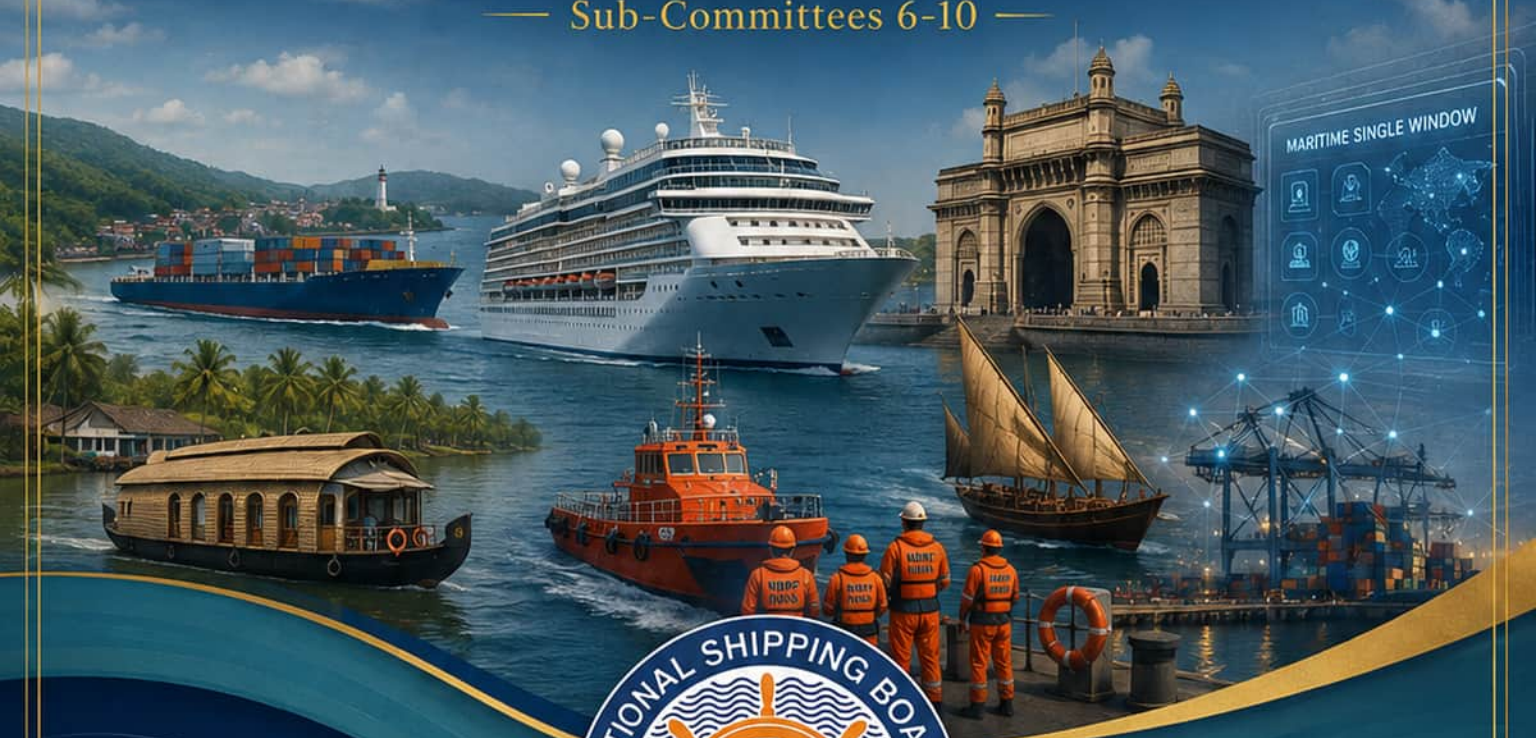




NATIONAL SHIPPING BOARD
MINISTRY OF PORTS, SHIPPING AND WATERWAYS
GOVERNMENT OF INDIA

REPORTS OF THE SUB COMMITTEES

— 2025-26 —
VOLUME II
— Sub-Committees 6-10 —



WISDOM IN THE OCEAN, PROGRESS IN THE NATION



COASTAL
SHIPPING



CRUISE &
HOUSEBOAT TOURISM



EMERGENCY
RESPONSE



MARITIME
HERITAGE



MARITIME
SINGLE WINDOW



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

**NATIONAL SHIPPING BOARD
ANNUAL REPORT
OF THE
SUB-COMMITTEES OF THE NSB
2025-26
Volume II**

Submitted
under
“Rule 10 of Procedure of National Shipping Board”
as specified under
Schedule II
of the
“National Shipping Board Rules, 2026”



WISDOM IN THE OCEAN, PROGRESS IN THE NATION

Attribution – Please cite the work as follows:

National Shipping Board (NSB) (2026). Annual Report of the Sub-committees of the NSB 2025-26. New Delhi: National Shipping Board, Ministry of Ports, Shipping and Waterways, Government of India, New Delhi.

Publication No.-NSB/2026/013/Annual Report of the Sub-committees of the NSB 2025-26/Vol II

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Prepared by:

National Shipping Board Secretariat, New Delhi



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MINISTRY OF PORTS, SHIPPING AND WATERWAYS
GOVERNMENT OF INDIA
NATIONAL SHIPPING BOARD
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2025-26
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Published by



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Sub-Committee Report No.6

Sub-Committee No. 6

Title:

To prepare a roadmap for Promotion of Coastal Shipping & Domestic waterways (coastal & inland) including policy, infrastructure and operational measures to increase coastal cargo share to achieve MAKV-2047 Goals

Chairperson: Shri Rakesh Singh

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PREFACE BY THE CHAIRPERSON OF THE SUB COMMITTEE



Rakesh Singh President ICCSA

Maritime Amrit Kaal Vision 2047 (MAKV 2047) sets a comprehensive roadmap for transformation of Indian maritime sector in the next 25 years. MAKV recognizes the growing importance of developing coastal waterways as an alternative, eco- friendly, and sustainable mode of transportation to decongest the roads and railways and reduce logistics costs.

The potential of coastal waters and its integration with other modes of transportation remains largely untapped with only 6% share of “Coastal mode” in national domestic freight. This is a below par performance considering 11000 KM of coastline and 200 plus major and non-major ports and around 28% of India’s population residing along the coast.

The perspectives of different stakeholder in using coastal waterways as a preferred mode of transportation needs to be addressed.

The perspective of shippers/Cargo Interests:

- ✓ Can the shipowners provide the reliable service on sustainable basis? (provide tonnage on round the year basis)
- ✓ Will it be cost effective (or comparable) in terms of overall cost when compared to Rail/roadways? (after factoring first and last mile connectivity cost.)

The Shipowners’ perspective:

- ✓ Is there sufficient cargo available to ensure existing capacity utilization and encourage future addition of tonnages?
- ✓ Inherent disadvantages associated with water borne transport including geographical.
- ✓ Relatively higher statutory compliance cost when compared to other modes.
- ✓ Overall viability of the business.

The neutral perspective:

- ✓ Modal shift will not happen for the sake of “shift/change”.
- ✓ Business has to viable to be sustainable.

To achieve the MAKV-47 goal of increasing the share of coastal shipping to 12% in domestic freight market, coastal shipping requires sustained support from the Government of India through targeted policy interventions, stakeholder incentives, infrastructure development, and the removal of unnecessary regulatory barriers. These measures are essential to enhance the ease of doing business, improve the competitiveness of coastal shipping, and facilitate a greater shift of cargo from road and rail to the coastal routes.

NSB has formed a sub-committee of members and representatives from stakeholder to identify the reasons for this below par performance and suggest measures to promote “modal shift” in particular and promotion of coastal shipping in general.

I wish to acknowledge the leadership and guidance of the Chairman, National Shipping Board, in constituting this Sub-Committee and entrusting it with a clear and purposeful mandate. The observations, findings, and recommendations contained in this report represent the collective work of the Sub-Committee. Any errors or omissions that may nevertheless remain are entirely my own.

Rakesh Singh
Chairperson- Sub- Committee on Promotion of Coastal Shipping
National Shipping Board

ACKNOWLEDGMENTS

The Sub-Committee wishes to thank all those who participated in the deliberations and in particular the representatives from INSA, ICCSA, CCTA, IWAI, SCI, AMTOI, and members of NSB as sub-committee members. The Sub-Committee also acknowledges the guidance provided by the DGMA, National Shipping Board Secretariat, Indian Port Association, and the Ministry of Ports, Shipping and Waterways in compiling this report.

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	Members	Designation	Organisation
1	Rakesh Singh *	President	ICC Shipping Association
2	Anil Devli *	CEO	Indian National Shipowners Association
3	Rahul Modi*	President	Coastal Container Transporters association (CCTA)
4	A. K Bansal	Director	IWAI
5	Mrs Archana Bharti	DGM	SCI
6	Mr Haresh Lalwani	Gen. Secretary	AMTOI
7	Mr Gautam Roy	Sr. Director	J M Baxi

***Member NSB**

This report draws heavily on the contribution of the members of the sub-committee and thanks them for their evidence-based contribution and support.

LIST OF ABBREVIATIONS

BIMSTEC	Bay of Bengal initiative for multi-sectoral technical and economic cooperation
BPCL	Bharat Petroleum Corporation Ltd
CCPS	Coastal Cargo Promotion Scheme
CIF/FOB	Cost, insurance, and freight/Free on board
COC	Certificate of competency
CRC	Cargo related charges
DGMA	Directorate General of Maritime Administration
EXIM	Export and Import
GT/NT	Gross Tonnage/Net Tonnage
HPCL	Hindustan Petroleum Corporation Ltd
ICCSA	ICC Shipping association
IFO	Intermediate fuel oil
IMO	International Maritime Organization
INSA	Indian national ship owners’ association
IOCL	Indian Oil Corporation Ltd
IPA	Indian Port Association
LSHF-HSD	Low sulphur High flash High speed diesel
MAKV 2047	Maritime Amrit Kaal Vision 2047
MIV	Maritime India Vision
MoPSW	Ministry of Ports, Shipping and Waterways
NSB	National Shipping Board
NTPC	National Thermal Power corporation
NW	National waterways
RoFR	Right of first refusal

SPL	Specified Period License
TOR	Terms of reference
VLSFO	Very low sulphur fuel oil
VRC	Vessels related charges

EXECUTIVE SUMMARY

The report has focused on following key Takeaways:

1	Lack of cargo visibility/assurance is an identified hurdle in sustainable growth of coastal shipping in India and capacity building in coastal sector.
2	Inherent disadvantage associated with “coastal mode” create viability gap.
3	Poor infrastructure support causes delays and adds to cost.
4	Regulatory overreach creates impediments in ease of doing business
5	Regional connectivity is essential to develop coastal shipping.

Indian coastal shipping includes ships carrying cargo and passengers between two Indian ports including islands and service ships (tugs, dredgers, OSVs, etc.) deployed in ports, offshore areas, offshore construction sector, etc. According to the data published by DGMA in 2025, around 1089 ships registered under Merchant Shipping Act, 2025 are designated as “coastal ships”. Out of which around 20% ships are actively engaged in carriage of goods including petroleum products and passengers. Rest of the coastal fleet falls under the category of “service ships”. In addition to the above there are foreign flag ships that operate in Indian coastal waters under the Specified Period /Voyage Licenses issued by the DGMA.

A significant number of foreign flag ships are operating in Indian waters under the licenses issued by the DGMA which shows the lack of investment in Indian flag tonnage. According to data published by DGMA the number of licenses issued to foreign ships to operate in Indian coastal water during the period October 2023-2024 were as follows:

- a. Coastal 932
- b. Offshore 332

Another area of concern is “near zero” capacity in certain categories such as Ro-Ro ships and small capacity container ships (around 300-400 TEU) to serve the

“short sea routes” on the coast. Policy focus on development of Ro-Ro fleet can offset many a challenge faced by coastal shipping, the key one being the first and last mile connectivity. The “modal shift” broader policy intent is to promote carriage of cargo in relatively smaller parcels (say 5000 to 10/15000 DWT) over shorter distances (500-600 NM) and take the load off from the rail/roadways through more environment friendly mode at competitive cost with lower carbon footprints. ***Overall, the sustainability of coastal trade needs robust national coastal fleet.***

The committee also reviewed the earlier initiatives taken by the Govt. of India to promote “modal shift” and its less than desired outcome in achieving the stated targets.

The key findings are:

- Treating coastal shipping as a homogeneous sector, rather than adopting a type-specific and region-specific approach. Adopting a one-size-fits-all approach and not factoring in disadvantage of peninsular coastline in coastal trade.
- Lack of detailed focus on cargo visibility.
- Taking “top down” approach with limited consultation with operational stakeholders to factor ground realities.
- Unimplemented recommendations.
- Lack of institutional mechanism to measure and monitor the progress.

CHAPTER I: MEASURE TO PROMOTE CARGO VISIBILITY/ ASSURANCE ON THE COAST TO MAKE COASTAL SHIPPING SUSTAINABLE AND SPUR INVESTMENT IN INDIAN TONNAGE

1.1 Purpose and Scope:

The lack of cargo visibility or assurance creates a proverbial “chicken and egg” situation. Ship owning is a capital-intensive business with long gestation period. Without assured business (cargo), investment in the sector will remain low. This is one of the key reasons behind India’s failure to develop robust “coastal fleet”.

At the same time, there are ample examples to establish that the cargo assurance does lead to significant modal shift and investment in Indian tonnage. Some of the examples are:

- i. Movement of cargo through Amba River (NW-10). In 2025 approximately 30 MMT of cargo was transported through this waterway.
- ii. The green tug transition policy (GTTP) with 15 years of employment guarantee has spurred the investment in this sector by Indian companies.
- iii. Movement of cargo in Hazira (Gujarat) region leading to investment in shipping is yet another example of cargo lead development of shipping.

1.2 Identification of the cargo movements along the coast with details of commodities, packaging, quantity, parcel size, etc:

1.2.1 Background:

The industrial production and consumption patterns along the coast are varied and often skewed. While most raw materials are found around the east or near east coast of India, the production and manufacturing are centred around western or southern regions. Often the shipowners are forced to “ballast out” the return passage leading to a non-viable voyage.

1.2.2 Identified problems and suggested measure:

- i) Absence of granular data on coastal cargo movement and potential for modal shift to coastal from land-based modes. The data on the coastal cargo carried on foreign flag ships need to be collected and regularly reviewed for future planning.

Undertake continuous market outreach and awareness campaigns with a region-specific focus to connect cargo to ships. Connect with trade bodies at state level.

Conduct comprehensive cargo mapping by collecting granular data on cargo movements including cargo type, quantity, packaging, origin-destination pairs, and potential for containerization. Publish data on cargo carried on foreign flag ships.

Facilitate regular interactions between cargo owners and shipowners to identify operational, commercial, and policy barriers affecting modal shift

1.3 Address disadvantage of a peninsular coast line:

1.3.1 Background:

A peninsular coastline is not always conducive for cost effective and efficient coastal cargo movement. The road and railways can offer far efficient services and rates in most sections. A country like China has the advantage of straight north-south coastline.

1.3.2 Identified problems and suggested measures:

i) Lack of focus on “short sea shipping” and “Hub and spoke” model for transportation:

The identification of viable short-sea shipping routes along both the coasts of India (ECI and the WCI), with cargo potential, needs to be undertaken. Based on this assessment, strategically located key ports along each coast can be developed as “hub ports” to serve neighboring ports and coastal towns through a hub-and-spoke model. For example, Chennai Port can function as a hub for non-major ports located to its north and south along the east coast, facilitating efficient cargo aggregation and distribution, improving coastal connectivity, and enhancing the overall efficiency of short-sea shipping operations.

1.4 Limited participation of Public Sector Units (PSUs) in coastal trade:

1.4.1 The Background:

PSU participation in coastal shipping is restricted to bulk shipments of coal (largely by Coal India and state power generation companies like NTPC) and Petroleum products moved by oil majors such as IOCL, BPCL, and HPCL.

1.4.2 Identified problems and suggested measures:

i) At present, PSUs predominantly transport bulk commodities through coastal shipping in large parcel sizes. This limits the participation of coastal shipping in the movement of smaller consignments.

PSUs engaged in the distribution of fertilizers, agricultural products, and other consumer goods should be encouraged to move cargo in smaller parcel sizes, including containerized cargo, through coastal shipping. Such participation would generate sustained cargo volumes, improve the viability of coastal shipping services, and stimulate investment in suitable coastal ships and related infrastructure.

In addition, investment by PSUs in coastal shipping assets, either directly or through long-term contractual arrangements with Indian shipping companies, would create a mutually beneficial ecosystem by ensuring assured cargo for ship operators while providing PSUs with a reliable, cost-effective, and environmentally sustainable mode of transport.

1.5 Use coastal trade to spur investment in Indian flag ships:

1.5.1 Background:

Any “modal shift” policy should first focus on “shifting” the coastal business from foreign flag ships to Indian flag ships. A country needs a robust national fleet for sustainable coastal trade. Besides, the foreign flag ships enjoy distinct advantages over Indian flag ships due to lesser compliance and manning cost.

1.5.2 Identified problems and suggested measures:

i. Taxation regime and high cost of finance:

Remove 5% IGST imposed on acquisition of ships by Indian companies whether by way of a new construction or second-hand acquisition.

Extend infra-status to “smaller” ships i.e. ships above 500 GT or more than 24 meters in length.

Make Indian registry mandatory for foreign flag ships operating under a SPL exceeding 6 months period with a provision to withdraw registry upon completion of the SPL.

Introduce more liner container services along the coast to build capacity and shippers/customers confidence.

Provide incentive to develop national Ro-Ro fleet and related infrastructure.

1.6 Reaffirm Free on Board (FOB) imports so that the opportunity to carry the last mile is also given to Indian coastal ships:

1.6.1 The Back ground:

The homogenous/bulk cargo imported to India often involves multiple ports discharge. Under the CIF terms, Indian importers have no say in choosing the ship or its flag. This often leads to foreign flag ships executing the entire stretch of voyage including coastal.

1.6.2 Identified problems and suggested measures:

i) Imports of cargo by Indian companies under the CIF terms leads to a loss of business opportunity for Indian shipowners:

Under the CIF terms, the exporter chooses the ship and the flag. Reverting to imports on FOB terms will provide opportunity to Indian importer to choose the ship and in turn will create business opportunities for Indian shipowners under the RoFR.

CHAPTER II: ADDRESS VIABILITY GAP TO MAKE COASTAL SHIPPING COMPETITIVE VIS A VIS RAIL AND ROADWAYS

2.1 Purpose and Scope:

Coastal shipping relies on other modes of transport for first- and last-mile connectivity. Although coastal shipping is significantly cheaper in terms of moving large volumes compared with other modes of transport, the overall cost of transporting cargo from its origin to the final destination often becomes higher when compared with road and rail transport. Short-term finance, charges related to multiple cargo handling, high regulatory compliance costs, etc. further reduce the competitiveness of the coastal shipping sector relative to other domestic modes of transportation.

2.2 Incentivizing ship and cargo owners:

2.2.1 The Background:

Programs like the European Union's Marco Polo provided direct financial assistance to logistics operators, covering a percentage of expenditures required to shift freight from road to sea. The scheme was a European Union funding program designed to reduce road congestion and improve environmental sustainability by shifting freight transport from highways to eco-friendly alternatives like short-sea shipping, rail, and inland waterways.

2.2.2 Identified problems and suggested measures:

i) Need of handholding by the government in the form of incentives to Ship and Cargo owners until the business becomes self-sustainable:

At the time of writing this report, the MoPSW is working on “Coastal Cargo Promotion Scheme” (CCPS) with budgetary support that proposes to incentivize cargo interest as well as shipowners who opt for modal shift. The details of the CCPS are being worked out.

It is expected that CCPS will be simple, transparent, and based on clearly measurable criteria and the views of all stakeholders will be taken on boards before the finalization of the scheme.

ii) Fuel cost is the single largest operating expense for ship owners, accounting for approximately 40% of the overall operating cost. Smaller coastal ships use Low Sulphur High flash - HSD (LSHF-HSD) as fuel for propulsion and power generation much like trucks on Indian roads:

The larger coastal ships and ships engaged in EXIM trade use Intermediate Fuel Oil (IFO) or Very Low Sulphur Fuel Oil (VLSFO). The IFO/VLSFO is supplied to ships operating on Indian coast at 5% GST.

According to the data published by MoPSW (2024-25), the total fossil fuel consumed by the Indian shipping sector was as follows:

IFO: 1.53 MMT

HSD: 0.764 MMT

LDO: 0.015 MMT

Out of the total consumption of HSD, smaller coastal ships consume merely about 0.4 MMT of HSD per annum which is a very small quantity when compared to the IFO consumption and national annual fossil fuel consumption of over 250 MMT.

To improve the competitiveness of coastal shipping and facilitate modal shift from road to waterways, it is recommended that LSHF-HSD supplied to coastal vessels be brought under the GST regime and taxed at a concessional rate of 5%.

During the recent geo political flare up in Arabian Gulf, the price of LSHF-HSD supplied to coastal ships shot up by 50 to 100%. The GOI shall adopt measure and safeguards to protect coastal shipping from extraordinary rise in fuel prices due to geo-political flare-ups.

iii. Major port authorities offer discounted vessels related charges (VRC) to coastal ships. However, this tariff is linked with U S Dollar and depreciation of Indian rupees impacts the VRC for coastal ships:

It is recommended that VRC, CRC, and other cargo related charges related to coastal shipping shall be delinked with USD and designated in INR.

CHAPTER III: IMPROVE INFRASTRUCTURE ASSOCIATED WITH “COASTAL ECO SYSTEM”.

3.1 The Purpose and Scope:

Coastal shipping, or the "modal shift," is not limited to the availability of the right types and sizes of ships or compatible cargo. Its success also depends heavily on the availability of the necessary supporting infrastructure, preferably dedicated, that enables coastal ships and cargo to enter and exit ports seamlessly, without procedural delays.

3.2 Dedicated coastal eco system and participation of non-major ports and coastal states in developing coastal shipping.

3.2.1 The Background:

All major ports in India have been directed to provide berths for coastal ships and movement of coastal cargo. However, this policy lacks clarity in terms of number and type of berths, and their availability. On the other hand, non-major ports are under no obligation to dedicate berths for coastal ships or provide priority berthing to coastal ships.

Further, inadequate road and rail connectivity to and from ports, along with the lack of dedicated container freight stations for coastal trade, continue to pose significant challenges to the efficient domestic movement of cargo using coastal routes.

3.2.2 Identified problems and suggested measures:

i) The absence of a clear and transparent berth allocation policy for coastal ships and cargo at major ports and non-participation of non-major ports in the coastal shipping framework:

Non major ports account for almost 50% of the cargo handled by Indian seaports. Without their engagement and participation, the coastal shipping will never achieve its identified potential.

Establish and enforce clear and transparent coastal berth allocation policy. The information on berths dedicated for coastal business and their availability should be made posted in public domain.

Incentivize non major ports to develop dedicated facilities for coastal trade. The coastal states should play key role in creating eco system exclusive for coastal shipping.

ii) Lack of space/facility for agglomeration of coastal cargo (cargo complexes) with efficient connectivity:

Identify key ports that can act as HUBs for cargo agglomeration/complexes for freight movements to nearby ports. (Hub and spoke model).

The entry and evacuation infrastructure to/from ports (roads and railways) need to be upgraded to facilitate quick turnaround of cargo/ship.

CHAPTER IV: RATIONALIZE VARIOUS REGULATORY REGIMES TO FACILITATE EASE OF DOING BUSINESS

4.1 The Purpose and Scope:

Ship owning is a very regulated activity. The maritime regulatory regime is largely governed through IMO conventions enforced through the maritime administration of the country (DGMA). However, the IMO permits the member states to dilute the requirement of the conventions for ships engaged in domestic/coastal trade. The extent of dilution is the discretion of the member state. The coastal ships by virtue of their proximity to the coast fall under lower risk category when compared to ocean going ships.

Similarly, customs, immigration, and other such authorities have different sets of rules and procedures of ships flying national flags engaged in domestic trade and ships engaged in EXIM trade.

Regulatory bodies in India have to take a pragmatic and uniform approach when applying rules to ships flying Indian flag and engaged in exclusive domestic/coastal trade.

4.2 Reform customs procedures for the smooth movement of coastal ships and cargo:

4.2.1 The Background:

Indian coastal ships carrying cargo exclusively between Indian ports do not involve any loss of revenue to the government or the risk of engaging in prohibited trade. Therefore, subjecting coastal vessels to regulatory procedures designed for ships engaged in EXIM (export-import) trade imposes unnecessary compliance costs and operational delays. These requirements reduce the efficiency and competitiveness of coastal shipping while creating avoidable administrative processes that primarily benefit intermediaries rather than serving any meaningful regulatory purpose. A differentiated regulatory framework for domestic coastal shipping would improve ease of doing business, lower logistics costs, and support the growth of India's coastal shipping sector.

4.2.2 Identified problems and suggested measures:

i) Coastal ships, coastal cargo, supplies, and services are subject to similar “customs checks and control” as applicable to ships engaged in EXIM trade leading to significant delays and cost escalations adversely impacting the efficiency of coastal trade.

Nominated coastal berths within a port, together with their adjoining operational areas, should be de-notified from customs control, while retaining appropriate security safeguards where necessary.

Wherever regulatory oversight is required, an online information-sharing and reporting system should be implemented to facilitate compliance, eliminate unnecessary human interface, and enhance transparency and efficiency.

Customs procedures and practices applicable to coastal shipping should be standardized and implemented uniformly across all ports in India to ensure consistency, predictability, and ease of operations.

4.3 Reform immigration procedures for Indian flag ships operating between two Indian ports/places:

4.3.1 The Background:

Subjecting Indian nationals travelling on Indian ships between two Indian ports to immigration checks and controls is an anomalous requirement that warrants urgent review. This practice is also inconsistent with the principles governing domestic travel and has few, if any, comparable precedents in other major maritime jurisdictions.

4.3.2 Identified problems and suggested measures:

i) Seafarers engaged on Indian flag vessels engaged in coastal/domestic trade continue to be subjected to Immigration rules for sign on/off and shore leave. This leads to escalation in operating costs, inconvenience to seafarers and scope for middlemen to exploit situation:

The Ministry of Home through a notification issued in 2025 has exempted Indian flag ships operating within the port limits from immigration checks and control. The implementation of the notification is pending till date.

The present practice of subjecting Indian coastal ships operating between 2 Indian ports to immigration checks and controls shall be replaced by a simpler (on line) system of verification and checks, if required.

4.4 Rationalize application of maritime regulations to coastal ships:

4.4.1 The Background:

Maritime regulatory overreach and the resulting compliance burden have significantly increased the cost of coastal shipping, widened the viability gap, and diminished its attractiveness as an investment opportunity. Excessive regulatory requirements not only escalate operating costs but also reduce the competitiveness of coastal shipping as a sustainable mode of domestic transport.

In addition, the Indian shipping industry, particularly the coastal shipping segment, is facing an acute shortage of qualified officers due to a widening gap between the demand and the supply of certified officers.

4.4.2 Identified problems and suggested measures:

i) Address regulatory overreach:

Revisit and rationalize the maritime regulatory framework governing coastal shipping, taking into account operations in close proximity to the coastline. Engage with stakeholders before proposing any major regulatory changes.

Remove all IMO plus regulations such as “age norm” for coastal ships.

Facilitate seamless transition of vessels between coastal and inland waterway operations through a simpler regulatory framework.

Conduct a study to replace equipment, machinery, and systems of foreign origins fitted on coastal ships with same manufactured in India and complying with national standards.

ii) To address shortage of officers on Indian ships and in particular coastal ships:

As a short- to medium-term measure, the DGMA should permit Indian nationals holding valid foreign Certificates of Competency (CoCs) to serve on Indian coastal vessels, subject to appropriate verification. At present, such permissions are generally limited to Indian seafarers holding CoCs issued by only a small

number of countries (such as the United Kingdom and Malaysia), which unnecessarily restricts the available pool of qualified Indian officers.

Expanding the recognition framework to include CoCs issued by other countries that meet internationally accepted standards would provide immediate relief to the acute shortage of officers, improve fleet availability, and support the continued growth of India's coastal shipping sector while longer-term measures to increase the domestic supply of qualified seafarers are implemented.

To improve the supply line, develop guidelines for Inland certificate holders to upgrade their competency to serve on smaller coastal ships.

