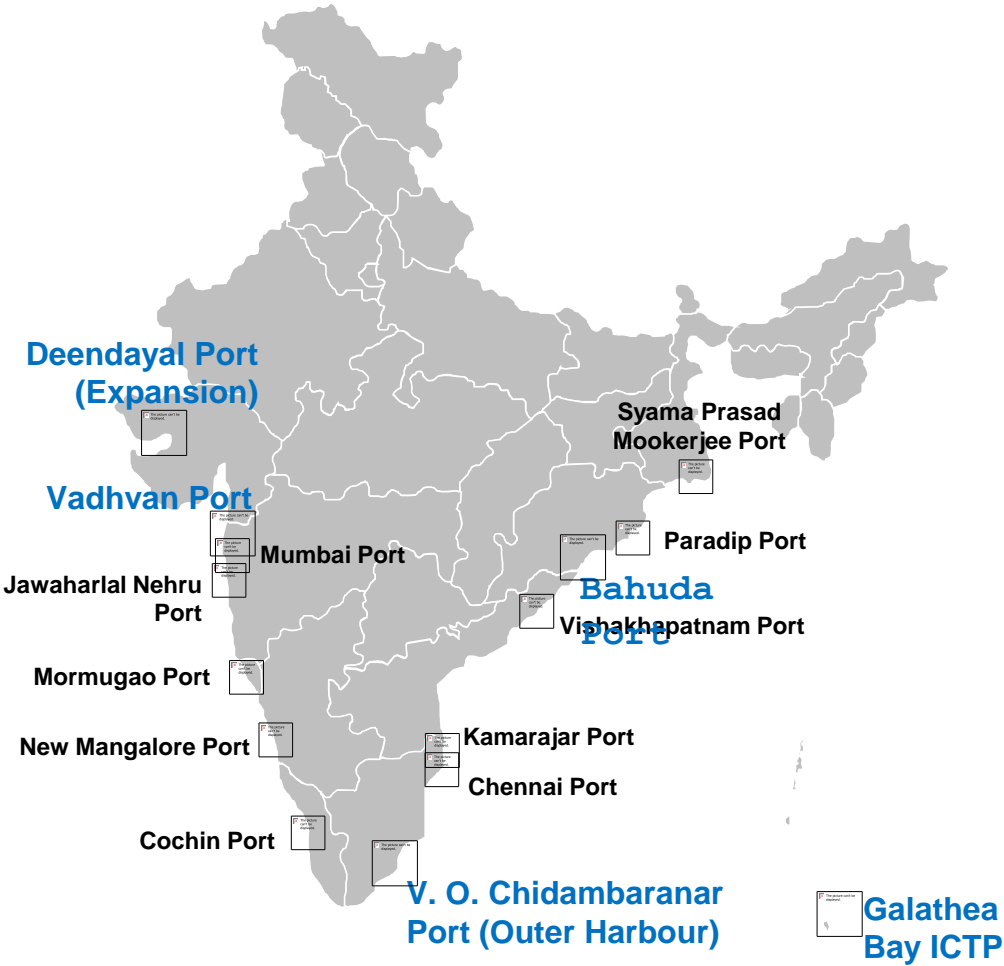
**Vadhavan Port (Maharashtra):** 23 Mn TEU mega Container Port (~USD 9.2 B)

**Galathea Bay ICTP (Great Nicobar):** 20 Mn+ TEU Transshipment Hub (~USD 4.3 B)

**Outer Harbour – V.O. Chidambarnar (Tuticorin) Port:** 5 Mn TEUs (~USD 1.7 B)

**Bahuda Port (Odisha):** 150 MTPA Multipurpose Terminal (~USD 2.6 B)

**Deendayal Port:** New 135 MTPA modern terminal (outside Kandla Creek – 6 km waterfront)



# Action Plan for Port led industrialization

Estimated Investment: ~₹ 53,000 Crore

Shipbuilding Clusters

4

Industrial Parks

8 (2 existing)

Multi-Modal Logistics Parks

20 (4 existing)

Green Hydrogen Hubs

3 (ongoing)

