



DIRECTORATE GENERAL OF MARITIME ADMINISTRATION

TRAINING MANUAL

INTERNATIONAL COOPERATION BRANCH

MODULE - II



**Global
Engagement**



Partnership



**Maritime
Excellence**



**Sustainable
Future**

Version 1

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1. Maritime policy framework

A long-term, integrated vision to transform India into a global maritime powerhouse

1.1 MARITIME AMRIT KAAL VISION 2047

- Long-term roadmap for India's maritime resurgence, extending through to the centenary of independence (2047)
- Builds on the foundation of Maritime India Vision 2030
- Investment: nearly ₹80 lakh crore earmarked, covering:
 - Ports
 - Coastal shipping
 - Inland waterways
 - Shipbuilding
 - Green shipping initiatives
- 300+ actionable initiatives outlined
- Green/sustainability focus:
 - Setting up green corridors
 - Introducing green hydrogen bunkering at major ports
 - Promoting use of methanol-fuelled vessels
- Goal stated: position India as one of the world's top maritime and shipbuilding powers by 2047
- Sagarmala Programme is named as a core pillar shared by both MIV 2030 and MAKV 2047 (840 projects, ₹5.8 lakh crore, by 2035)

1.2 MARITIME INDIA VISION 2030

A long-term, integrated vision to transform India into a global maritime powerhouse

- Launched in 2021, comprehensive roadmap for holistic development of India's maritime sector — ports, shipping, and inland waterways
- 150+ strategic initiatives
- 10 interconnected themes, addressing every facet of the maritime ecosystem:
 1. Develop best-in-class port infrastructure
 2. Drive E2E logistics efficiency and cost competitiveness
 3. Enhance logistics efficiency through technology and innovation
 4. Strengthen policy and institutional framework to support all stakeholders
 5. Enhance global share in shipbuilding, repair and recycling
 6. Enhance cargo and passenger movement through inland waterways
 7. Promote ocean, coastal and river cruise sector
 8. Enhance India's global stature and maritime co-operation
 9. Lead the world in safe, sustainable and green maritime sector
 10. Become top seafaring nation with world-class education, research and training
- Investment: projected ₹3–3.5 lakh crore across ports, shipping, and inland waterways

1.3 SAGARMALA PROGRAMME

- Launched March 2015, flagship initiative of the Ministry of Ports, Shipping and Waterways
- Aim: streamline logistics, reduce costs, enhance international trade competitiveness by shifting from traditional infrastructure-heavy transport to efficient coastal and waterway networks
- Focus: port modernization, industrial growth, job creation, sustainable coastal development — "minimal infrastructure investment while maximizing economic impact"
- Positioned as a core pillar of Maritime Amrit Kaal Vision 2047 (MAKV), building on MIV 2030; MAKV sets targets of 4 million GRT shipbuilding capacity and 10 billion metric tons of port handling annually, aiming for India among the top 5 shipbuilding nations by 2047

1.4 SAGARMALA 2.0

- Focus: shipbuilding, repair, recycling, port modernization
- Budgetary support: ₹40,000 crore
- Aims to leverage/unlock ₹12 lakh crore in investments over the next decade
- Drives infrastructure development, coastal economic growth, job creation
- Aligns with the vision of *Viksit Bharat* and *Atmanirbhar Bharat* by 2047
- Positioned to accelerate port-led development and strengthen India's position as a global maritime leader

2. Free Trade Agreement (FTA) Negotiations

2.1 Overview

A trade agreement is a formal arrangement through which two or more countries or customs territories establish agreed rights, obligations and procedures governing trade and related economic activity. Depending on its scope, an agreement may cover tariff liberalisation for goods, trade in services, rules of origin, customs procedures, investment, standards, regulatory cooperation and dispute settlement. For the maritime sector, the analysis must therefore examine both merchandise trade - particularly products such as ships and marine equipment - and maritime transport and auxiliary services.

Before beginning technical analysis, the analyst should first understand the nature of the proposed negotiation: the partner or group of partners, whether the exercise concerns a new Free trade Agreement (FTA) / Comprehensive Economic Partnership Agreement (CEPA) or an upgrade of an existing agreement, the proposed coverage, the negotiating timetable, the lead department and the mandate assigned to the Ministry. The uploaded draft manual treats this scoping exercise as the starting point for all subsequent quantitative and qualitative work.

2.2 Objectives of an FTA Analysis

The objective of FTA analysis is not merely to measure existing trade. It is to determine what India should seek from the partner, what India may offer, which domestic interests require protection or adjustment, and whether the proposed commitments are commercially meaningful and consistent with sectoral policy.

2.3 Analytical Structure: Two Sections

Section	Coverage	Main negotiation issues
Trade in Goods	Merchandise trade, tariffs, HS classification, domestic production, imports/exports, partner-market access, rules of origin.	Tariff change, exclusions, safeguards, tariff-rate quotas, PSR/RoO, standards and non-tariff barriers.
Trade in Services	Maritime transport, port and auxiliary services, logistics, professional/technical services and movement of natural persons.	Market Access, National Treatment, Modes 1-4, local presence, equity limits, licensing, cabotage, port access, reservations and horizontal limitations.

2.4 Trade in Goods

The goods module begins with correct product classification. Use the Harmonized System (HS) at the most detailed practical level and verify the HS version used in the trade or tariff data. For maritime products, Chapter 89 should be disaggregated because passenger ships, tankers, tugs, dredgers, fishing vessels and floating structures have different production structures and negotiating sensitivities. Where domestic production is being assessed, HS data should be linked, where feasible, with relevant product/activity classifications and industry statistics.

Area of analysis	What to examine
Trade performance	5-10 year exports, imports, total trade, trade balance, annual growth and CAGR.
Product composition	Top export/import products and each product's share in total trade.
Market access	Partner MFN tariff, preferential tariff, effectively applied tariff, tariff staging and remaining dutiable lines.
Competitiveness	India's share in partner imports, competitor shares, competitor FTAs, tariff disadvantage and unit values where meaningful.
Domestic industry	Production, capacity, employment, demand, import penetration, domestic market share and planned investment.
Rules of origin	Manufacturing process, imported inputs, value addition, RVC, cumulation and transshipment risk.

2.5 Trade in Services

The services module should first identify the precise maritime service and the classification used in the agreement. The uploaded manual uses the WTO Services Sectoral Classification List (W/120), CPC Provisional and corresponding CPC 2.0/2.1 references for analytical purposes. The legal commitment must then be read mode-by-mode under Market Access and National Treatment, together with horizontal limitations and sector-specific qualifications.

Mode	Maritime illustration	What to check
Mode 1 - Cross-border supply	Remote ship design, vessel monitoring, consultancy, digital freight management.	Local-presence requirements, licensing, ability to supply remotely.
Mode 2 - Consumption abroad	Indian vessel repaired abroad or purchasing port services abroad.	Restrictions on purchasing/using the service abroad.
Mode 3 - Commercial presence	Shipping, terminal, freight-forwarding or ship-management company establishes locally.	Foreign equity, legal form, number of suppliers, licensing and economic-needs tests.
Mode 4 - Natural persons	Marine engineers, surveyors, consultants, seafarers or trainers.	Entry/stay, categories of persons, qualifications and licensing.

3. Trade Competitiveness & Economic Analysis

3.1 Data Collection

Data collection should be completed before drawing conclusions. The same period, classification and units should be used wherever possible. Sources should be divided into trade data, sector data, legal/commitment data and stakeholder evidence.

Data requirement	Preferred sources
Partner and economic profile	UNCTAD country/general/maritime profiles; World Bank or official partner-country sources where necessary.
India merchandise trade	Department of Commerce / DGCI&S TRADESTAT.
Partner/world merchandise trade	UN Comtrade, WTO Tariff & Trade Data, WITS, ITC Trade Map.
Tariffs and preferences	WTO tariff data, ITC Market Access Map and the relevant FTA tariff schedules.
Domestic production/capacity	MoPSW, DGMA, MoSPI/ASI/NPCMS where relevant, sector ministries, company annual reports and industry associations.
Services commitments	WTO GATS schedules, W/120/CPC references and the relevant FTA services schedule or reservation list.
Regulatory measures	MoPSW, DGMA, port authorities, domestic laws/rules and partner-country regulators.
Stakeholder evidence	Shipyards, shipowners, port operators, freight forwarders, associations, classification societies, service suppliers and users.

3.2 Analysis and Interpretation

The analytical stage should combine quantitative indicators with legal and sectoral evidence. Trade statistics should not be interpreted in isolation. A high level of imports, for example, may reflect lack of domestic capacity, strong domestic demand, essential inputs or temporary one-off vessel purchases. Similarly, a services schedule must be read together with horizontal commitments and domestic regulation.

Step	Analytical task	Indicative output
1. Establish baseline	Prepare partner profile and 5-10 year goods/services baseline.	Country and bilateral relationship profile.
2. Identify priorities	Locate major products/services, high-growth lines, declining lines, persistent deficits/surpluses and commercially important services.	Priority list.
3. Measure competitiveness	Market shares, competitor position, tariff preference, RCA where appropriate, service-market barriers.	Offensive opportunity assessment.
4. Test domestic sensitivity	Production, capacity, employment, apparent consumption, import penetration, strategic/policy relevance.	Defensive/sensitive list.
5. Examine barriers	Tariffs, standards, licensing, equity limits, legal-form requirements, cabotage, port access, local presence and other restrictions.	Barrier inventory.
6. Assess requests/offers	Compare partner requests with India's expected commercial gains, implementation periods and policy costs.	Request-offer matrix.
7. Formulate negotiating position	Classify products/services as offensive, sensitive, emerging/strategic or import-dependent; propose concessions/reservations.	Negotiating recommendation.

3.3 Key Indicators for Goods Analysis

Indicator	Formula / interpretation
Trade balance	Exports - Imports
Product share	Product trade value / total trade value x 100
CAGR	$[(\text{Final value} / \text{Initial value})^{(1/n)} - 1] \times 100$
Partner market share	Partner imports from India / partner imports from world x 100
Apparent domestic consumption	Domestic production + Imports - Exports
Import penetration	Imports / apparent domestic consumption x 100
Capacity utilisation	Actual production / installed capacity x 100
RCA	$(\text{India product exports} / \text{India total exports}) / (\text{world product exports} / \text{world total exports})$

3.4 Report Writing and Policy Recommendation

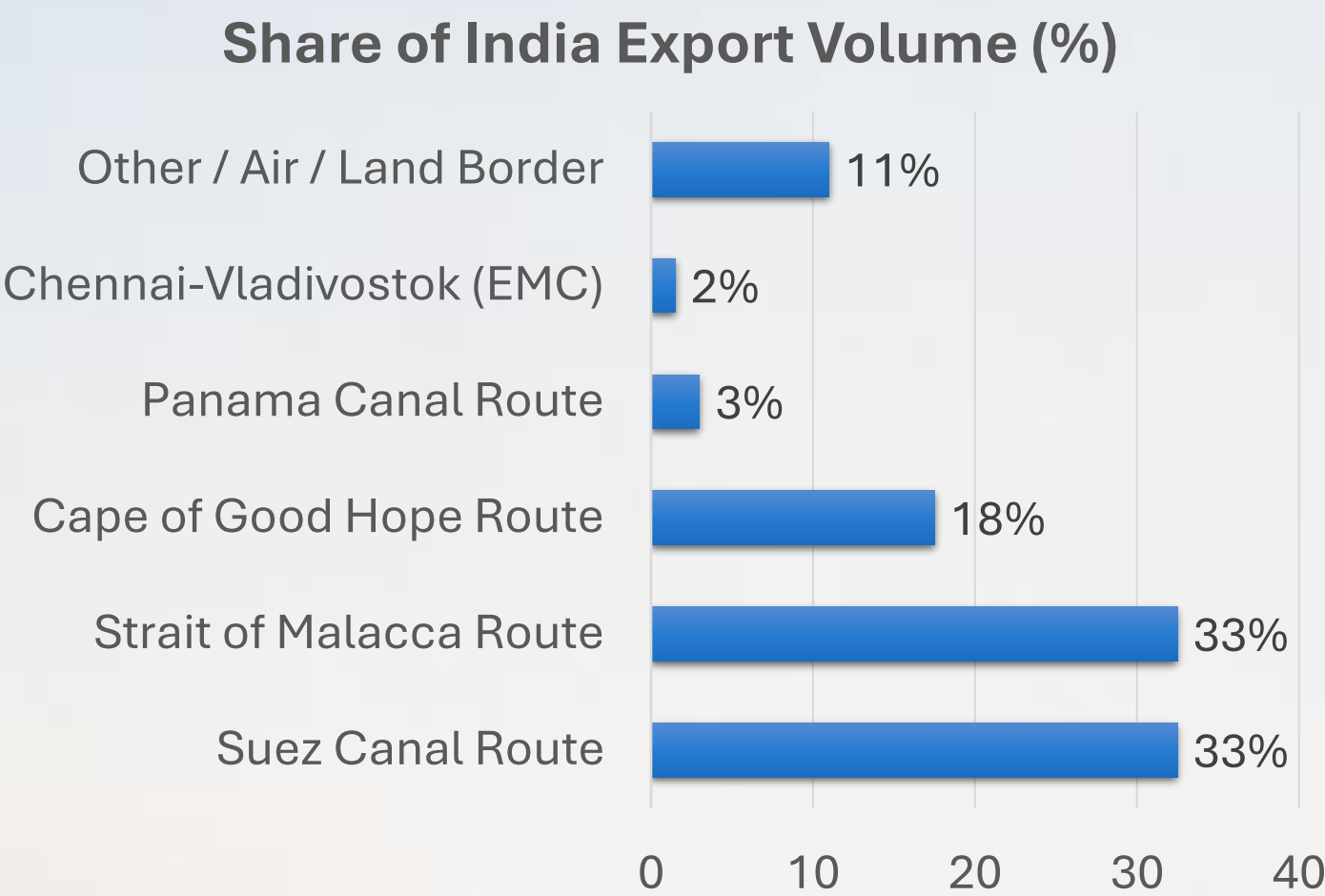
The final report should translate the statistical and qualitative findings into a concise, evidence-based negotiating recommendation. It should begin with the objective and scope of the negotiation, summarise the partner-country profile, and then present separate findings for goods and services. Each major conclusion should be linked to the relevant data source, while data limitations or classification mismatches should be stated explicitly. The report should distinguish current applied policy from legally bound commitments and should not treat a present restriction or market opening as permanently guaranteed unless it is reflected in the agreement or schedule.