4.5 Create domestic frame work of Domestic multi-modal document:

4.5.1 The background:

The Multimodal Transportation of Goods Act, 1993 (brought into force in 1994) enabled the carriage of EXIM (export-import) cargo through multiple modes of transport under a single document of carriage. Coastal and inland water transport depend on road and rail networks for first- and last-mile connectivity. As traders increasingly demand seamless door-to-door logistics services, shipowners are compelled to offer integrated transport solutions. Consequently, multimodal transport operators have assumed a crucial role in coordinating the movement of cargo carried by coastal vessels. A similar legislative framework is required to facilitate the domestic carriage of goods under a single document of carriage across multiple modes of transport, thereby enabling efficient, seamless, and integrated logistics services.

4.5.2 Identified problems and suggested measures:

i) At present, each mode of transportation is governed by a separate document of carriage issued by different regulatory authorities, resulting in fragmented documentation and administrative processes across the multimodal transport chain:

This sub-committee proposes to establish a legal framework for domestic multimodal transportation of goods involving coastal/inland waterways. Such a framework should provide for the issuance of a single multimodal transport document covering the entire domestic journey.

The introduction of a unified transport document for domestic multimodal movements would:

- i. Simplify documentation and contractual arrangements.*
- ii. Reduce transaction costs and administrative burden.*
- iii. Improve cargo traceability and operational efficiency.*
- iv. Promote seamless integration of road, rail, coastal shipping and Inland waterways.*

CHAPTER V: PROMOTE REGIONAL CONNECTIVITY (BIMSTEC)

5.1 Purpose and Scope:

India has an extensive coastline, and in many instances the distance between two Indian ports exceeds the distance between an Indian port and a port located in a neighboring BIMSTEC country. The marine risks associated with services between Indian ports and ports in BIMSTEC countries are almost similar to ones encountered in coastal shipping. At the same time, such services offer significant opportunities to enhance regional trade, and create new business opportunities for Indian shipowners and traders. Recognizing these advantages, there is a need to strengthen regional maritime connectivity through bilateral coastal shipping arrangements with neighboring BIMSTEC countries.

5.2 Increase regional connectivity to create business opportunities for Indian shipowners and traders:

5.2.1 Background:

India and Bangladesh signed an agreement on Coastal Shipping in 2015, enabling coastal and domestic vessels of both countries, up to the prescribed gross tonnage (GT) limit, to operate between designated ports without being subject to the full international regulatory regime applicable to international voyages under the IMO. The agreement was designed to facilitate the seamless movement of cargo between the two countries at lower transportation costs, thereby promoting bilateral trade, and enhancing regional connectivity. A similar agreement with other neighboring BIMSTEC countries can offer potential benefits to Indian ship owner and traders.

5.2.2 Identified problems and suggested measures:

i) Absence of bilateral Coastal Shipping Agreements with Sri Lanka and Myanmar:

Sri Lanka occupies a strategic position in the Indian Ocean and is central to the trade corridor connecting the eastern and western coasts of India. Enhanced coastal shipping connectivity with Sri Lanka would facilitate more efficient movement of cargo and containers, reduce logistics and transshipment costs, and expand commercial opportunities for Indian shipowners and traders.

Similarly, improved maritime connectivity with Myanmar would strengthen trade links within the Bay of Bengal region and support greater economic integration among BIMSTEC member countries.

This Sub-Committee recommends that India pursues similar trade and shipping agreements with Sri Lanka, followed by Myanmar. An agreement with Sri Lanka would strengthen maritime connectivity between the eastern and western coasts of India, promote coastal shipping, enhance regional trade integration, and provide greater business opportunities for Indian shipowners. Subsequently, a similar arrangement with Myanmar would further improve regional maritime connectivity and facilitate trade within the Bay of Bengal region.

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PART VIII

Sub-Committee Report No. 7

Sub-Committee No. 7

Title:

**To Preparing a roadmap for Promotion of Cruise & House Boat
Tourism to achieve MAKV-2047 Goals**

Chairperson: Shri Rahul B. Modi

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PREFACE FROM THE CHAIRMAN OF THE SUB-COMMITTEE



Rahul Modi President CCTA

The maritime tourism sector in India stands at a critical inflection point. While ocean cruise shipping offers massive potential for international and domestic passenger flows, regional backwater ecosystems like Kerala’s houseboats represent iconic cultural products that require delicate, sustainable balance. Recognized globally, Kerala's houseboats support thousands of livelihoods but face rising pressure from fragmented regulation, safety variations, and ecological congestion.

To address these multi-faceted challenges, the National Shipping Board (NSB) constituted this Sub-Committee to conduct a holistic policy and operational review. The objective of this report is twofold: first, to establish a predictable, commercially viable, and hospitality-led framework for ocean and coastal cruise shipping across Indian ports; and second, to deliver a modernized, single-window compliance and environmental protection framework for Kerala’s houseboat sector.

This report systematically analyzes core sectoral themes from port infrastructure, custom/immigration protocols, and tax predictability to lake-wise carrying capacities, GPS-linked waste tracking, and green vessel transitions. Designed for immediate execution, it translates strategic vision into a clear, 100-day checklist and a 5-year roadmap with explicit KPIs and agency accountabilities.

Rahul B. Modi
Chairman Sub-Committee on Promotion of Cruise Tourism
National Shipping Board

ACKNOWLEDGEMENTS

The Sub-Committee extends its heartfelt gratitude to the Ministry of Ports, Shipping and Waterways (MoPSW), Government of India, for its unwavering guidance and support. We express special thanks to the Directorate General of Shipping (DGS), the Inland Waterways Authority of India (IWAI), and the Ministry of Tourism for providing essential data and administrative support.

We are deeply indebted to the Department of Tourism (Government of Kerala), the State Wetland Authority Kerala (SWAK), the Kerala State Pollution Control Board (KSPCB), and various local boat owners' associations whose frontline insights were invaluable in structuring the Kerala houseboat framework. Finally, we acknowledge the contributions of port authorities, immigration and customs officials, and private cruise operators whose operational perspectives helped ensure that every recommendation in this report is practical, scalable, and impact-driven.

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Meetings Held:

Formal meeting dates, venues and participants should be inserted from official Sub-Committee records. The report reflects policy review, stakeholder experience and sectoral deliberations on cruise operations and Kerala backwater tourism.

S. No.	Date	Mode / Venue	Subject / Focus Area
1	12 November 2025	Hybrid / MoPSW, New Delhi	Cruise policy, port infrastructure, customs/immigration, and tariff packaging.
2	28 January 2026	In-person / Kochi, Kerala	Kerala houseboat governance, safety compliance, carrying capacity, and environmental protection.
3	15 April 2026	Virtual Platform	Finalization of recommendations, action plan, KPIs, and monitoring framework.

LIST OF ABBREVIATIONS

Abbreviation	Full Form
AIS	Automatic Identification System
APIS	Advance Passenger Information System
B2B	Business-to-Business
CISF	Central Industrial Security Force
DGS	Directorate General of Shipping
GIS	Geographic Information System
GPS	Global Positioning System
GST	Goods and Services Tax
ICCCSA	Indian Coastal Conference & Shipping Agents Association
IWAI	Inland Waterways Authority of India
KIV	Kerala Inland Vessel Rules
KPI	Key Performance Indicator
KSPCB	Kerala State Pollution Control Board
LSGD	Local Self Government Department (Kerala)
MARPOL	International Convention for the Prevention of Pollution from Ships
MICE	Meetings, Incentives, Conferences, and Exhibitions
MoPSW	Ministry of Ports, Shipping and Waterways
MHA	Ministry of Home Affairs
NSB	National Shipping Board
PPP	Public-Private Partnership
QR	Quick Response (Code)
RPL	Recognition of Prior Learning
RT	Responsible Tourism
SOP	Standard Operating Procedure
SWAK	State Wetland Authority Kerala

EXECUTIVE SUMMARY

India’s maritime-tourism opportunity requires coordinated action across shipping, ports, tourism, home affairs, finance, environment, states and local bodies. Cruise lines plan deployment well in advance; policy uncertainty, fragmented clearances and variable costs can therefore directly affect itinerary inclusion.

The recommended model is a National Cruise Facilitation Council supported by port-level Cruise Coordination Cells, a digital single window, stable tariff packages, market-tested circuits, destination certification, passenger rights, green standards and a national dashboard.

For Kerala, the report recommends an empowered unified mechanism, GIS-enabled live registration, annual safety audits, e-manifests, scientific lake-wise carrying capacity, GPS-linked sewage tracking, green-houseboat transition support, safer jetties, rescue systems and verified booking standards.

Top Policy Outcomes:

Issue	Current Status / Impact	Solution / Recommendation
Seamless passenger journey	Multiple agencies operate sequentially, causing delay and unpredictability during turnaround/transit.	Adopt a unified cruise passenger protocol, advance data exchange (APIS), risk-based clearance, and maximum processing time standards.
Commercially viable circuits	Terminals without dependable itineraries and destination integration remain underutilized.	Develop market-tested coastal circuits, support home-porting, promote 2–5 night domestic cruises, and conduct joint international marketing.
Predictable cost framework	Port, pilotage, berth, security, and service charges vary widely across ports, weakening global competitiveness.	Publish a transparent national cruise tariff framework with bundled port-call packages and volume/frequency incentives.

Safe and green operations	Unregulated growth risks increasing emissions, waste dumping, harbor crowding, and safety hazards.	Mandate shore power readiness, MARPOL waste reception, integrated emergency plans, passenger caps, and green port incentives.
Sustainable Kerala houseboats	Fragmented multi-agency regulation leads to uneven safety enforcement and unchecked illegal vessel operations.	Create a unified digital licensing portal, GIS live registry, compulsory e-manifests, annual safety audits, and scientific carrying capacity limits.
Local economic participation	Cruise and houseboat expenditure often fails to trickle down effectively to local communities.	Establish certified shore-excursion and Responsible Tourism networks covering local guides, artisans, traditional cuisine, and village enterprises.

CHAPTER I: STRATEGIC CONTEXT AND INSTITUTIONAL FRAMEWORK

Cruise development requires coordinated action across ministries, ports, tourism departments, security agencies, states and local bodies. Fragmented governance and changing policy signals weaken long-lead deployment decisions.

Priority Directions:

- National Cruise Facilitation Council
- Port-level Cruise Coordination Cells
- Destination-specific Centre–State–Port MoUs
- National Cruise Dashboard
- Five-year stable policy and tariff window

Issue	Current Status / Impact	Solution / Recommendation
Fragmented governance	Cruise calls involve MoPSW, Ports, Tourism, Customs, Immigration, CISF, DG Shipping, and State agencies operating in silos.	Constitute a National Cruise Facilitation Council under Cruise Bharat Mission with inter-ministerial powers and quarterly review mechanisms.
Port-level coordination	Passenger experience relies on synchronized berth, baggage, immigration, transport, and guide operations.	Establish Cruise Coordination Cells at every designated cruise port, chaired by Port Chairpersons with State Tourism and city police representation.
Unclear Central–State roles	Port infrastructure is centrally managed while city transport, destination quality, and security fall under state purview.	Sign destination-specific Cruise Development MoUs defining infrastructure assets, service standards, joint funding, and accountability.
Data fragmentation	Calls, passenger spend, turnaround performance, and local employment data are dispersed across disparate systems.	Build a centralized National Cruise Dashboard tracking port KPIs, passenger feedback, economic impact, and carbon/waste metrics.

Policy instability	Deployment planning occurs 18–30 months ahead; sudden changes in tariffs or taxes discourage itinerary inclusion.	Provide a guaranteed minimum 5-year stable policy and tariff window, mandating advance consultation before any material changes.
Limited private participation	Terminal operations, retail, marinas, and digital processing require commercial expertise and capital investment.	Adopt outcome-based PPP/O&M models with traffic-risk sharing, minimum service level agreements, and commercial non-port monetization.
Inadequate stakeholder platform	Cruise lines, port operators, agents, and local tour operators lack a structured mechanism to resolve operational issues.	Institutionalize biannual national and regional stakeholder forums, mandating published Action-Taken Reports on agreed points.

CHAPTER II: CRUISE PORT INFRASTRUCTURE AND OPERATIONS

The objective should be fast, safe and hospitality-led turnaround rather than merely constructing terminals. Passenger flow, baggage, clearance, transport, utilities and emergency response must function as one system.

Priority Directions:

- Assured berth windows
- Airport-style passenger flow
- Advance data exchange and risk-based clearance
- Cruise-day city transport plans
- MARPOL waste reception and shore-power readiness

Issue	Current Status / Impact	Solution / Recommendation
Berth priority & availability	Vessels run tight itineraries and cannot tolerate waiting times; cargo ships sometimes receive operational preference.	Notify assured priority berthing windows for scheduled cruise vessels backed by service-level guarantees and penal provisions.
Terminal utilization	Dedicated cruise terminals incur high fixed operational costs during non-cruise seasonal periods.	Design flexible, multi-purpose terminal halls convertible for MICE, cultural events, and waterfront retail during off-peak periods.
Baggage & passenger flow	Multiple queues, insufficient counters, and mixed passenger/crew flows cause congestion and frustration.	Implement airport-style flow design, common-use terminal equipment (CUTE), e-gates, baggage tracking, and accessible walkways.
Customs & immigration time	Manual documentation and physical verification consume excessive shore time, causing missed tour departures.	Enable Advance Passenger Information Systems (APIS), biometric screening, facial recognition e-gates, and remote vessel clearance.
Last-mile connectivity	City traffic bottlenecks, unregulated taxis, and distant	Formulate cruise-day traffic management protocols, dedicated tour bus bays,

	coach parking create poor transit impressions.	prepaid taxi dispatch, and city shuttle loops.
Waste reception & utilities	Cruise ships require certified reception for sewage, garbage, and bilge; service availability varies widely across ports.	Mandate MARPOL-compliant waste reception facilities, transparent tariffs, digital waste manifests, and freshwater supply certification.
Shore power & emissions	Auxiliary engine operations at berth generate localized emissions, particulate matter, and noise pollution.	Develop phased shore-side electricity (SSE) infrastructure at major cruise terminals with preferential green tariffs.
Emergency preparedness	High concentrations of international passengers require specialized safety and disaster management protocols.	Conduct mandatory multi-agency safety drills covering medical evacuation, fire, security incidents, and severe weather response.

CHAPTER III:

MARKET DEVELOPMENT, CIRCUITS AND ECONOMIC VIABILITY

India should build a portfolio of products rather than depend only on occasional international calls. Home-porting and short domestic cruises create stronger economic value and year-round utilisation.

Priority Directions:

- Home-port packages
- West, South, East, island and river/backwater clusters
- 2–5 night domestic products
- Cruise Destination Certification
- Dedicated Cruise India B2B marketing

Issue	Current Status / Impact	Solution / Recommendation
Weak circuit economics	Isolated ports struggle to attract cruise lines without linked regional itineraries within practical sailing distances.	Develop multi-port regional circuits: West Coast, South India–Sri Lanka, East Coast–Bay of Bengal, and Lakshadweep/Andaman loops.
Monsoon seasonality	Monsoon conditions disrupt ocean cruising along the west coast for four to five months annually.	Create complementary seasonal products, repositioning itineraries, inland river/backwater extensions, and harbour day cruises.
Underdeveloped domestic market	Cruising is perceived as a luxury foreign product, missing out on massive domestic family, MICE, and pilgrimage demand.	Promote affordable 2–5 night domestic coastal itineraries targeting weekend leisure, corporate MICE, and pilgrimage corridors.
Destination readiness	Port terminals are modernized, but nearby tourist attractions, restrooms, and transport options lack readiness.	Roll out a 'Cruise Destination Certification' scheme, establishing minimum urban infrastructure and hospitality benchmarks.

Shore excursion quality	Unregulated guides, inconsistent pricing, and repetitive itineraries undermine passenger satisfaction.	Build certified excursion marketplaces featuring verified multilingual guides, transparent pricing, and direct booking options.
Low local value capture	Tour revenues are concentrated among major operators while local artisans, performers, and vendors gain limited income.	Integrate Responsible Tourism initiatives into shore itineraries, mandating local handicraft, culinary, and cultural components.
Global marketing gap	Generic promotional campaigns fail to target global cruise itinerary planners and vessel deployment managers.	Establish a specialized 'Cruise India' B2B marketing division to participate in global trade forums and offer route planning data.

CHAPTER IV: REGULATION, TAXATION, SAFETY, SKILLS AND SUSTAINABILITY

A competitive framework must protect passengers, crew, ports, destinations and the environment. Simplification should proceed without weakening safety, consumer protection or environmental compliance.

Priority Directions:

- Digital single window
- GST and customs review
- Calibrated vessel deployment framework
- Cruise Passenger Rights
- Cruise skills, green and accessibility standards

Issue	Current Status / Impact	Solution / Recommendation
Multiple permissions	Vessel operators must navigate redundant clearances across maritime, port, customs, security, and state agencies.	Implement a Single-Window Cruise Portal with automated parallel processing, digital document vault, and deemed approval timelines.
Tax & fee complexity	Unclear GST application on international vs. domestic legs and shipboard services creates financial uncertainty.	Issue comprehensive GST and Customs guidance notes establishing flat, predictable tax structures for domestic cruise operations.
Cabotage restrictions	Foreign-flagged cruise ships face deployment restrictions, limiting immediate vessel availability for domestic routes.	Maintain calibrated cabotage relaxations for cruise ships while offering long-term tax incentives for Indian-flagged vessel operations.
Passenger protection	Absence of standardized consumer rights for voyage cancellations, delays, medical emergencies, or service failures.	Enact a 'Cruise Passenger Bill of Rights' mandating transparent refund policies, medical care standards, and grievance redressal.

Safety oversight	Diverse vessel types (coastal, harbour, river) operate under varying safety standards and inspection regimes.	Standardize vessel safety audits under DG Shipping, mandating AIS tracking, compulsory life-saving gear, and certified crew.
Skill shortages	Acute shortage of trained Indian personnel in specialized cruise hospitality, marine hotel management, and port services.	Establish Cruise Hospitality Academies in partnership with global cruise operators, featuring standardized skill certification.
Environmental footprint	Risk of marine pollution, air emissions, single-use plastic waste, and ecosystem disturbance in sensitive coastal zones.	Enforce a 'Green Cruise Standard' awarding eco-ratings based on zero plastic use, low-emission fuels, and waste recycling efficiency.
Accessibility gaps	Terminals, gangways, tenders, and excursion buses frequently lack adequate facilities for elderly or disabled passengers.	Enforce Universal Accessibility guidelines across all cruise infrastructure, gangways, transport vehicles, and public facilities.

CHAPTER V:

KERALA HOUSEBOATS: GOVERNANCE, REGISTRATION AND SAFETY

Houseboats are passenger vessels, accommodation units, tourism products, workplaces and wetland users. Regulation must therefore be unified, digital and enforceable.

Priority Directions:

- Unified Kerala Backwater Tourism mechanism
- GIS-enabled live registry
- Annual third-party safety audits
- E-manifests and capacity control
- Insurance, emergency centres and rescue drills

Issue	Current Status / Impact	Solution / Recommendation
Incomplete live registry	Official databases lack real-time visibility on active vessels, ownership transfers, route permits, and compliance status.	Deploy a GIS-enabled Live Houseboat Registry linking vessel KIV numbers, ownership, crew lists, and real-time GPS locations.
Uneven safety compliance	Variations in firefighting equipment, electrical wiring, LPG storage, and hull structural integrity pose safety risks.	Mandate annual third-party safety certifications by accredited marine surveyors with QR-coded certificates displayed on vessels.
Overcrowding & manifest control	Day-cruises and group events frequently exceed certified passenger limits without formal manifest tracking.	Mandate digital e-manifest submission prior to departure, linked to real-time passenger counting and random patrol checks.

Crew competency & welfare	Crew members perform dual navigation and hospitality roles without formal safety refresher training or social security.	Institute mandatory competency certification, emergency response training, medical checkups, and standardized labor contracts.
Night navigation risks	Unregistered night anchorages in narrow channels create collision hazards and disturb local fishing/agricultural operations.	Define designated safe night-anchorage zones, strictly enforce navigation light requirements, and implement GPS geofencing.
Insurance gaps	Inadequate passenger liability and third-party property damage coverage among smaller, independent houseboat operators.	Make comprehensive passenger liability and environmental insurance a mandatory prerequisite for annual license renewal.

CHAPTER VI: KERALA HOUSEBOATS: ENVIRONMENT, CARRYING CAPACITY AND INFRASTRUCTURE

The backwaters are the tourism asset. Pollution, congestion and erosion directly damage visitor confidence, ecology and livelihoods.

Priority Directions:

- Sealed sewage systems and GPS-linked pump-out records
- Digital solid-waste handover
- Lake-wise carrying-capacity studies
- Green houseboat hubs and safer jetties
- Hybrid/electric/solar transition support

Issue	Current Status / Impact	Solution / Recommendation
Sewage & greywater discharge	Untreated black/grey water discharge damages wetland ecosystems and compromises public health.	Mandate sealed bio-toilets/holding tanks, tamper-proof discharge valves, and GPS-tracked pump-out logging at sewage treatment plants.
Solid waste management	Plastic and food waste entering canals chokes waterways and damages marine life.	Implement mandatory segregated waste storage on board, digital handover tracking at jetties, and strict zero-plastic norms.
Lake carrying capacity	Uncontrolled vessel growth in Vembanad and Ashtamudi lakes exceeds ecological and navigational limits.	Enforce scientific lake-wise carrying-capacity caps, freezing new conventional licences in saturated backwater zones.
Route congestion & erosion	Heavy vessel traffic in narrow channels causes bank erosion, noise pollution, and damage to paddy fields.	Establish one-way navigation loops, strict speed/no-wake zones, staggered departure times, and alternative backwater routes.

Inadequate boarding jetties	Overcrowded, unsafe boarding points lack passenger amenities, clean drinking water, and waste collection points.	Develop model 'Green Houseboat Hubs' equipped with floating docks, universal access, solar charging, and waste reception.
Engine noise & emissions	Conventional diesel engines generate soot, surface oil slicks, noise pollution, and high operating costs.	Launch a Green Vessel Transition Scheme providing subsidies for solar-electric propulsion and clean energy retrofits.
Water quality monitoring	Difficulty in isolating houseboat pollution from agricultural runoff and municipal sewage leads to debate.	Deploy automated real-time water quality sensors across major channels and display data on a public eco-dashboard.
Climate vulnerability	Extreme rain events, flooding, and fluctuating water levels disrupt seasonal operations and threaten vessel safety.	Develop a Climate Resilience & Disaster Plan for backwaters, including early warning alerts and emergency shelter mooring sites.

CHAPTER VII:

KERALA HOUSEBOATS: PRODUCT QUALITY, LIVELIHOODS AND DESTINATION MANAGEMENT

The next phase should shift from vessel-volume growth to quality, yield, authenticity and community benefit.

Priority Directions:

- Integrated grading
- Verified booking registry
- Themed and diversified routes
- Local procurement and Responsible Tourism
- Safe & Green Kerala Backwaters certification

Issue	Current Status / Impact	Solution / Recommendation
Inconsistent classification	Legacy grading schemes focus primarily on room amenities rather than safety, environmental compliance, and service.	Replace existing schemes with an Integrated Star-Rating Framework incorporating safety, eco-compliance, and service benchmarks.
Price opacity & mis-selling	Misleading online listings regarding air conditioning hours, vessel age, and routes lead to frequent tourist grievances.	Launch an Official Verified Booking Portal displaying genuine vessel photos, validated certificates, and transparent pricing.
Low-value repetitive routes	Vessels crowd identical short circuits, missing opportunities to showcase northern backwaters and village cultural assets.	Diversify itineraries by introducing themed circuits: culinary trails, birdwatching, coir crafts, heritage, and wellness cruises.
Limited community benefit	Local canal-side residents bear the environmental impacts of tourism without receiving adequate direct economic return.	Mandate local sourcing of organic produce, fish, and services, linking houseboat operations to Responsible Tourism village units.
Food safety standards	Confined galley spaces create hygiene and food safety risks if water quality and	Enforce mandatory FSSAI food safety certification, routine water purity testing,

	refrigeration are unmonitored.	and hygiene training for all onboard cooks.
Worker informalities	Seasonal workers face irregular wages, lack of formal contracts, and limited access to social security benefits.	Introduce standardized employment agreements, Recognition of Prior Learning (RPL) certification, and welfare board enrollment.
Destination branding	Sensationalized reports of backwater pollution or safety incidents damage Kerala's global tourism reputation.	Execute a targeted 'Safe & Green Kerala Backwaters' promotional campaign highlighting verified sustainability standards.
Weak performance metrics	Destination success is measured purely by tourist arrival numbers rather than economic yield and local satisfaction.	Adopt comprehensive Destination Health Metrics tracking average spend, local employment, eco-compliance, and tourist ratings.

CHAPTER VIII: CONSOLIDATED RECOMMENDATIONS

S. No.	Area	Core Strategic Recommendation
1	Governance	Constitute the National Cruise Facilitation Council and port Cruise Coordination Cells; establish the Kerala Backwater Tourism Authority.
2	Single-Window Portal	Deploy an integrated digital portal for seamless vessel clearance, advance passenger processing, and automated licensing.
3	Commercial Viability	Implement transparent 5-year tariff frameworks, volume discounts, fly-cruise support, and structured home-port incentives.
4	Passenger Experience	Modernize cruise terminals with airport-style passenger flows, universal accessibility, and certified shore excursion networks.
5	Safety & Security	Mandate AIS tracking, annual third-party safety audits, digital e-manifests, emergency command centers, and passenger rights.
6	Environmental Stewardship	Enforce MARPOL compliance, shore power infrastructure, green vessel subsidies, and GPS-tracked sewage disposal systems.
7	Ecological Carrying Capacity	Implement scientific lake-wise vessel caps, real-time water quality monitoring, and designated no-wake backwater corridors.
8	Livelihoods & Quality	Establish integrated star-grading, verified booking portals, skill certification, local sourcing mandates, and Responsible Tourism links.
9	Accountability & Data	Launch real-time national and state public dashboards tracking traffic, passenger satisfaction, environmental health, and KPIs.

CHAPTER IX:

ACTION POINTS AND IMPLEMENTATION ROADMAP

Phase 1: Immediate 100-Day Action Plan:

- Notify the establishment of the National Cruise Facilitation Council and Port-Level Coordination Cells.
- Publish standardized master checklists for all cruise port clearances and passenger processing protocols.
- Launch the development of the Kerala GIS Live Houseboat Registry and mandatory digital e-manifest system.
- Conduct a comprehensive gap audit of sewage reception facilities, waste management, and emergency rescue setups.

Phase 2: Short-Term Reforms (Within 1 Year):

- Operationalize the Single-Window Cruise Portal with APIS integration across major cruise ports.
- Publish transparent 5-year national cruise tariff guidelines and bundled port-call incentive packages.
- Complete scientific carrying-capacity studies for Vembanad and Ashtamudi lakes and enforce route caps.
- Enforce mandatory third-party safety audits and QR-coded operational licensing for all Kerala houseboats.

Phase 3: Medium-Term Scale-Up (1 to 3 Years):

- Complete terminal modernization and shore-power readiness projects at Mumbai, Goa, Kochi, and Chennai.
- Launch the Green Houseboat Transition Scheme, offering financial subsidies for solar-electric vessel retrofits.
- Establish standardized Green Houseboat Hubs equipped with floating docks, pump-out stations, and solar chargers.
- Expand regional multi-port cruise circuits connecting Indian ports with Sri Lanka, Maldives, and Southeast Asia.

Phase 4: Ecosystem Maturity (3 to 5 Years):

- Achieve full data-led automated regulation across all coastal cruise ports and inland backwater waterways.
- Scale domestic Indian-flagged cruise vessel operations through long-term fiscal and manufacturing incentives.
- Position India and Kerala as globally certified, high-yield, safe, and sustainable maritime tourism destination.

CHAPTER X: PRIORITY RESPONSIBILITY MATRIX

Strategic Action Item	Lead Agency	Supporting Agencies	Key Performance Indicator (KPI)
National Cruise Facilitation & Single Window	MoPSW	Ministry of Tourism, MHA, Customs, CISF, State Ports	Average passenger clearance time < 30 mins; 100% digital approvals.
Cruise Circuits & Home-Porting	MoPSW / Tourism	Major Port Authorities, State Tourism Boards, Cruise Lines	50% increase in home-port calls; 30% rise in passenger spend.
Maritime Safety & Skill Certification	DG Shipping / IWAI	Port Authorities, Maritime Training Institutes, Tourism Boards	Zero major safety incidents; 5,000 certified cruise/houseboat crew.
Kerala Houseboat Single-Window Governance	Govt. of Kerala	Department of Tourism, Port Department, KSPCB, LSGD	100% active vessels registered on GIS portal with valid safety audits.
Wetland Carrying Capacity & Pollution Control	SWAK / KSPCB	Department of Tourism, District Administration, Operators	100% sewage discharge tracked via GPS; zero raw sewage dumping.
Community Livelihoods & Responsible Tourism	Kerala RT Mission	District Tourism Councils, Local Enterprises, Operators	40% local procurement mandate met; 25% growth in village tour yield.