Ship Repair Clusters

2 (ongoing)

Salt Land

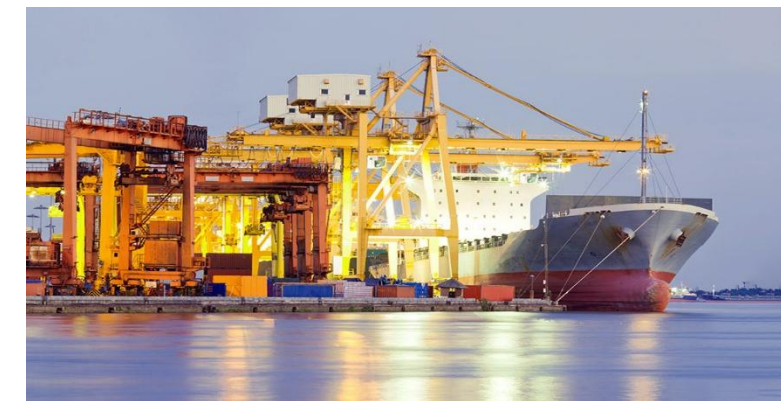
25,000 (Acres)



Special Economic Zone at JNPA



Green Hydrogen Hubs



SPEEDZ at Tuticorin Port

# Green and Sustainability

- 1 | Green Hydrogen Hubs at Deendayal, Paradip and Tuticorin Ports
- 2 | Green Tug Transition Programme
- 3 | Zero Emission Trucking
- 4 | Shore to Ship Power Supply
- 5 | RE Share to be Increased from 26% to 60% by 2030 & 90% by 2047



***1 Mega Watt Green Hydrogen Plant, Deendayal Port***



***Electric truck at Jawaharlal Nehru Port***



**Progress, Reforms and Action Plan**

**Digital Initiatives**

# PM Gati Shakti – National Master Plan (NMP)

BISAG Platform for Geospatial Planning | Digital Backbone for Infrastructure Development



## WHAT IS IT?

- 1 PM Gati Shakti is India's National Master Plan for multi-modal connectivity
- 2 BISAG-N (Bhaskaracharya National Institute for Space Applications) provides the GIS backbone
- 3 Integrates 16 Ministries' infrastructure data on a single geospatial platform
- 4 Enables holistic planning of ports, roads, railways, pipelines & logistics corridors

### Geospatial Dashboard

Real-time visualization of port hinterland, logistics networks & last-mile connectivity gaps

### Multi-Modal Integration

Seamlessly connects sea, road, rail and inland waterway planning for holistic infrastructure decisions

### Project Tracking

Monitors ₹100+ lakh crore infrastructure projects across 16 ministries via GIS layers

### Smart Decisions

Data-driven site selection, capacity forecasting and investment priority mapping for future ports