Policy recommendations should follow logically from the evidence. Products with strong domestic production and export capability may be treated as offensive interests and may warrant requests for faster tariff elimination and workable rules of origin. Products with meaningful domestic production and rising import penetration may require longer staging, exclusion or safeguards, depending on the evidence. Import-dependent products may be considered for faster liberalisation where this reduces costs without undermining credible domestic capacity-building plans. For services, recommendations should identify the desired level of Market Access and National Treatment by mode, the treatment of horizontal limitations, any sector-specific reservations, and the policy space required for cabotage, port security, public services or strategic infrastructure.

4. Alternate Routes/Corridors: Logistics, Vessels, Cargo and Traffic

4.1 India's Export Distribution by Maritime Corridor

2026 estimates • share of total India export volume

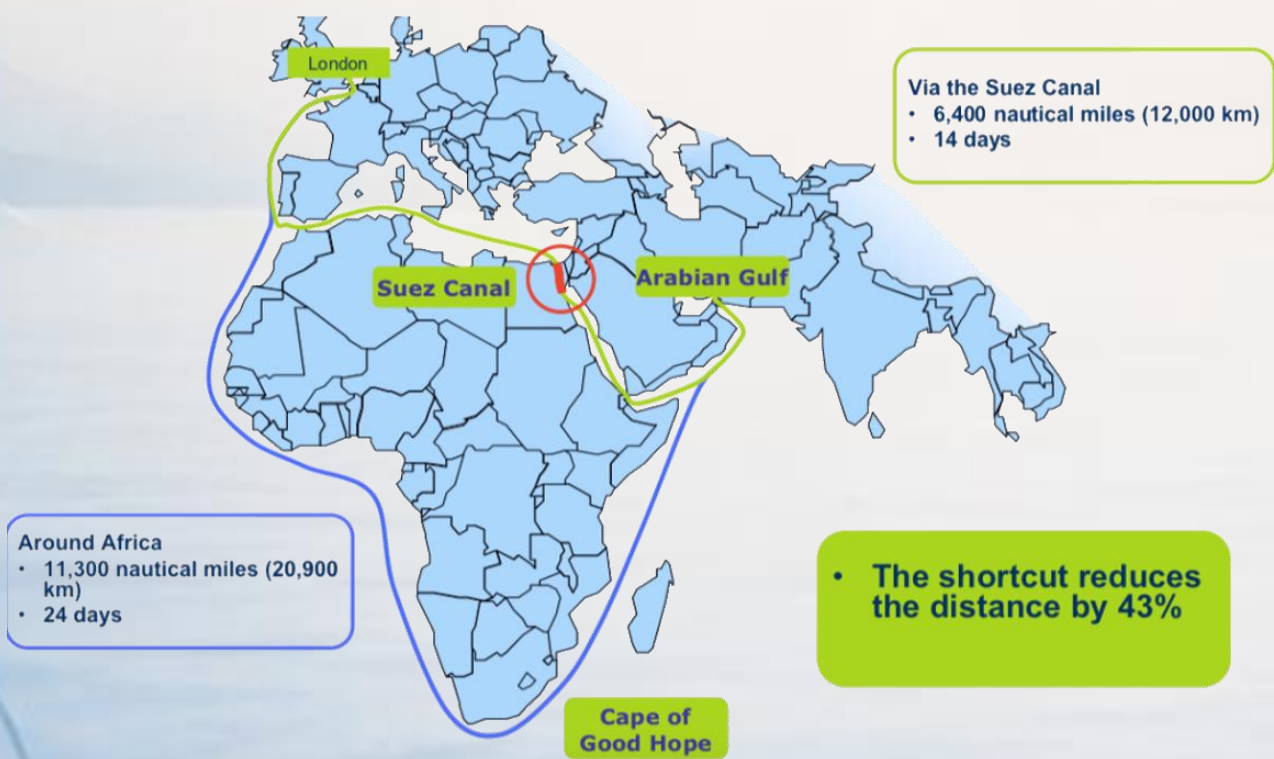


Reading the corridors

- Suez and Malacca together carry roughly two-thirds of India's seaborne exports.
- Cape of Good Hope acts as the primary fallback whenever Suez transit is disrupted.
- Panama and the Chennai-Vladivostok corridor (EMC) remain niche but strategically important links.
- Percentages can overlap seasonally as carriers reroute between Suez and the Cape during security disruptions.

4.2 Suez Canal vs. Cape of Good Hope

The Cape route is the standing alternate whenever Suez transit is constrained



Via Suez Canal

6,400 nm (12,000 km)
~14 days transit

Around the Cape

11,300 nm (20,900 km)
~24 days transit

43%

shorter distance via Suez vs.
the Cape route

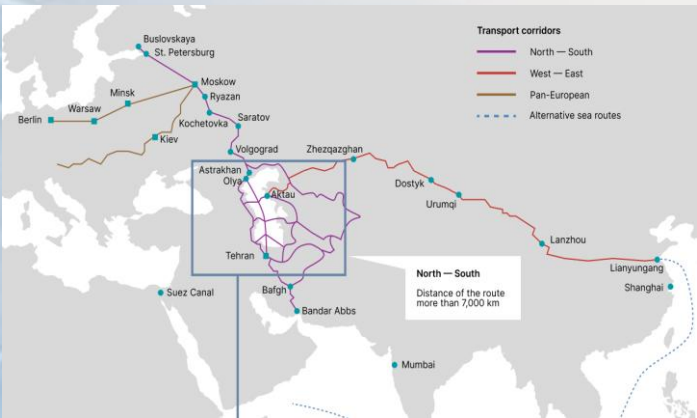
4.3 Panama Canal vs. Suez Canal

The two most-compared canal chokepoints in global logistics

Feature	Panama Canal	Suez Canal
Length	82 km	193 km
Design	Lock & lake (fresh water)	Sea-level (salt water)
Opened	1914	1869
Max vessel	Neopanamax (14,000 TEU)	Suezmax / VLCC
Transit time	8 – 10 hours	12 – 16 hours
Annual transits	12,000 – 14,000	~19,000
Share of world trade	~5%	~12%
Main risk	Drought, water shortage	Security, blockage (2021 Ever Given)
Operator	Panama Canal Authority	Suez Canal Authority, Egypt

4.4 Beyond the Sea Lanes: Overland & Arctic Alternates

India–Russia logistics corridors that bypass the traditional Suez/Malacca lanes



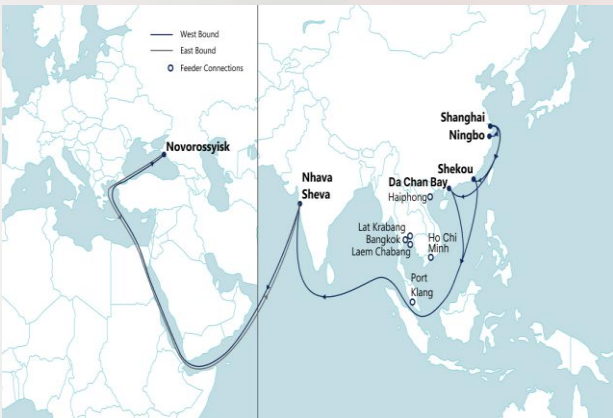
INSTC — International North–South Transport Corridor

Multimodal rail/sea link, Mumbai–Bandar Abbas–Tehran–Moscow–St. Petersburg; route length >7,000 km.



Northern Sea Route & Eastern Maritime Corridor

Arctic route (Murmansk–Vladivostok) plus the Chennai–Vladivostok EMC linking India to Russia's Far East.



India–Novorossiysk Service

Direct liner service connecting Nhava Sheva to the Black Sea, feeding onward to East Asian hubs.

4.5 Vessels and Cargo

What moves on the water — crude tankers, LNG carriers, and containerised trade.

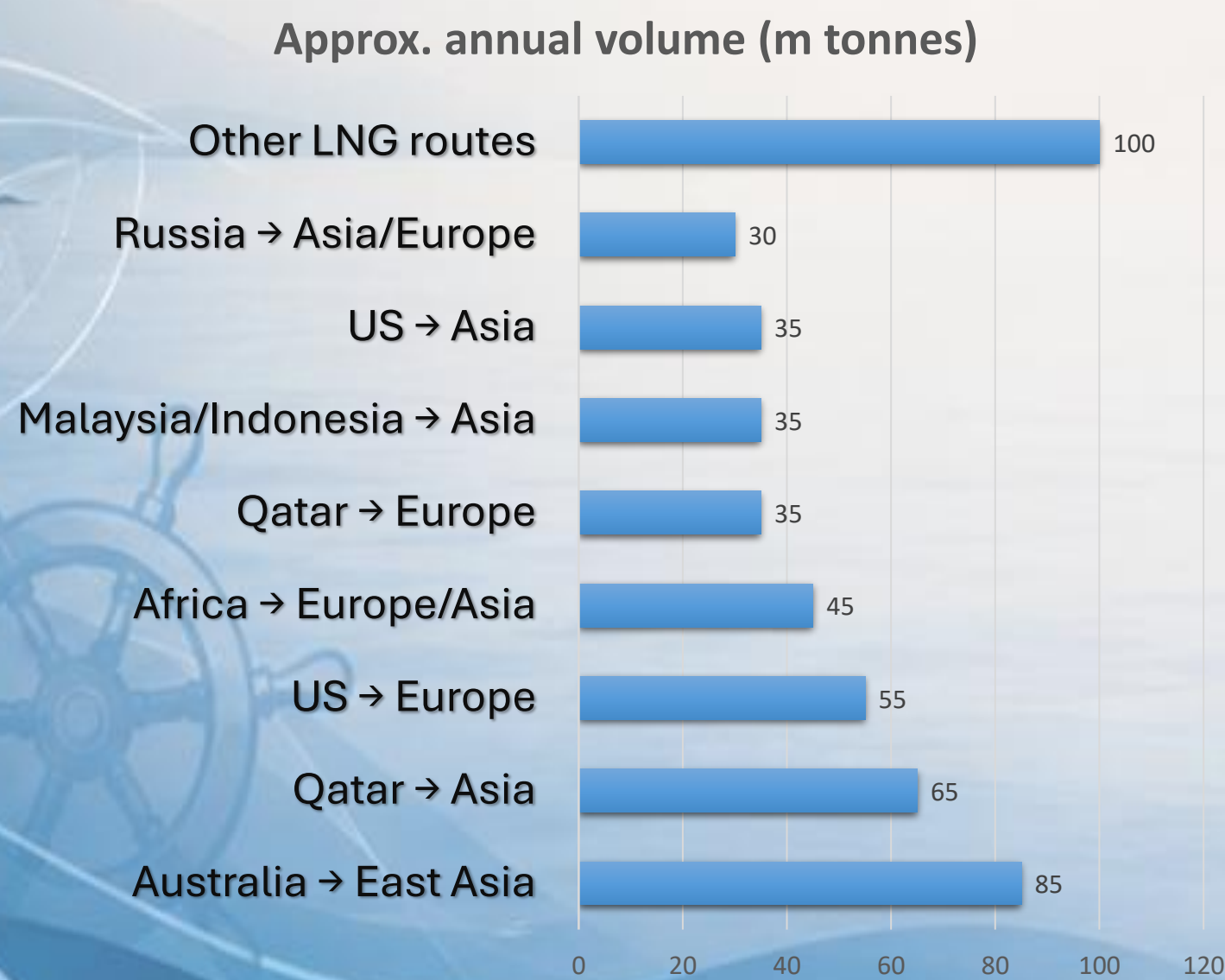
Crude Oil — Major Maritime Trade Routes

Approx. annual seaborne crude volume by route, world crude ≈ 16% of total seaborne trade (~12.1 bn t)

Route	Origin	Destination	Volume	World share	Tanker / chokepoint
Middle East → East Asia	Saudi Arabia, Iraq, UAE, Kuwait, Qatar	China, Japan, S. Korea, India	~1.0 bn t	~8%	VLCC; Hormuz → Malacca
Russia → China / India	Russia	China, India	~240 m t	~2 – 2.5%	Aframax/Suezmax; Baltic/Black Sea → Asia
West Africa → Asia	Nigeria, Angola	China, India, other Asia	~150 – 200 m t	~1.3 – 1.7%	VLCC/Suezmax; Cape of Good Hope
Brazil/Guyana → Asia	Brazil, Guyana	China, India	~150 – 200 m t	~1.3 – 1.7%	VLCC; Cape of Good Hope
US → Asia	United States	China, S. Korea, India	~100 – 150 m t	~0.8 – 1.2%	VLCC; Cape of Good Hope
Middle East → Europe	Saudi Arabia, Iraq, UAE	Mediterranean / N. Europe	~150 m t	~1.2%	Hormuz → Suez

4.6 LNG Trade Routes

World LNG seaborne trade ≈ 450–500 m t/yr, ~4% of global seaborne trade



Key LNG chokepoints

Hormuz → Indian Ocean

Qatar's flows to Asia and, via Suez, to Europe both transit Hormuz.

Malacca Strait

Chokepoint for Australian and SE Asian LNG bound for Japan, China, South Korea.

Panama / Cape routes

US Gulf LNG reaches Asia either via Panama or around the Cape.