CHAPTER XI: MONITORING FRAMEWORK AND KEY PERFORMANCE INDICATORS

Performance Area	Key Performance Indicator	Review / Frequency
Cruise Port Traffic	Total vessel calls, passenger throughput, turnaround calls, home-porting volume.	Monthly / Quarterly
Passenger Facilitation	Average customs/immigration clearance time, passenger satisfaction index.	Per Call / Quarterly
Economic Yield	Average spend per passenger, shore excursion uptake, hotel nights, provisioning value.	Quarterly / Annual
Safety & Security	Number of incidents/accidents, safety audit compliance rate, joint drill execution.	Monthly / Annual
Environmental Performance	MARPOL waste received, shore power usage rate, zero-single-use plastic compliance.	Monthly / Annual
Kerala Houseboat Governance	Percentage of fleet licensed, e-manifest compliance, active GIS tracking rate.	Monthly / Annual
Backwater Eco-Health	Water quality parameters (BOD, Dissolved Oxygen), pump-out volumes logged.	Monthly / Seasonal
Community Impact	Local procurement expenditure, community guide employment, repeat visitor rate.	Quarterly / Annual

CHAPTER XII: CONCLUSION

India can become a major cruise destination only when ports, destinations and regulators operate as one tourism value chain. The focus must move from isolated infrastructure projects to commercially viable circuits, predictable costs, seamless passenger facilitation, destination readiness, safety, professional marketing and measurable local benefits.

Kerala can preserve and expand its iconic houseboat economy only by replacing fragmented approvals and volume-led growth with unified regulation, scientific carrying capacity, traceable pollution control, professional safety, quality standards and strong community participation.

The proposed reforms can make maritime tourism a high-employment, high-value and environmentally responsible pillar of India’s Blue Economy and Viksit Bharat 2047.

ANNEXURES

Annexure I: Immediate 100-Day Action Checklist

S. No.	Immediate Operational Action Item	Lead Agency
1	Formally notify National Cruise Facilitation Council and Port Cruise Coordination Cells.	MoPSW / Major Ports
2	Map all regulatory approvals and publish unified master clearance checklists.	MoPSW / Kerala Tourism
3	Identify priority regional cruise circuits, home ports, and destination infrastructure gaps.	MoPSW / Tourism / States
4	Roll out the GIS-enabled live houseboat registry, mandatory safety audits, and e-manifests.	Government of Kerala
5	Audit backwater sewage treatment capacity, waste collection points, and rescue boat readiness.	KSPCB / SWAK / Port Dept
6	Publish draft service standards, passenger processing SLAs, and national public KPI dashboards.	MoPSW / Kerala Tourism

Annexure II: Indicative Product Portfolio

- International ocean cruise calls and turnaround operations.
- Short domestic coastal cruises of two to five nights.
- Harbour, sunset, dinner and city cruises.
- Pilgrimage, heritage, wellness, wedding, educational and MICE cruises.
- Island circuits and river/coastal combinations.
- Kerala overnight, day, themed and community-linked houseboat products.

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PART IX
Sub-Committee Report No.8

Sub-Committee No. 8

Title:

**To prepare a roadmap for development of a robust Maritime
Emergency Preparedness and Response ecosystem to achieve
MAKV-2047 Goals**

Chairperson: Representative from Indian Navy

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PREFACE BY THE CHAIRPERSON OF THE SUB-COMMITTEE



Captain Vikas Anand Indian Navy

The maritime sector has long been one of the pillars of India's economic growth, national security, and global engagement. As the country advances towards the vision of a developed maritime nation under the Maritime Amrit Kaal Vision (MAKV)-2047, strengthening our preparedness to effectively respond to maritime contingencies has become an imperative rather than a choice.

The Sub-Committee was entrusted with the responsibility of examining the existing maritime contingency response framework, identifying the challenges confronting various stakeholders, and recommending practical measures to enhance the nation's preparedness and resilience. In carrying out this mandate, the Committee benefited immensely from the experience and expertise of representatives from the Indian Navy, Indian Coast Guard, Directorate General of Shipping, Indian National Shipowners' Association, maritime professionals, and other stakeholders, whose candid deliberations and constructive suggestions have shaped the recommendations contained in this report.

The discussions reaffirmed that while India possesses capable institutions, a sound legal framework, and experienced maritime professionals, the increasing complexity of maritime emergencies calls for greater integration, faster decision-making, enhanced technological support, and stronger coordination across all agencies. The recommendations made in this report seek to build upon the nation's existing strengths by promoting a unified, technology-enabled, and future-ready Maritime Contingency Management Framework that is both practical and implementable.

This report is not merely an assessment of present capabilities; it is a roadmap for strengthening national maritime resilience. Its recommendations emphasise the importance of institutional coordination, indigenous capability development, digital transformation, and a whole-of-government approach to ensure timely and effective response to maritime emergencies while safeguarding human life, protecting the marine environment, and securing India's maritime interests.

I place on record my sincere appreciation to all members of the Sub-Committee for their commitment, professionalism, and invaluable contributions throughout the course of this study. I also acknowledge the support extended by all organisations and experts who generously shared their knowledge and practical experience, enabling the Committee to undertake a comprehensive examination of this important subject.

It is my sincere hope that the recommendations contained in this report will contribute meaningfully to policy formulation and further strengthen India's maritime contingency response architecture, reinforcing our collective endeavour to build a safe, resilient, and globally respected maritime nation.

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National Shipping Board

ACKNOWLEDGEMENTS

The Sub-Committee places on record its sincere appreciation to the National Shipping Board (NSB) for entrusting it with the important responsibility of examining the subject of Response to Maritime Contingency on the Indian Coast. The Committee is particularly grateful to the NSB Secretariat for its constant guidance, meticulous coordination, and administrative support throughout the course of this study. The Secretariat's efficient management of meetings, documentation, stakeholder consultations, and compilation of inputs greatly facilitated the timely completion of this report.

The Sub-Committee conveys its deep appreciation to all its members for their unwavering commitment, constructive participation, and valuable professional insights. The deliberations were enriched by the collective experience of members drawn from diverse sectors of the maritime community, whose knowledge and practical perspectives ensured that the recommendations are balanced, pragmatic, and forward-looking. The spirit of cooperation and consensus demonstrated throughout the proceedings was instrumental in achieving the objectives entrusted to the Committee.

The Committee also expresses its gratitude to the representatives of the Indian Navy, Indian Coast Guard, Directorate General of Shipping, Indian National Shipowners' Association (INSA), and other organisations who generously shared their expertise and operational experience. Their candid observations, technical inputs, and practical suggestions provided valuable perspectives on the existing maritime contingency response framework and significantly strengthened the quality of the Committee's deliberations and recommendations.

The Sub-Committee further acknowledges the contributions of maritime professionals, industry experts, and all stakeholders who participated in consultations and offered constructive suggestions during the course of this study. Their willingness to share experiences, identify operational challenges, and propose practical solutions has added considerable value to this report and has ensured that its recommendations remain grounded in operational realities while addressing future maritime requirements.

Finally, the Sub-Committee records its appreciation to all officers, officials, and supporting staff whose dedicated efforts, whether in research, coordination, logistics, or documentation, contributed to the successful completion of this report. It is hoped that the collective efforts reflected in these pages will assist the Government and all maritime stakeholders in strengthening India's maritime contingency response framework and advancing the nation's vision of a safe, secure, resilient, and future-ready maritime sector.

LIST OF CONTRIBUTORS

The Sub Committee places on record its sincere gratitude to all members for their unwavering commitment, valuable insights, and collective efforts in preparing this report. The report is the outcome of extensive discussions, professional expertise, and a shared commitment towards strengthening India's maritime contingency response framework. Each member contributed uniquely, and their dedication made this report comprehensive and practical.

Commodore (Naval Operations). Cmde (Nav Ops), as the lead of the Sub-Committee brought a clear operational perspective on the increasing complexity of maritime contingencies in the Indian Ocean Region. The Navy's inputs on incidents involving Indian-flagged merchant vessels and foreign-flagged vessels transiting India's maritime zones significantly shaped the Sub-Group's understanding of the operational landscape. Its emphasis on strengthening Maritime Domain Awareness, institutionalised information-sharing mechanisms, and a clearly defined command-and-control structure is reflected throughout the report's recommendations. The Navy's suggestion for a whole of nation approach, and for strengthening the National Maritime Domain Awareness framework and the Information Fusion Centre- Indian Ocean Region, added considerable depth to the deliberations.

PD (Ops), Indian Coast Guard. The Committee extends heartfelt appreciation to the PD (Ops), ICG for sharing extensive expertise in Search And Rescue, pollution response, and maritime emergency management. ICG's proven operational readiness in handling marine pollution response and enforcing safety frameworks like the National Oil Spill Disaster Contingency Plan (NOS-DCP) offered vital practical benchmarks for this study. Their technical inputs regarding the optimization of Maritime Rescue Coordination Centres (MRCCs) and coastal radar chains were essential in defining robust, tiered response mechanisms for future emergencies within the Maritime Zones of India. The organisation's practical understanding of ground realities, operational challenges, and existing response mechanisms helped shape realistic and implementable recommendations, and strengthened the quality of the report.

Sh Anil Devli, Chairman INSA. The Sub-Group is highly indebted to the Chairman Indian National Shipowners Association for providing the crucial

commercial shipping and industry perspective necessary for a balanced framework. His free and frank inputs have shaped the report into a practical document. INSA's contributions highlighted the operational realities faced by commercial mariners and underscored the strategic potential of utilising merchant vessels to support emergency towing, cargo transfers, and personnel rescue during contingencies. His pragmatic recommendations regarding the establishment of a single, empowered decision-making body with statutory backing significantly shaped the final policy recommendation.

Sh Shantanu Kalita. We gratefully acknowledge the vital inputs provided by the Sh Shantanu Kalita. Drawing upon his extensive experience in the fields of social welfare and the rich exposure gained through professional visits to over 40 countries, he brought a unique global perspective to the sub-committee’s deliberations. His strategic oversight into interagency coordination mechanisms, vessel reporting workflows, and post incident investigation protocols provided the essential legal and administrative blueprint for the proposed nation response model.

Sh Ramalingeswar Naidu. The Sub Committee acknowledges with sincere appreciation, the suggestion provided by Shri Ramalingeshwar Naidu. His inputs, drawing on 15 years of sea service and cross check against verified sources National Maritime Search and Rescue Plan 2022 and the Standing Committee on Defence’s report to Parliament, were both substantive and precedent-grounded. His recommendations spanning a national readiness architecture and command doctrine, closing the detection to decision gap, strengthening capacity at the edges of the system, and building an auditable intelligence and regional cooperation layer have added valuable perspective to the Sub-Group’s deliberations.

LIST OF ABBREVIATIONS

AIS	Automatic Identification System
CMF	Combined Maritime Forces
CMG	Crisis Management Group
DGS	Directorate General of Shipping
EEZ	Exclusive Economic Zone
ETVs	Emergency Towing Vessels
EUNAVFOR	European Union Naval Forces
GMDSS	Global Maritime Distress and Safety System
HADR	Humanitarian Assistance and Disaster Relief
HNS	Hazardous and Noxious Substances
ICG	Indian Coast Guard
IFC-IOR	Information Fusion Centre – Indian Ocean Region
IFMV	Indian Flagged Merchant Vessels
ILO	International Liaison Officer
IMO	International Maritime Organisation
IN	Indian Navy
INCOIS	Indian National Centre for Ocean Information Services
INDSAR	Indian Search and Rescue (Computerized Ship Reporting System)
IONS	Indian Ocean Naval Symposium
IOR	Indian Ocean Region
IORA	Indian Ocean Rim Association
ISPS	International Ship and Port Security Code
MAKV	Maritime Amrit Kaal Vision
MBD	Mission Based Deployment
MoD	Ministry of Defence
MoPS&W	Ministry of Port Shipping and Waterways
MRCC	Maritime Rescue Coordination Centre
MVs	Merchant Vessel
MZI	Maritime Zones of India
NCMC	National Crisis Management Committee
NDRF	National Disaster Relief Force
NIOT	National Institute of Ocean Technology
NMDA	National Maritime Domain Awareness
NMSAR	National Maritime Search and Rescue

NOS-DCP	National Oil Spill - Disaster Contingency Plan
NSB	National Shipping Board
ROVs	Remotely Operated Vehicles
SAR	Search and Rescue
SARAT	Search and Rescue Aid Tool
SLOCs	Sea Lanes of Communication
SMBs	State Maritime Boards
SOLAS	Safety of Life at Sea
SOPs	Standard Operating Procedures
SOSREP	Secretary of State’s Representative for Maritime Salvage and Intervention
ToR	Terms of Reference
TW	Territorial Waters
UK	United Kingdom
USA	United States of America
UNCLOS	United Nations Convention on the Law of the Sea

EXECUTIVE SUMMARY

The deliberations of Sub-Group 8 highlight that India's maritime sector is entering an era where maritime contingency management is no longer limited to responding to isolated emergencies but has become an essential component of national security, economic resilience, environmental protection, and strategic maritime governance. As India's dependence on maritime trade, offshore infrastructure, coastal industrialisation, and the Blue Economy continues to expand, the complexity and frequency of maritime contingencies are expected to increase significantly.

Recent incidents involving merchant vessels, hazardous cargo, marine pollution, and severe weather events have demonstrated both, the strengths of India's existing response mechanisms and the challenges that remain in managing prolonged, multi-agency maritime emergencies. The Sub-Committee's deliberations therefore indicate that the future maritime contingency framework should move beyond reactive emergency response, and towards a proactive, technology-enabled, and integrated preparedness model.

Institutional Strengths of India's Maritime Contingency Framework:

The Sub-Committee recognises that India possesses a well-established institutional framework comprising the Indian Navy, Indian Coast Guard, Directorate General of Maritime Administration, Directorate General of Shipping, Port Authorities, Maritime Rescue Coordination Centres (MRCCs), State Maritime Boards, environmental agencies, and disaster management organisations. Collectively, these institutions provide significant operational capability across search and rescue, marine pollution response, maritime safety, surveillance, disaster relief, and coastal security.

The existing legal framework, supported by the Merchant Shipping Act, 2025, National Oil Spill Disaster Contingency Plan (NOS-DCP), National Maritime Search and Rescue Manual, Disaster Management Act, and other international maritime conventions, provides a strong regulatory foundation for contingency management.

The Sub-Committee notes that India's maritime agencies have repeatedly demonstrated professionalism and operational excellence during cyclones, oil spill incidents, search and rescue operations, and humanitarian assistance missions. These capabilities constitute a strong foundation upon which future reforms can be built.

Need for an Integrated National Maritime Contingency Architecture:

One of the principal observations emerging from the deliberations is that India possesses multiple capable organisations but lacks a single integrated framework that brings together all stakeholders under a unified operational architecture during major maritime contingencies. Although agencies individually discharge their statutory responsibilities effectively, overlapping jurisdictions, differing operational procedures, and fragmented communication systems often delay coordinated decision-making during complex emergencies.

The Sub-Committee therefore considers the establishment of a **National Maritime Emergency Readiness Architecture** as one of the most significant long-term reforms required under Maritime Amrit Kaal Vision (MAKV)-2047. Such an architecture should integrate existing institutional arrangements while preserving the statutory roles of each organisation. The proposed framework should emphasise: -

- ✓ Unified command principles during major contingencies.
- ✓ Clearly defined responsibilities of all participating agencies.
- ✓ Standardised operating procedures.
- ✓ Real-time information sharing.
- ✓ Interoperable communication systems.
- ✓ Common operational picture across all stakeholders.

Technology as a Force Multiplier:

The Sub-Committee observes that emerging technologies have the potential to fundamentally transform maritime contingency management. Future preparedness should increasingly leverage:-

- ✓ Artificial Intelligence (AI) for predictive decision support.
- ✓ Satellite-based maritime surveillance.
- ✓ Oceanographic forecasting.
- ✓ Digital Maritime Domain Awareness (MDA).
- ✓ Geographic Information Systems (GIS).
- ✓ Big Data analytics.
- ✓ Autonomous and remotely operated systems.
- ✓ Integrated vessel tracking platforms.

The Sub-Committee particularly notes that systems such as coastal radar networks, Automatic Identification Systems (AIS), INDSAR, SARAT, and satellite imagery should progressively evolve into a common national operational picture that enables all agencies to work from a shared situational awareness platform. These inputs are recommended for integration into NMDA project for ensuring common operational picture is available with all stakeholders.

Indigenous Capability Development and Self-Reliance:

The discussions clearly indicate that India continues to depend upon foreign expertise and commercial organisations for several specialised maritime emergency functions, particularly large-scale salvage operations, emergency towing, underwater intervention, and advanced pollution response. Reducing this dependence should become a strategic national objective. The Sub-Committee therefore identifies the following areas as priorities for indigenous capability development: -

- ✓ National salvage capability.
- ✓ Emergency Towing Vessels (ETVs).
- ✓ Pollution response vessels.
- ✓ Underwater intervention systems.
- ✓ Heavy-lift salvage equipment.
- ✓ Remotely Operated Vehicles (ROVs).
- ✓ Modern spill containment and recovery equipment.
- ✓ Indigenous marine emergency technologies.

Strengthening these capabilities would improve operational responsiveness while supporting the Government's vision of **Atmanirbhar Bharat**.

Importance of Preparedness over Response:

An important lesson emerging from recent maritime incidents is that preparedness determines the effectiveness of emergency response. Such measurable performance indicators would enable periodic assessment of national maritime readiness. Preparedness should therefore encompass:-

- ✓ Regular multi-agency exercises.
- ✓ Simulation-based training.
- ✓ Capability audits.
- ✓ Emergency planning.
- ✓ Pre-positioning of specialised assets.
- ✓ Predictive risk assessment.
- ✓ Institutional learning from previous incidents.

Strengthening Stakeholder Coordination:

Maritime contingencies require simultaneous participation of numerous governmental and non-governmental organisations. Given India's geographical location and growing maritime responsibilities, regional cooperation will remain indispensable for addressing maritime contingencies extending beyond national jurisdictions. Strengthening these partnerships will enhance information sharing, operational interoperability, and India's stature as a responsible maritime power and a net security provider within the Indian Ocean Region.

Maritime Contingency Management as a Strategic National Priority:

The Sub-Committee concludes that maritime contingency management should no longer be viewed solely as an operational function. Investment in preparedness, technology, institutional reforms, and indigenous capability should therefore be viewed as strategic national investments rather than expenditure on emergency response alone. It must increasingly become an integral component of:-

- ✓ National Security.
- ✓ Blue Economy.
- ✓ Environmental Governance.
- ✓ Energy Security.

- ✓ Supply Chain Resilience.
- ✓ Coastal Community Protection.
- ✓ Maritime Trade Competitiveness.
- ✓ Strategic Maritime Diplomacy.
- ✓ Investment.

Way Forward:

The overarching takeaway of the Sub-Group is that India possesses capable institutions, experienced maritime professionals, and a sound legal framework. The principal challenge lies not in the absence of capability, but in integrating these strengths into a unified, technology-enabled, and future-ready national maritime contingency management framework. The Sub-Committee believes that adopting a whole-of-government and whole-of-maritime-sector approach, supported by integrated governance, indigenous capability development, digital transformation, and measurable preparedness standards, will significantly enhance India's ability to respond to future maritime contingencies.

Such reforms will contribute directly towards achieving the objectives of Maritime Amrit Kaal Vision (MAKV)-2047, strengthening maritime resilience, safeguarding the marine environment, ensuring uninterrupted maritime commerce, and reinforcing India's position as a leading maritime nation in the Indian Ocean Region.

CHAPTER I: INTRODUCTION

India’s maritime geography represents both a major strategic advantage and a continuing national responsibility. With a coastline extending over 11,000 kilometres, Exclusive Economic Zone (EEZ) of more than 2.4 million square kilometres and island territories positioned strategically in the Arabian Sea and Bay of Bengal, India occupies a central position in the Indian Ocean Region (IOR). This geographical advantage provides India with direct access to critical Sea Lines of Communication (SLOCs) through which a substantial portion of global trade and energy supplies pass every day. The Indian Ocean, therefore, is not merely a regional water body for India, but a critical strategic space that directly influences national security, economic development, trade sustainability and geopolitics.

The importance of maritime sector for India has increased significantly over the last two decades due to rapid economic growth, rising energy requirements, expansion of international trade and increasing dependence on global supply chains. Nearly 95 percent of India’s trade by volume and around 70 percent by value is transported through maritime routes. Major ports, shipping networks, offshore installations and coastal infrastructure today form the backbone of India’s economic architecture. Any disruption in maritime trade routes, port functioning or coastal security may therefore have serious implications on national commerce, industrial production, energy security and overall economic stability.

India’s maritime interests extend beyond trade and commerce. The maritime domain is increasingly becoming an area of strategic competition, technological advancement and environmental concern. Traditional security challenges such as piracy, smuggling, trafficking, maritime terrorism and illegal, unreported and unregulated fishing continue to remain significant concerns in the Indian Ocean Region. At the same time, emerging non-traditional threats including cyber-attacks on maritime infrastructure, marine pollution, climate-induced disasters, coastal erosion and disruptions caused by geopolitical instability have added new dimensions to maritime governance and preparedness.

The Indian Ocean Region also remains vulnerable to natural disasters such as cyclones, storm surges, tsunamis and extreme weather events which frequently

affect coastal populations, port operations and maritime activities. Recent experiences have demonstrated that maritime contingencies can rapidly escalate into complex multi-agency situations requiring coordinated responses involving the Indian Navy, Indian Coast Guard, port authorities, shipping companies, environmental agencies and disaster management organisations. The increasing density of shipping traffic, offshore energy exploration and coastal industrialisation has further amplified the complexity of maritime emergency management.

In this evolving maritime environment, the National Shipping Board (NSB), functioning under the Ministry of Ports, Shipping and Waterways, has emerged as an important advisory institution supporting the Government in policy formulation, maritime reforms and stakeholder coordination. The Board provides a common platform for interaction between the Government, shipping industry, seafarers, maritime experts and other stakeholders. Its role has expanded considerably in recent years with growing emphasis on maritime infrastructure development, green shipping, digitalisation, indigenous shipbuilding, maritime safety and long-term strategic planning under Maritime India Vision 2030 and Maritime Amrit Kaal Vision (MAKV)-2047.

In order to examine emerging maritime challenges and future strategic requirements in a focused and structured manner, the NSB constituted various Sub-Groups to deliberate upon specific thematic areas relating to maritime governance, shipping development and national maritime capability. Sub-Group 8 was constituted to examine issues related to maritime contingencies, maritime resilience, operational preparedness, inter-agency coordination and policy measures required for strengthening India’s maritime response framework in the context of evolving national and global maritime challenges.

The Terms of Reference (ToRs) of the Sub-Group 8 broadly included assessment of the existing maritime contingency response mechanisms, identification of critical capability gaps, and examination of stakeholder challenges and review of national and international best practices relevant to maritime safety, environmental protection and operational preparedness. The Sub-Group was also tasked to recommend policy measures for strengthening institutional coordination, indigenous capability development, technological integration and long-term strategic preparedness.

The present report aims to examine the current status of India’s maritime sector, identify major challenges faced by stakeholders, analyse existing policy mechanisms and recommend future strategies to strengthen India’s maritime resilience and competitiveness. The report also seeks to support the Government’s long-term vision of transforming India into a leading global maritime power through sustainable growth, technological modernisation, enhanced maritime security and integrated national maritime capability.

CHAPTER II: STATEMENT OF PROBLEM

India’s maritime sector is gradually facing a diverse spectrum of operational, environmental, security, and disaster related contingencies that have direct implications on national trade, energy security, economic resilience, and maritime safety. The growing density of maritime traffic, expanding offshore infrastructure, and increasing dependence on sea based trade have heightened the risks arising from oil spills, hazardous chemical leaks, marine litter, etc.

The incidents involving MSC ELSA-3 and WAN HAI-503 off the Kerala coast have highlighted significant capability gaps in managing large scale and prolonged maritime emergencies. While the Indian Navy and Indian Coast Guard responded effectively in saving lives and stabilising situations, several gaps continue to exist in handling large scale maritime contingencies. The increasing frequency and complexity of maritime contingencies necessitate a more integrated, technology enabled and institutionalised national response framework.

In view of the evolving threat matrix and India’s growing maritime dependence, it has become an imperative to develop integrated maritime response mechanisms supported by policy reforms, infrastructure enhancement, indigenous capability development and improved inter-agency coordination to ensure timely, effective, and unified response to emergencies at sea.

CHAPTER III: PRESENT CAPABILITIES AND RESPONSE MECHANISM

Role and Present State of Capabilities:

Globally, several developed maritime nations have established integrated maritime contingency response systems based on unified command structures, specialised emergency response agencies, and advanced technological support mechanisms. Few countries have united coordination centres capable of integrating operational inputs from naval forces, coast frameworks developed under IMO and provide guidance for pollution response, salvage operations, and maritime emergency management.

India maintains a multi-agency maritime emergency response structure. India (being a flag, coastal, and port state), has both statutory and international obligation to ensure safety of life at sea, protection of marine environment, and investigate & respond to marine casualties/ incidents. The Merchant Shipping Act, 2025 provides the domestic legal framework based on global maritime standards, including incorporation of key instruments such as the IMO Conventions, MARPOL, SOLAS, and the Casualty Investigation Code. For the purpose of Search and Rescue, Natural Disasters and Oil Spill Response, Indian Coast Guard is the nodal authority as part of its mandate, whereas for any other incidents involving merchant vessels or seafarers, the Directorate General of Maritime Administration assumes the role of the nodal authority. The role and present state of capabilities with relevant agencies include following: -

1.1. Directorate General of Shipping (DG Shipping): DG Shipping plays a central and regulatory role in managing maritime contingencies along the Indian coast by overseeing the conduct, safety, and compliance of all merchant ships operating in the Indian Waters. DG Shipping issues safety guidelines for vessels & ports and undertakes coordination with Chief Surveyor for technical inspections. Also, while overseeing port-level preparedness in any maritime emergency, DG Shipping coordinates the reporting mechanisms from vessels, ensuring timely promulgation of navigational warnings and issuing emergency

directives to safeguard maritime traffic. It supervises adherence to international and national safety standards, pollution-prevention regulations, crew readiness, and ship seaworthiness, thereby reducing the risk of escalation during contingencies. DG Shipping also works closely with *IN*, *ICG*, Port authorities, and coastal administration to support SAR efforts, causality evacuation, emergency towing, and pollution response operations. Additionally, it maintains communication channels with shipping companies, classification societies, and maritime training institutions to ensure preparedness and continuous improvement of safety protocols. Through these coordinated regulatory, operational, and supervisory functions, DG Shipping upholds navigational safety and environmental protection, and uninterrupted maritime trade during contingencies in the Maritime Zones of India. DG Shipping also represents the legal backbone of India's contingency framework, ensuring that vessels and ports adhere to global safety standards.

1.2. Chief Surveyor: The Chief Surveyor, plays a critical technical and regulatory role during maritime contingencies along the Indian Coast. Under the provisions related to ship surveys, certifications, sea worthiness, cargo safety and pollution prevention, the Chief Surveyor provides expert assessment on structural integrity, stability, machinery conditions and cargo related hazards of the vessel involved in incidents. In coordination with recognised organisations, classification societies, *ICG* and Port authorities, the Chief Surveyor guides emergency inspections, damage control measures and decisions related to towing or port of refuge. Post incident, the Chief Surveyor supervises mandatory surveys, determines corrective actions, and evaluates regulatory authority and specialised technical support.

1.3. Director General Maritime Affairs (DGMA): DGMA is the apex coordinating authority for maritime contingencies management, providing strategic oversight and enabling a unified national response to maritime emergencies. As the nodal authority, the DGMA facilitates inter-ministerial and inter-agency coordination among the MoD (*IN*, *ICG*), DG Shipping, Port authorities, SMBs disaster management agencies, environmental regulators and other stakeholders. The DGMA is responsible for establishing national policies, SOPs, and response framework for maritime contingencies. Additionally, DGMA coordinates resources mobilisation during major incidents, monitor preparedness level, conduct periodic exercises and audits, and facilitates capacity building

across agencies. One of the key functions of DGMA is to provide a central platform for decision making, information sharing, risk assessment, and operational coordination during crisis.