16 Ministries Integrated

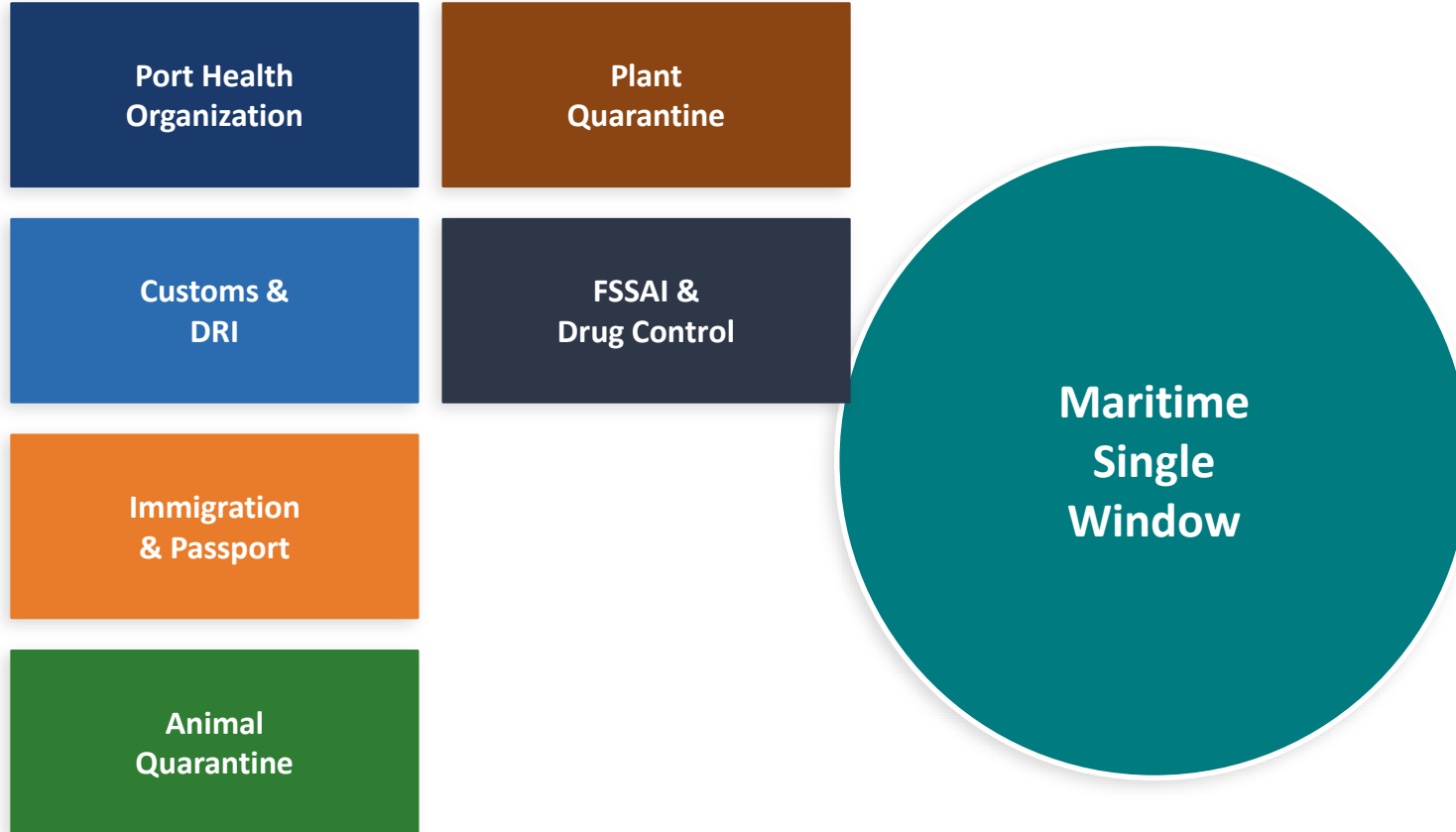
₹100+ Lakh Crore Projects Tracked

1,200+ GIS Layers

Supports Sagarmala Programme

# Maritime Single Window (MSW)

Enhanced Ease of Doing Business (EoDB) | Integrated with Electronic Business Suite (EBS)



## KEY BENEFITS

- ✓ Single submission of ship arrival/departure documents
- ✓ 24×7 digital processing, zero manual intervention
- ✓ Turnaround time reduced by up to 30%
- ✓ Integrated with EBS for auto-fee computation
- ✓ Real-time status tracking for trade community
- ✓ Compliant with IMO FAL Convention

12+ Regulatory Bodies

Pan-India Deployment

IMO FAL Compliant

Paperless Clearance

# E-Samudra Project

Digitalization of DG Shipping Operations | Flagging, Certification & Seafarer Services



## Phase 1

2021-22

Ship Registration & Flagging Portal  
Online survey applications

## Phase 2

2022-23

Seafarer Certification (CoC/CoE)  
DG Shipping e-payments

## Phase 3

2023-24

Port State Control records  
Incident Reporting System

## Phase 4

2024-25

Integration with MSW & EBS  
AI-based compliance analytics



Digital Registry

35,000+  
ships registered



Seafarers Served

1.7 lakh+  
certificates issued



Processing Speed

72 hrs → 2 hrs  
approval time



Integrations

EBS, MSW,  
Passport Seva

## IMPACT HIGHLIGHTS

- ✓ Eliminated 100% paper-based DG Shipping processes
- ✓ India's maritime ranks improved in World Bank LPI
- ✓ Transparent grievance redressal portal
- ✓ Supports 'Ease of Doing Business' mandate