Arctic / Baltic

Russian LNG to Asia and Europe, exposed to seasonal ice conditions.

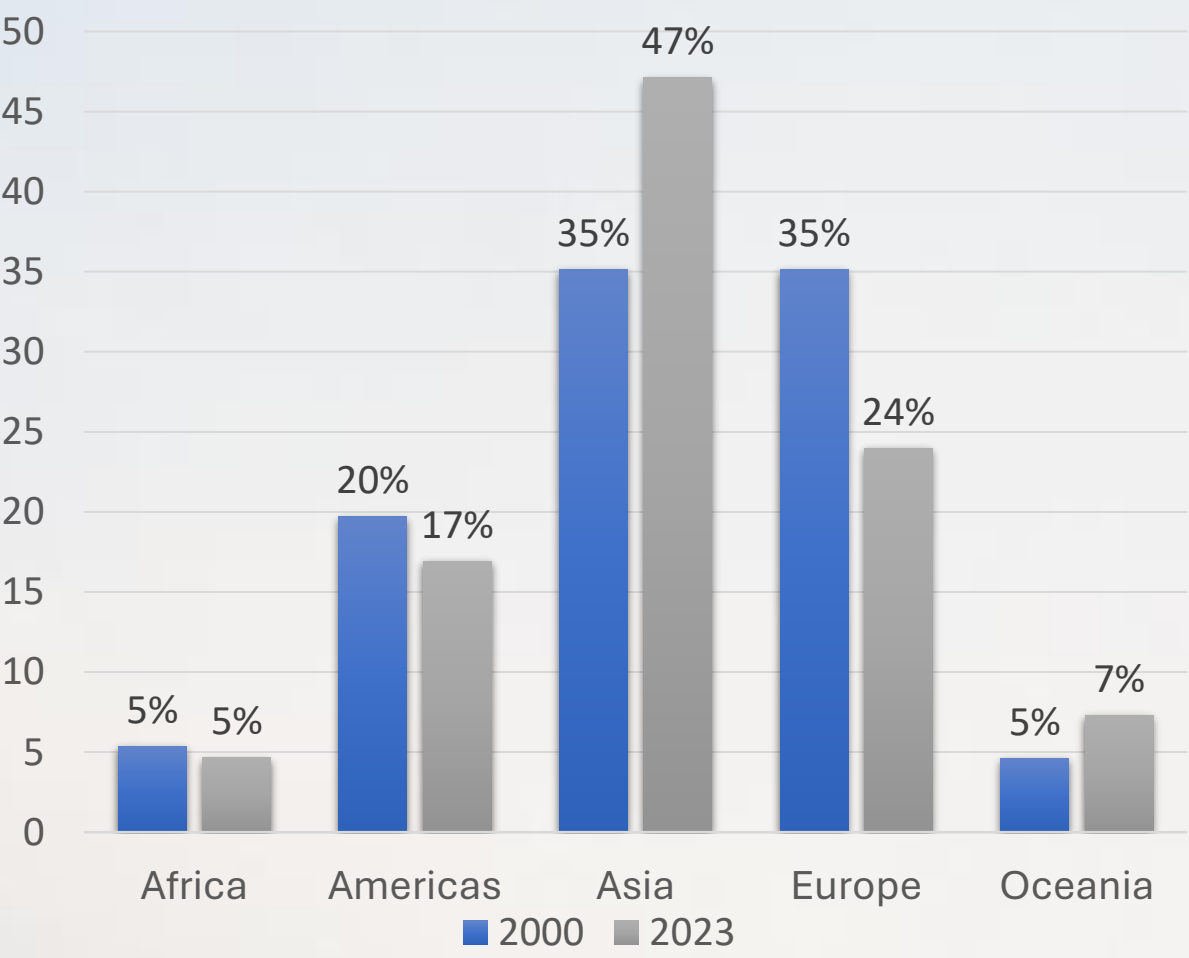
4.7 Traffic

How seaborne trade volumes are growing, shifting by region, and flowing into India

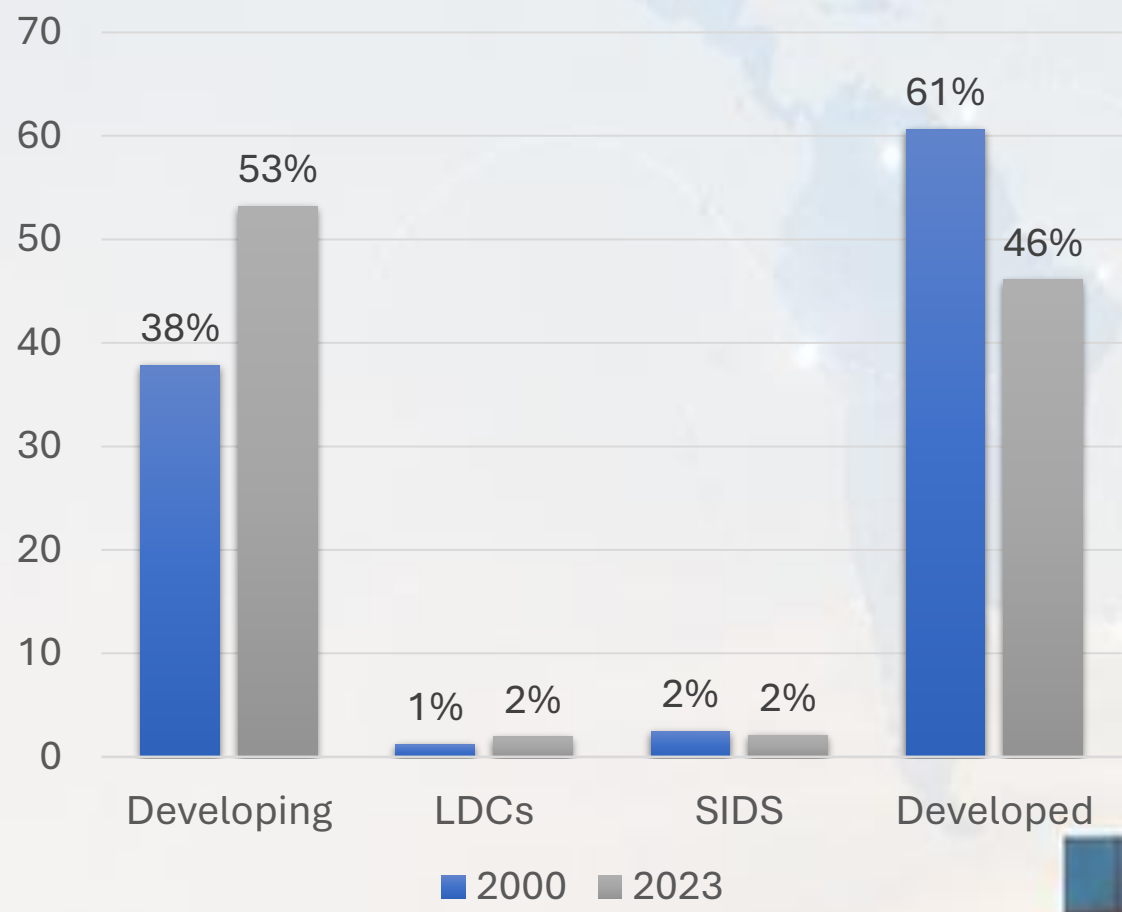
Maritime Trade Share — 2000 vs. 2023

Percentage share of total maritime trade, by region and by economic group

By region



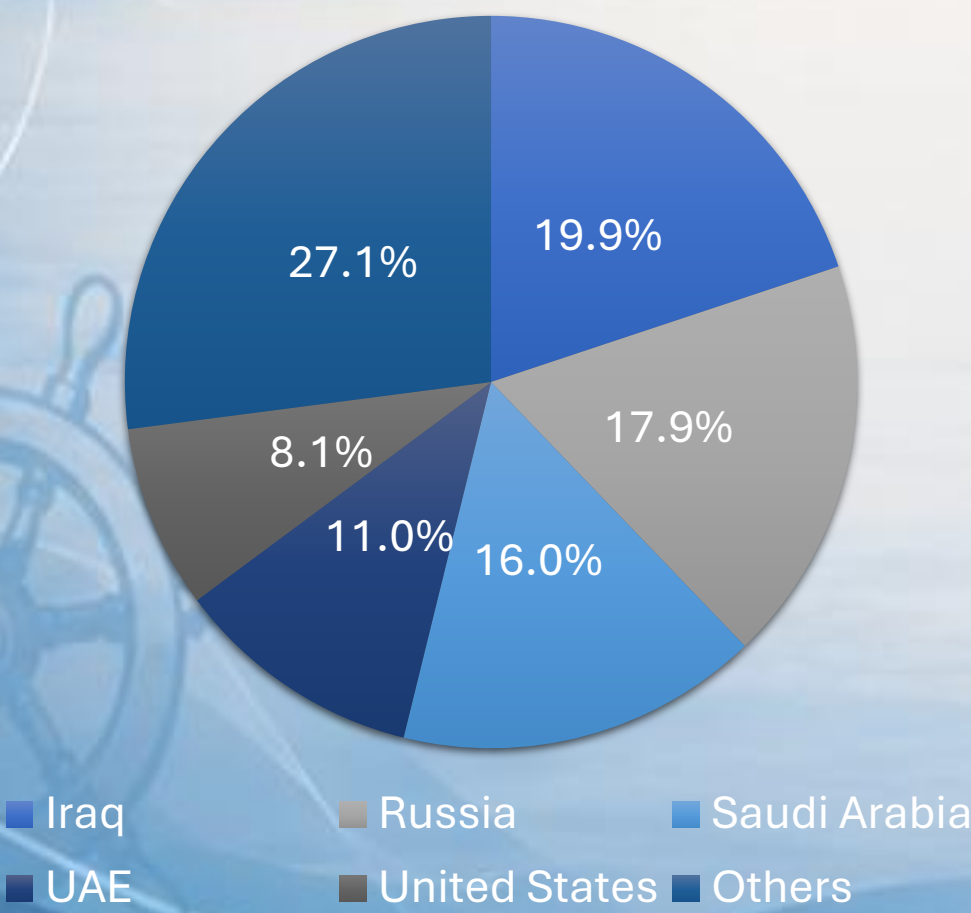
By economic group



Asia's share of world maritime trade rose ~12 points since 2000, while developing economies overtook developed economies around 2015-16.

4.8 India's Crude Oil Import Traffic by Source Country

2026 estimates — share of India's total crude oil import volume



What the traffic mix shows

- Iraq and Russia together supply ~38% of India's crude imports, arriving via Hormuz and the Black Sea/Baltic-to-Asia route respectively.
- Gulf suppliers (Iraq, Saudi Arabia, UAE) combined account for ~47% — concentrating traffic risk at the Strait of Hormuz.
- US crude arrives via the Cape of Good Hope route, diversifying supply away from Middle East chokepoints.
- The 'Others' category (~27%) reflects a broadening supplier base across West Africa, Latin America and elsewhere.

5. Green Shipping & Environmental Compliance

5.1 Green Shipping and IMO Initiatives



GloLitter



**Global Partnership for
Mitigation of
Underwater Noise
from Shipping
(GloNoise)**



Green Voyage 2050



- Joint initiative of IMO and FAO
- Helps countries strengthen MARPOL Annex V implementation and reduce ship-source plastic litter
- Focus areas: Shipping & Port Operations and Fisheries Sector
- Develops National Action Plans, legal/policy updates and capacity-building tools
- Implemented across 5 regions, 30 countries
- India is Lead Partner Country (Asia) guiding regional capacity building



- reduce underwater radiated noise (URN) from ships
- It focuses on four key components:
 - developing a global toolkit and conducting policy analysis;
 - capacity building and raising awareness in participating developing countries;
 - fostering partnerships for mitigating underwater radiated noise (URN) from shipping, and
 - monitoring, learning, adaptive feedback, and evaluation.
- Six Lead Pilot Countries (LPCs): Argentina, Chile, Costa Rica, India, South Africa, and Trinidad and Tobago
- Three Twinning Partner Countries: Georgia, Madagascar, and Malaysia.



- To reduce emissions from ships, in line with the 2023 IMO GHG Strategy
The Following projects were selected:
Fitment of waste heat recovery system on a bulk carrier, Greening of inland ferries, Greening of inland ferries, Greening of passenger wooden ferries and Electric hybrid tugs

5.2 Green Shipping and India's Policy framework



Green Tug Transition Programme



Harit Sagar Green Port guidelines



National Maritime Decarbonisation Policy



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

- 
- provides a framework for the Major Ports for drawing out a comprehensive action plan for achieving targeted outcomes in terms of quantified reduction in carbon emission over defined timelines
 - to minimize waste through Reduce, Reuse, Repurpose and Recycle to attain zero waste discharge from port operations and promote monitoring, based on Environmental Performance Indicators.
 - lays emphasis on use of Clean / Green energy in Port operation, developing Port capabilities for storage, handling and bunkering Greener Fuels viz. Green Hydrogen, Green Ammonia, Green Methanol / Ethanol etc.