1.4. Indian Navy: The Navy's primary focus remains defence, sovereignty and territorial integrity of the Nation. *IN* role is supportive in contingencies but indispensable, providing depth and reach when civilian agencies are overwhelmed. *IN* has consistently demonstrated its critical role in responding to natural disasters affecting coastal and maritime domain. Its timely and effective interventions during major calamities such as the 2004 Tsunami, Cyclone Tauktae, and more recent maritime incidents involving MSC ELSA-3 and WAN HAI-503 stand testimony to its state of perpetual operational readiness. *IN* has not only undertaken complex Search and Rescue and relief operations under challenging conditions, but has also provided Humanitarian Assistance and Disaster Relief (HADR) support to mariners at sea and affected populations. *IN* possess the capability of speedy response in SAR especially beyond the Maritime Zones of India. The ships deployed for Mission Based Deployments (MBDs) and long-range aviation assets are capable of undertaking SAR at extended ranges. *IN* would also deploy naval assets (ships, aircraft, and technical support) in high-severity incidents, including those beyond the EEZ, based on request. These efforts underscore the Navy's professionalism, rapid response capability, and unwavering commitment to safeguard lives, property, and maritime security, even in the most adverse circumstances.

1.5. Indian Coast Guard: *ICG* serves as the primary maritime law-enforcement and emergency response agency during contingencies within the Maritime Zones of India. Established in 1978, *ICG* is the nodal agency for maritime contingencies, with responsibilities of SAR, pollution response, maritime safety, and security within the MZI. In case of any incident within MZI, the *ICG* undertakes immediate coordination of rescue operations, mobilisation of assets and specialised teams to ensure prompt assistance to distressed vessels and crew. It enforces maritime laws, monitors coastal waters through continuous surveillance by Coastal Radar Chain, ships and aircraft deployed for surveillance and other available sources. Advisory to the mariners are issued based on the situation. *ICG* is the designated authority for oil-spill response and environmental protection, coordinating containment, damage control and clean up measure in close coordination with all relevant agencies. *ICG* has a fleet of more than 150 ships

and 70 aircraft, including specialised Pollution Control Vessels. *ICG* also maintains a strong coastal presence and community engagement. Through MRCCs and operational centres at various vantage positions, *ICG* maintains a high level of readiness for ensuring safety of life at sea within MZI.

1.6. Indian National Shipowners Association (INSA): INSA plays an important supportive role during maritime contingencies on the Indian Coast by acting as a strong link between Indian flagged ships and national maritime authorities. INSA helps in ensuring that incidents at sea are reported quickly, the safety advisories and emergency instructions reach ship-owners without delay, and that the vessels follow all navigation, safety, and pollution control norms. During emergencies, INSA also assists authorities by coordinating the availability of ships that may be able to support the contingency operations, like rescue of personnel, or towing a disabled ship for transfer of cargo at sea. The association works closely with *ICG*, DG Shipping, Port authorities and classification societies to improve preparedness, shares best practices, and strengthens overall safety standards in the industry. Through this continuous cooperation and communication, INSA contributes to safer operations, quicker responses, and better management of maritime situation along the coast of India.

1.7. Ministry of Earth Sciences (MoES): MoES plays a crucial supporting role in handling maritime contingencies near the coast of India by providing scientific information and early warnings needed for quick and early decision making. The contingency functions undertaken by MoES include: -

- ✓ Cyclone and tsunami early warnings via INCOIS.
- ✓ Ocean state forecasting for safe navigation.
- ✓ Climate resilience research through NIOT.

1.8. The Centres have advanced forecasting systems, recognised globally for accuracy. These Centres also support incident management by supplying specialised oceanographic data like drift, oil spill trajectory forecast, and high resolution coastal data for SAR efforts. MoES strengthens national preparedness and helps safeguard lives, marine environment, and coastal infrastructure during contingencies along the Indian shoreline. MoES is the knowledge engine of India's contingency framework, but its forecasts must be seamlessly integrated into operational responses.

Response Mechanism:

2. India has a multi-layered framework for responding to maritime emergencies, by combining operational agencies, coordination mechanisms, and financial support for effective action. While this architecture provides multiple layers of support, it also presents challenges related to overlapping mandates, fragmented coordination, and gaps in maritime-specific preparedness. Contingency response mechanism in the country is majorly governed by below mentioned agencies.

3. **National Crisis Management Committee (NCMC)**: The NCMC provides strategic oversight and government-wide coordination during major disasters but requires stronger integration of maritime contingencies. Its broad disaster management mandate may limit sustained focus on specialised maritime risks, unless supported by dedicated maritime coordination mechanisms.

4. **National Disaster Relief Force (NDRF)**: The NDRF supports maritime emergencies with specialised disaster response capabilities but needs enhanced maritime-focused training and resources. Coordination with maritime agencies such as the Coast Guard, port authorities, and shipping stakeholders can also be strengthened to improve operational effectiveness.

5. **Crisis Management Group (CMG)**: The CMG coordinates inter-ministerial decision making, resource mobilisation, and stakeholder response during major emergencies. However, its role can overlap with higher level crisis coordination bodies during large scale incidents, sometimes creating ambiguity in command and decision-making processes.

6. **Maritime Assistance Services (MAS)**: MAS serves as the national contact point for ships in distress and coordinates information exchange among vessels, authorities, and response agencies. Despite its importance, information-sharing across agencies can be uneven, particularly during complex incidents involving multiple jurisdictions and stakeholders.

7. **Financial Preparedness and Contingency Fund of India**: The Contingency Fund of India provides immediate financial support for maritime emergencies until regular budgetary approvals are available. However, the absence of

dedicated maritime emergency funding streams may affect the speed and scale of response in major incidents

8. A key challenge in India's maritime crisis management framework is the coexistence of multiple institutions with related responsibilities. While this redundancy can enhance resilience, it also leads to overlapping of coordination functions between the CMG, NCMC, and sector specific mechanisms. Gaps remain in maritime domain specific planning, real time information integration, and unified command arrangements during large-scale emergencies. Differences in institutional priorities, communication protocols, and operational capacities further complicate coordinated responses.

9. Few limitations in the current framework are as follows: -

- ✓ Limited integration with operational agencies.
- ✓ Despite the availability of substantial data, a persistent data-to-action gap exists, reflecting limitations in institutional processes.
- ✓ The contingency management agencies are primarily focussed on land-based contingency response, with limited capacity and capability to respond during contingencies in the maritime domain.

10. The existing framework lacks measureable performance indicators for assessing national maritime emergency preparedness. There is no standard mechanism to evaluate response speed, inter-agency coordination, operational reach, resilience during prolonged incidents, and institutional learning from exercises and actual contingencies.

CHAPTER IV: PRESENT STATUS AND EVOLVING TRENDS

1. Stakeholders involved in maritime contingency management continue to face several operational, logistical, and institutional challenges. Maritime response operations often require simultaneous coordination between operational agencies, technical specialists, environmental authorities, port administrations, state governments, and private operators. Differences in operational procedures and communication structures frequently create delays in decision-making and resource deployment.

2. While Indian Navy and Coast Guard are proficient in Search and Rescue (SAR), certain loopholes have been observed in the recent casualties view lack of dedicated, specialised civil response (like ETVs, and modern spill response vessels) and pre-positioned, industry-grade pollution control and salvage systems. The skills often exist, but are hamstrung by lack of immediate access to the right tools. One of the primary challenges remains the limited indigenous salvage capability available for handling large maritime accidents.

3. **Limited Oil/ Chemical Spill Response:** The scale of the spill (plastics, chemicals) overwhelms national capabilities. India suffers from a critical shortage of modern containment booms, high-capacity skimmers, and oil recovery vessels. Existing equipment was often old, poorly maintained, or not deployed rapidly. Lack of specialised containment and recovery gear for mixed pollutant was evident during the MV X-Press Pearls accident off Sri Lanka (can happen in our waters or EEZ).

4. **Absence of Salvage Preparedness:** At present, there is no pre-planned salvage contract or existing national salvage capability, which leads to delays in security a private international salvor. There is also a commercial strategic issue here since Salvage companies then take advantage of their absence in India and extract far more money than necessary. India continues to depend significantly on foreign salvage support for major incidents involving large vessels. Similarly, availability of specialised pollution response equipment and trained manpower remains uneven across coastal regions. Certain ports possess advanced emergency response capability, while smaller ports and coastal areas remain comparatively underprepared.

5. **Lack of Night Time and Heavy Weather Response:** The National Oil Spill Disaster Contingency Plan (NOS-DCP) notes limited capability to operate skimmers and booms effectively at night or in rough weather. Additionally, the inadequate stockpiles of dispersants (and controversy over their use) and a lack of protected staging areas and barges for recovered oil/ waste further exacerbates the problem.

6. **Sharing of Information:** Another major challenge relates to real-time situational awareness and information sharing. Although multiple surveillance systems are operational, integration of data into a unified maritime contingency response platform remains limited. Stakeholders also face jurisdictional and regulatory challenges during incidents involving foreign vessels, and environmental damage extending across state boundaries.

7. Operational experiences have additionally highlighted the need for specialised training, simulation exercises, and standard operating procedures for multi-agency coordination. Delays in legal clearances, insurance processes, and contractual arrangement for salvage operations further affect the speed and effectiveness of response measures during emergencies.

CHAPTER V: GOVERNMENT POLICIES AND THEIR EFFICACY

1. Current maritime contingency response policies in India are based on a multi-agency approach involving operational coordination between the Indian Navy, Coast Guard, DG Shipping, Indian Port Authorities, environmental agencies and coastal State Administrations. The existing framework incorporates surveillance systems, pollution response mechanisms, search and rescue coordination, and emergency communication procedures.

2. Coast Guard continues to function as the nodal agency for marine pollution response under the NOS-DCP framework. Dedicated pollution response vessels, surveillance aircraft, and coastal monitoring systems have enhanced operational readiness for handling maritime emergencies. Maritime Rescue Coordination Centres (MRCCs) maintain coordination for search and rescue incidents, while coastal radar chain and AIS systems provide improved Maritime Domain Awareness.

3. The Government has also introduced initiatives aimed at modernising ports, enhancing coastal infrastructure, and strengthening maritime security integration. Digital information sharing systems and institutional coordination mechanisms have improved situational awareness during maritime incidents.

4. Despite these improvements, current policies still face limitations during prolonged or complex contingencies involving multiple stakeholders and technical agencies. Existing frameworks require greater emphasis on integrated command structures, indigenous salvage capability, rapid mobilisation mechanisms, and specialised environmental response resources. There also exists a requirement for institutionalised multi-agency exercises and comprehensive contingency planning involving both government and private stakeholders. Existing governing policies include Disaster Management Act, 2005, and National Disaster Management Plan. However, the focus till date is land centric. Major policy frameworks and organisations in place for handling of contingencies at sea are covered in subsequent paragraphs.

5. **NOS-DCP and NHS Spill Response:** Over the years, the Government of India has introduced multiple policies and institutional mechanisms aimed at improving maritime safety, environmental protection, and emergency response

preparedness. The National Oil Spill Disaster Contingency Plan (NOS-DCP) represented one of the most significant initiatives towards establishing a coordinated framework for marine pollution response. The policy enabled identification of nodal agencies, allocation of responsibilities, and standardisation of response procedures for oil spill incidents. Coast Guard as the designated national authority for marine pollution response, has strengthened India's preparedness for Hazardous and Noxious Substances (NHS) incidents at sea through the promulgation of dedicated SOP and a coordinated multi-agency response framework.

6. **MRCCs**: The establishment of Maritime Rescue Coordination Centres (MRCCs) and strengthening of Search and Rescue frameworks significantly improved India's capability to respond to maritime distress situations. Coastal security initiatives introduced after the 2008 Mumbai attacks also enhanced surveillance capability through coastal radar chains, vessel monitoring systems, and inter-agency coordination mechanisms.

7. **NMDA Project**: The National Maritime Domain Awareness Project, being implemented under the aegis of the Indian Navy, is envisaged as a comprehensive maritime information sharing and monitoring framework that will significantly enhance India's ability to maintain real time awareness of activities across its Maritime Zones. NMDA project will facilitate a common operational picture for timely decision making and coordinated response. NMDA is expected to strengthen the nation's capability to respond effectively to the contingencies at sea. In particular, enhanced vessel tracking, improved information fusion and rapid dissemination of actionable information will enable a quicker response mechanism. The NMDA project may also integrate operational tools such as INDSAR (Indian SAR Computerised Ship Reporting System) and SARAT (Search and Rescue Aid Tool) to provide a common operational picture across all Maritime Rescue Coordination Centres (MRCCs) and Maritime Rescue Sub-Centres, thereby improving search planning, drift prediction and coordinated decision-making.

8. **IFC-IOR**: The IFC-IOR serves as a collaborative maritime information sharing hub aimed at enhancing Maritime Domain Awareness across the Indian Ocean Region. Through close cooperation with partner nations, maritime agencies and international organisations, the centre facilitates exchange of

information. It is pertinent to mention that the contingency onboard MV WAN HAI off the coast of Kochi was reported to IFC-IOR and quick coordination resulted in saving 23 precious lives.

9. **National Mechanism**: The Flag State becomes primarily responsible for contingencies onboard Merchant Vessels (MVs) operating in the IOR. The MVs are exposed not only to security threats, but also to non-security contingencies as fire, explosion, collision, grounding, machinery breakdown and marine pollution incidents. The response and coordination mechanism for contingencies onboard Indian Flagged MVs (IFMVs) is guided by following principles/ frameworks: -

- ✓ Safety of life at Sea (SOLAS).
- ✓ Clear flag state responsibility.
- ✓ Timely information flow and Maritime Domain Awareness (MDA).
- ✓ Inter-agency and International Cooperation.
- ✓ UNCLOS.
- ✓ MARPOL Convention.
- ✓ ISPS Code.
- ✓ Local Legal Framework (NMSAR Manual).

10. All these conventions are implemented under the regulatory oversight of the DG Shipping, under the MoPS&W. The master of the vessel holds overriding authority under MS Act for immediate activation of shipboard emergency plans, Firefighting and Damage Control systems, and GMDSS distress procedures reporting through GMDSS and Coastal Radio to MRCC and IFC-IOR. All maritime casualties involving IFMVs are mandatorily reportable to the DG Shipping. DG Shipping is the authority for ordering Preliminary Inquiry/ Formal Investigation, as deemed fit. Additionally, DG Shipping has issued an advisory for Indian-flagged merchant vessels, to report to IFC-IOR when transiting in the region and in case of any contingency. Notwithstanding, foreign flagged vessels while transiting through the area also report to IFC-IOR. Details of IFC-IOR as other reporting centre has been published in Maritime Security Chart 'Q6099'.

11. These measures have substantially improved India's preparedness for maritime emergencies. However, past experiences demonstrate that policy implementation often remained fragmented across multiple stakeholders. While individual agencies enhanced their operational capabilities, institutional

integration and unified operational planning remained limited. Large-scale incidents involving pollution response, salvage, and hazardous cargo management exposed gaps in coordination and sustained operational capability.

12. Additionally, many policies focused primarily on initial response and immediate containment, with comparatively less emphasis on long-term environmental recovery, salvage infrastructure development, and integrated contingency management. Therefore, while previous policies have laid a strong foundation for maritime safety and response preparedness, evolving operational realities necessitate a more integrated and future oriented policy approach.

CHAPTER VI: DISCUSSIONS WITH STAKEHOLDERS

1. Consultations were undertaken with key maritime stakeholders to assess the existing maritime contingency response framework, identify capability gaps, and formulate recommendations for enhancing national preparedness. The discussions with representatives from various agencies were undertaken during/ side-lines of the NSB meetings. The members of the sub-group i.e *IN*, *ICG*, Indian National Shipowners Association (INSA) and others brought together the comprehensive experience of their respective organisations.

2. Key inputs highlighted by the member are as follows: -

a. The Indian Navy highlighted the increasing complexity of maritime contingencies in the IOR arising from the growth in maritime trade, offshore activities, and strategic maritime interests. The Navy emphasised the need for a coordinated national framework capable of addressing incidents involving IFMVs and foreign-flagged vessels transiting through India's maritime zones. The requirement for enhanced Maritime Domain Awareness (MDA), institutionalised information-sharing mechanisms, and a clearly defined command-and-control structure for major contingencies was underscored. The Navy also stressed the importance of accounting for Indian energy carrying vessels and IFMVs for operational planning and contingency response, and recommended a whole of nation approach and strengthening of NMDA and IFC-IOR.

b. The *ICG* highlighted its statutory responsibility as the lead maritime agency for Search and Rescue (SAR), maritime pollution response, and coastal surveillance. The Coast Guard emphasised the effectiveness of the National Oil Spill Disaster Contingency Plan (NOS-DCP), which provides a well-defined tiered response mechanism and unified command structure for oil spill incidents. It was observed that similar institutionalised frameworks are absent for several other maritime contingencies. The Coast Guard also highlighted its extensive surveillance network, Maritime Rescue Coordination Centres (MRCCs), pollution response capabilities, specialised vessels, aircraft, and operational centres that provide continuous readiness for maritime emergencies.

c. INSA has highlighted the critical role of the shipping industry in supporting maritime contingency management. The association emphasised the need for rapid dissemination of safety advisories, streamlined reporting procedures, and effective communication channels between shipowners and maritime authorities. INSA underlined that merchant vessels can provide valuable support during emergencies through rescue of personnel, emergency towing, transfer of stores and cargo, and provision of logistic assistance. The association recommended stronger integration of commercial shipping stakeholders within contingency planning and response mechanisms to ensure timely mobilisation of available maritime resources. INSA has recommended that bridging this gap requires significant investment, strategic partnerships with the private sector, and regional cooperation to pool resources for rare but high-impact maritime disasters. INSA highlighted that India does not lack agencies or expertise, it lacks a single empowered decision maker during maritime emergencies. The key recommendations by INSA includes:-

- ✓ SOSREP type organisation with legal backing.
- ✓ Early implementation of NSB recommendations.
- ✓ No major change in roles and organisational structure but a single decision-making body.

CHAPER VII: CHALLENGES REPORTED BY THE STAKEHOLDERS

1.The Sub Committee conducted discussions with a wide range of stakeholders associated with maritime operations, environmental management, emergency response, and regulatory oversight. During these discussions, stakeholders emphasised the increasing complexity of maritime contingencies due to growth in coastal infrastructure, offshore energy operations, and maritime trade volumes. Concerns were raised regarding the adequacy of existing response mechanisms for handling simultaneous or large-scale incidents involving hazardous cargo and pollution response.

2. Operational agencies highlighted the requirement for better inter-agency coordination, common communication platforms, and clearly defined command structures during emergencies. Port authorities stressed the importance of enhancing emergency response capability at smaller and non-major ports. Technical experts recommended strengthening indigenous salvage infrastructure and specialised pollution response resources.

3. Stakeholders also identified legal and procedural challenges affecting emergency response timelines. Delays in approvals, insurance related processes, and contracting mechanisms often affect operational efficiency during critical situations. Multiple stakeholders recommended establishment of an integrated national maritime contingency management framework supported by regular exercises, institutionalised coordination mechanisms, and technology enabled information sharing systems.

CHATER VIII: GLOBAL BEST PRACTICES TO RESOLVE THE ISSUE

1. Several maritime nations have adopted advanced maritime contingency response systems based on integrated command and control structures, specialised response capability, and institutional coordination mechanisms. The United States follows the Incident Command System (ICS) model, integrating multiple agencies under a unified command structure during emergencies. Singapore maintains highly coordinated port emergency response mechanisms supported by advanced Vessel Traffic Management Systems, dedicated emergency response equipment, environmental recovery capability, and continuous stakeholder training programmes. These countries regularly conduct large-scale simulation exercises involving naval forces, coast guards, environmental agencies, and private operators.

2. At the national level, India has developed several effective practices including coastal surveillance integration, maritime information sharing, and coordinated search and rescue operations. Coast Guard's pollution response capability and aiding the establishment of coastal radar chains represent significant achievements in maritime preparedness.

3. Global best practices demonstrate the importance of unified command systems, integrated emergency coordination centres, pre-positioned response resources, and indigenous capability. Regular multi-agency exercises, centralised information platforms, and technology enabled decision support systems are common features among advanced maritime nations. Adoption of these practices in the Indian context would significantly improve preparedness, coordination, and operational effectiveness during maritime contingencies. Many advanced maritime administrations also employ published capability assessment framework to measure improvements in preparedness through periodic exercises and actual incident response, thereby ensuring continuous capability enhancement.

4. Few countries with certain best practices and these models demonstrate the importance of integration, specialisation, and foresight. Few of these models are as listed under: -

- ✓ **Japan.** Japan follows an integrated forecasting and operational response, through a centralised maritime safety agency. A multi-agency team is standby at all times to tackle any kind of maritime contingency.
- ✓ **United States of America.** USA follows a unified command structure under the National Response Framework to tackle such contingencies. The national response framework has clearly laid down actions of all agencies involved in maritime contingency and response mechanism.
- ✓ **Singapore.** Singapore being one of the busiest harbour, had developed advanced portlevel preparedness with dedicated hazardous cargo units. Also, the SOPs on formulated by Singapore harbour are regularly exercised by all concerned authorities.
- ✓ **United Kingdom.** After the MT Sea Empress disaster in 1966, leading to release of around 72,000 tonnes oil into sea, UK formed a Secretary of States' Representative for Maritime Salvage and Intervention (SOSREP). The role of SOSREP was to create a centralised control with one authority to take ultimate control and decision during national maritime emergencies. SOSREP has the overriding authority over ships owners, insurers, ports and local authority. SOSREP can undertake executive decisions and cut short on procedural delays. SOSREP has been entrusted with necessary powers to take decision on matters pertaining to safety within Territorial Waters (TW) and pollution related matter within EEZ. SOSREP has the authority to override ship owners, insurers, ports, and local authorities. It does not require committee approvals for giving order to a ship to be moved, grounded, or salvaged. *

CHAPTER IX: SUGGESTED POLICIES

1. The Sub-group recommends establishment of a comprehensive National Maritime Contingency Response Framework integrating all relevant stakeholders under a unified operational architecture with measureable performance key performance indicators such as Speed, Unity, Reach, Resilience and Learning for periodic assessment of preparedness. The proposed framework should clearly define command responsibilities, communication protocols, resource allocation mechanisms, and operational procedures for different categories of maritime contingencies.
2. There is a requirement to strengthen indigenous salvage capability through development of dedicated salvage assets, specialised pollution response vessels, and underwater technical support infrastructure. Regional emergency response centres should be established at strategic coastal locations for rapid mobilisation of resources during emergencies. The regional Maritime Marine Pollution Response Centre established at Chennai may be replicated on the western seaboard to strengthen pollution response capacity for areas of higher concentration of ports and offshore energy infrastructure.
3. Additionally, India must expand its use of satellite imagery for real-time monitoring of oil spills, vessel movements, and illegal fishing. Artificial Intelligence (AI) can be utilised for modelling spill trajectories, predict cyclone impacts, and identify suspicious vessel patterns.
4. **Regional Engagement:** Deepening cooperation with IORA, IONS, EUNAVFOR, CMF, and strengthening IFC-IOR information-sharing networks towards sharing of best practices and establishment of support mechanism for joint tackling of contingencies at high seas is required. India can learn from global trends in maritime contingency management. Few countries with these models demonstrate the importance of integration, specialisation, and foresight. India must adapt the best practices to its unique geography and threat profile.
5. The Committee further recommends integration of all maritime surveillance systems into a common operational platform capable of providing real-time situational awareness to all stakeholders. Timely completion of NMDA project and participation of all concerned agencies would institutionalised information

sharing mechanism and interoperable communication systems should be developed to improve coordination during emergencies. Further, inclusion of IFC-IOR as primary reporting centre in the region and promulgation of the same on 'Q' series safety charts would not only ensure seamless information sharing and quick response, it would also enable availability of unified picture with all concerned agencies in the country. Additionally, strengthening of IFC-IOR with more International Liaison Officers (ILOs) would aid in the centre becoming a multinational maritime information fusion and dissemination centre.

6. Under the single decision-making agency under MoPS&W, a structured approach will ensure clarity of responsibility at each stage. A four-stage response model is recommended: -

- ✓ **Distress Phase.** SAR coordination and deployment of nearest available assets.
- ✓ **Stabilization Phase.** Damage assessment, firefighting assistance, dewatering, and evacuation (if required).
- ✓ **Technical Control Phase.** Engagement of professional salvors; establishment of On-Scene Command and environmental monitoring.
- ✓ **Recovery Phase.** Wreck marking/ removal, pollution response, claims and liability processing on the later phase.

CHATER X: CONCLUSION

Industry feedback reinforces that India does not lack professional expertise or institutional commitment rather, the principal challenges lie in bridging capability gaps and streamlining decision-making during rare but high-impact maritime disasters. Addressing these gaps through targeted capability enhancement, assured salvage preparedness, and consideration of a single-point maritime emergency intervention mechanism would significantly strengthen national resilience. This trajectory would transform India from a nation struggling with fragmented preparedness into a net security provider in its maritime neighbourhood. Ultimately, the conclusion is not merely a summary but a call to action. India's maritime contingencies demand a whole-of-nation approach, where military, civilian, regulatory, and scientific agencies operate under a unified vision. They demand investment in technology, infrastructure, and training, alongside legal reforms and regional cooperation. They demand recognition that the sea is not only a conduit of trade but a theatre of risk, where resilience is as vital as prosperity. If India can internalize the lessons of past incidents and adapt global best practices, it will not only safeguard its own coastline but also contribute to the stability of the wider Indian Ocean Region. In doing so, it will fulfil its role as a responsible maritime power, ensuring that the vulnerabilities of the sea are transformed into strengths of resilience.

Creation of a single apex maritime contingency body under MoPSW, with statutory backing through amendments to the Merchant Shipping Act, would significantly enhance unity of command, rapid decision-making, and efficient deployment of national maritime assets. The proposed framework seeks to address a critical gap between operational capability and decision making speed during maritime emergencies, by enabling coordinated, empowered, and time critical intervention while preserving existing institutional roles. The framework has the potential to significantly strengthen India's maritime resilience. If adapted

appropriately, such a mechanism would align India with international best practices and support the nation's broader objectives of maritime safety, environmental protection, and economic security.

CHAPTER XI: FINAL POLICY RECOMMENDATION TO THE GOVERNMENT TO ACHIEVE MAKV-2047 GOAL

1. In order to achieve the maritime vision envisaged under MAKV-2047, it is essential for India to establish a future-ready, integrated, and technology-enabled maritime contingency response architecture capable of addressing evolving maritime risks and operational challenges. The proposed framework should be based on unified command principles, real-time situational awareness, and institutionalised coordination mechanisms involving all maritime stakeholders.

2. It is proposed to establish a National Maritime Contingency Management Authority or equivalent institutional mechanism responsible for strategic planning, policy integration, capability development, and coordination of large-scale maritime emergencies. Dedicated regional response centres equipped with specialised assets and trained manpower should support rapid operational deployment along the coastline.

3. Priority should be accorded to development of indigenous capacity in the following areas: -

- ✓ National towing capability.
- ✓ Indigenous salvage assets.
- ✓ Shoreline clean-up capacity.
- ✓ Underwater intervention systems, including Remotely Operated Vehicles (ROVs), divers and heavy-lift systems.
- ✓ Reducing dependence on foreign technical assistance during major maritime contingencies.

PART X
Sub-Committee Report No. 9

Sub-Committee No. 9

Title:

**To prepare a roadmap for documenting Indian Maritime
Heritage to achieve MAKV-2047 Goals**

Chairperson: Shri Shantanu Kalita

This Sub-Committee is still undergoing extensive Stakeholders’ consultations and its recommendations will be submitted in due course of time.

PART NO. XI
Sub-Committee Report No. 10

Sub-Committee No. 10

Title:

**To prepare a roadmap for Creation of an Integrated National
Single Maritime Window that is Globally Compliant to achieve
MAKV-2047 Goals**

Chairperson: Capt. Nitin Mukesh

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PREFACE BY THE CHAIRPERSON OF THE SUB-COMMITTEE



Captain Nitin Mukesh Secretary NSB

It is my privilege to present this Report on behalf of the Sub-Committee constituted by the National Shipping Board (NSB) to chart a roadmap for an Integrated National Single Maritime Window that is globally compliant and aligned with the goals of the Maritime Amrit Kaal Vision 2047 (MAKV 2047).