# Port Automation

Digital Twin | IoT | 5G Deployment | Automated Weighbridges | Remote Operations



## Digital Twin

Virtual replica of port infrastructure for real-time simulation, predictive maintenance and capacity optimization

30% OpEx reduction

## IoT Deployment

10,000+ sensors across berths, cranes, gates and cargo yards for live asset tracking and environment monitoring

24x7 monitoring

## 5G Connectivity

High-speed 5G networks enabling ultra-low-latency crane operations, autonomous vehicles and real-time video analytics

<10ms latency

## Automated Weighbridges

RFID-enabled automatic weighing of vehicles at gates, reducing dwell time and eliminating manual errors

3 min → 20 sec

## Remote Operations

Control rooms enabling remote operation of cranes, gates and yard equipment—reducing on-ground personnel risk

40% productivity gain

## AI Analytics

Machine learning models for vessel ETA prediction, berth allocation, stacking optimization and demand forecasting

95% forecast accuracy

# One Nation One Port Process (ONOP)

Elimination of Paperwork | Streamlining of Port Processes Across All Major Ports



## BEFORE – Fragmented Processes

- ✗ Inconsistent documentation across 13 major ports
- ✗ Manual paper-based gate entry, vessel arrival forms
- ✗ Port-specific SOPs — no standardization
- ✗ Repeated data submission by shipping lines
- ✗ Cargo dwell time 5–7 days due to procedural delays
- ✗ No real-time visibility into cargo status



## AFTER – One Nation One Port Process

- ✓ Uniform SOPs deployed across all 13 Major Ports
- ✓ 100% digital gate entry with RFID/FASTag integration
- ✓ Single-window document submission via Port Community System
- ✓ Electronic pre-arrival data from shipping lines
- ✓ Cargo dwell time target: under 24 hours
- ✓ End-to-end visibility for importers, exporters & CHAs

13 Major Ports Covered

5-day → <24 hr Dwell Time

Zero Paper Gate Entry

₹500 Cr+ Logistics Savings

# National Inland Vessel & Crew Registration System






Centralized Digital Registry for Inland Waterways | Project Under Implementation



## WHY THIS MATTERS

- 1 India has 14,500+ km of navigable inland waterways
- 2 ~0.5 lakh inland vessels operate across country
- 3 No centralized registry — state-wise fragmented records
- 4 Difficulty in crew certification & verification
- 5 Accidents due to unregistered, substandard vessels
- 6 IWT sector contributes only 2% of freight — huge potential

## SYSTEM FEATURES

-  **Central Vessel Registry**  
Unique national ID for every inland vessel with owner details, class & survey records
-  **Digital Crew Certification**  
Online CoC/CoE issuance for inland crew, linked to Aadhaar for verification
-  **State Integration**  
API-based linkage with all state maritime boards for seamless data exchange
-  **Compliance Tracking**  
Auto-alerts for vessel survey renewals, crew certification expiries
-  **Accident & Incident Log**  
Mandatory digital incident reporting for safety analytics & policy formulation

## ROADMAP

Phase 1 2024-25	Pilot: NW-1 & NW-2
Phase 2 2025-26	All National Waterways
Phase 3 2026-27	State waterways onboarding
Phase 4 2027-28	Full integration & AI analytics

*Project Under Implementation*

14,500+ km Navigable Waterways

~50,000 Inland Vessels

All States to be Covered

Linked to IWT Act 2021

An aerial photograph of a large shipping port. The foreground is filled with stacks of colorful shipping containers in shades of red, blue, green, and white. In the middle ground, there are several large gantry cranes and a ship docked at a pier. The background shows a wide expanse of the port area under a blue sky with scattered white clouds. A semi-transparent teal banner is overlaid across the center of the image.

**Thank You**