Establishes integrated national architecture within which India's maritime decarbonisation transition will be planned, financed, governed and measured. Consists of 8 pillars:

- 
- Pillar 1 - Green Shipbuilding and Retrofits
 - Pillar 2 – Green Ports
 - Pillar 3 – Green Ship Recycling
 - Pillar 4 – Green Finance
 - Pillar 5 – Green Skills and Capacity Building
 - Pillar 6 – Alternative Fuels
 - Pillar 7 – Green Technology
 - Pillar 8 – Pollution Prevention/ Waste Management

5.3 Convention and India’s Ratification



5.4 Green Shipping MoUs

Country	Green Initiatives Signed
Denmark	India and Denmark agreed on a joint work plan for green and digital maritime initiatives under their MoU via a Steering Group with DG Shipping and the Danish Maritime Authority, set up a Centre of Excellence in Green Shipping, and will cooperate in green fuel development, green maritime technology, ship recycling, and energy efficient innovation.
Norway	India and Norway Joint Working Group decided to cooperate on green shipping, ship recycling, maritime training, maritime security related issues.
Russia	India and Russia will strengthen cooperation on the Northern Sea Route to promote more efficient, lower-emission Arctic shipping.
Malta	The Joint Committee formed under the MoU signed between India and Malta discussed the possible collaboration in the field of green shipping, cruise shipping, ports infrastructure, initiatives under IMO, sharing information and best practices in shipping registry.
Singapore	India signed an MoU with Singapore on Green and Digital Shipping Corridor. The collaboration is expected to accelerate the adoption of low-emission technologies, strengthen digital tools, and transform maritime operations.
Netherlands	India and the Netherlands signed an MoU on Maritime Cooperation and the Green Digital Sea Corridor to drive sustainable port growth.

6. Ship Building

6.1 Overview

Shipbuilding may be defined as a technology-driven, skill- and material-intensive industrial assembly activity involving the construction of ships and other floating assets through the integration of structural materials, machinery, equipment, systems and specialised services.

Step 1: Define the Objective and Scope of the Analysis

The analysis should begin with a clear statement of purpose. The data required for an overall industry assessment will differ from those needed for an FTA negotiation, a domestic production assessment or an evaluation of government support schemes. The analyst should define the time period, preferably the latest five to ten years, the vessel categories to be covered, whether ship repair is included, the geographical level of analysis, and the intended policy output.

For trade-agreement work, the analysis should ultimately be linked to the relevant products under HS Chapter 89 rather than relying only on aggregate shipbuilding-industry figures.

Define the analytical objective: industry performance, competitiveness, policy impact, domestic capability or FTA negotiation.

Step 2: Identify and Collect the Required Data

The annual MoPSW publication Statistics of India's Ship Building and Ship Repairing Industry should be used as the primary domestic-industry source. The same variables should be extracted from successive editions so that a consistent time series can be constructed. These data should then be supplemented with fleet, port, trade, company and industry-association information.

- Domestic production, deliveries, capacity, order book, employment and repair activity: MoPSW annual shipbuilding/repair reports.
- Indian fleet size, composition and age: Indian Shipping Statistics and Directorate General of Shipping.
- Port-related demand: Basic Port Statistics of India and Major Port Authority reports.
- Imports and exports: DGCI&S / Department of Commerce TRADESTAT, preferably at ITC-HS 8-digit level.
- Government schemes: MoPSW notifications and operational guidelines.
- Company-level performance: annual reports of major public and private shipyards.
- Industry inputs: Shipyards Association of India, INSA, classification societies, OEMs and marine-equipment suppliers.

Step 3: Analyse Data

The first analytical output should be a descriptive profile of India's shipbuilding ecosystem. This establishes the structure of the industry before growth, competitiveness or trade sensitivity is assessed.

A time-series analysis should determine whether the industry is expanding, stagnant or declining. Because shipbuilding is project-based, vessel deliveries may fluctuate sharply from one year to another; therefore, multi-year trends are more reliable than a single-year comparison.

- Annual growth and CAGR should be calculated for vessel deliveries, tonnage, output value, repair activity and order book, wherever consistent data are available.
- Annual Growth (%) = $[(\text{Current Year Value} / \text{Previous Year Value}) - 1] \times 100$
- CAGR (%) = $[(\text{Final Year Value} / \text{Initial Year Value})^{(1/n)} - 1] \times 100$
- Use at least five years where possible.

Where production and installed capacity are measured on a comparable basis, capacity utilisation can be calculated.

- Capacity Utilisation (%) = $\text{Actual Production} / \text{Installed Capacity} \times 100$
- Compare public and private yards separately where relevant.
- Review planned brownfield and greenfield expansions.
- Identify whether technology, infrastructure or working-capital constraints limit usable capacity.

Aggregate shipbuilding data can hide major differences between vessel categories. The analyst should therefore identify the segments in which Indian yards have strong capability, emerging capability or little/no production.

This step is particularly important for trade negotiations because tariff commitments and product-specific rules of origin apply to specific tariff lines, not to the industry as a whole.

- Passenger vessels and ferries.
- Tankers, bulk carriers and container ships.
- Tugs, dredgers, barges and workboats.
- Fishing vessels.
- Offshore vessels and specialised craft.
- Naval and Coast Guard vessels.
- Floating structures and platforms.

Along with the above analysis the following analysis also can be done for the industry

- Analyse Employment and Productivity
- Analyse Financial Performance
- Assess Domestic Demand for Ships

- Analyse External Trade
- Analyse Import Dependence and Supplier Concentration
- Assess Domestic Value Addition and Supply-Chain Capability
- Benchmark India Against Major Shipbuilding Countries
- Evaluate Government Policy and Support Measures
- Undertake Competitiveness and Gap Analysis

Step 4: Report and Policy Recommendation

The final stage of the analysis should translate the statistical and qualitative findings into a concise, evidence-based report that supports decision-making. The report should clearly present the structure and performance of the shipbuilding industry, trends in production and capacity, order-book position, domestic demand, imports and exports, import dependence, employment, financial performance, supply-chain localisation, international competitiveness and the impact of existing government support measures. Each major conclusion should be directly linked to the underlying data and source, and limitations in the data should be stated explicitly. Policy recommendations should follow logically from the findings rather than being generic.

6.2 FRAMEWORK FOR ANALYSIS OF SHIP BUILDING & SHIP REPAIRING INDUSTRY IN INDIA

WHAT CAN BE ANALYSED?

A. Industry Size & Growth	B. Capacity & Infrastructure	C. Product Mix Analysis	D. Demand Analysis	E. Trade Analysis
- Shipbuilding output - Ship repairing output - Number of vessels built/repairs - Tonnage & CGT Growth trends (YoY, CAGR)	- Number of shipyards - Graving docks & repair berths - Dry dock capacity - Geographical distribution - Capacity utilisation	- By type of vessel - By size (DWT/GT) - By ship type (cargo, tanker, offshore, tugs, etc.) - Indigenous vs imported design	- Domestic demand (newbuilding & repair) - Import of ships - Export of ships - Order book position	- Imports (value & volume) - Exports (value & volume) - Trade balance - Import penetration
F. Performance & Productivity	G. Financial Performance		H. Policy & Scheme Impact	
- Output per employee - Cost competitiveness - Turnaround time (repair) - Technological capability	- Investment - Turnover - Profitability - Employment		- Impact of SBAS, MFD, SbDS, ROFR etc. - Incentive uptake - Outcomes & gaps	

SOURCES OF DATA

A. MoPSW – Annual Reports	B. Administrative Data	C. Government Databases	D. Trade Data	E. Industry & Association Data	F. Secondary Sources	G. Field Inputs
Statistics of India's Ship Building and Ship Repairing Industry (Latest Annual Report)	Directorate General of Shipping (DGS) Ship registration data, Indian Register of Shipping (IRS)	PIB releases, MoPSW website, Sagarmala Portal, NITI Aayog, DPIIT, Make in India	DGFT (HS Code 89), Ministry of Commerce & Industry, UN Comtrade	Cochin Shipyard, Garden Reach, GRSE, India Shipyards Association (INSA)	Reports of IBEF, FICCI, ICRA, CRISIL, NCAER, World Bank, OECD, Clarksons, Marine Insight	Shipyards, OEMs, suppliers, experts, surveys, stakeholder consultations

HOW TO DO THE ANALYSIS? (Methodology / Steps)

Step	Methodology / Activities	Outputs
1. Define Objective & Scope	- Define purpose (e.g., industry overview, policy impact, competitiveness, FTA negotiation input) - Define time period (e.g., last 10 years) - Define coverage (shipbuilding, ship repairing or both; by vessel type/size/region)	- Problem definition - Scope matrix
2. Data Collection	- Collect data from all identified sources (primary & secondary) - Ensure latest annual report – Statistics of India's Ship Building and Ship Repairing Industry (MoPSW) - Collect trade data (HS 8901-8908), registration data, scheme data, financials etc.	- Data templates - Checklists
3. Data Validation & Compilation	- Cross-verify data from multiple sources - Handle missing values, outliers, classification differences - Compile database (Excel/Stat software)	- Data cleaning - Reconciliation - Database creation
4. Descriptive Analysis	- Prepare industry profile: size, growth, capacity, product mix, regional distribution - Time series analysis (trend charts) - Share analysis (e.g. by vessel type, by yard, by region)	- Charts, Tables - Trend analysis
5. Quantitative & Analytical Analysis	- Growth analysis (YoY, CAGR) - Capacity utilisation = $(\text{Actual Output} / \text{Installed Capacity}) \times 100$ - Import penetration = $(\text{Imports} / \text{Apparent Consumption}) \times 100$ - Export intensity = $(\text{Exports} / \text{Output}) \times 100$ - Labour productivity = $\text{Output (CGT)} / \text{Number of employees}$ - Cost competitiveness, unit cost benchmarking (if data available)	- Ratio analysis - Time series - Regression (if required) - Scenario analysis
6. Comparative & Benchmarking	- Compare with global shipbuilding nations (China, Korea, Japan, EU) - Compare with past performance (5–10 years) - Benchmark productivity, capacity, order book, export share	- Benchmarking - Index comparison
7. Interpretation & Policy Linkage	- Identify strengths, weaknesses, opportunities, threats (SWOT) - Link findings with policies/schemes and outcomes - Identify gaps, bottlenecks, policy implications for trade negotiations (e.g., RoO, market access, NT, subsidies, standards)	- SWOT - Cause–Effect analysis - Policy impact assessment
8. Reporting & Dissemination	- Prepare report with charts, tables, key findings, recommendations - Executive summary for decision makers - Share with stakeholders & use for policy/negotiation strategy	- Dashboard - Policy briefs - Presentation

OUTPUT / KEY INSIGHTS

1	2	3	4	5	6	7
Industry size & growth assessment	Capacity & utilisation status	Demand–supply gap assessment	Competitiveness analysis	Policy / Scheme impact	Trade implications (FTA, RoO, NT, MA)	Strategic recommendations

7. Maritime Cooperation Agreements

7.1 OBJECTIVES

1.

Develop ports and maritime infrastructure – sharing expertise, technology and best practices in port development, operations, logistics and related infrastructure.

2.

Build maritime skills and expertise – promoting training, capacity building and exchange of knowledge to develop skilled seafarers and maritime professionals.

3.

Improve maritime trade and connectivity – making it easier and more efficient to move goods, people and services by sea and strengthen India's trade links with other countries.

4.

Support the growth of India's shipping sector – encouraging cooperation in merchant shipping, shipbuilding, ship management and other maritime services, while creating opportunities for Indian companies.

5.

Encourage technology and innovation – sharing new technologies and practices in areas such as digital ports, maritime logistics, vessel management and maritime communication

6.

Promote greener shipping – working with partner countries on clean fuels, energy-efficient vessels, decarbonisation and environmentally sustainable maritime operations.

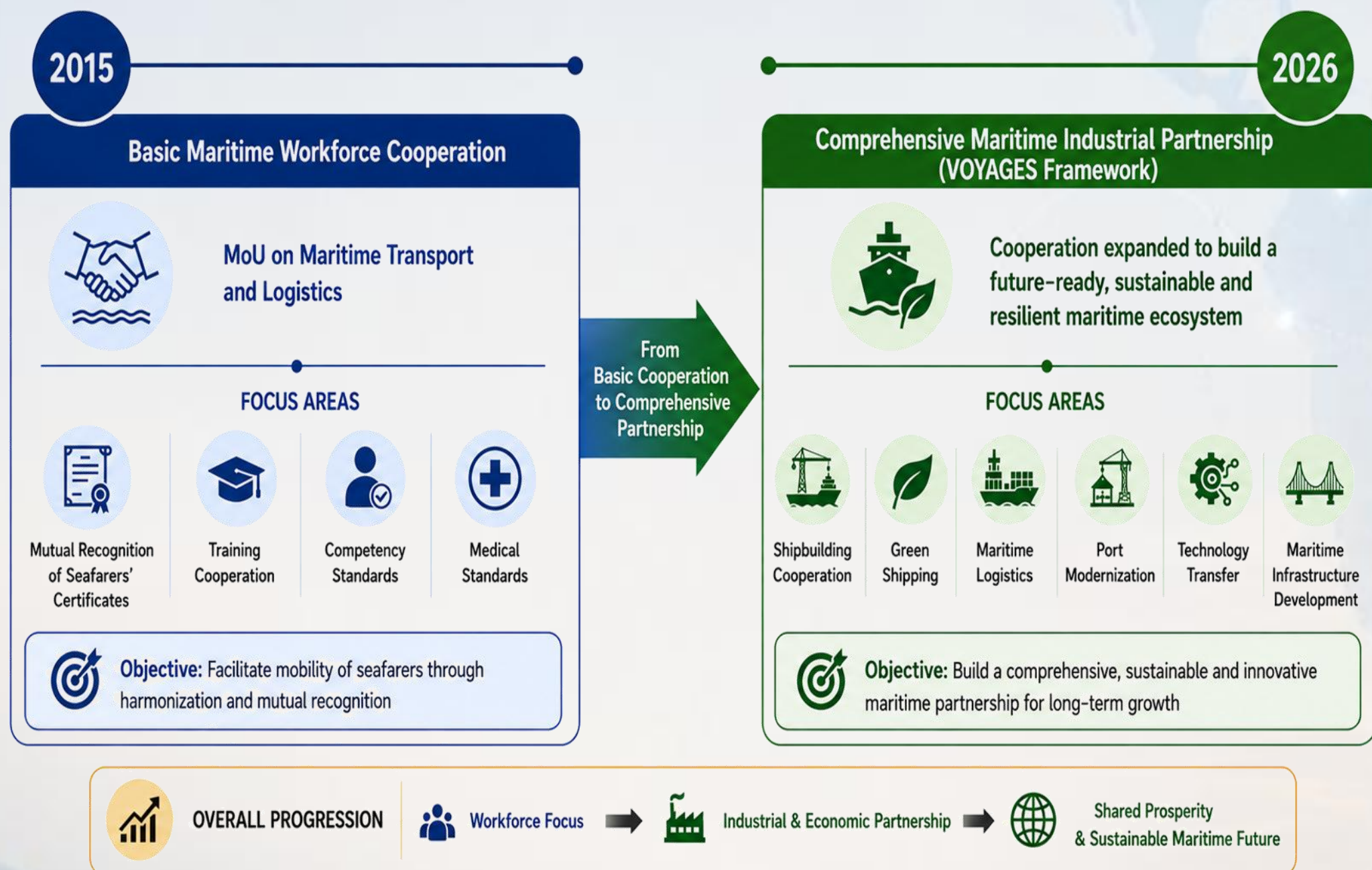
7.