The Maritime Single Window (MSW) is not a discretionary convenience but an IMO Facilitation (FAL) Convention obligation. India has discharged this obligation through MSW 1.0, rolled out on 01 January 2024, and its successor MSW 2.0 / Sagar Setu, developed and maintained by the Indian Ports Association (IPA) for electronic inward and outward vessel clearance.

This Report is grounded in four principal bodies of evidence placed before the Sub-Committee. First, the Directorate General of Shipping's formal communication dated 29 May 2026 (File No. 25-63011/7/2023-NT-DGS), addressed by the Director General of Shipping to the Chairman, Deendayal Port Authority, with a copy to the Secretary, Ministry of Ports, Shipping and Waterways, setting out in granular detail thirteen implementation, operational, integration and documentation issues affecting MSW 2.0, including the finding that compliance had fallen to approximately 3 per cent of vessel calls in April 2026 against roughly 60–80 per cent achieved under MSW 1.0. Second, the official User Manuals for the Maritime Single Window and the Vessel Profile / PANS modules of Sagar Setu (National Logistics Portal-Marine), issued by the IPA, describing the platform's stakeholder model, module architecture and operating workflow as built. Third, the consultation submission ‘The Integrated National Single Maritime Window Towards a Self-Improving National Maritime

Operating System’, placed before Sub-Committee No. 10 by Shri Ramalingeswar Naidu, setting out thirteen precedent-grounded recommendations benchmarked against international single-window platforms. Fourth, the formal representation dated 1 July 2026 from the Southern India Consolidators Association (SICA), recording the operational experience of the LCL consolidation and NVOCC trade.

Read together, this evidence shows a system that began with encouraging design intent, suffered a severe compliance collapse following the MSW 2.0 transition, and remains constrained by unresolved technical, integration, documentation and governance gaps that the Directorate General of Shipping has itself formally placed on record. This Report sets out that record, the persistent gaps identified by the Sub-Committee's independent review of the underlying platform documentation and stakeholder representations, and a phased roadmap immediate, short-term, medium-term and long-term for converting MSW 2.0 into a genuinely integrated, globally compliant National Single Maritime Window capable of supporting the ambitions of MAKV 2047.

On behalf of the Sub-Committee, I thank the Members Shri Anil Devli, Shri Rakesh Singh, Shri Rahul Modi and Shri Shantanu Kalita for their valuable

inputs, and the Directorate General of Shipping, the Indian Ports Association, the Southern India Consolidators Association and the independent consultation contributor for the data and documentation that made this Report possible.

Capt. Nitin Mukesh
Chairperson, Sub-Committee 10 on Maritime Single Window
National Shipping Board

ACKNOWLEDGEMENTS

The Sub-Committee acknowledges with gratitude the support and guidance of the National Shipping Board Secretariat in facilitating this assignment within the stipulated 100-day timeline.

The Sub-Committee places on record its deep appreciation for the detailed, candid account of implementation and operational challenges furnished by the Directorate General of Shipping vide letter File No. 25-63011/7/2023-NT-DGS dated 29 May 2026, signed by Shri Shyam Jagannathan, I.A.S., Director General of Shipping and Additional Secretary to the Government of India, which has formed a primary evidentiary basis of this Report.

The Sub-Committee further places on record its appreciation for the detailed platform documentation the Maritime Single Window (MSW) User Manual and the MSW & PANS Vessel Profile Module User Manual for Sagar Setu (National Logistics Portal-Marine) made available by the Indian Ports Association (IPA).

The Sub-Committee also acknowledges the valuable consultation submission received from Shri Ramalingeswar Naidu (Marine Engineer; ISO/IEC 42001 Lead Auditor; DBA Scholar, Generative AI and Emerging Technology), whose paper on the Integrated National Single Maritime Window has substantially informed the strategic recommendations in this Report, and the formal representation received from the Southern India Consolidators Association (SICA), whose on-ground experience in the cargo-consolidation and NVOCC trade has informed the stakeholder-consultation findings at Chapter VII.

LIST OF CONTRIBUTORS

Capt. Nitin Mukesh Chairperson, Sub-Committee; Secretary, NSB and Deputy Nautical Adviser, Directorate General of Shipping.

Shri Anil Devli Member, Sub-Committee.

Shri Rakesh Singh Member, Sub-Committee.

Shri Rahul Modi Member, Sub-Committee.

Shri Shantanu Kalita Member, Sub-Committee.

Shri Shyam Jagannathan, I.A.S. Director General of Shipping and Additional Secretary to the Government of India; author of the formal DGS communication of 29 May 2026 that forms a primary evidentiary basis of this Report.

Shri Ramalingeswar Naidu Contributing Author, Consultation Submission (Marine Engineer; ISO/IEC 42001 Lead Auditor; DBA Scholar, AI Governance).

Shri Nagaraj Chandrasekaran, General Secretary Southern India Consolidators Association (SICA), Stakeholder Representation.

Indian Ports Association (IPA) Owner and custodian of the Sagar Setu (National Logistics Portal-Marine) MSW and Vessel Profile / PANS User Manuals.

Shri Trilochan Padhi, OSD II to the Chairman, NSB NSB Secretariat coordination.

LIST OF ABBREVIATIONS

Abbreviation	Full Form
BoI	Bureau of Immigration
CBIC	Central Board of Indirect Taxes and Customs
CFS	Container Freight Station
CRN	Consolidated Reference Number
DGFT	Directorate General of Foreign Trade
DGLL	Directorate General of Lighthouses and Lightships
DGS	Directorate General of Shipping
DMS	Document Management System
DPDP	Digital Personal Data Protection (Rules, 2025)
EPC	Export Promotion Council
FAL	Facilitation (Convention)
FRS	Functional Requirement Specification
ICD	Inland Container Depot
ICEGATE	Indian Customs Electronic Commerce/Electronic Data Interchange Gateway
IGM	Import General Manifest
IMO	International Maritime Organization
IPA	Indian Ports Association
ISO/IEC 42001	International Standard for AI Management Systems
LCL	Less-than-Container-Load
MAKV 2047	Maritime Amrit Kaal Vision 2047
MMD	Mercantile Marine Department
MoPSW	Ministry of Ports, Shipping and Waterways

MSW	Maritime Single Window
NDCS	National Data Communication / Consolidation Strategy (draft)
NLP-Marine	National Logistics Portal-Marine (Sagar Setu)
NSB	National Shipping Board
NVOCC	Non-Vessel Owning Common Carrier
PANS	Pre-Arrival Notification System / Vessel Profile module
PGA	Partner Government Agency
PHO	Port Health Organisation
QR	Quick Response (code)
SCMTR	Sea Cargo Manifest and Transhipment Regulations
SDLC	Software Development Life Cycle
SICA	Southern India Consolidators Association
SRS	Software Requirement Specification
VCN	Vessel Call Number

EXECUTIVE SUMMARY

1. The Maritime Single Window (MSW) is implemented today as MSW 2.0, a module of Sagar Setu (National Logistics Portal-Marine), the Indian Ports Association's national maritime single-window platform, undertaken for electronic inward and outward vessel clearance in line with IMO FAL Convention requirements. Core functionalities Vessel Profile, Voyage Registration and IMO-mandated FAL Forms have been deployed, while the PHO Module, Pre-Arrival Notification System (PANS) inward/outward clearance workflows, Immigration integration and Customs integration remain pending, as formally recorded by the Directorate General of Shipping.
2. The Directorate General of Shipping, in its letter dated 29 May 2026, has placed on record that submission levels through MSW 2.0 remain critically low: in April 2026, out of 5,409 Vessel Call Numbers (VCNs) generated, only 168 vessels submitted FAL forms through the portal approximately 3 per cent compliance a sharp decline from the roughly 60 per cent compliance achieved under MSW 1.0, and as high as nearly 80 per cent at some ports.
3. The DGS letter identifies thirteen specific, unresolved implementation and operational issues spanning manual/parallel FAL-form submission, absence of PDF upload for Forms 3 and 4, lack of partial-submission and Save-as-Draft functionality, Crew List and Last Port of Call upload errors, Port Authority navigation confusion, system usability concerns, incomplete Customs and Immigration integration, inconsistent port-wise documentation demands, a confirmed fake-certificate incident, pending linkage of FAL submission with port operations, and the absence of a time-bound issue-resolution and accountability mechanism each of which is examined in detail at Chapter IV of this Report.
4. DG Shipping has also formally requested that Software Requirement Specification (SRS), Functional Requirement Specification (FRS), module-wise structure, technology specifications, System Architecture/Integration Framework and Governance and Change Management Framework documents for MSW 2.0 be furnished to the Directorate for reference and examination documentation that, as of this Report, the Sub-Committee has not found evidence of being publicly consolidated or published.

5. Sagar Setu (NLP-Marine) is designed as a G2G, G2B and B2B open platform spanning over thirty defined stakeholder categories, and is being rolled out in six agile iterations, with MSW itself delivered in Iteration Six alongside the Coastal, Rail, Shipping Line, Inland Waterway, CFS, ICD and Mobile App modules.
6. An independent consultation submission placed before Sub-Committee No. 10 sets out thirteen precedent-grounded recommendations across five design areas Architecture and Data Foundation, the Virtuous Cycle of AI, Maritime Data as a Sovereign Strategic Asset, Risk and Institutional Discipline, and Inclusive Rollout benchmarked against global single-window platforms in Singapore, Rotterdam, Antwerp and the Netherlands (Portbase), and against the documented failure modes of single-window programmes in the United Kingdom, the European Union and the United States.
7. The Southern India Consolidators Association (SICA), representing LCL consolidators and NVOCCs across Chennai, Tuticorin and associated ICDs/CFSs, has formally represented that the existing MSW does not yet treat the cargo-consolidation manifest as a first-class data object, resulting in continued duplicate data entry and limited API access for MSME consolidators.
8. No public-sector port or single-window platform anywhere in the world has yet been certified to ISO/IEC 42001 (AI management systems). The Sub-Committee finds this an opportunity for India to set, rather than follow, a global precedent in AI governance of maritime clearance systems, once the foundational technical and integration issues identified by DGS are resolved.
9. This Report recommends a phased roadmap immediate (0–4 weeks), short-term (1–3 months), medium-term (3–12 months) and long-term (up to the MAKV 2047 horizon) that first closes the thirteen DGS-identified operational gaps, then consolidates the data layer, adopts a governed AI feedback loop, treats maritime data as a federated sovereign asset, and designs inclusion for MSME and non-major-port stakeholders into the rollout from the outset.

CHAPTER I: INTRODUCTION AND MANDATE

1.1 Constitution and Terms of Reference:

This Sub-Committee was constituted by the National Shipping Board (NSB), one of fifteen Sub-Committees constituted vide Order No. NSB-13/14/2025-NSB dated 06.02.2026 (fourteen Sub-Committees) and Order No. NSB-13/14/2025-NSB dated 05.05.2026 (one additional Sub-Committee), with the task of preparing a roadmap for the creation of an Integrated National Single Maritime Window that is globally compliant, so as to achieve the goals set out in the Maritime Amrit Kaal Vision 2047 (MAKV 2047). Each Sub-Committee, including this one, was assigned a timeline of 100 days for submission of its report. The Sub-Committee is chaired by Capt. Nitin Mukesh, Secretary, NSB and Deputy Nautical Adviser, Directorate General of Shipping, with Shri Anil Devli, Shri Rakesh Singh, Shri Rahul Modi and Shri Shantanu Kalita as Members.

1.2 The Maritime Single Window Concept and IMO Mandate:

A Maritime Single Window (MSW) is a centralised digital platform through which ship owners, shipping agents and vessel operators submit all mandatory maritime reporting information electronically through a single interface, rather than separately to Customs, Immigration, the Port Health Organisation (PHO), Port Authorities and DG Shipping. The International Maritime Organization (IMO), through its Facilitation (FAL) Convention, mandates the establishment of electronic Maritime Single Windows by member States. The seven standardised FAL forms prescribed under the Convention General Declaration, Cargo Declaration, Ship's Stores Declaration, Crew Effects Declaration, Crew List, Passenger List and Dangerous Goods Manifest together constitute the data backbone of the MSW. The structure and data fields of each of these seven forms, as implemented on the MSW portal, are examined in detail at Chapter XII and Annexure E of this Report.

1.3 India's MSW From MSW 1.0 to MSW 2.0 / Sagar Setu:

India's Maritime Single Window was first rolled out as MSW 1.0 on 01 January 2024, achieving compliance levels as high as approximately 80 per cent at some

ports. MSW 2.0 was subsequently developed and implemented as a module of Sagar Setu (National Logistics Portal-Marine), a national maritime single-window platform owned, designed, developed and maintained by the Indian Ports Association (IPA), accessible at <https://nlpmarine.gov.in>, and undertaken for electronic inward and outward vessel clearance processes in line with IMO FAL Convention requirements.

Sagar Setu is envisaged as a complete end-to-end logistics solution catering to exporters, importers and service providers in a G2G, G2B and B2B model an ‘open platform’ permitting coexistence of multiple service providers, integration with Port Operating Systems / Terminal Operating Systems, real-time visibility of vessel, terminal-gate and CFS-gate activity, digital payment of clearance charges, and a ‘Latch-on’ feature allowing third-party applications to plug into the ecosystem without being directly embedded in the core platform.

As recorded by the Directorate General of Shipping, MSW 2.0 is understood to have been rolled out in phases across ports, with certain core functionalities Vessel Profile, Voyage Registration and IMO-mandated FAL Forms deployed, while additional components including the PHO Module, the Pre-Arrival Notification System (PANS), inward and outward clearance workflows, integration with Immigration and integration with Customs remain pending. This transition from MSW 1.0 to MSW 2.0, and the compliance consequences that followed, are examined in detail at Chapters IV and V.

1.4 Scope and Methodology of this Report:

This Report is based on four principal sources placed before the Sub-Committee: the Directorate General of Shipping's formal communication dated 29 May 2026 (File No. 25-63011/7/2023-NT-DGS) on implementation, operational issues, integration challenges and documentation relating to MSW 2.0, addressed to the Chairman, Deendayal Port Authority, with a copy to the Secretary, MoPSW; the official MSW and Vessel Profile / PANS User Manuals of Sagar Setu (National Logistics Portal-Marine), issued by the Indian Ports Association, describing the platform's stakeholder model, module architecture and operating workflow as it exists today; the consultation submission ‘The Integrated National Single Maritime Window Towards a Self-Improving National Maritime Operating

System’ authored by Shri Ramalingeswar Naidu and placed before Sub-Committee No. 10, setting out thirteen precedent-grounded recommendations benchmarked against international single-window platforms; and the formal representation dated 1 July 2026 from the Southern India Consolidators Association (SICA), recording the operational experience of the LCL consolidation and NVOCC trade. Together, these sources allow the Sub-Committee to assess the distance between the MSW as built and operated, and the Integrated National Single Maritime Window envisaged under MAKV 2047, and to recommend a roadmap to close that distance.

1.5 Report Format:

This Report has been prepared in the format prescribed by the National Shipping Board Secretariat vide letter F.No. NSB-13/14/2025-NSB dated 08.06.2026, addressed to the Chairs of all fifteen Sub-Committees of the NSB, specifying document specifications (A4 page size, Times New Roman font, 14-point size, and prescribed margins), header and footer conventions, pagination rules (lower-case Roman numerals for preliminary pages, Arabic numerals commencing from Chapter I), and the suggested sequence of contents followed in this Report.

CHAPTER II: INSTITUTIONAL AND GOVERNANCE FRAMEWORK

2.1 Stakeholder Ecosystem:

Sagar Setu (National Logistics Portal-Marine) is designed around a stakeholder map of over thirty defined participant categories, reflecting the full breadth of India's maritime EXIM ecosystem. A summary is at Table 2.1 below; the complete stakeholder directory, as recorded in the Sagar Setu MSW User Manual, is reproduced at Annexure C.

Stakeholder Category	Role
Cargo Owner / Exporter / Importer	Owns or has legal possession of goods; arranges and pays for transport; exports/imports goods and services.
Shipping Agent	Acts as representative of the ship owner/master for each port call; carries out duties required by Port, Customs and statutory bodies; the primary MSW filing user.
Shipping Line / NVOCC	Operates vessels (Shipping Line) or acts as carrier without owning vessels (NVOCC, incl. LCL consolidators).
Port Authority (Sea Exim + Coastal) / Terminal Operator	Development and promotion of port services, berth allotment, piloting, vessel and cargo-related services; terminal storage, loading/discharge.
DG Shipping / MMD / DGLL	Shipping-policy implementation, seafarer certification, port state control (DGS/MMD); general aids to navigation (DGLL).
Customs / PGAs / DGFT	Duty and tax collection, border control, entry-inward/outward permission (Customs); commodity regulation (PGAs); foreign trade policy (DGFT).

Stakeholder Category	Role
Port Health Organisation (PHO)	Hygiene inspection, infectious-disease control; issues Free Pratique, Radio/Limited Free Pratique and Health Declarations via MSW.
Immigration / Bureau of Immigration (BoI)	Regulates entry and exit of seafarers and passengers through Indian ports.
CFS / ICD / Empty Yard / Warehouse Provider	Custody of containers/cargo pending Customs clearance (CFS/ICD); maintenance of empty containers (Empty Yard); warehousing services.
Customs Broker / Freight Forwarder	Handle documentation, duty ascertainment and EXIM record-keeping (Customs Broker); organise and coordinate shipment movement (Freight Forwarder).
Banks / Insurance Providers	Facilitate payment of port, service-provider and statutory charges (Banks); provide marine risk coverage (Insurers).
Road / Rail Transport Operator / IWT Authority	Cargo/container movement to/from port and ICDs by road or rail; development and maintenance of inland-waterway infrastructure.
Navy / Coast Guard	Maritime defence and security; protection and assistance to seamen in distress; marine-pollution prevention and control.

Table 2.1 Summary of principal Sagar Setu (NLP-Marine) stakeholder categories, condensed from the platform's stakeholder directory
(Source: MSW User Manual, IPA)

2.2 Platform Ownership and Governance:

The MSW module, along with the wider Sagar Setu platform, is owned and maintained by the Indian Ports Association (IPA), headquartered at NBCC Place, Bhishma Pitamah Marg, Lodi Road, New Delhi. Document control for the MSW User Manual records IPA as Document Owner, with authorship and review functions performed through a designated Functional/BPR consultancy team, and formal sign-off by a Project Director. Users access the platform through three principal login categories Exim Trade (Importer, Exporter, CHA), Service Provider (Shipping Agent and other logistics-service providers) and Custodian/Regulatory Body (Port Authority, DG Shipping and other regulatory agencies) each with role-specific functionality.

2.3 Multi-Tier Governance Structure:

The governance framework for MSW-Sagar Setu, as understood by the Sub-Committee from the documentation before it, comprises the tiers set out in Table 2.2. Critically, the DGS letter of 29 May 2026 establishes that the Directorate General of Shipping itself functions as the principal operational review and escalation authority for MSW 2.0, having held multiple review and coordination meetings with IPA and concerned stakeholders (see Chapter IV).

Tier	Composition	Function
Steering Committee	Secretary MoPSW, DG Shipping and IPA leadership	Strategic oversight and policy decisions.
Administrative Committee	ED (IT) IPA and financial/legal representatives	Contractual and financial governance.
Technical Advisory Committee	NIC, port technical experts, IPA technical teams	Architecture and cybersecurity supervision.
DGS Review Mechanism	Nautical Adviser / Dy. Nautical Adviser, DGS, chairing periodic review	Principal operational review, escalation and issue-tracking mechanism,

Tier	Composition	Function
	meetings with IPA and stakeholders	as evidenced by the DGS letter of 29 May 2026 (Chapter IV).

2.4 Governance Gap Identified by the Sub-Committee:

While the platform's stakeholder and module architecture is comprehensively documented, and while DGS has been actively engaged in review and coordination, the DGS letter of 29 May 2026 itself records at its paragraph 13 that several issues have been raised repeatedly in successive meetings without resolution, indicating the need for a time-bound issue-resolution mechanism, an issue-wise ownership matrix, clearly identified responsible agencies, and definite timelines for closure. The Sub-Committee independently notes that no formal AI-governance or model-risk framework, and no codified data-sovereignty or federated-ownership charter, currently attaches to the MSW module or to Sagar Setu as a whole. These gaps are addressed in Chapters IV, IX and X of this Report.

CHAPTER III: CURRENT STATUS OF MSW 2.0 / SAGAR SETU IMPLEMENTATION

3.1 Iteration-Wise Platform Rollout:

Sagar Setu (National Logistics Portal-Marine) has been developed iteration-wise under an Agile methodology. The Maritime Single Window module was delivered in Iteration Six, alongside the Coastal Module, Rail (CTO), Shipping Line, Inland Waterway, CFS, ICD and Mobile App modules indicating that MSW is one of the more recently matured components of a platform whose foundational modules (Landing Page, Registration, Login, Booking, Transport, e-VGM) were established from Iteration One.

Iteration	Modules Delivered
One	Landing Page, Service Catalogue, Registration Module; Login Module, CAF Module, e-VGM Module, Booking, Transport
Two	e-Seal Module, Trade Finance, Marine Insurance, Document Management System (DMS)
Three	Empty Yard Module; Warehouse Module, Freight Forwarding Module (Full Service), Route Planning Module, Admin Config Module, Content Management, Vendor Management
Four	Packaging Service Provider, Generated Certificate, Integrated PGA & EPC, Dashboard Analytics & MIS
Five	PCS 1X Trade (Migration), e-Berthing Module, Terminal Module, Track & Trace Module, Order Management, Ratings Module, Listing Module; Integrated Regulatory Platform
Six	Coastal Module; Rail (CTO), Shipping Line, Inland Waterway, CFS Container Freight Station; ICD Inland Container Depot, Mobile App, MSW

Table 3.1 Iteration-wise module rollout of Sagar Setu
(National Logistics Portal-Marine)
Source: MSW User Manual, IPA

3.2 Module-Wise Deployment Status:

Table 3.2 below consolidates the module-wise deployment status as documented in the Sagar Setu User Manuals, cross-checked against the Directorate General of Shipping's own assessment in its letter of 29 May 2026.

Module	Status	Remarks
Login Management & User Registration	Deployed	Exim Trade, Service Provider and Custodian login categories operational.
Voyage Registration / VCN Module	Deployed	VCN allotment underpins MSW filing; Shipping Agents search MSW records against allotted VCN/CRN.
Vessel Profile Module	Deployed	Basic, Technical and Certificate information captured across three tabs; certificate library with document upload; VESPRO Document Reference Number generated on submission.
MSW IMO FAL Forms (1–7)	Deployed (partial functionality)	Manual, Excel and XML entry; PDF attachment not available for Forms 3 & 4 as of the DGS letter (Chapter IV.3).
Custodian / Port Authority Review	Deployed (Vessel Profile); not evidenced for MSW	Approve/Reject-with-comments workflow implemented for Vessel Profile; Port Authorities report difficulty locating the MSW submission interface (Chapter IV.6).
PHO Module	Pending	Confirmed pending by DGS letter, para 2.

Pre-Arrival Notification System (PANS) inward/outward clearance workflows	Pending	Confirmed pending by DGS letter, para 2.
Immigration Integration	Pending	BoI has held meetings with IPA and committed to providing revised forms; DGS records no positive communication or action yet from Customs (DGS letter, para 2).
Customs (ICEGATE / SCMTR) Integration	Pending	Confirmed pending by DGS letter, para 2; SCMTR manifest-filing framework operative for vessel-side data independently of MSW.
Admin Configuration, Dashboard, DMS	Deployed (basic)	DGS letter, para 3, records these as components of MSW 2.0 requiring transition to a structured SDLC-based framework.

3.3 MSW Operating Workflow Shipping Agent

The Shipping Agent flow is: Registration on Sagar Setu → Login as Service Provider → Port Module → MSW → User. On login, the agent searches the MSW list for VCN/CRN records already allotted by the Port, selects a record, and is presented with a General Declaration form pre-populated against the VCN, together with linked sections for Cargo Declaration, Ship's Stores Declaration, Crew Effects Declaration, Crew List, Passenger List, Dangerous Goods List and Health Declaration. Each section supports manual entry, Excel upload (with downloadable sample templates) and XML upload; PDF attachment, as recorded in Chapter IV, is not presently available for Forms 3 and 4. On submission, the platform auto-generates the corresponding FAL Form in standard IMO format, which can be downloaded, printed, or saved as PDF.

3.4 MSW Operating Workflow Port User / DG Shipping / Regulatory Agencies:

Port Authority, DG Shipping and other onboarded regulatory-agency users follow the flow: Registration → Login as Custodian → Port Module → MSW → User. These users view the MSW list of submissions against each VCN, open individual records, and access the generated FAL Form output for download and record-keeping.

3.5 The Vessel Profile and PANS Module:

A closely linked module Vessel Profile, supporting the Pre-Arrival Notification System (PANS) allows a Shipping Agent to search for a vessel by IMO Number (Worldwide/Coastal trade) or Vessel Registration Number (Inland Vessel trade), auto-populate previously captured profile data, and update Vessel Basic Information, Vessel Technical Information and Vessel Certificates across three tabs. Certificates covered include Certificate of Registry, Certificate of Class, CAS/CAP (for tankers), Tonnage Certificate, Safety Management Certificate, International/Interim Ship Security Certificate, Safety Construction Certificate and P&I Details, each with mandatory document upload. On submission, a VESPRO Document Reference Number is generated, and the Port Custodian user reviews and Approves or Rejects the profile with mandatory comments.

Figure 3.1 Sagar Setu / NLP-Marine login screen, showing the Exim Trade, Service Provider, Regulatory Body and Custodian login categories.
(Source: MSW & PANS Vessel Profile Module User Manual, IPA)



Figure 3.2 Vessel Profile list view, showing previously submitted vessel profiles with Approved, Draft and Submitted statuses.
(Source: MSW & PANS Vessel Profile Module User Manual, IPA)

The Sub-Committee notes that this Approve / Reject-with-comments accountability workflow, implemented for the Vessel Profile module, is more structured than is currently documented for MSW FAL-form submissions, and recommends at Chapter XV that it be extended to MSW.

CHAPTER IV: DGS LETTER DATED 29 MAY 2026 IMPLEMENTATION, OPERATIONAL, INTEGRATION AND DOCUMENTATION ISSUES

4.1 Background and Provenance:

By letter File No. 25-63011/7/2023-NT-DGS dated 29 May 2026, subject ‘Implementation, Operational Issues, Integration Challenges and Documentation relating to Maritime Single Window (MSW) 2.0 reg.’, the Director General of Shipping, Shri Shyam Jagannathan, I.A.S. (also Additional Secretary to the Government of India), addressed the Chairman, Deendayal Port Authority, with a copy to Shri Vijay Kumar, IAS, Secretary, Ministry of Ports, Shipping and Waterways, setting out the findings of DGS's participation in review and coordination meetings regarding MSW 2.0 held with the Indian Ports Association (IPA) and concerned stakeholders.

This letter is, in the Sub-Committee's assessment, the single most authoritative and current official record of the operational reality of MSW 2.0 available to this Sub-Committee, and it is examined issue-by-issue in this Chapter, both because of its intrinsic importance and because it directly frames the roadmap this Sub-Committee is required to recommend.

Issue (i) - Very Low Compliance through MSW 2.0:

The DGS letter records that submission levels through MSW 2.0 remain critically low compared with vessel calls. In April 2026, out of 5,409 VCNs generated, only 168 vessels submitted FAL forms through the portal, working out to approximately 3 per cent compliance. This is a sharp fall compared with the earlier compliance level of around 60 per cent under MSW 1.0, and, at some ports, compliance had earlier reached nearly 80 per cent under MSW 1.0. DGS characterises this steep decline as a matter of serious concern requiring immediate corrective action. The Sub-Committee's own analysis of this compliance trend, and of the underlying VCN/FAL submission data, is set out at Chapter V.

Issue (ii) - FAL Forms Still Being Sent Manually:

Shipping agents are noted to still be submitting FAL forms by email or other manual means to ports, Customs and Immigration instead of through the portal.

Port Authorities are also accepting these manual submissions without insisting on online filing. DGS records that this practice is defeating the purpose of MSW 2.0 and continuing the parallel manual process the single-window model is designed to eliminate.