Strengthen regional maritime connectivity – using maritime cooperation to improve links with countries in the Indian Ocean Region, BIMSTEC, ASEAN and the wider Indo-Pacific.

7.2 Agreements

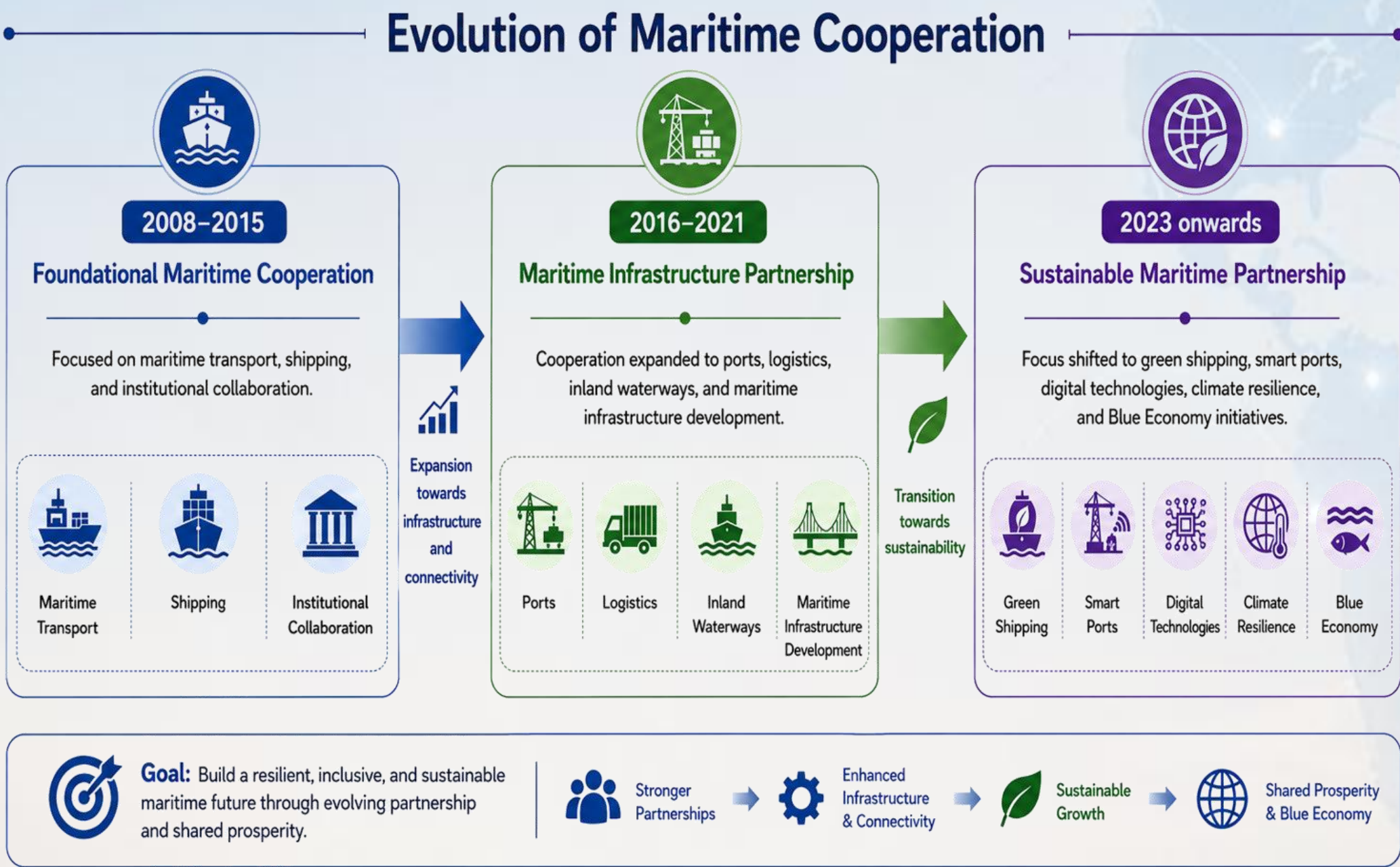
7.2.1 India – Republic of Korea(ROK) Maritime Cooperation Agreement

Evolution of India–Republic of Korea (ROK) Maritime Cooperation



The cooperation is essentially economic, technological, institutional and capacity-building in nature. It seeks to combine India's growing maritime market, shipbuilding potential, port-development opportunities, financial incentives, infrastructure requirements and large seafarer pool and ROK's advanced shipbuilding technology, maritime equipment manufacturing, port expertise, technical know-how and experienced private-sector companies. The partnership is therefore aimed at creating an integrated and resilient maritime ecosystem in India.

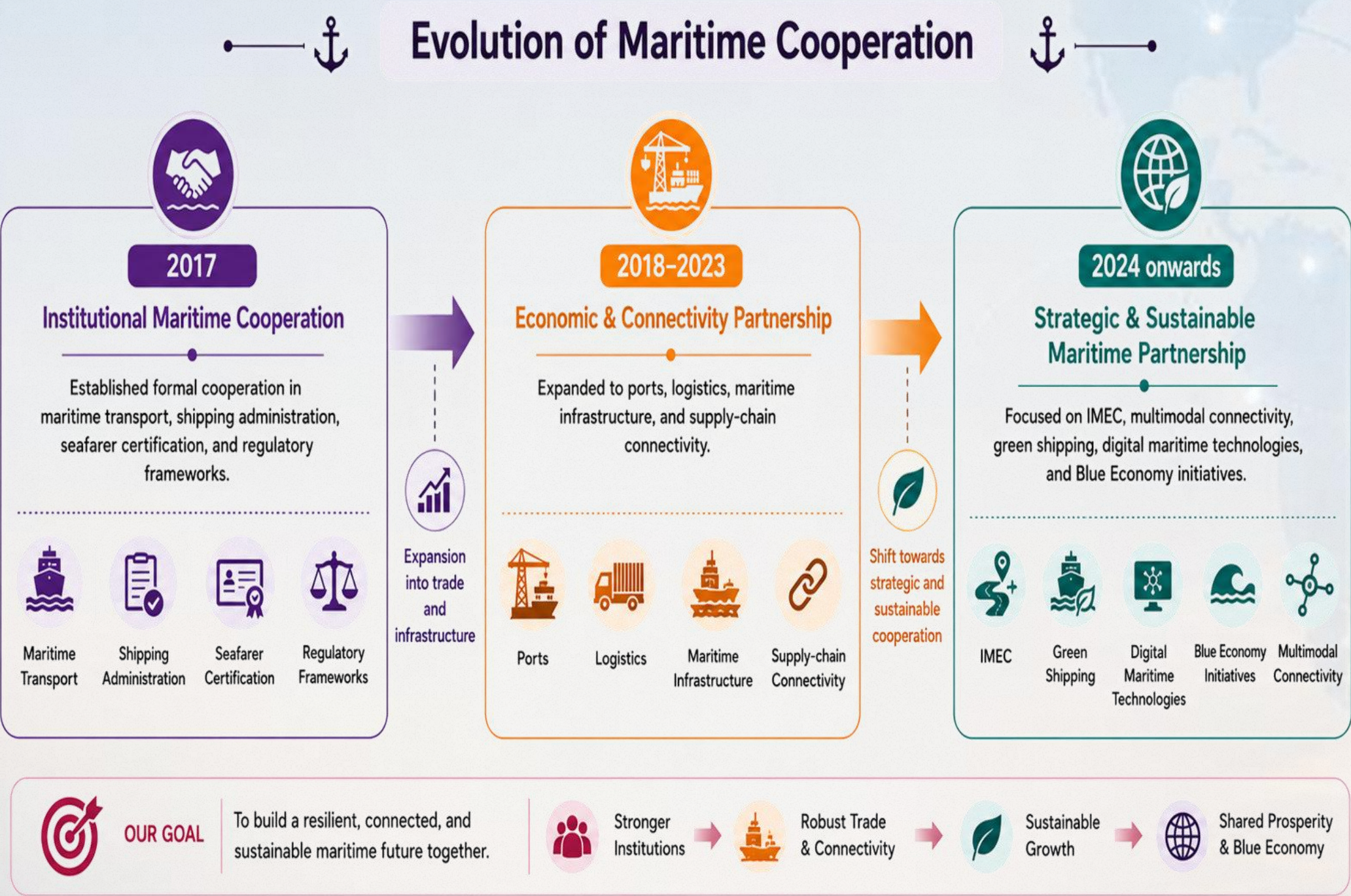
7.2.2 India – Netherlands Maritime Cooperation Agreement



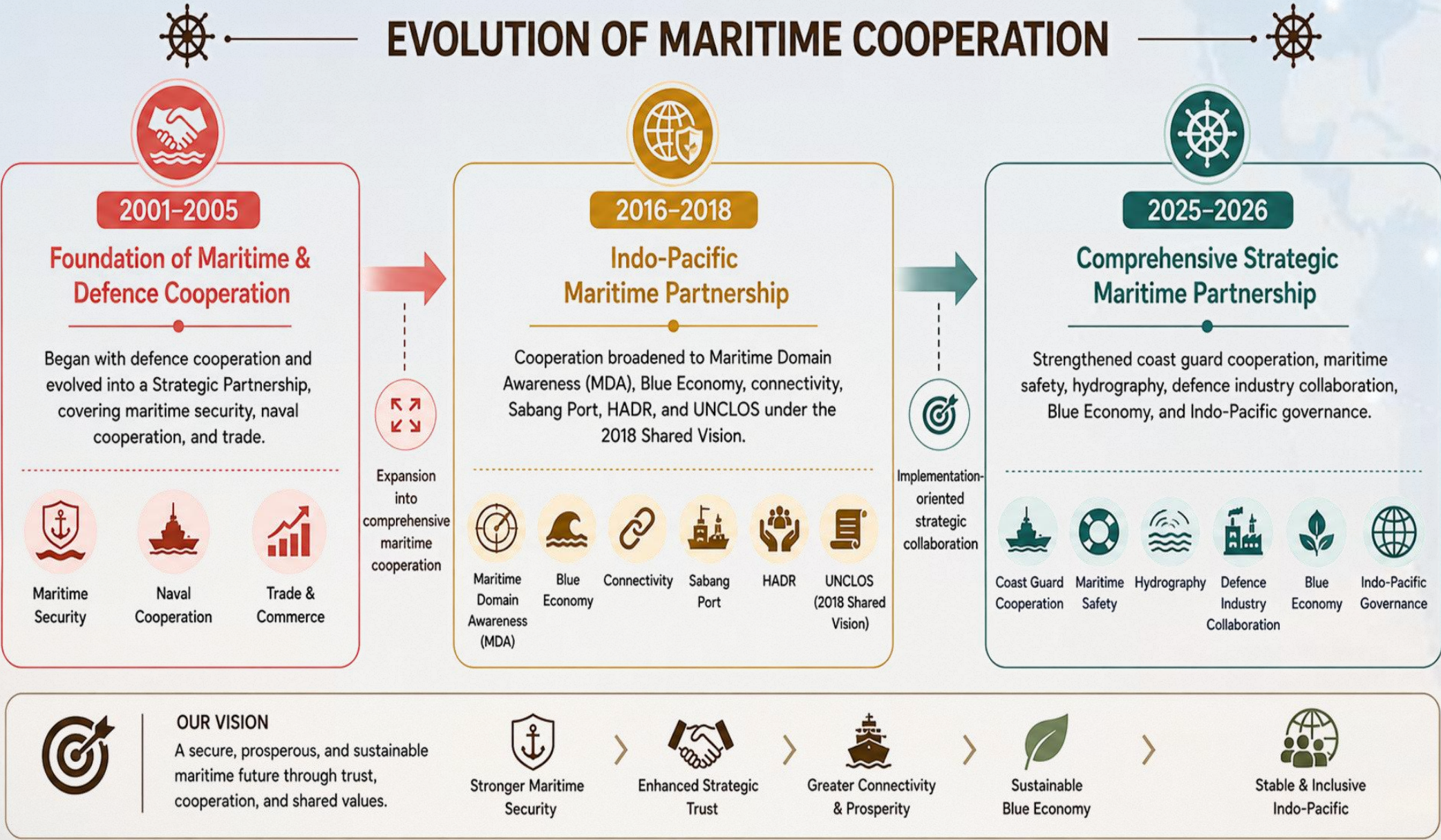
India seeks Dutch expertise, technology and investment to modernise ports, shipping and logistics, promote green maritime development and strengthen connectivity with European markets whereas Netherlands seeks to leverage its expertise in ports, logistics, waterways and green/digital maritime technologies while strengthening Rotterdam–India connectivity and expanding opportunities for Dutch maritime businesses.