Issue (iii) - PDF Upload Facility Not Available for Form 3 and Form 4:

Agents have raised repeated difficulty in filing the Ship's Stores Declaration (FAL Form 3) and the Crew's Effects Declaration (FAL Form 4) because the portal does not allow PDF upload for these forms. As a result, agents are forced to re-enter data manually into the MSW Excel format, which is time-consuming and creates duplication of effort. The full field structure of Forms 3 and 4, and of the remaining five FAL forms, is set out at Chapter XII and Annexure E.

Issue (iv) - The Portal Does Not Allow Partial Submission:

The system presently does not permit agents to move to later forms unless the earlier form pages are fully completed. This creates serious difficulty in cases where cargo details are not yet available but other forms are ready for submission. There is also no ‘Save as Draft’ option for individual forms, which DGS records makes the portal difficult to use in live operational situations.

Issue (v) - Upload Errors in Crew List and Last Port of Call Data:

Agents face repeated upload failures because of date-format errors in the Date of Birth and Document Expiry Date fields of the Crew List (FAL Form 5). The Last Port of Call list is also not uploading correctly, owing to data-type and format mismatches in the template.

Issue (vi) - Port Authorities Not Clear on How to Access Submissions:

Some Port Authorities have stated that they are unable to clearly locate the MSW submission interface on the Sagar Setu / NLP portal. There is confusion about where the MSW tab appears, how submissions are viewed, and how approvals are handled. DGS records that clear guidance and navigation support are urgently required a finding the Sub-Committee notes is consistent with the more structured, better-documented navigation flow evidenced for the Vessel Profile module (Chapter III.5) as against the MSW module itself.

Issue (vii) - Some Users Continue to Face Challenges in Understanding the System:

During the weekly meetings referred to in the DGS letter, stakeholders highlighted that they are facing certain challenges in understanding and using the present MSW 2.0 system. While the revamping of MSW 1.0 was undertaken with the objective of making the system more user-friendly and improving ease of doing business, feedback indicates that some users continue to require guidance, including a user manual, to navigate the workflow effectively. DGS has therefore observed that there is scope for further simplification and stabilisation of the system to enhance the overall user experience.

Issue (viii) - Customs and Immigration Integration Still Pending:

Customs and Immigration remain not fully integrated with MSW 2.0. They continue to accept printed or emailed documents from agents, which reduces the practical need for portal submission. DGS identifies this as one of the major reasons compliance remains low, and states plainly that until these agencies are fully integrated, the single-submission concept cannot work properly a conclusion the Sub-Committee endorses and elaborates upon at Chapter VII (the SICA representation) and Chapter VIII (Recommendation A2, joint technical standards).

Issue (ix) - Immigration Forms Still Under Standardisation:

The Bureau of Immigration (BoI) has informed DGS that it has reduced the number of immigration forms from 20 to 12, and will share the revised, standardised form formats with IPA. IPA has stated it will implement the digitised forms within three weeks of receiving the formats. Until this is completed, immigration documents will continue to be handled outside the portal.

Issue (x) - Different Document Demands at Different Ports:

Immigration Officers at some ports are asking for additional documents such as crew contracts and crew medical certificates, while the same documents are not being asked for at other ports. This creates inconsistency and confusion for

shipping agents. The issue is expected to be resolved once standard forms are implemented through the portal (see Issue ix, above).

Issue (xi) - Fake Certificate Risk on the Portal:

A serious incident was reported in which a vessel submitted suspected fake statutory certificates through the portal. Although the QR code generated a certificate on scanning, cross-verification with the classification society confirmed that the certificates were fake. DGS records that this demonstrates the need for stronger online verification, validation controls, and safeguards against fake certificates a finding the Sub-Committee treats as a priority governance gap at Chapter XI (Recommendation D2, Critical Information Infrastructure classification).

Issue (xii) - Linkage with Port Operations Still Pending:

The proposed linkage of FAL submission with pilot booking, berthing, and other port-operation functions has not yet been implemented. This limits enforcement and reduces the practical incentive for filing through the portal. DGS states that linking these downstream services would help improve compliance a recommendation the Sub-Committee adopts directly into the roadmap at Chapter XIV (Immediate Actions).

Issue (xiii) - Need for Clear Action and Accountability:

Several issues have been raised repeatedly in successive meetings, but many remain unresolved. DGS records that this indicates the need for a time-bound issue-resolution mechanism, an issue-wise ownership matrix, clearly identified responsible agencies, present stage of action taken, and definite timelines for closure of each pending matter, so that issues do not remain pending for prolonged periods. The Sub-Committee has compiled an Issue Resolution Tracker against all thirteen issues at Annexure D, and recommends its formal adoption and periodic review (Chapter XV, Recommendation 5).

4.2 DGS Requests for Status and Documentation:

In paragraph 6 of its letter, DGS has requested that an updated and comprehensive status of MSW 2.0 be communicated officially, indicating inter alia the present

position regarding module-wise deployment, functionality-wise implementation, transition status from MSW 1.0 to MSW 2.0, status of integrations with stakeholder agencies including Customs, Immigration and Port Authorities, progress on resolution of pending issues, stabilisation measures undertaken, timelines for pending deliverables, issue-wise present status, agency responsible, action already initiated, milestone dates for completion, expected date of full resolution, adoption metrics including the number of vessel calls with actual electronic reporting through MSW, and the proposed roadmap for full operationalisation and system strengthening.

In paragraph 7, DGS has further requested that copies of the relevant project, technical and governance documents pertaining to MSW 2.0 be furnished for reference and examination, including inter alia the Software Requirement Specification (SRS), Functional Requirement Specification (FRS), module-wise structure, technology specifications, overall System Architecture/Integration Framework, and Governance and Change Management Framework.

DGS states, in paragraph 8, that this information and documentation would assist the Directorate in assessing regulatory preparedness, stakeholder coordination requirements and the overall implementation progress of the Maritime Single Window framework, facilitating informed regulatory oversight, coordinated inter-agency implementation, tracking of committed timelines, and expeditious resolution of operational issues requiring attention.

4.3 Sub-Committee Assessment:

The Sub-Committee treats the DGS letter of 29 May 2026 as establishing, on the record, that the transition from MSW 1.0 to MSW 2.0 has not yet delivered on the single-window objective in practice, notwithstanding sound underlying platform architecture (Chapters II and III). The thirteen issues identified span the full spectrum of implementation risk user experience, data-format handling, inter-agency integration, governance documentation, security and accountability and the Sub-Committee finds that no single remedial action can address them; rather, a structured, phased and accountable programme, of the kind recommended at Chapter XIV, is required. DG Shipping's own request for SRS/FRS and governance documentation (paragraph 7 of its letter) is, in the Sub-Committee's

view, a necessary precondition for the AI-governance and data-sovereignty recommendations examined at Chapters IX and X, and this Report recommends that it be treated as such.

CHAPTER V: COMPLIANCE TRENDS AND ADOPTION METRICS

5.1 From Collapse to Recovery: The Compliance Trajectory:

The Directorate General of Shipping's letter of 29 May 2026 recorded a decline from an MSW 1.0 national average of approximately 60 per cent (reaching nearly 80 per cent at some ports) to approximately 3 per cent under MSW 2.0 in April 2026 a compliance collapse the Sub-Committee treated, at Chapter IV, as the single most urgent finding before it. The Sub-Committee has since had the opportunity to examine the IPA's own MSW Report for June 2026 (period ended 30.06.2026), a port-wise compliance return covering 40 ports and terminals. This data shows that, by the end of June 2026, national FAL-form compliance had recovered substantially, to approximately 63.9 per cent (3,117 MSW submissions against 4,879 approved VCNs) a recovery of nearly 61 percentage points from the April 2026 low, and now marginally above the MSW 1.0 national average. Table 5.1 sets out this fuller trend.

Period / System	Compliance	Remarks
MSW 1.0 (best ports)	~80%	Peak compliance recorded at certain ports under MSW 1.0, prior to transition.
MSW 1.0 (national average)	~60%	Approximate national average compliance level under MSW 1.0.
MSW 2.0 (April 2026)	~3% (168 of 5,409 VCNs)	Compliance level recorded by DGS following the MSW 2.0 transition a steep decline requiring immediate corrective action.

MSW 2.0 (30 June 2026)	~63.9% (3,117 of 4,879 VCNs)	National compliance recorded in the MSW Report for June 2026 a substantial recovery, now approaching the MSW 1.0 national average.
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**Table 5.1 MSW compliance trend, MSW 1.0 through MSW 2.0
(April and June 2026)**

**Sources: DGS letter File No. 25-63011/7/2023-NT-DGS dated 29.05.2026
MSW Report June 2026 (till 30.06.2026), Indian Ports Association**

5.2 April-to-June Movement:

Table 5.2 restates the April and June 2026 positions side by side. While the number of VCNs approved fell marginally (from 5,409 to 4,879, a seasonal or reporting-basis variation the Sub-Committee has not sought to explain), the number of FAL forms actually submitted through the portal rose nearly eighteen-fold, from 168 to 3,117, over the two-month period following the DGS letter.

Metric	April 2026	June 2026	Change
Total VCNs generated/approved	5,409	4,879	-530 (-9.8%)
FAL forms / MSW submissions	168	3,117	+2,949 (+1,755%)
Compliance rate	~3%	~63.9%	+60.9 percentage points

**Table 5.2 April-to-June 2026 movement in VCN and FAL-submission
volumes**

5.3 June 2026 National Snapshot

Metric	Value
Total VCNs Approved	4,879
Total MSW (FAL Form) Submitted	3,117
National FAL Compliance	63.9%
Total Free Pratique Submitted	1,829 (37.5% of approved VCNs)
Number of ports/terminals reporting	40

Table 5.3 June 2026 national snapshot.
Source: MSW Report June 2026 (till 30.06.2026), IPA

5.4 Port-Wise Compliance June 2026:

Table 5.4 reproduces the full port-wise compliance return for June 2026, ranked by percentage FAL-form compliance. The recovery recorded at the national level in Table 5.1 is not uniform: compliance at individual ports ranges from 100 per cent to zero.

Port	Port Code	VCN Approved	MSW Submitted	Free Pratique Submitted	% Compliance
Gopalpur Port	INGPR1	6	6	0	100.0%
Karaikal Port	INKRK1	21	21	0	100.0%
Adani Petronet (Dahej) Port Pvt. Ltd.	INDAH1	67	65	0	97.0%
Krishnapatnam Port	INKRI1	81	77	0	95.1%

Port	Port Code	VCN Approved	MSW Submitted	Free Pratique Submitted	% Compliance
Adani Gangavaram Port Pvt Ltd	INGGV1	65	61	1	93.8%
Visakhapatnam Port Authority	INVTZ1	235	202	184	86.0%
Magdalla Group of Ports	INMDA1	55	47	0	85.5%
Paradip Port Authority	INPRT1	236	200	108	84.7%
Chennai Port Authority	INMAA1	180	151	141	83.9%
New Mangalore Port Authority	INNML1	148	124	124	83.8%
Kamarajar Port Limited	INENR1	129	108	97	83.7%
Kakinada Seaport Limited	INKAK1	88	71	0	80.7%
V.O. Chidambaranar Port Authority	INTUT1	260	204	133	78.5%
SMPA HDC	INHAL1	199	154	140	77.4%
Deendayal Port Authority	INIXY1	388	297	283	76.5%
Adani Hazira Port Pvt Ltd	INHZA1	112	84	0	75.0%
Vizhinjam International Seaport	INTRV1	62	46	18	74.2%

Port	Port Code	VCN Approved	MSW Submitted	Free Pratique Submitted	% Compliance
Kattupalli Port Pvt Ltd	INKAT1	52	37	5	71.2%
Cochin Port Authority	INCOK1	201	143	137	71.1%
Mundra Port	INMUN1	407	287	5	70.5%
SMPA KDS	INCCU1	105	70	66	66.7%
Essar Bulk Terminal (Salaya) Limited	INSAL1	3	2	0	66.7%
BPCL SPM, Sikka	INSIK1	117	78	0	66.7%
Mormugao Port Authority	INMRM1	50	32	28	64.0%
Pipavav Port	INPAV1	109	63	0	57.8%
Dighi Port	INDIG1	2	1	1	50.0%
Jawaharlal Nehru Port Authority	INJNP1	525	224	194	42.7%
The Dhamra Port Company Limited	INDMA1	53	22	1	41.5%
Navlakhi Port	INNAV1	10	4	0	40.0%
Mumbai Port Authority	INBOM1	535	194	163	36.3%
The Bedi Group of Ports	INBED1	13	4	0	30.8%

Port	Port Code	VCN Approved	MSW Submitted	Free Pratique Submitted	% Compliance
JSW Jaigarh Port Ltd.	INJGD1	211	36	0	17.1%
Karwar Port	INKRW1	8	1	0	12.5%
Vadinar Port	INVAD1	108	1	0	0.9%
Ship Recycling Yard Alang	INALA1	11	0	0	0.0%
Bhavnagar Port	INBHU1	1	0	0	0.0%
Konkan LNG Pvt Ltd	INDHP1	2	0	0	0.0%
Chhara Port	INKOS1	1	0	0	0.0%
Old Mundra Port	INOMU1	19	0	0	0.0%
Porbandar Port	INPBD1	4	0	0	0.0%
Grand Total		4,879	3,117	1,829	63.9%

Table 5.4 Port-wise VCN, MSW submission, Free Pratique submission and FAL compliance, June 2026.

Source: MSW Report June 2026 (till 30.06.2026), IPA

5.5 Best and Worst Performing Ports:

Table 5.5 sets out the five best-performing ports/terminals by compliance percentage, all at or above 90 per cent. Table 5.6 sets out the ten weakest performers, six of which recorded zero MSW submissions against approved VCNs in June 2026 despite having live vessel calls.

Port	Compliance	VCN Approved
Gopalpur Port	100.0%	6

Port	Compliance	VCN Approved
Karaikal Port	100.0%	21
Adani Petronet (Dahej)	97.0%	67
Krishnapatnam Port	95.1%	81
Adani Gangavaram Port	93.8%	65

Table 5.5 Top five ports by FAL compliance, June 2026

Port	Compliance	VCN Approved
Ship Recycling Yard Alang	0.0%	11
Bhavnagar Port	0.0%	1
Konkan LNG Pvt Ltd	0.0%	2
Chhara Port	0.0%	1
Old Mundra Port	0.0%	19
Porbandar Port	0.0%	4
Vadinar Port	0.9%	108
Karwar Port	12.5%	8
JSW Jaigarh Port Ltd.	17.1%	211
The Bedi Group of Ports	30.8%	13

Table 5.6 Ten weakest-performing ports by FAL compliance, June 2026

5.6 Compliance at High-Volume Ports:

Because national compliance is a volume-weighted average, performance at India's largest ports by VCN volume disproportionately determines the headline figure. Table 5.7 sets out compliance at the six highest-volume ports in the June 2026 return. Notably, Mumbai Port Authority and Jawaharlal Nehru Port

Authority together accounting for 1,060 of the 4,879 VCNs approved nationally, or approximately 22 per cent of national volume recorded compliance of only 36.3 per cent and 42.7 per cent respectively, materially below the national average, and well below the 76–86 per cent range achieved at Deendayal, Paradip and Visakhapatnam.

Port	VCN Approved	% Compliance
Mumbai Port Authority	535	36.3%
Jawaharlal Nehru Port Authority	525	42.7%
Mundra Port	407	70.5%
Deendayal Port Authority	388	76.5%
Paradip Port Authority	236	84.7%
Visakhapatnam Port Authority	235	86.0%

Table 5.7 FAL compliance at the six highest-volume ports, June 2026

5.7 The Free Pratique Gap:

Of 4,879 VCNs approved nationally in June 2026, only 1,829 approximately 37.5 per cent were accompanied by a Free Pratique submission, compared with 3,117 (63.9 per cent) for FAL-form (MSW) submission generally. This gap of over 26 percentage points between general FAL compliance and Free Pratique submission is consistent with, and corroborates, the DGS letter's own finding (Chapter III.2, Chapter IV.2) that the PHO Module remains pending integration with MSW 2.0. Twelve of the forty reporting ports recorded zero Free Pratique submissions in June 2026 notwithstanding non-zero MSW submissions, including several relatively high-compliance ports such as Adani Petronet (Dahej) (97.0% FAL compliance, zero Free Pratique) and Krishnapatnam (95.1% FAL compliance, zero Free Pratique) indicating that strong FAL-form compliance does not by itself guarantee PHO-module usage, and that these two workstreams require separate monitoring and remediation.

5.8 Diagnosed Drivers of the Residual Gap:

Reading the thirteen issues examined in Chapter IV against the compliance trajectory in Tables 5.1 and 5.2, the Sub-Committee identifies the following causal chain of drivers still operative in the approximately 36 per cent of vessel calls not yet captured through the portal, and in the wide port-wise variation recorded in Table 5.4.

Driver (DGS Issue Reference)	Effect on Compliance
Parallel manual filing accepted by ports (Issue ii)	Removes commercial incentive to use the portal; agents default to familiar email/manual channels.
No PDF upload for Forms 3 & 4 (Issue iii)	Forces re-keying into Excel, increasing agent effort per submission and discouraging portal-first filing.
No partial submission / Save-as-Draft (Issue iv)	Blocks submission in live operational situations where full cargo data is not yet available at time of filing.
Crew List / Last Port of Call upload errors (Issue v)	Causes failed submissions that push agents back to manual channels.
Port Authority navigation confusion (Issue vi)	Even where agents file through the portal, downstream port-side processing may default to manual handling.
System difficult to understand (Issue vii)	Raises the effective training cost of portal-first filing relative to established manual practice.
Customs and Immigration non-integration (Issue viii)	Remains the single most significant structural driver of the residual gap between FAL submission (63.9%) and full end-to-end single-window compliance.

Driver (DGS Issue Reference)	Effect on Compliance
No linkage with port operations / pilot booking / berthing (Issue xii)	Removes any operational leverage or enforcement mechanism that could compel portal-first compliance at the lagging ports identified in Table 5.6.

5.9 Sub-Committee Assessment:

The Sub-Committee records that the recovery from approximately 3 per cent in April 2026 to approximately 63.9 per cent in June 2026 is a materially positive development, and reflects credibly on the corrective steps taken by IPA and DGS in the period following the 29 May 2026 letter. However, the Sub-Committee cautions against treating the national average alone as evidence that the underlying issues identified in Chapter IV have been resolved. Table 5.4 shows that six ports recorded zero compliance and a further four recorded compliance below 20 per cent in June 2026, while Table 5.7 shows that two of India's largest ports by volume Mumbai and Jawaharlal Nehru remain materially below the national average, meaning a disproportionate share of the residual non-compliant vessel calls is concentrated at high-traffic ports where the consequences of continued manual/parallel filing are largest. The Sub-Committee further finds that the Free Pratique gap identified at section 5.7 is independent evidence, distinct from the DGS letter, that PHO-module integration remains incomplete.

The Sub-Committee recommends that the immediate-action program at Chapter XIV be retained in full notwithstanding the improved national average, but re-targeted: (a) the six zero-compliance ports and four sub-20-per-cent ports at Table 5.6 should be prioritized for direct diagnostic support, given that a national average recovery can mask localized failure; (b) Mumbai Port Authority and Jawaharlal Nehru Port Authority should be treated as priority remediation sites given their combined volume share; (c) the practices of the five top-performing ports and terminals at Table 5.5 should be documented and disseminated as an internal best-practice reference for lagging ports; and (d) DGS and IPA should institutionalize the port-wise monthly reporting format used in the June 2026 M SW Report

rather than the national aggregate alone as the standing transparency measure recommended at Chapter XIV and Recommendation 12, Chapter XV, so that port-level divergence of the kind identified in this Chapter remains visible on an ongoing basis.

5.10 Diagnosed Drivers of Non-Compliance:

Reading the thirteen issues examined in Chapter IV against the compliance collapse in Table 5.1, the Sub-Committee identifies the following causal chain of drivers, several of which are mutually reinforcing.

Driver (DGS Issue Reference)	Effect on Compliance
Parallel manual filing accepted by ports (Issue ii)	Removes commercial incentive to use the portal; agents default to familiar email/manual channels.
No PDF upload for Forms 3 & 4 (Issue iii)	Forces re-keying into Excel, increasing agent effort per submission and discouraging portal-first filing.
No partial submission / Save-as-Draft (Issue iv)	Blocks submission in live operational situations where full cargo data is not yet available at time of filing.
Crew List / Last Port of Call upload errors (Issue v)	Causes failed submissions that push agents back to manual channels.
Port Authority navigation confusion (Issue vi)	Even where agents file through the portal, downstream port-side processing may default to manual handling.
System difficult to understand (Issue vii)	Raises the effective training cost of portal-first filing relative to established manual practice.
Customs and Immigration non-integration (Issue viii)	The single most significant driver identified by DGS: while Customs/Immigration accept manual documents, the single-submission concept structurally cannot succeed.

Driver (DGS Issue Reference)	Effect on Compliance
No linkage with port operations / pilot booking / berthing (Issue xii)	Removes any operational leverage or enforcement mechanism that could compel portal-first compliance.

5.11 Sub-Committee Assessment:

The Sub-Committee's reading of Table 5.3 is that the single largest lever for restoring compliance is Customs and Immigration integration (Issue viii): so long as these two agencies continue to accept manual or emailed documentation, no amount of portal usability improvement can, on its own, restore MSW to its MSW 1.0 compliance levels, because agents retain a fully functional, lower-friction alternative. The Sub-Committee therefore recommends, at Chapter XIV, that Customs and Immigration integration be prioritised as an immediate action, in parallel with the technical fixes (PDF upload, partial submission, upload-error correction) that reduce the friction of portal-first filing, and that linkage with port operations (pilot booking, berthing) be implemented as the enforcement mechanism that ultimately makes portal-first filing the path of least resistance for shipping agents. The Sub-Committee further recommends that DGS's own request (Chapter IV.15) for month-wise adoption metrics be institutionalised as a standing KPI, published on a recurring basis, so that the trend in Table 5.1 can be tracked to recovery and beyond, toward the higher compliance benchmarks discussed in Chapter VI.

CHAPTER VI: GLOBAL BENCHMARKS WHAT WORKED AND WHAT FAILED

The consultation submission before Sub-Committee No. 10 frames the design choice for India's Integrated National Single Maritime Window against eight comparable international programmes four that succeeded and four that encountered serious difficulty. The Sub-Committee finds this comparative evidence directly relevant to the roadmap in Chapter XIV and adopts it as part of the evidentiary basis of this Report. Where relevant, the Sub-Committee has cross-referenced these precedents against India's own MSW 2.0 experience as documented at Chapters III to V.

6.1 What Worked, and What India Should Adapt:

Platform	Result	Lesson for India
Singapore digitalPORT@ SG	16 clearance forms consolidated into one; ~100,000 industry man-hours saved annually.	Consolidate before layering AI sequencing drove the gain.
Rotterdam Pronto	Vessel waiting time cut ~20%; berth-ETA accuracy to 20 minutes.	The clearest working model of an AI-enabled virtuous cycle.
Antwerp NxtPort	Open-API data exchange live since April 2025 across the port community.	Template for one published open standard, not bilateral point-to-point integrations.
Portbase, Netherlands	1,000+ shippers, 1,200+ forwarders, 1,400+ inland operators, 130+ terminals, 150+ shipping lines on one federated platform.	Governance template for India's sovereign-data ambition.

6.2 What Failed, and the Design Rule It Sets:

Platform	Failure Mode	Design Rule
UK HMRC Single Trade Window	National Audit Office found complexity underestimated; a supplier dispute arose within a year.	Undertake an independent complexity assessment before any vendor contract.
UK Customs Declaration Service	Hard legacy cutover caused declaration delays of up to 45 minutes in 2026.	Never force a cutover without sustained parallel running of legacy and new systems.
EU EMSWe	Became applicable in August 2025, but shared technical specifications were finalised late, causing up to an 18-month desynchronisation across member States.	Lock the shared technical standard centrally and early.
US ACE (Automated Commercial Environment)	Took roughly three decades to reach mandatory status, including a halt in 2010–13; the Government Accountability Office cited weak governance.	Vest one empowered interagency authority with clear accountability from day one.

6.3 India's Position Against These Benchmarks:

Table 6.3 maps India's MSW 2.0 experience, as documented in this Report, against each of the five design disciplines these precedents illustrate.

Design Discipline	Global Precedent	India's Current Position
Consolidation before AI	Achieved (16-into-1 forms) before layering intelligence	Not yet achieved core FAL/Vessel Profile/Voyage Registration deployed, but PHO, PANS, Customs and Immigration integration still pending (Ch. III, IV)
Legacy cutover discipline	N/A built single-window from a blank slate	MSW 1.0 to MSW 2.0 cutover coincided with a compliance collapse from ~60% to ~3% (Ch. V), consistent with the UK CDS hard-cutover failure mode
Locked joint technical standard	Antwerp NxtPort: one open standard since April 2025	No evidence of a locked joint standard with ICEGATE 2.0/RMS/ICES yet (Ch. VIII, Recommendation A2)
Federated data governance	Portbase: rules set at design time	No codified data-sovereignty charter yet exists for Sagar Setu (Ch. X, Recommendation C1)
Single empowered authority	US ACE failure attributed to its absence; ideal is one clear owner	DGS functions as de facto review authority (Ch. II.3) but the DGS letter itself calls for a formal ownership/accountability matrix (Ch. IV.14)

6.4 Sub-Committee Assessment:

Read together, these precedents and India's own experience suggest that the sequencing of India's Integrated National Single Maritime Window matters as much as its feature set. The MSW 1.0-to-2.0 cutover, and the compliance collapse that followed (Chapter V), is a live illustration of the very failure mode the UK Customs Declaration Service experienced: a hard cutover without sustained parallel running, compounded by incomplete integration with Customs and

Immigration precisely the governance discipline the US ACE programme lacked for three decades. The Sub-Committee's central recommendation flowing from this chapter is that the remedial programme in Chapter XIV must restore genuine consolidation (fixing the technical and integration gaps identified by DGS) before any further AI-enablement is layered onto the platform, following the Singapore sequencing lesson, and that a joint technical standard, a federated data-governance charter, and a single empowered authority all currently absent or incomplete be established as a matter of priority.

CHAPTER VII: STAKEHOLDER CONSULTATION FINDINGS (SICA REPRESENTATION)

7.1 Background:

The Southern India Consolidators Association (SICA), the apex trade body representing LCL (Less-than-Container-Load) consolidators and NVOCCs across Southern India with members operating at Chennai, Tuticorin and associated ICDs and Container Freight Stations, made a formal representation to the National Shipping Board dated 1 July 2026 (Ref: SICA/NSB/2026/001), welcoming Sub-Committee No. 10's initiative and setting out eight specific suggestions from the perspective of the cargo-consolidation segment of the trade.

SICA's representation explicitly recognises the substantial progress already made through the MSW module within Sagar Setu, the Port Community System (PCS 1x), and the Indian Customs ICEGATE platform including the SCMTR manifest-filing framework while identifying a specific, persistent gap: the cargo-consolidation and NVOCC leg of the trade, which SICA states is not yet fully integrated into a single window, leaving consolidators to face duplication, rework and fragmented compliance.

7.2 SICA's Eight Suggestions:

S. No.	Suggestion	Detail
1	Single submission of data ‘enter once, use everywhere’	Consolidators today key the same manifest, container and cargo data separately into Customs (ICEGATE/SCMTR) and port systems. A single, validated submission should be shared across Customs, port and Participating Government Agencies (PGAs), eliminating duplicate entry.

2	Cargo-level integration, not only vessel-level	The existing MSW is oriented largely to vessel arrival, stay and departure (IMO FAL forms). A truly integrated window must treat the LCL consolidation manifest (SCMTR / SACHM22 CSN) as a first-class data object, so house-level and consolidated cargo data flow through the same window.
3	Open API access for all stakeholders, including MSMEs	Integration should be available to every consolidator and their in-house or third-party software through open, well-documented APIs not limited to large logistics providers who can afford bespoke ‘latch-on’ integration to ensure a level playing field for MSME consolidators.
4	Validation at source to reduce rejections	Real-time, pre-submission validation against Customs and port business rules should flag errors before submission, sharply reducing manifest rejections, amendments and resulting delays and costs.
5	End-to-end ICD and transshipment visibility	LCL cargo routed through Inland Container Depots and inland transshipment currently falls between port and Customs systems, with limited visibility. The window should provide unified tracking and a defined workflow for ICD-routed and transshipment LCL cargo.
6	Structured exception workflow for returned/rolled containers and detention & demurrage	Trade is frequently penalised with detention and demurrage for delays driven by carriers, ports or external disruptions. A transparent, time-stamped workflow is needed for returned/rolled LCL containers and for waiver or adjudication of associated charges.

7	Shared, standardised master data	Common master data IEC, GSTIN, HS codes and party/PGA references should be maintained once within the window and re-used across all modules, avoiding the repeated lookups and data mismatches that currently cause rejections.
8	Phased, modular and consultative rollout	An incremental, modular implementation developed in continuous consultation with trade bodies representing each segment is recommended, with a built-in grievance and feedback mechanism with published turnaround times.

7.3 Correlation with the DGS Letter:

The Sub-Committee finds a striking correlation between SICA's trade-level representation and the DGS letter examined at Chapter IV, notwithstanding that the two documents originate from entirely different vantage points one from a regulator reviewing platform performance, the other from a trade association describing daily filing experience. SICA's first suggestion (single submission, ‘enter once, use everywhere’) is the cargo-consolidation trade's version of the same structural problem DGS identifies at Issue viii (incomplete Customs and Immigration integration): in both cases, the absence of true single-window integration forces double entry and parallel manual processes. SICA's fourth suggestion (validation at source) mirrors the data-quality problems DGS records at Issue v (Crew List and Last Port of Call upload errors). SICA's eighth suggestion (phased, modular, consultative rollout with a grievance mechanism) is the trade-facing analogue of DGS's Issue xiii (need for a time-bound issue-resolution mechanism).

7.4 Sub-Committee Assessment:

The Sub-Committee finds SICA's representation directly corroborative of Recommendation A3 (‘data once, use many times’) and Recommendation A1 (consolidation of the data layer) set out in Chapter VIII, and of the emphasis on MSME-inclusive open API access reflected in Recommendation E1 at Chapter XI. The Sub-Committee further notes SICA's request to be included as a

continuing stakeholder and consultee in working sessions, pilots and consultations relating to the cargo-consolidation aspects of the Integrated National Single Maritime Window, and recommends that this request be accepted (see Recommendation 7, Chapter XV).

CHAPTER VIII: ARCHITECTURE AND THE DATA FOUNDATION

The consultation submission frames the first of four design choices facing the Sub-Committee as follows: read narrowly, the Integrated National Single Maritime Window is trade facilitation ‘one platform, all clearances’; read ambitiously, it is the opening move in a self-improving national maritime operating system, engineered as four connected layers a Transaction Layer (one platform for port, customs, immigration, DG Shipping and health clearances), an Intelligence Layer (AI for validation, anomaly detection and predictive congestion management), a Learning Layer (every decision, correction, delay and exception feeding back to improve workflows and model performance), and a Strategic Repository Layer (accumulated, governed data as a sovereign asset for policy and industrial advantage).

The Sub-Committee endorses the ambitious reading, and records three recommendations under this design choice, building on what already exists rather than duplicating it. The Sub-Committee also notes that Recommendation A2 (locking a joint technical standard) directly addresses DGS Issue viii (Chapter IV.9) incomplete Customs and Immigration integration by requiring the technical standard to be settled before, rather than after, further architectural hardening.

Ref	Recommendation	Precedent
A1	Consolidate SagarSetu, Sagar Manthan and the draft NDCS into one data layer	Precedent: NMF 2026 NDCS review
A2	Lock a joint technical standard with ICEGATE 2.0 / RMS / ICES before architecture hardens	Precedent: Antwerp NxtPort
A3	Bind the window to ‘data once, use many times’	Precedent: Singapore digitalPORT@SG

A1 Consolidate the data layer:

SagarSetu (the platform through which MSW is delivered), Sagar Manthan and the draft National Data Communication/Consolidation Strategy (NDCS) should be consolidated into a single data layer rather than run as three parallel systems,

consistent with the finding of the NMF 2026 NDCS review. The Sub-Committee notes that this consolidation should also formally absorb the Admin Configuration, Dashboard, and Document Management System (DMS) components which the DGS letter records (para 3) as requiring transition to a more structured, SDLC-based framework.

A2 Lock a joint technical standard early:

A joint technical standard with ICEGATE 2.0, the Risk Management System (RMS) and the Indian Customs EDI System (ICES) should be locked before the architecture of the Integrated National Single Maritime Window hardens further following the Antwerp NxtPort precedent of one published open standard rather than bilateral integrations, and directly addressing both the dual-filing burden SICA has identified between MSW's IMO-FAL cargo format and Customs' WCO/CBIC-aligned manifest format, and the Customs/Immigration integration gap DGS has formally flagged as the principal driver of the compliance collapse (Chapter V.3).

A3 'Data once, use many times':

The window should be bound to the principle that data entered once is used many times across all downstream modules and agencies the design principle that delivered Singapore's digitalPORT@SG its ~100,000 annual industry man-hour saving, and the principle SICA's own first suggestion (Chapter VII) independently calls for from the cargo-consolidation side of the trade. Applied to the specific technical issues at Chapter IV, this principle also requires that PDF-upload and partial-submission functionality (Issues iii and iv) be restored, since a 'data once' window cannot function if agents are forced to re-key data into a secondary Excel format.

CHAPTER IX: THE VIRTUOUS CYCLE OF AI AND AI GOVERNANCE

9.1 Recommendation B1 The Virtuous Cycle of AI:

The second design choice concerns engineering AI as a genuine virtuous cycle rather than an automation layer bolted onto paper-equivalent forms, modelled explicitly on Rotterdam's Pronto platform:

Step	Description
1. Standardised capture	Every port-call transaction recorded once, in a common format.
2. AI-assisted prediction	Berth arrival forecast to approximately 20 minutes; conflicts flagged early.
3. Coordinated action	Just-in-time sailing and pre-cleared documentation, replacing idling at anchorage.
4. Measured outcome	Approximately 20% cut in waiting time published as an open KPI; associated CO2 reduction.
5. Deeper participation	Operators share more, better data sharpening step 2 again.

The governing clause attached to this recommendation is that every step must be logged, reviewable, attributable and bounded by human authority that is what makes the cycle virtuous, and not merely automated. The Sub-Committee emphasises that this virtuous cycle is entirely premature while the foundational data-capture layer is compromised by the compliance collapse documented at Chapter V: an AI prediction layer trained on data from only 3 per cent of vessel calls cannot generate reliable, representative predictions. AI-enablement must therefore follow, not precede, the remedial actions in Chapter XIV.

9.2 Recommendation B2 A First-Mover ISO/IEC 42001 Certification:

No public-sector port or single-window platform anywhere in the world has yet been certified to ISO/IEC 42001, the international standard for AI management systems. The consultation submission frames this absence as an opening for India

to set a global precedent rather than a gap to close by catching up, and proposes six governance disciplines as the foundation of such a certification:

Discipline	Requirement
Model registry	Every production model, its scope, lineage and known limitations recorded.
Change control	Formal review required before any model update goes live.
Monitoring thresholds	Triggers for review when accuracy or flag rates drift.
Audit logs	Every AI-assisted decision logged and reviewable.
Incident escalation	A named chain when an AI flag or denial is contested.
Periodic review & retirement	Fixed-cycle independent review; retirement criteria for under-performing models.

The Sub-Committee notes that several of these disciplines in particular audit logs and incident escalation map directly onto the fake-certificate risk DGS has identified at Issue xi (Chapter IV.12): a model registry and audit-log regime, applied to certificate-verification functions, would materially reduce the risk of a repeat incident.

9.3 Recommendation B3 Phased AI Deployment:

AI deployment within the Integrated National Single Maritime Window should be phased rather than launched in full at once, modelled on the phased automation approach adopted at PSA Tuas, so that intelligence-layer functions (validation, anomaly detection, predictive congestion management) are progressively introduced and independently reviewed as they mature, rather than deployed as a single undifferentiated capability.

9.4 Sub-Committee Assessment:

The Sub-Committee regards Recommendation B2 as the single clearest strategic opportunity identified in the evidence before it: India's maritime single window can become the first public-sector platform of its kind, anywhere, to be certified to ISO/IEC 42001, converting an AI-governance obligation into a source of international credibility consistent with the MAKV 2047 goal of global maritime standing (Chapter XIII) but only once the foundational compliance and integration issues at Chapters IV and V have been substantially resolved.

CHAPTER X: MARITIME DATA AS A SOVEREIGN STRATEGIC ASSET

10.1 Recommendation C1 Federated Ownership (Portbase Model):

The third design choice concerns centralising the data-exchange layer without centralising data ownership the Portbase template for resolving the tension between sovereignty and agency control. Portbase in the Netherlands operates a federated platform of over 1,000 shippers, 1,200 forwarders, 1,400 inland operators, 130 terminals and 150 shipping lines, in which each participant retains ownership of the data it contributes, with explicit rules set at design time governing access, anonymisation, retention, research-use and security classification per data class. The Sub-Committee recommends this federated-ownership model as the template for India's Integrated National Single Maritime Window.

10.2 Recommendation C2 Design for the DPDP Rules, 2025 Phasing:

Data governance for the Integrated National Single Maritime Window must be designed against the phased implementation timetable of the Digital Personal Data Protection Rules, 2025:

Phase	Requirement
Phase I 13 Nov 2025	Data Protection Board of India established.
Phase II 13 Nov 2026	Consent-manager obligations take effect.
Phase III 13 May 2027	Full data-fiduciary compliance required; no grace period.

The Sub-Committee notes that Phase II (consent-manager obligations, effective 13 November 2026) falls within the immediate horizon of the roadmap at Chapter XIV, and that data-governance design work under Recommendation C1 should be substantially complete before that date. The Sub-Committee also observes that the crew, passenger and identity-document data captured through FAL Forms 4, 5 and 6 (Chapter XII) precisely the forms where DGS has recorded upload errors

at Issue v fall squarely within the scope of personal data the DPDP Rules will govern, making data-quality remediation for these forms a data-protection as well as an operational priority.

10.3 Recommendation C3 Connection to Green Shipping Corridors:

The accumulated, governed data held within the Integrated National Single Maritime Window should be connected to green shipping corridor initiatives, enabling the platform's Strategic Repository Layer (Chapter VIII) to support sustainability measurement and reporting as a strategic national asset, consistent with MAKV 2047's ambition of resilient, digitally integrated trade corridors (Chapter XIII).

CHAPTER XI: RISK, INSTITUTIONAL DISCIPLINE AND INCLUSIVE ROLLOUT

11.1 Risk & Institutional Discipline:

The fourth design area addresses learning from global failures by design, rather than by incident, and comprises two recommendations:

Ref	Recommendation	Rationale
D1	Independent complexity assessment + one empowered interagency authority	Avoids the failure modes documented for UK HMRC Single Trade Window and US ACE (Chapter VI), and directly answers DGS's own call, at Issue xiii, for clear ownership and accountability.
D2	Classify as Critical Information Infrastructure with a documented offline fallback	Extends the existing ICEGATE / ECCS / ACES-GST precedent, and directly addresses the fake-certificate risk at DGS Issue xi.

On D1, the Sub-Committee recommends that no major architectural or vendor commitment for the Integrated National Single Maritime Window proceed without a prior independent complexity assessment, and that a single, empowered interagency authority rather than a diffuse, multi-agency escalation chain hold accountability for programme delivery. The Sub-Committee notes that this recommendation is not merely a precautionary borrowing from international precedent but a direct response to DGS's own explicit finding, at Issue xiii of its letter (Chapter IV.14), that several issues have been raised repeatedly in successive meetings without resolution, and that a time-bound issue-resolution mechanism with clear ownership is required.

On D2, the Sub-Committee recommends that the Integrated National Single Maritime Window be formally classified as Critical Information Infrastructure,

with a documented offline fallback procedure, extending the precedent already established for ICEGATE, the Express Cargo Clearance System (ECCS) and ACES-GST. The Sub-Committee regards this recommendation as materially reinforced by the fake-certificate incident recorded at DGS Issue xi (Chapter IV.12), which demonstrates that the platform's current verification controls are insufficient for a system handling statutory certification with legal and safety consequences.

11.2 Inclusive Rollout:

The fifth design area addresses reaching beyond the largest ports, building inclusion and low-bandwidth access into the rollout from the first pilot rather than as an afterthought:

Ref	Recommendation	Rationale
E1	Mixed major / non-major pilot ports	Ensures pilot learning reflects the operating conditions of both high-volume and lower-bandwidth ports from the outset.
E2	Continuous structured stakeholder consultation	Institutionalises the kind of trade-body input SICA has already provided (Chapter VII) as an ongoing, not one-off, mechanism.

The Sub-Committee notes that this design area directly answers SICA's eighth suggestion (phased, modular and consultative rollout with a built-in grievance and feedback mechanism) and its request for continuing participation as a stakeholder (Chapter VII), and recommends that Recommendations E1 and E2 be read together with that representation. The Sub-Committee further notes that DGS's own account of inconsistent port-wise documentation demands (Issue x, Chapter IV.11) is itself an inclusion and standardisation failure, which continuous structured stakeholder consultation (E2) is designed to prevent going forward.

CHAPTER XII: STRUCTURE OF THE SEVEN IMO FAL FORMS UNDER MSW

The seven standardized IMO FAL forms constitute the mandatory data backbone of any Maritime Single Window. This Chapter sets out the field-level structure of each form as implemented on the MSW module of Sagar Setu, summarised from the platform's General Declaration output template and the form-wise field structures placed before the Sub-Committee. A consolidated field-reference table for all seven forms is reproduced at Annexure E.

12.1 FAL Form 1 General Declaration:

The General Declaration is the master form of the set, cross-referencing whether Cargo Declaration, Ship's Stores Declaration, Crew List, Passenger List, Crew's Effects Declaration and Maritime Declaration of Health have been separately filed. It captures the vessel's identity, arrival/departure particulars, master and agent details, tonnage, voyage history, cargo summary, and crew/passenger counts.

Field(s)	Description
1.1	Name and type of ship
1.2	IMO number
1.3	Call sign
1.4	Voyage number
2	Port of arrival / departure
3	Date and time of arrival / departure
4	Flag State of ship
5	Name of master
6	Next port of call / Last port of call
7	Certificate of registry (port; date; number)
8	Name and contact details of ship's agent

Field(s)	Description
9	Gross tonnage
10	Net tonnage
11	Brief particulars of voyage (previous and subsequent ports of call; underline where remaining cargo will be discharged)
12	Brief description of the cargo
13	Number of crew
14	Number of passengers
15	Remarks
16–22	Attached documents indicator (Cargo Declaration, Ship's Stores Declaration, Crew List, Passenger List, ship's waste/residue requirements, Crew's Effects Declaration (arrival only), Maritime Declaration of Health (arrival only))
23	Date and signature by master, authorised agent or officer

12.2 **FAL Form 2 Cargo Declaration:**

The Cargo Declaration captures Bill-of-Lading level detail for goods carried, cross-referenced to the vessel's General Declaration.

Field(s)	Description
1.1–1.4	Name of ship; IMO number; Voyage number; Port where report is made
2–4	Flag State of ship; Name of master; Port of loading / Port of discharge
B/L No.	Bill of Lading number
6–7	Marks and numbers; Number and kind of packages; description of goods or, if available, the HS Code
8–9	Gross weight; Measurement

12.3 FAL Form 3 Ship's Stores Declaration:

The Ship's Stores Declaration records the ship's on-board stores by article, quantity and location, for the duration of the port stay. As recorded at DGS Issue iii (Chapter IV.4), this form does not presently support PDF attachment on the MSW portal.

Field(s)	Description
1.1–1.4	Name of ship; IMO number; Call sign; Voyage number
2–3	Port of arrival / departure; Date of arrival / departure
4–5	Flag State of ship; Last port of call / Next port of call
6–7	Number of persons on board; Period of stay
8–11	Name of article; Quantity; Location on board; Official use

12.4 FAL Form 4 Crew's Effects Declaration:

The Crew's Effects Declaration records personal effects of crew members that are ineligible for customs relief, or subject to prohibition or restriction, and is required only on arrival. Like Form 3, this form does not presently support PDF attachment on the MSW portal (DGS Issue iii).

Field(s)	Description
1.1–1.4	Name of ship; IMO number; Call sign; Voyage number
2	Flag State of ship
3–8	No.; Family name; Given names; Rank or rating; Effects ineligible for relief from customs duties and taxes or subject to prohibitions or restrictions; Signature

12.5 FAL Form 5 Crew List:

The Crew List records identity, nationality and travel-document particulars for every crew member on board. This is the form for which DGS has recorded date-format upload errors in the Date of Birth and Document Expiry Date fields (Issue v, Chapter IV.6).

Field(s)	Description
1.1–1.4	Name of ship; IMO number; Call sign; Voyage number
2–6	No.; Family name; Given names; Rank or rating; Nationality
7–9	Date of birth; Place of birth; Nature and number of identity document
10–11	Issuing State of identity document; Expiry date of identity document
12	Port and date of arrival / previous port of call

12.6 FAL Form 6 Passenger List:

The Passenger List records identity, travel-document and embarkation/disembarkation particulars for all passengers carried.

Field(s)	Description
1.1–1.4	Name of ship; IMO number; Call sign; Voyage number
2–4	Port of arrival / departure; Date of arrival / departure; Flag State of ship
5–10	Family name; Given names; Nationality; Date of birth; Place of birth; Gender
11–14	Type of identity or travel document; Number; Issuing State; Expiry date of identity or travel document
15–16	Port of embarkation; Port of disembarkation
17–18	Visa number, if appropriate; Transit passenger or not

12.7 FAL Form 7 Dangerous Goods Manifest:

The Dangerous Goods Manifest, required under SOLAS 74 Chapter VII (Regulations 4.2 and 7-2.2), MARPOL Annex III (Regulation 4.2) and paragraph 5.4.3.1 of the IMDG Code, records the UN Number, Proper Shipping Name, Class, Packing Group and mass of all dangerous cargo carried, by storage position and port of loading/discharge.

Field(s)	Description
1.1–1.4	Name of ship; IMO number; Call sign; Voyage number
2–3	Port of loading; Port of discharge
4	Storage / stowage position
5–6	Reference / Cargo Transport Unit identification number(s); UN Number
7	Proper Shipping Name, Class / Subsidiary Risk(s), Packing Group, as applicable
8–9	Additional information (e.g. flashpoint if applicable); Number and kind of packages
10	Mass (kg), gross or net, as appropriate

12.8 Sub-Committee Assessment:

Reviewing the field structures of all seven forms together, the Sub-Committee observes that Forms 3, 4 and 5 Ship's Stores Declaration, Crew's Effects Declaration and Crew List are precisely the three forms against which DGS has recorded specific technical defects (absence of PDF upload for Forms 3 and 4; date-format upload errors for Form 5). This is not, in the Sub-Committee's assessment, a coincidence: these three forms carry the highest density of free-text and date-typed fields (article names, quantities, identity-document dates) relative to the more structured, code-based fields of Forms 2, 6 and 7, and are therefore the most vulnerable to the template and validation defects DGS has identified. The Sub-Committee recommends, at Chapter XIV, that remediation of Forms 3, 4 and 5 be treated as a distinct, prioritised work item within the immediate-action phase of the roadmap.

CHAPTER XIII: ALIGNMENT WITH MAKV 2047 GOALS

The Maritime Amrit Kaal Vision 2047 (MAKV 2047) envisages India as a globally competitive, digitally integrated maritime nation with resilient trade corridors, a robust international ship registry, blue-economy finance, and cross-border digital interoperability. A functional, globally compliant National Single Maritime Window is foundational to several MAKV 2047 objectives, but the evidence in Chapters IV and V establishes that this foundation is not yet secure.

- **Ease of Doing Business:** a consolidated, ‘data once, use many times’ MSW (Recommendation A3) directly advances streamlined, paperless port clearance; at present, however, approximately 97% of vessel calls in April 2026 were processed outside the portal (Chapter V), the opposite of ease of doing business.
- **Resilient and Digitally Integrated Trade Corridors:** a locked joint technical standard with ICEGATE 2.0/RMS/ICES (Recommendation A2) and connection of governed data to green shipping corridors (Recommendation C3) position the window as the digital backbone for India's trade-corridor ambitions, but this requires the Customs and Immigration integration DGS has flagged as still pending (Issue viii).
- **Global Maritime Standing and IMO Compliance:** sustained, verifiable FAL-form compliance through the MSW module is a direct measure of India's discharge of its IMO Facilitation Convention obligations, underpinning its credibility as a maritime nation; a 3 per cent compliance rate is a material compliance risk that this Report treats as the most urgent priority for remediation.
- **Technology-Enabled, Trusted Governance:** a first-mover ISO/IEC 42001 AI-governance certification (Recommendation B2), a federated sovereign-data charter on the Portbase model (Recommendation C1), and Critical Information Infrastructure classification with documented offline fallback (Recommendation D2) together align the window with the digital-governance and security standards a MAKV 2047-ready platform requires, and directly respond to the fake-certificate risk DGS has recorded (Issue xi).

- Inclusive, MSME-Enabled Trade: open, well-documented API access for MSME consolidators (SICA Suggestion 3) and a mixed major/non-major pilot-port rollout (Recommendation E1) ensure the benefits of the window are not confined to the largest ports and operators.

The gap analysis in Chapters III, IV and V indicates that while the MSW module of Sagar Setu is functionally deployed, its actual operational compliance has fallen sharply since the MSW 2.0 transition, and it remains in its current form closer to an underused digital utility running in parallel with an entrenched manual process than to the self-improving, AI-governed, federated-data national maritime operating system MAKV 2047 requires. The roadmap in Chapter XIV is designed to close this gap, prioritising the restoration of basic compliance before pursuing the more ambitious AI-governance and data-sovereignty goals.

CHAPTER XIV: PHASED ROADMAP FOR AN INTEGRATED, GLOBALLY COMPLIANT NATIONAL SINGLE MARITIME WINDOW

Unlike a roadmap built solely on aspirational design principles, this Sub-Committee's roadmap is anchored first and foremost in the thirteen concrete operational issues DGS has placed on record (Chapter IV), sequenced so that basic compliance is restored before more ambitious AI-governance and data-sovereignty goals are pursued, consistent with the sequencing lesson of Chapter VI (consolidate before layering intelligence).

14.1 Immediate Actions (0–4 weeks):

Action	Responsible Agency	Reference
Restore PDF upload for FAL Forms 3 and 4	IPA	DGS Issue iii
Implement partial submission and Save-as-Draft functionality across all FAL forms	IPA	DGS Issue iv
Correct date-format and data-type validation errors in Crew List and Last Port of Call fields	IPA	DGS Issue v
Issue clear navigation guidance to Port Authorities on locating and processing MSW submissions	IPA / DGS	DGS Issue vi
Investigate and close the fake-certificate verification gap; introduce interim manual cross-verification with classification societies pending a permanent fix	IPA / DGS / Class Societies	DGS Issue xi

Action	Responsible Agency	Reference
Furnish DGS with the requested SRS, FRS, module-wise structure, technology specifications, System Architecture/Integration Framework and Governance and Change Management Framework	IPA	DGS para 7
Constitute the issue-wise ownership matrix and time-bound resolution mechanism DGS has requested	MoPSW / DGS / IPA	DGS Issue xiii

14.2 Short-Term Actions (1–3 months):

Action	Responsible Agency	Reference
Complete Bureau of Immigration form standardisation (20→12 forms) and digitise within IPA's committed 3-week window	BoI / IPA	DGS Issue ix
Discontinue acceptance of manual/emailed FAL submissions by Port Authorities once portal issues above are resolved, with a defined transition/parallel-running period	Port Authorities / DGS	DGS Issues ii, viii
Publish standardised, port-uniform document checklists for Immigration and other regulatory clearances	BoI / Immigration / DGS	DGS Issue x

Action	Responsible Agency	Reference
Commence consolidation of SagarSetu, Sagar Manthan and the draft NDCS into a single data layer (Recommendation A1)	IPA / MoPSW	Naidu submission A1
Undertake the independent complexity assessment recommended at Chapter XI before further vendor commitments (Recommendation D1)	MoPSW	Naidu submission D1
Select one major and one non-major pilot port for inclusive rollout testing (Recommendation E1)	IPA / DGS	Naidu submission E1

14.3 Medium-Term Actions (3–12 months):

Action	Responsible Agency
Complete Customs (ICEGATE 2.0/RMS/ICES) integration and lock the joint technical standard (Recommendation A2)	IPA / CBIC / DGS
Complete Immigration integration into MSW workflows	BoI / IPA
Implement linkage of FAL submission with pilot booking, berthing and other port-operation functions (DGS Issue xii)	IPA / Port Authorities

Action	Responsible Agency
Design and adopt the federated data-governance charter on the Portbase model (Recommendation C1), calibrated to DPDP Phase II (Nov 2026)	IPA / MoPSW
Classify the Integrated National Single Maritime Window as Critical Information Infrastructure with documented offline fallback (Recommendation D2)	MoPSW / NCIIPC
Publish monthly VCN/FAL-compliance KPIs as a standing transparency measure	DGS / IPA

14.4 Long-Term Actions (12 months to MAKV 2047 horizon):

Action	Responsible Agency
Deploy the Rotterdam-style AI virtuous cycle (Recommendation B1) once data-capture compliance is restored to at least MSW 1.0 levels	IPA
Pursue first-mover ISO/IEC 42001 certification of the platform's AI functions (Recommendation B2)	IPA / DGS
Connect governed data to green shipping corridor initiatives (Recommendation C3)	IPA / MoPSW
Institutionalise continuous structured stakeholder consultation, including SICA and comparable trade bodies (Recommendation E2)	IPA / MoPSW
Scale nationally with audited KPIs and open the data layer for vetted research under one interagency authority	MoPSW / IPA

14.5 Sequencing Rationale:

The Sub-Committee has sequenced this roadmap so that the immediate actions directly close the specific technical defects DGS has identified (PDF upload, partial submission, upload-error correction, navigation guidance, certificate verification), because these are low-complexity, high-impact fixes that can materially improve the compliance trend documented at Chapter V within weeks. Short-term actions address the higher-complexity integration work (Immigration standardisation, Customs/Immigration transition planning) that DGS has recorded as already underway but incomplete. Medium-term actions complete the structural integrations (Customs, Immigration, port-operations linkage) and establish the governance and data-sovereignty frameworks that must be in place before DPDP Phase II (November 2026). Long-term actions reserve AI-enablement, ISO/IEC 42001 certification, and full national scaling for the period after the foundational compliance and integration problems have been demonstrably resolved, consistent with the Singapore consolidation-before-AI precedent (Chapter VI) and the recognition that AI trained on unrepresentative data (3 per cent of vessel calls) would itself be an unreliable foundation for the intelligence layer of Chapter IX.

CHAPTER XV: RECOMMENDATIONS AND WAY FORWARD

Building on the roadmap in Chapter XIV, the Sub-Committee makes the following specific recommendations to the National Shipping Board:

1. The Ministry of Ports, Shipping and Waterways should direct the Indian Ports Association to treat the thirteen issues formally identified in the DGS letter of 29 May 2026 (Chapter IV) as the first-priority work programme for MSW 2.0, with the immediate and short-term actions at Chapter XIV.1 and XIV.2 completed within the timelines indicated therein, and with monthly progress reported to DGS and the NSB Secretariat.
2. IPA should furnish DGS, without further delay, the Software Requirement Specification (SRS), Functional Requirement Specification (FRS), module-wise structure, technology specifications, System Architecture/Integration Framework and Governance and Change Management Framework requested at paragraph 7 of the DGS letter, and should transition MSW 2.0 to a structured Software Development Life Cycle (SDLC)-based framework as recommended at paragraph 3 of that letter.
3. The Ministry should constitute, on an urgent basis, the issue-wise ownership matrix and time-bound resolution mechanism DGS has requested at Issue xiii of its letter, with clearly identified responsible agencies, present stage of action, and definite closure timelines for each of the thirteen issues, as tabulated at Annexure D of this Report.
4. The Ministry should direct IPA and DGS jointly to consolidate SagarSetu, Sagar Manthan and the draft National Data Communication/Consolidation Strategy (NDCS) into a single data layer (Recommendation A1), and to lock a joint technical standard with ICEGATE 2.0, RMS and ICES before the architecture of the Integrated National Single Maritime Window hardens further (Recommendation A2), thereby directly resolving the Customs/Immigration integration gap identified as the principal driver of the compliance collapse (Chapter V).
5. IPA should adopt ‘data once, use many times’ (Recommendation A3) as a binding design principle for the Integrated National Single Maritime

Window, and should, as a first application of this principle, treat the LCL consolidation manifest (SCMTR / SACHM22 CSN) as a first-class data object as requested by SICA (Suggestion 2).