India and the Netherlands signed an MoU to strengthen maritime heritage cooperation, linking India’s National Maritime Heritage Complex (NMHC), Lothal, with the National Maritime Museum in Amsterdam. The partnership focuses on knowledge and expertise exchange, conservation, museum design, joint exhibitions, research and cultural programmes, while promoting India’s maritime heritage globally. It also complements wider bilateral cooperation in green shipping, port development and shipbuilding.

7.2.3 India–UAE Maritime Cooperation Agreement:

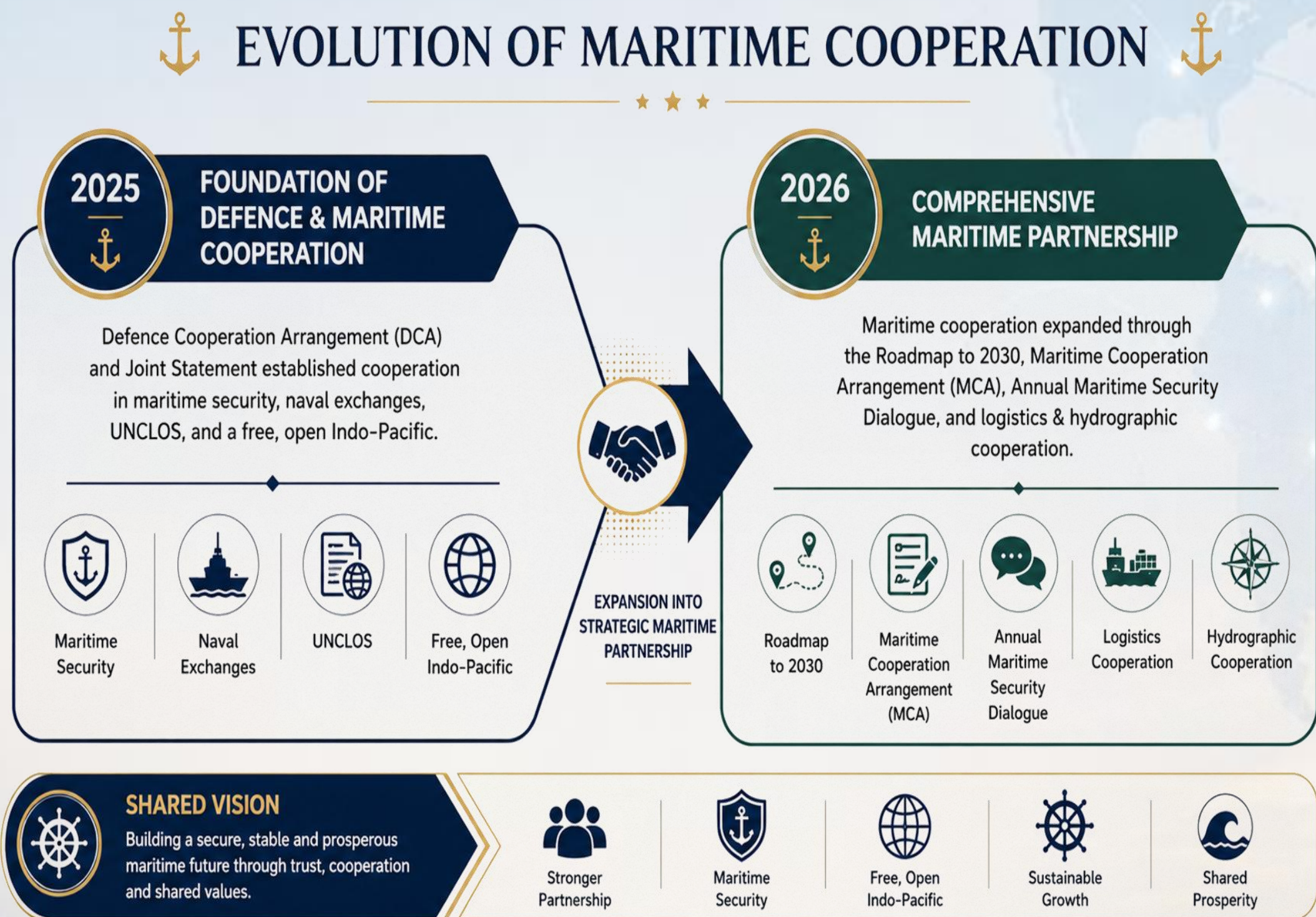


7.2.4 India–Indonesia Maritime Cooperation Agreement:



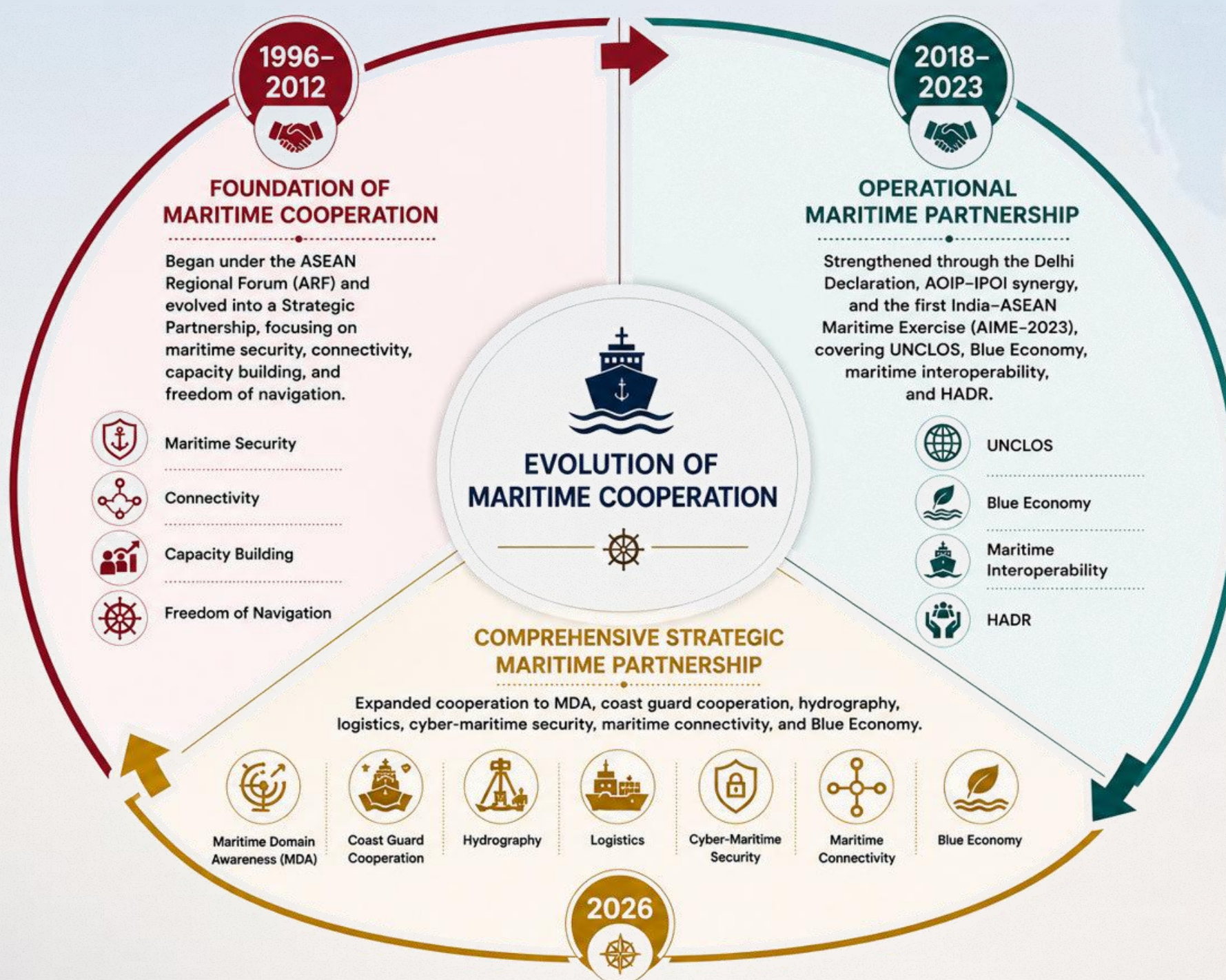
The India–Indonesia maritime partnership is driven by the growing strategic importance of the Indo-Pacific and the two countries’ shared interest in keeping the region peaceful and secure. India focuses on strengthening maritime security, connectivity and a free, open and rules-based Indo-Pacific. Indonesia places greater emphasis on maritime stability, sovereignty, ASEAN centrality and international law.

7.2.5 India–New Zealand Maritime Cooperation Agreement:



The India–New Zealand maritime partnership is built around their shared interest in a free, open and secure Indo-Pacific. India benefits through greater maritime security, information sharing, hydrographic cooperation and access to New Zealand’s Pacific expertise, while New Zealand gains a stronger security partner and deeper access to India’s maritime capabilities and regional reach. Both sides are also strengthening naval cooperation, logistics support, maritime security dialogue and capacity building.

7.2.6 India–ASEAN Maritime Cooperation Agreement:

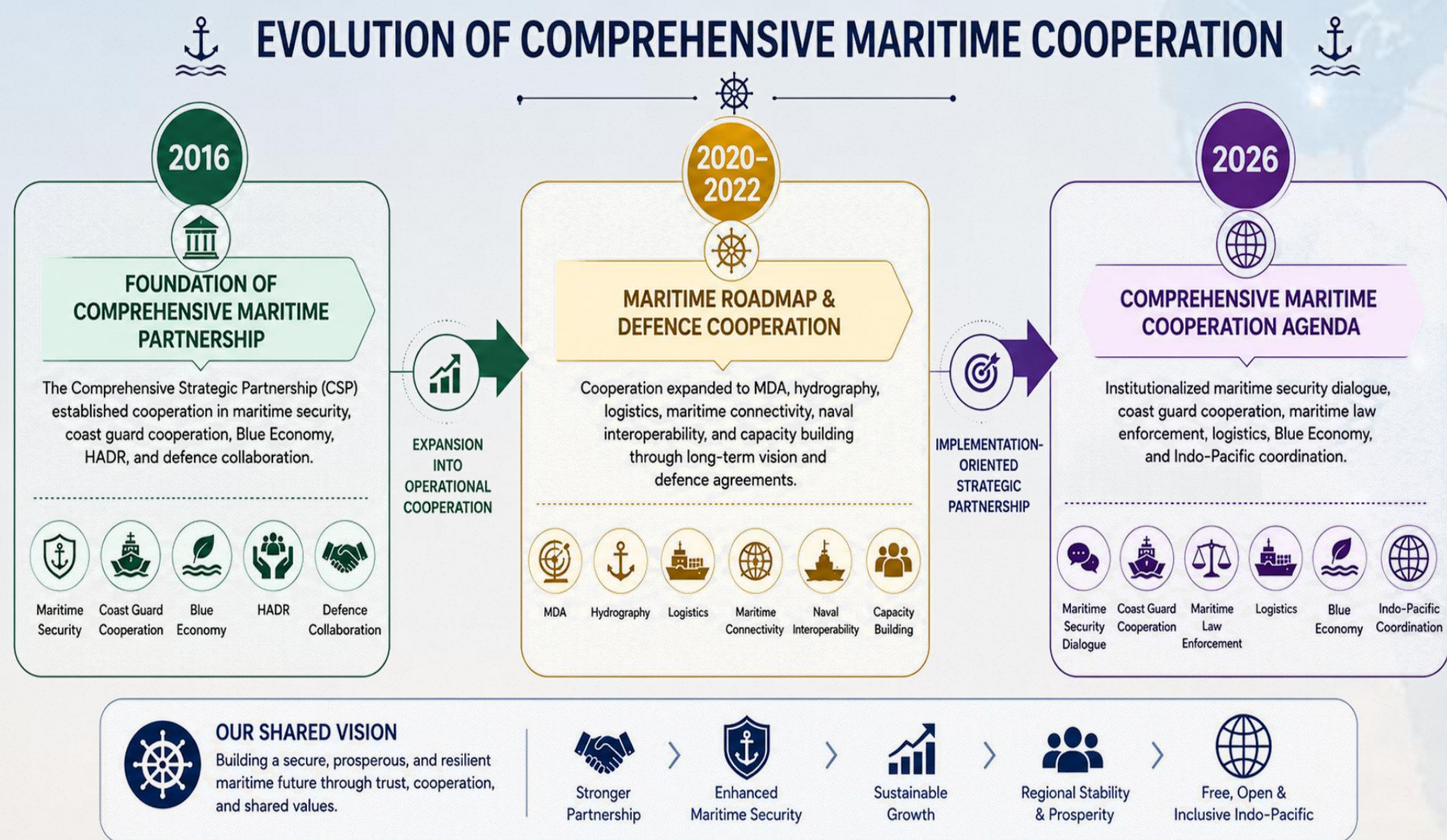


India–ASEAN maritime cooperation is based on their shared interest in a peaceful, secure and rules-based Indo-Pacific, with ASEAN centrality and India’s Act East Policy providing the broader framework.

India benefits through stronger connectivity, maritime security and a deeper presence in Southeast Asia, while ASEAN gains from India’s maritime capabilities, capacity-building and economic links.

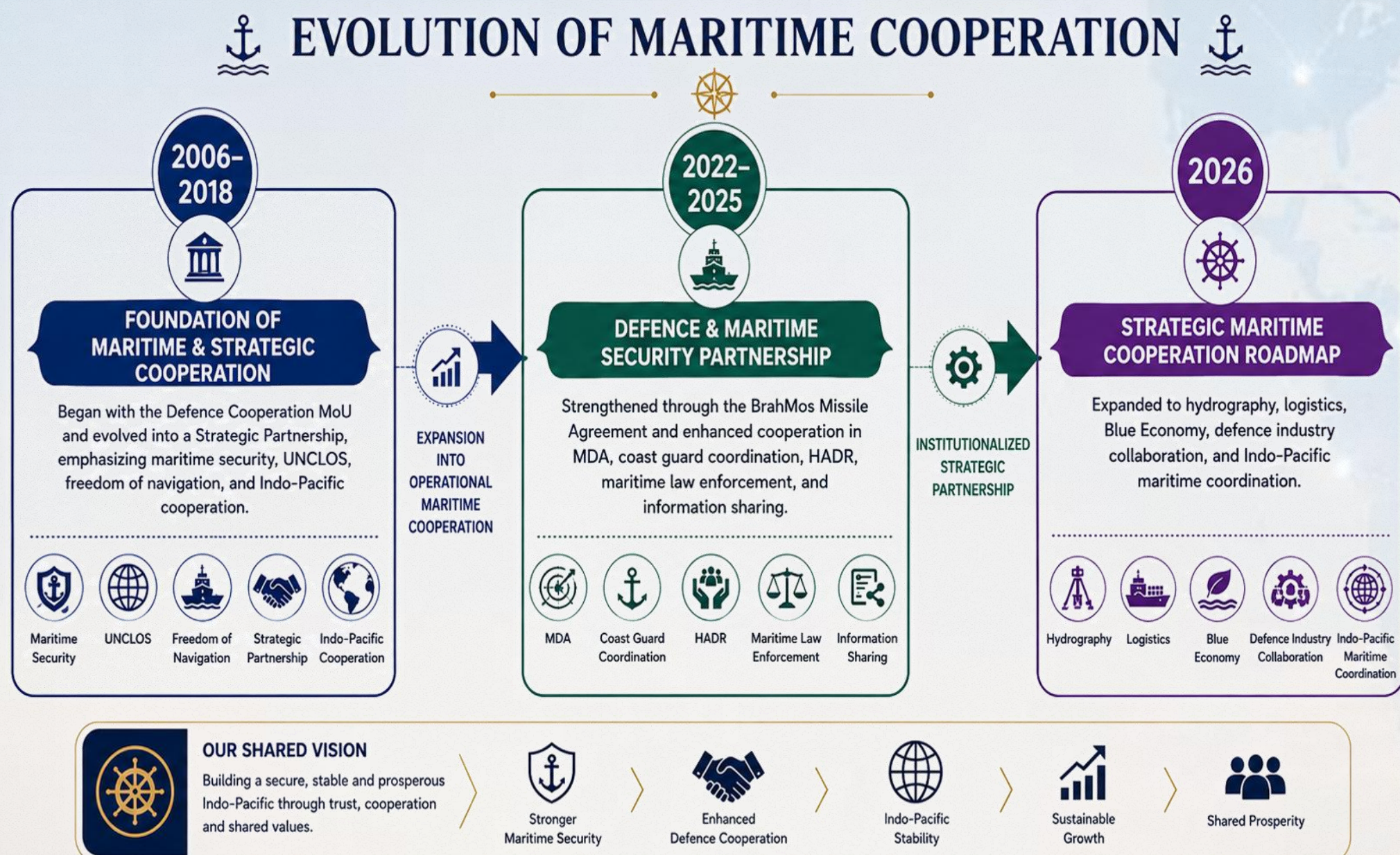
Both sides support freedom of navigation, maritime safety, search and rescue, HADR, anti-piracy efforts and sustainable use of marine resources.

7.2.7 India–Vietnam Maritime Cooperation Agreement:



The India–Vietnam maritime partnership is built on their long maritime history, shared interests and the growing importance of the Indo-Pacific. India wants to deepen maritime security, information sharing and cooperation through initiatives like IPOI, while Vietnam sees India as an important partner for strengthening maritime awareness and regional cooperation. Both countries are also looking to work together in oceanography, marine research, data sharing and capacity building. Overall, the partnership aims to build greater trust, strengthen maritime capabilities and contribute to a more stable Indo-Pacific.

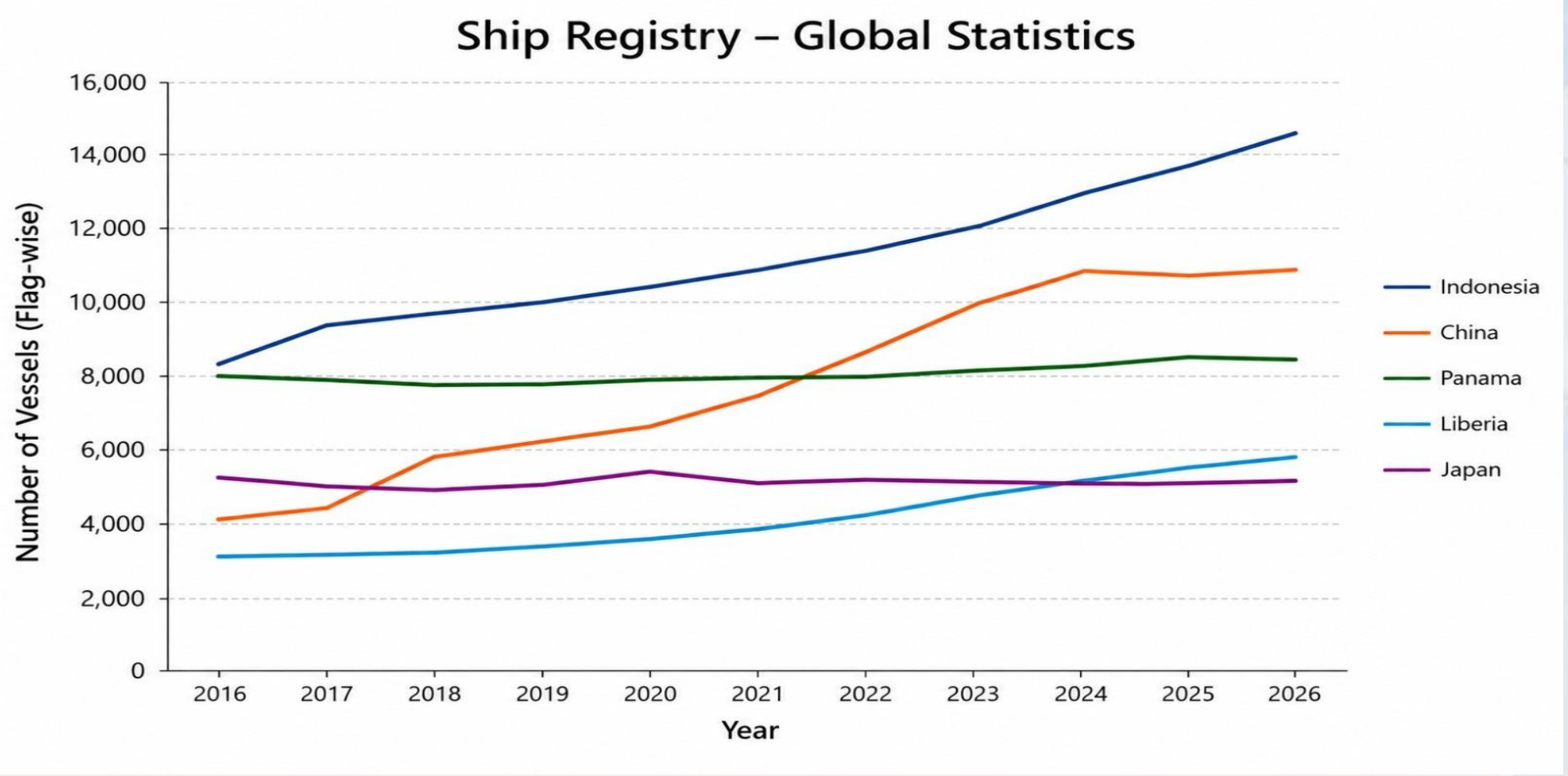
7.2.8 India–Philippines Maritime Cooperation Agreement:



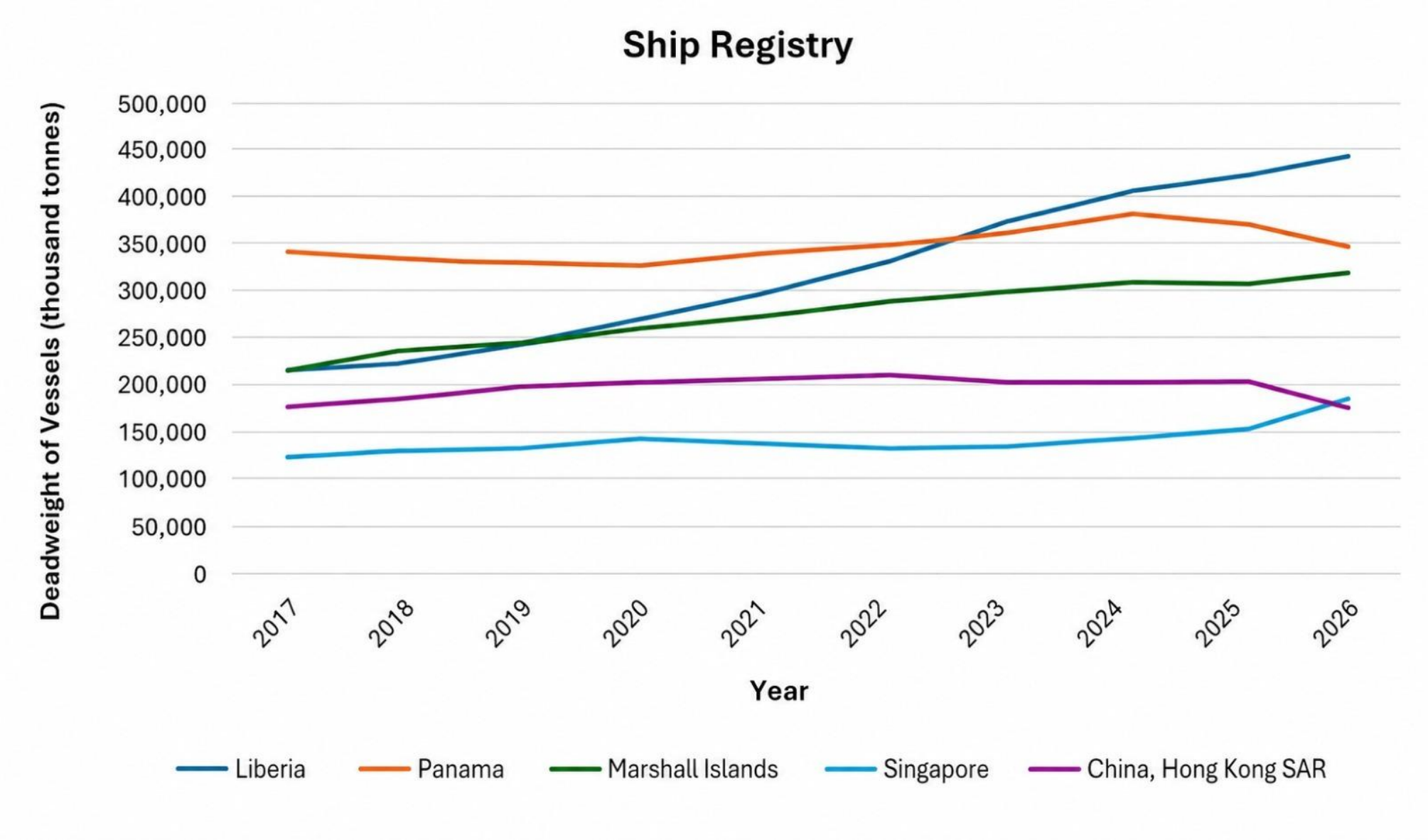
The India–Philippines maritime partnership is mainly driven by practical cooperation in maritime security, trade and regional connectivity, with the Law of the Sea providing an important foundation. India sees the Philippines as a useful partner for strengthening maritime domain awareness and regional cooperation, while the Philippines benefits from India’s maritime expertise and capabilities. Both sides are working together on naval and Coast Guard engagement, seafarers, marine research, HADR and resilient supply chains, helping address common maritime challenges.

8. Ship Registry

8.1 Global and domestic statistics on flagged vessels

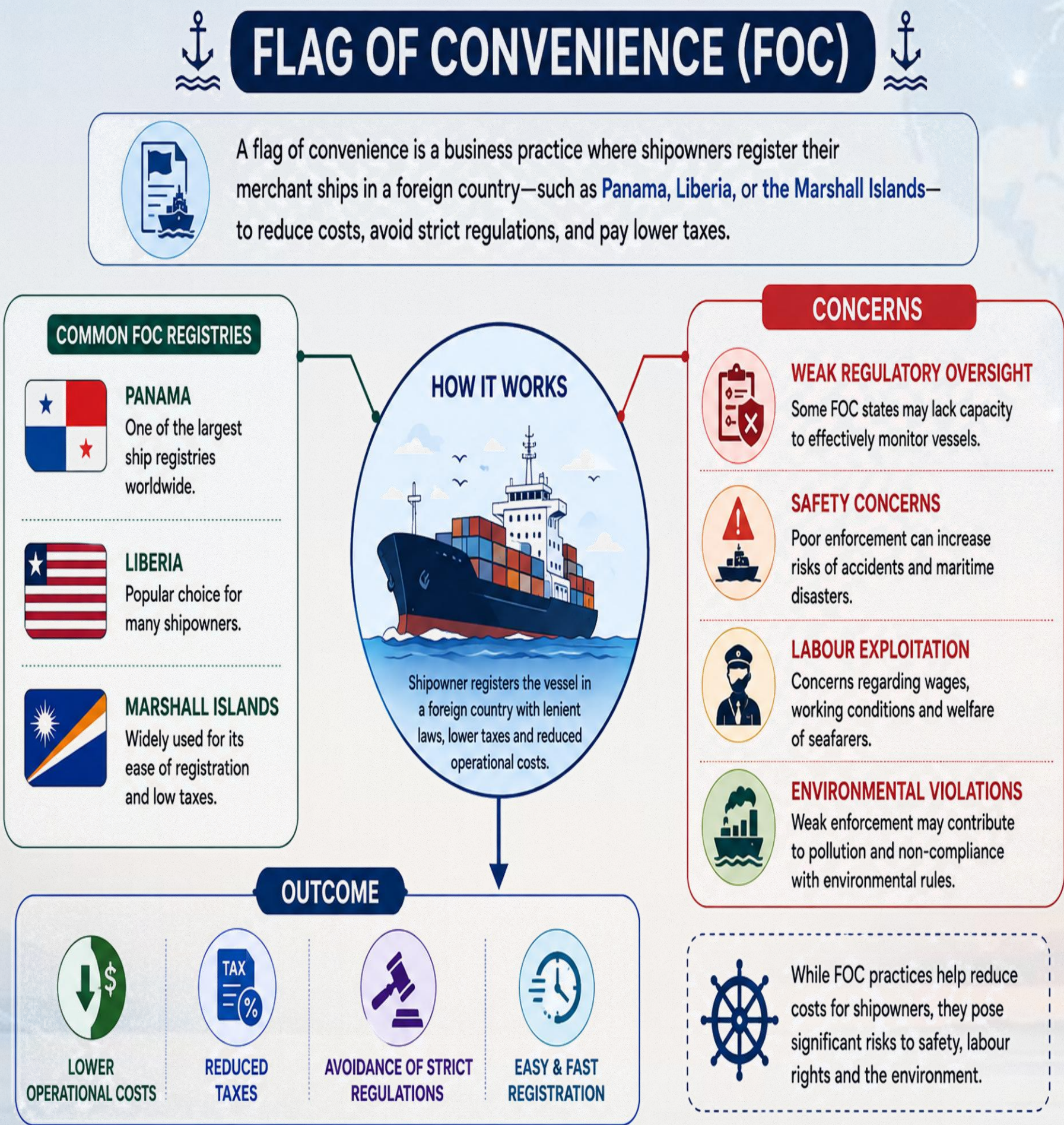


Source: ITC Trade Map



Source: ITC Trade Map

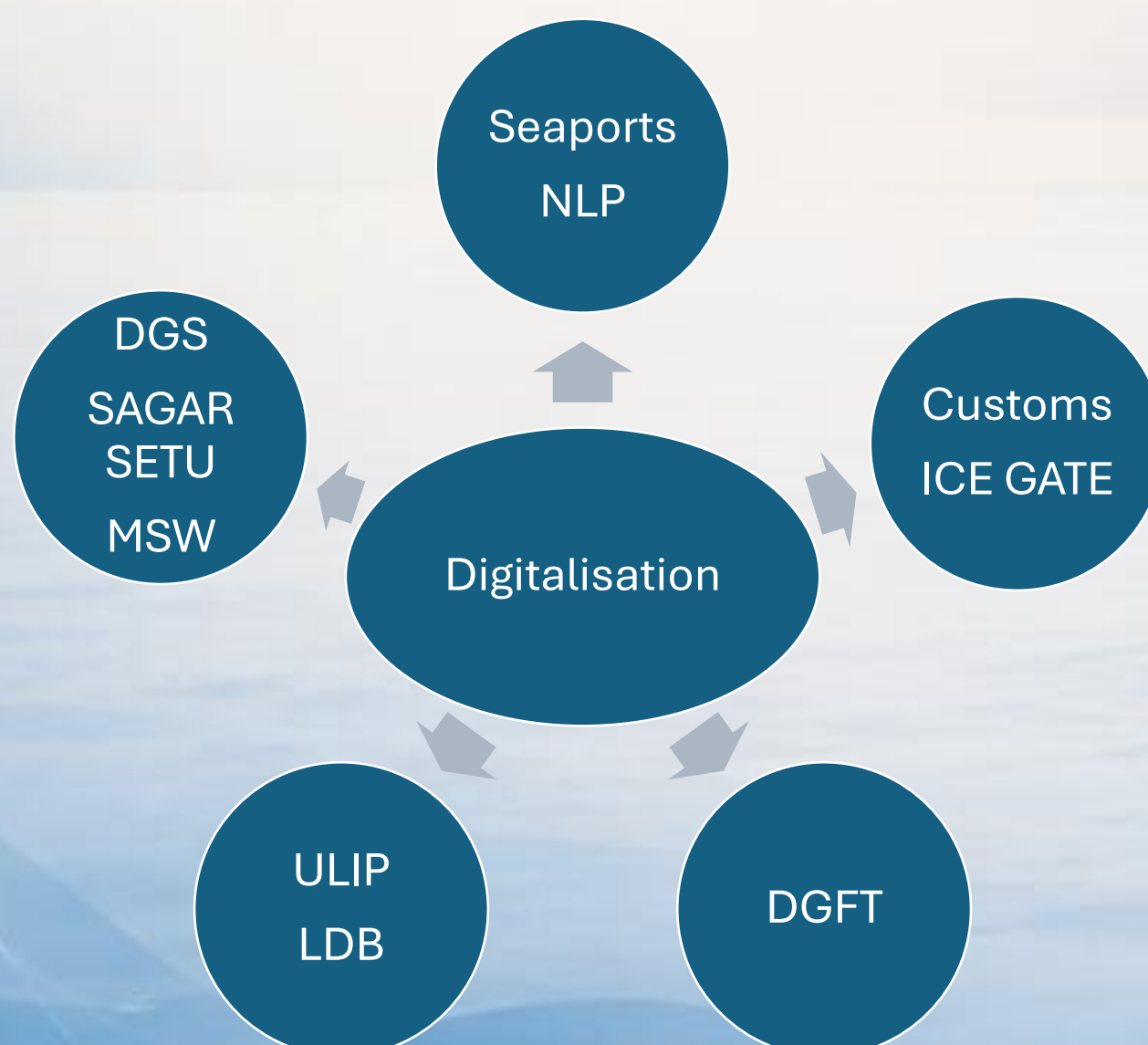
8.2 Flag of Convenience



9. Digitalization

9.1 Digitalisation Initiatives: Building Blocks

- NLP-Marine (National Logistics Portal–Marine)
 - Broadest concept; creates a common digital ecosystem for EXIM maritime logistics.
 - Covers four verticals: Carrier, Cargo, Banking & Finance, Regulatory Bodies/Participating Government Agencies.
 - Integrates Port Operating Systems, Terminal Operating Systems, ICEGATE, regulatory agencies, shipping lines, CFSs/ICDs, customs brokers and importers/exporters.
 - Answers: *“How do we digitally connect India’s maritime logistics ecosystem?”*
- SagarSetu
 - User-facing/operational manifestation and evolution of NLP-Marine.
 - Provides vessel information, gate/CFS information, transactions, payments, operational messages and tracking.
 - Integrates port, cargo and vessel-related processes.
 - Answers: *“How do users actually interact with the integrated maritime digital ecosystem?”*
- Maritime Single Window (MSW)
 - Specifically focuses on ships and their regulatory formalities.
 - Single electronic entry point for ship-related information covering arrival, stay and departure.
 - Launched as a module of SagarSetu (NLP-Marine) in February 2024.
 - Answers: *“How can a vessel submit its regulatory information once instead of separately to multiple authorities?”*



9.2 How the Digital Maritime Ecosystem Works

Suppose a Maersk container vessel arrives at JNPA. The three digital initiatives work together as follows:

Step 1 - NLP-Marine

- NLP-Marine provides the overall digital ecosystem connecting the different stakeholders involved in maritime EXIM logistics:
- Shipping Line → Port → Terminal → Customs → CFS → Cargo Owner → Other Stakeholders
- This represents the NLP-Marine architecture.

Step 2 - SagarSetu

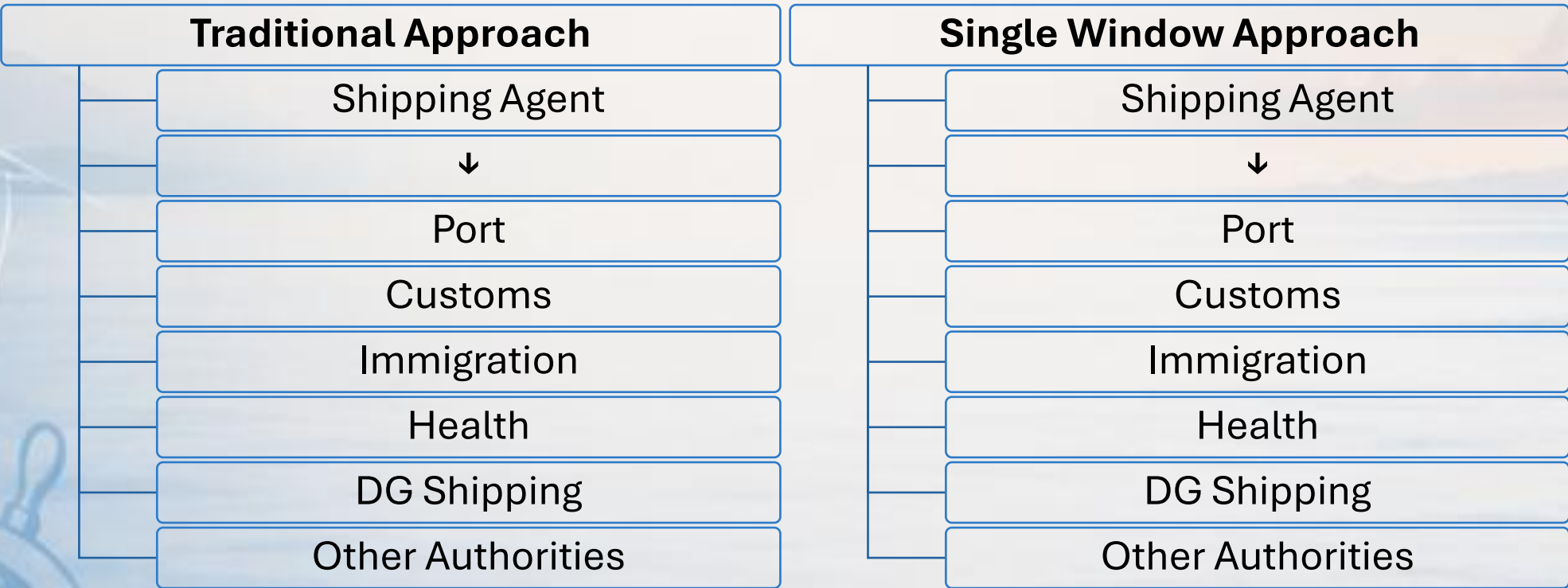
The shipping agent and other users interact with the SagarSetu platform for various operational requirements, such as:

- Vessel information
- Port services
- Cargo-related information
- Transactions and payments
- Operational messages
- Tracking

Step 3 - Maritime Single Window (MSW)

- The vessel's agent submits ship-related regulatory information electronically through the MSW module for: Arrival → Stay → Departure
- The information can then be exchanged with the relevant authorities through a single electronic entry point.

9.3 From Multiple Submissions to a Single Window



This is the basic idea behind the Maritime Single Window: instead of submitting the same information separately to different authorities, the information is submitted through a single electronic entry point and can be exchanged with the relevant authorities.

9.4 Digitalisation Initiatives: Customs, Maritime & Logistics

Initiative	Institution	Core Function / Relevance	Trade-Facilitation Impact
ICEGATE / ICES	CBIC / Customs	Electronic customs clearance, filing and messaging	Faster clearance, lower paperwork, greater transparency
SWIFT	CBIC	Single point for regulatory clearances; links Customs with PGAs	Reduces multiple applications and agency interfaces
e-SANCHIT	CBIC	Electronic submission/storage of supporting documents	Paperless trade and reduced document-handling time
Faceless Customs Assessment	CBIC	Risk-based, anonymised assessment	Reduces physical interface and improves standardisation
SCMTR	CBIC	Advance electronic cargo/manifest information	Greater predictability, advance risk assessment and faster clearance
NLP-Marine	MoPSW	Integrated digital logistics platform	End-to-end visibility of maritime EXIM logistics
e-Delivery Order (e-DO)	IPA / Ports / Shipping Lines	Electronic release of cargo by shipping lines	Reduces paper documents, transaction time and release delays
e-Invoicing & e-Payment through PCS	IPA / Ports	Digital commercial/payment transactions	Paperless and faster cargo processing
SagarSetu	MoPSW	Evolution of NLP-Marine / maritime digital ecosystem	Integrates port, cargo and vessel-related processes
MSW	MoPSW	Unified ship-related data submission/exchange	Reduces duplication through “submit once, use many times” approach

9.5 Digitalisation Initiatives: Logistics Visibility & Port Operations

Initiative	Institution	Core Function / Relevance	Trade-Facilitation Impact
ULIP – Unified Logistics Interface Platform	DPIIT / National Industrial Corridor ecosystem	API-based integration of logistics databases across road, rail, ports, Customs etc.	End-to-end cargo visibility beyond the port boundary
LDB – Logistics Data Bank	NICDC / DMIC ecosystem	Container tracking and logistics visibility	Improves predictability and supply-chain visibility
Direct Port Delivery (DPD)	CBIC / Ports	Direct movement of eligible import containers from port	Lower dwell time and logistics cost
Direct Port Entry (DPE)	CBIC / Ports	Direct entry of export cargo into port	Reduces pre-port handling and congestion
Automated Gate Systems	Ports / Terminals	Electronic vehicle/container identification and processing	Reduces queues and truck turnaround time
Online Port Permits	Ports	Digital access/driver permissions	Reduces paper and administrative delays
Port Operating Systems / TOS	Ports / Terminal Operators	Digital vessel, yard and container management	Improves port productivity and cargo-flow coordination
Enterprise Business Systems (EBS)	Major Ports	ERP + port operating-system integration	Creates a digitally integrated port organisation
Sagarmanthan Dashboard	MoPSW	Real-time performance monitoring	Data-driven governance and performance management
Trade Connect ePlatform	Department of Commerce	Digital export information/intermediation	Improves the pre-trade side of trade facilitation