6. DGS and IPA should pursue first-mover certification of the Integrated National Single Maritime Window's AI functions to ISO/IEC 42001 (Recommendation B2) only after data-capture compliance has been restored to at least MSW 1.0 levels, instituting in the interim the model registry, change control, monitoring thresholds, audit logs, incident escalation and periodic review disciplines set out in Chapter IX, particularly as they relate to certificate verification (DGS Issue xi).
7. IPA should design the data-governance architecture of the window on the Portbase federated-ownership model (Recommendation C1), with explicit rules on access, anonymisation, retention and research-use set before DPDP Phase II (13 November 2026), and calibrated to the full DPDP Rules, 2025 phasing (Recommendation C2).
8. The Ministry should commission an independent complexity assessment before any further major architectural or vendor commitment for the Integrated National Single Maritime Window, and should designate a single, empowered interagency authority accountable for programme delivery (Recommendation D1), together with formal classification of the window as Critical Information Infrastructure with a documented offline fallback (Recommendation D2), directly addressing the fake-certificate risk at DGS Issue xi.
9. IPA should select one major and one non-major port for the initial pilot (Recommendation E1) and should institutionalise continuous, structured stakeholder consultation (Recommendation E2), including formally accepting SICA's request to be included as a continuing stakeholder and consultee in working sessions, pilots and consultations relating to cargo-consolidation aspects of the window.
10. IPA should open well-documented, open API access to all consolidators and their in-house or third-party software not only to large logistics providers to ensure a level playing field for MSME consolidators (SICA Suggestion 3),

and should implement real-time, pre-submission validation of filings to reduce manifest rejections (SICA Suggestion 4).

11. IPA should extend the structured Approve/Reject-with-comments accountability workflow already implemented for the Vessel Profile module (Chapter III.5) to MSW FAL-form submissions, to bring the same standard of custodian-level review and audit trail to vessel-clearance filings.
12. DGS and IPA should institute standing, published monthly KPIs on VCN generation and FAL-form submission compliance, so that the trend documented at Chapter V can be transparently tracked to recovery.
13. This Sub-Committee's roadmap and findings should be read together with the DGS letter of 29 May 2026, the consultation submission by Shri Ramalingeswar Naidu, and the SICA representation dated 1 July 2026, all of which independently corroborate the design gaps and recommendations set out in this Report, and all relevant contributors should be invited to join the implementation working groups referenced in Recommendation 9.

CHAPTER XVI: CONCLUSION

The Maritime Single Window module of Sagar Setu (National Logistics Portal-Marine) represents a substantial digital investment: it was designed to enable Shipping Agents to file all seven IMO FAL Forms against a Vessel Call Number from a single interface, to auto-generate standard IMO-format output forms for Port Authorities, DG Shipping and other regulatory agencies, and to sit within a platform that has, across six agile iterations, built out a stakeholder ecosystem spanning over thirty categories of participants.

However, the record placed before this Sub-Committee most authoritatively, the Directorate General of Shipping's own letter of 29 May 2026 establishes that the transition from MSW 1.0 to MSW 2.0 has, to date, produced a severe compliance collapse: from approximately 60 per cent (and at some ports nearly 80 per cent) under MSW 1.0, to approximately 3 per cent in April 2026 under MSW 2.0. Thirteen specific, interlocking operational, technical, integration, documentation and governance issues underlie this collapse, ranging from the absence of PDF upload for two of the seven FAL forms and the lack of partial-submission functionality, to incomplete Customs and Immigration integration, inconsistent port-wise documentation demands, a confirmed fake-certificate incident, and the absence, as DGS itself records, of a time-bound issue-resolution and accountability mechanism.

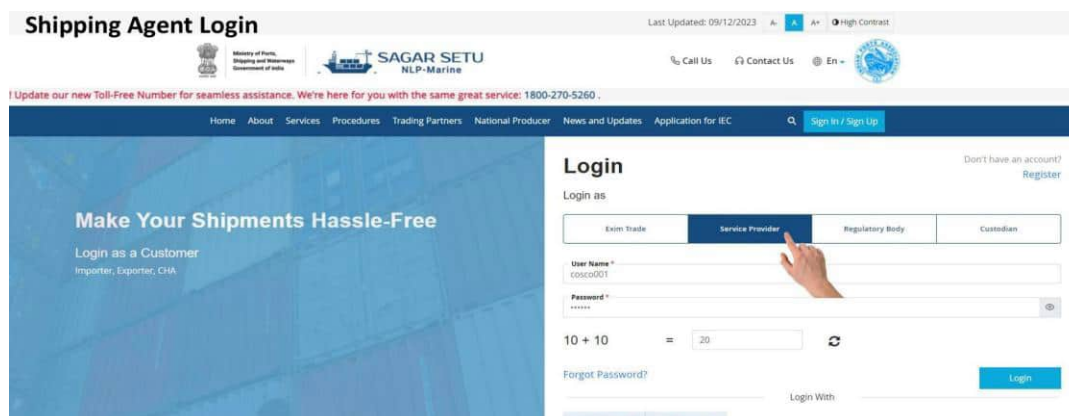
The goals of MAKV 2047 a globally competitive, digitally integrated, trusted maritime India cannot be achieved by a Maritime Single Window operating at 3 per cent compliance, however sound its underlying architecture. This Report's roadmap therefore places first priority on the immediate technical and integration fixes DGS has identified, before pursuing the more ambitious consolidation, AI-governance, federated-data-sovereignty and inclusive-rollout goals set out at Chapters VIII to XI goals which remain the right long-term destination, but which cannot be safely or credibly pursued on a foundation of collapsed compliance and unresolved integration gaps.

The Sub-Committee recommends that the National Shipping Board endorse this Report and its phased roadmap, and request the Ministry of Ports, Shipping and Waterways to accord the necessary priority, resources and inter-agency

coordination particularly between IPA, DGS, Customs and the Bureau of Immigration to its implementation, so that the Integrated National Single Maritime Window becomes, in practice and not only in design, a cornerstone of India's Maritime Amrit Kaal Vision 2047.

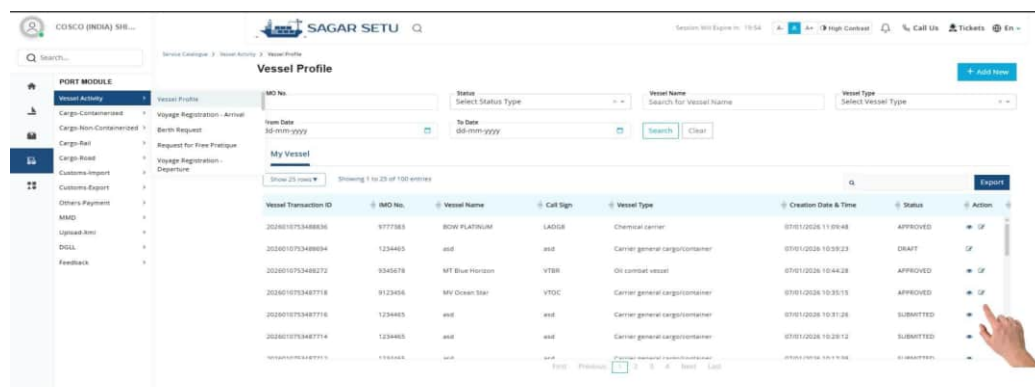
PHOTOGRAPHS

The following screenshots, reproduced from the official Sagar Setu (National Logistics Portal-Marine) MSW and Vessel Profile / PANS User Manuals issued by the Indian Ports Association, illustrate the platform interfaces discussed in this Report.



Photograph 1 Sagar Setu / NLP-Marine Shipping Agent login screen, showing Exim Trade, Service Provider, Regulatory Body and Custodian login categories.

(Source: MSW & PANS Vessel Profile Module User Manual, IPA)



Photograph 2 Service Catalogue and Port Module navigation, from which the Vessel Profile and MSW modules are accessed.

(Source: MSW & PANS Vessel Profile Module User Manual, IPA)

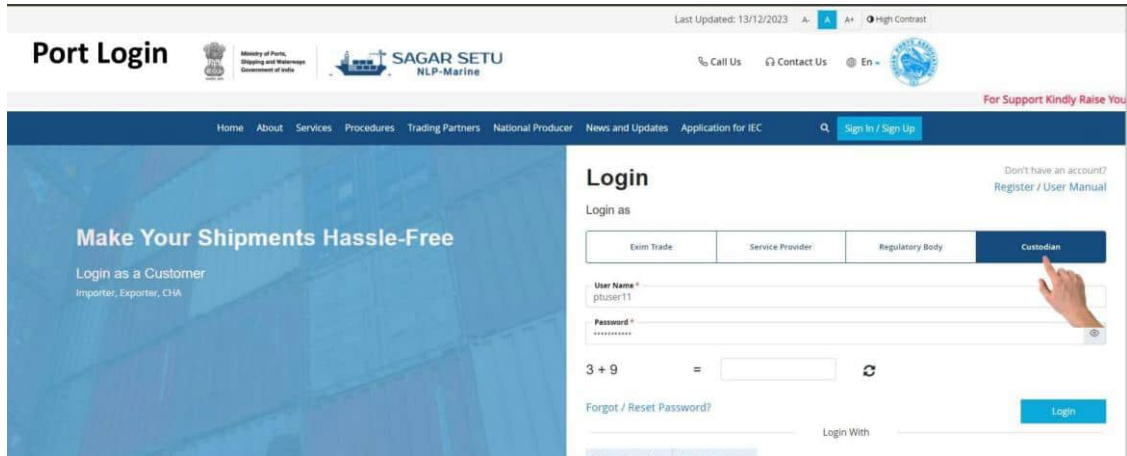
The screenshot shows the SAGAR SETU Vessel Profile module. The left sidebar contains a 'PORT MODULE' menu with options like Vessel Activity, Cargo-Containerized, Cargo-Non-Containerized, Cargo-Rail, Cargo-Road, Customs-Import, Customs-Export, Others-Payment, MIMO, Upload-xml, DGL, and Feedback. The main content area has three tabs: 'Vessel Basic Information', 'Vessel Technical Information', and 'Vessel Certificates'. The 'Vessel Basic Information' tab is active, showing a form with a 'Trade' dropdown menu (options: Worldwide, Coastal, Inland Vessel (R)) and a 'Vessel Registration No.' search field. A hand icon is pointing at the search field. Below the search field, there is a note: 'Please enter at least 3 characters of the Vessel Registration Number, then click Search.' At the bottom right, there are 'Back', 'Clear', and 'Next' buttons.

Photograph 3 Vessel Profile module: Trade Type selection (Worldwide / Coastal / Inland Vessel) and Vessel Registration Number search (Source: MSW & PANS Vessel Profile Module User Manual, IPA)

The screenshot shows the SAGAR SETU Vessel Profile module with the 'IMO List' table. The table has columns: Created Date, Vessel Transaction Id, IMO Number, Vessel Name, Status, and Detention Status. A hand icon is pointing at the 'Search' button. The table shows 23 entries, with the first four rows visible. The 'Export' button is also visible.

Created Date	Vessel Transaction Id	IMO Number	Vessel Name	Status	Detention Status
2025-12-18 12:07:23	2025121753332937	9676543	MV ARAVALI STAR	Approved	NA
2025-10-13 13:10:10	2025101353090308	9676543	Hapag Lloyd	Approved	NA
2025-06-26 12:00:08	2025062602633624	9676543	bulk carriers	Submitted	NA
2025-05-20 12:15:56	2025052052456040	9676543	DRY BULK	InActive	NA

**Photograph 4 Vessel Profile: auto-populated Vessel Basic Information screen following vessel selection.
(Source: MSW & PANS Vessel Profile Module User Manual, IPA.)**



Photograph 5 Port / Custodian user Vessel Profile review screen, showing the Approve/Reject-with-comments workflow discussed at Chapter III.5 of this Report.

(Source: MSW & PANS Vessel Profile Module User Manual, IPA)

TABLES

Table No.	Title
2.1	Summary of principal Sagar Setu (NLP-Marine) stakeholder categories
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3.1	Iteration-wise module rollout of Sagar Setu (National Logistics Portal-Marine)
3.2	Module-wise deployment status
5.1	MSW compliance trend, MSW 1.0 to MSW 2.0
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5.3	Diagnosed drivers of non-compliance
6.1	Global single-window precedents what worked
6.2	Global single-window precedents what failed
6.3	India's current position against five design disciplines
7.1	SICA's eight suggestions to Sub-Committee No. 10
8.1	Architecture and Data Foundation Recommendations A1–A3
9.1	The Virtuous Cycle of AI five steps
9.2	ISO/IEC 42001 governance disciplines
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12.1–12.7	Field structure of FAL Forms 1 through 7
14.1	Immediate Actions (0–4 weeks)
14.2	Short-Term Actions (1–3 months)
14.3	Medium-Term Actions (3–12 months)

Table No.	Title
14.4	Long-Term Actions (12 months to MAKV 2047 horizon)

ANNEXURES

Annexure A: Full Recommendation Map Thirteen Recommendations Across Five Sections:

(Source: Consultation submission to Sub-Committee No. 10 ‘The Integrated National Single Maritime Window’, Shri Ramalingeswar Naidu, 29 June 2026.)

Section	Theme	Recommendations
A	Architecture & Data Foundation	A1. Consolidate SagarSetu, Sagar Manthan, NDCS A2. Joint standard with ICEGATE 2.0/RMS/ICES A3. ‘Data once, use many times’
B	The Virtuous Cycle of AI	B1. Adopt the Rotterdam Pronto model B2. Govern under ISO/IEC 42001 B3. Phase AI deployment (PSA Tuas model)
C	Sovereign Strategic Data Asset	C1. Federated ownership (Portbase model) C2. Design for DPDP Rules, 2025 phasing C3. Connect to green shipping corridors
D	Risk & Institutional Discipline	D1. Independent assessment + one authority D2. Critical Information Infrastructure status
E	Inclusive Rollout	E1. Mixed major/non-major pilot ports E2. Continuous structured stakeholder consultation

Annexure B: SICA Representation Summary of Suggestions:

(Source: Southern India Consolidators Association, Ref. SICA/NSB/2026/001, dated 1 July 2026, addressed to the Chairperson, National Shipping Board.)

S. No.	Suggestion
1	Single submission of data ‘enter once, use everywhere’
2	Cargo-level integration, not only vessel-level
3	Open API access for all stakeholders, including MSMEs
4	Validation at source to reduce rejections
5	End-to-end ICD and transshipment visibility
6	Structured exception workflow for returned/rolled containers and detention & demurrage
7	Shared, standardised master data
8	Phased, modular and consultative rollout

Annexure C : Sagar Setu (NLP-Marine) Stakeholder Directory

(Source: MSW User Manual, Project: Sagar Setu (National Logistics Portal-Marine), Version 1.1, Indian Ports Association.)

Stakeholder	Role Description
Cargo Owner	Individual, company or entity that owns or has legal possession of goods being transported; responsible for arranging and often paying for transportation.
Terminal Operator IW	Manages and operates a terminal on inland water routes, facilitating transfer of goods between ships, barges, trucks and trains.
Barge Owner	Transports cargo on inland waterways, including anchorage-to-berth movement in a port.
Ship Chandler	Supplies necessary and requisite commodities to a vessel at port.
Port Authority Sea Exim + Coastal	State/private establishment for development and promotion of port services; berth allotment and piloting.
Inland Waterways Authority	Develops and maintains IWT infrastructure on national waterways.
Terminal Operator Sea	Manages terminal operations: storage, loading/discharge and delivery of containers/cargo.
Bunker Supplier	Supplies bunkers (fuel) to a ship.
Container Freight Station (CFS)	Custodian of containers and cargo until release to importers (imports) or shift to port after stuffing (exports).
ICD (Inland Container Depot)	Temporary storage for import/export laden and empty containers, located outside port towns; functionally equivalent to CFS.
Empty Yard	Stores and maintains empty containers.
Warehouse Provider	Provides warehousing services to other organisations.

Stakeholder	Role Description
Shipping Agent	Represents the ship owner/master for each port call; carries out duties under Port, Customs and statutory regulation.
Shipping Line	Operates vessels for transport of goods, cargo or passengers by sea.
NVOCC	Non-Vessel Owning Common Carrier; acts as carrier without owning vessels.
Stevedore	Loads/unloads cargo/containers from the vessel; may transport within storage yards.
Surveyor	Surveys vessel, container and cargo for quantity/damage ascertainment on behalf of port, importer/exporter or agent.
Exporter	Sells and ships goods/services from India to another country.
Importer	Purchases and imports goods/services from another country into India.
Customs Broker	Licensed by Customs; handles documentation, duty ascertainment and record-keeping for importer/exporter.
Freight Forwarders	Organise and coordinate shipment movement from origin to destination on behalf of shippers.
Banks	Facilitate payment of service charges and statutory duties/taxes to port, Customs and service providers.
Insurance Provider	Offers marine insurance coverage for maritime risks.
Packaging Service Provider	Specialises in packaging of goods for transport, distribution or retail.
Customs	Collects duty/taxes, enforces the Customs Act, grants entry inward/outward and clears goods for import/export.

Stakeholder	Role Description
Port Health Organisation (PHO)	Inspects hygiene on ships/crew, controls infectious-disease spread, certifies food/agricultural products; issues Free Pratique and Health Declarations.
Plant Quarantine Organisation	Examines consignments for harmful organisms; issues Phytosanitary Certificates.
Mercantile Marine Department (MMD)	Regulates maritime safety, ship registration, seafarer certification, port state control and crew welfare, under DGS.
Immigration	Regulates movement of seafarers and passengers through Indian ports.
DGLL	Directorate General of Lighthouses and Lightships; provides general aids to marine navigation.
DG Shipping	Implements shipping policy/legislation; safety of life and ships at sea; seafarer welfare and certification.
DGFT	Formulates and implements Foreign Trade Policy; issues export scrips/authorisations.
PGA (Partner Government Agency)	Government agency regulating commodities entering India alongside Customs.
EPC (Export Promotion Council)	Advisory and executive body promoting India's exports under the Department of Commerce.
Road Transport Operator	Provides transportation of cargo/container between origin and destination by road.
Rail Transport Operator	Custodian and transporter of containers to/from port and ICDs by rail/road.

Stakeholder	Role Description
Cargo Owner Tank Farm Operator	Provides bulk-liquid-cargo storage and pipeline facilities to/from vessel.
Navy	Maritime military branch responsible for defence and security of maritime interests.
Coast Guard	Protection and assistance to seamen in distress; marine-pollution prevention and control.

Annexure D : DGS Issue Resolution Tracker Thirteen Issues (Letter dated 29 May 2026)

(Source: DGS letter File No. 25-63011/7/2023-NT-DGS dated 29.05.2026, as analysed by the Sub-Committee at Chapter IV. Status reflects the position as understood by the Sub-Committee from the documentation before it as of the date of this Report; this tracker is recommended for formal adoption and periodic update per Recommendation 3, Chapter XV.)

Issue	Description	Responsible Agency	Status
I	Very low compliance through MSW 2.0 (~3% in April 2026)	IPA / DGS	Open
II	FAL forms still being sent manually	Port Authorities / Shipping Agents / IPA	Open
III	PDF upload facility not available for Form 3 and Form 4	IPA	Open
IV	Portal does not allow partial submission / no Save-as-Draft	IPA	Open
V	Upload errors in Crew List and Last Port of Call data	IPA	Open
VI	Port Authorities not clear on how to access submissions	IPA / Port Authorities	Open
VII	System seen as difficult to understand	IPA	Open
VIII	Customs and Immigration integration still pending	CBIC / BoI / IPA	Open

Issue	Description	Responsible Agency	Status
IX	Immigration forms still under standardisation (20→12)	BoI / IPA	In progress (BoI committed; IPA to digitise within 3 weeks of receipt)
X	Different document demands at different ports	BoI / Immigration / Port Authorities	Pending resolution of Issue ix
XI	Fake certificate risk on the portal	IPA / DGS / Classification Societies	Open priority
XII	Linkage with port operations (pilot booking, berthing) still pending	IPA / Port Authorities	Open
XIII	Need for clear action and accountability mechanism	MoPSW / DGS / IPA	Open recommended for immediate constitution

Annexure E : Structure of the Seven IMO FAL Forms Summary

(Detailed field-level structure for each form is set out at Chapter XII. Source: FAL Forms 1–7 templates and MSW User Manual, IPA.)

Form	Title	Primary Content
FAL Form 1	General Declaration	Master vessel/voyage record cross-referencing all other forms
FAL Form 2	Cargo Declaration	Bill-of-Lading level cargo detail
FAL Form 3	Ship's Stores Declaration	On-board stores by article, quantity, location
FAL Form 4	Crew's Effects Declaration	Crew personal effects subject to customs restriction (arrival only)
FAL Form 5	Crew List	Identity and travel-document particulars of all crew
FAL Form 6	Passenger List	Identity, travel-document and embarkation/disembarkation particulars of all passengers
FAL Form 7	Dangerous Goods Manifest	UN Number, Proper Shipping Name, Class, Packing Group and mass of dangerous cargo

BIBLIOGRAPHY

- ✓ Directorate General of Shipping, Ministry of Ports, Shipping and Waterways, Government of India, Letter File No. 25-63011/7/2023-NT-DGS, Subject: ‘Implementation, Operational Issues, Integration Challenges and Documentation relating to Maritime Single Window (MSW) 2.0 reg.’, dated 29 May 2026, signed by Shri Shyam Jagannathan, I.A.S., Director General of Shipping and Additional Secretary to the Government of India.
- ✓ National Shipping Board Secretariat, Letter F.No. NSB-13/14/2025-NSB, Subject: ‘Submission of Final Reports by the Sub-Committees Constituted by the National Shipping Board Regarding’, dated 08 June 2026, signed by Shri Trilochan Padhi, OSD II to the Chairman, NSB.
- ✓ The Integrated National Single Maritime Window Towards a Self-Improving National Maritime Operating System, consultation submission to NSB Sub-Committee No. 10 by Shri Ramalingeswar Naidu, Marine Engineer, ISO/IEC 42001 Lead Auditor, DBA Scholar (AI Governance), dated 29 June 2026.
- ✓ Southern India Consolidators Association (SICA), Representation to the Chairperson, National Shipping Board Suggestions for NSB Sub-Committee No. 10, Ref. SICA/NSB/2026/001, dated 1 July 2026.
- ✓ User Manual: Indian Maritime Single Window (MSW) for User & Service Provider, Project: Sagar Setu (National Logistics Portal-Marine), Version 1.1, Indian Ports Association.
- ✓ MSW & PANS New Changes in Vessel Profile Module User Manual, Sagar Setu (National Logistics Portal-Marine), Indian Ports Association.
- ✓ IMO FAL Forms 1 to 7 (General Declaration; Cargo Declaration; Ship's Stores Declaration; Crew's Effects Declaration; Crew List; Passenger List; Dangerous Goods Manifest), as implemented on the MSW module of Sagar Setu (National Logistics Portal-Marine).



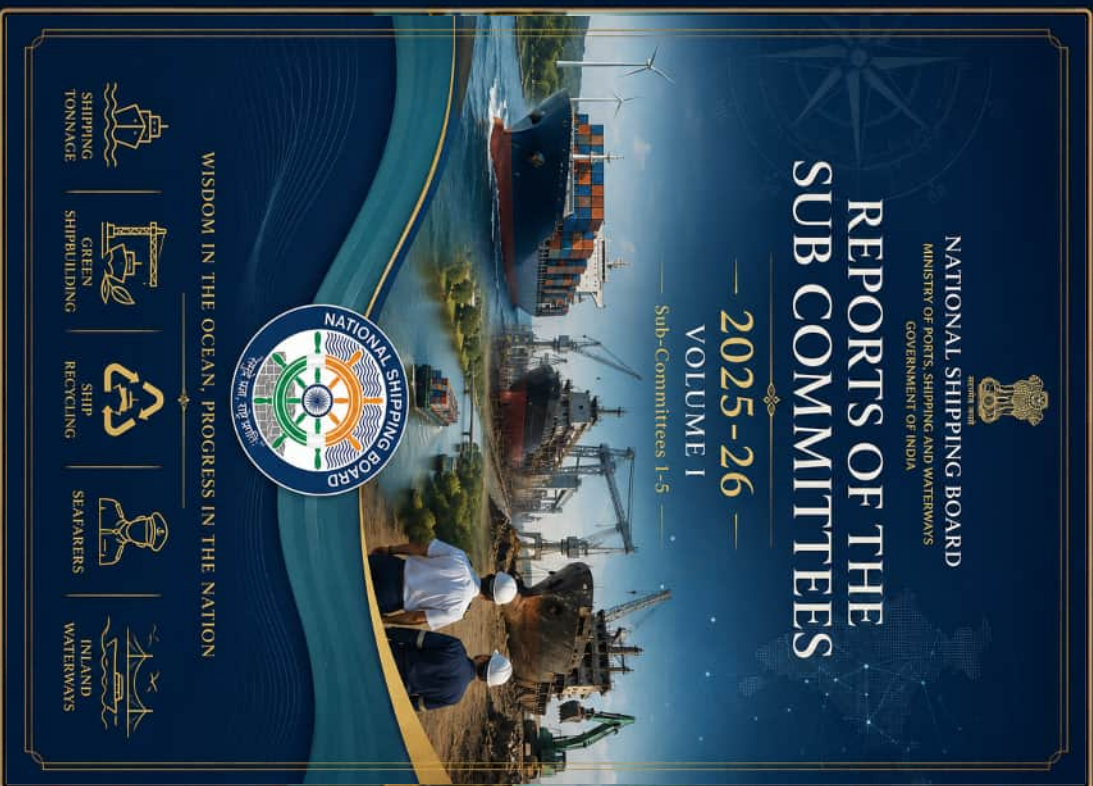
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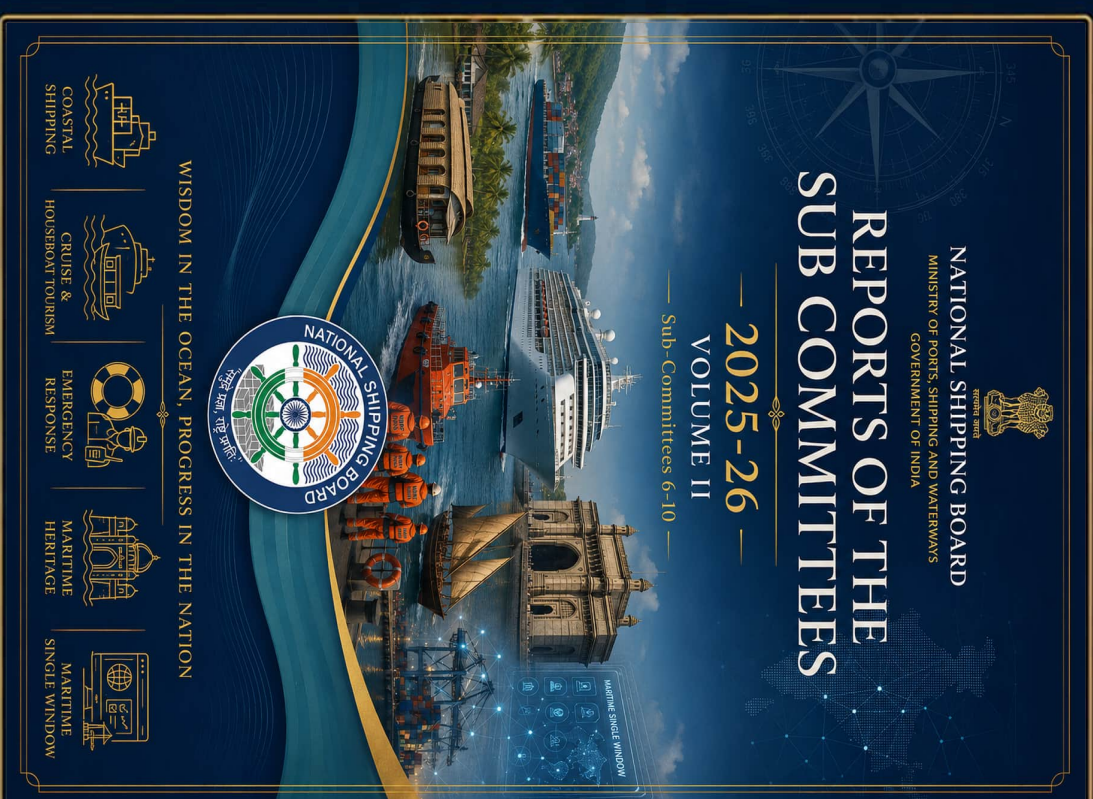
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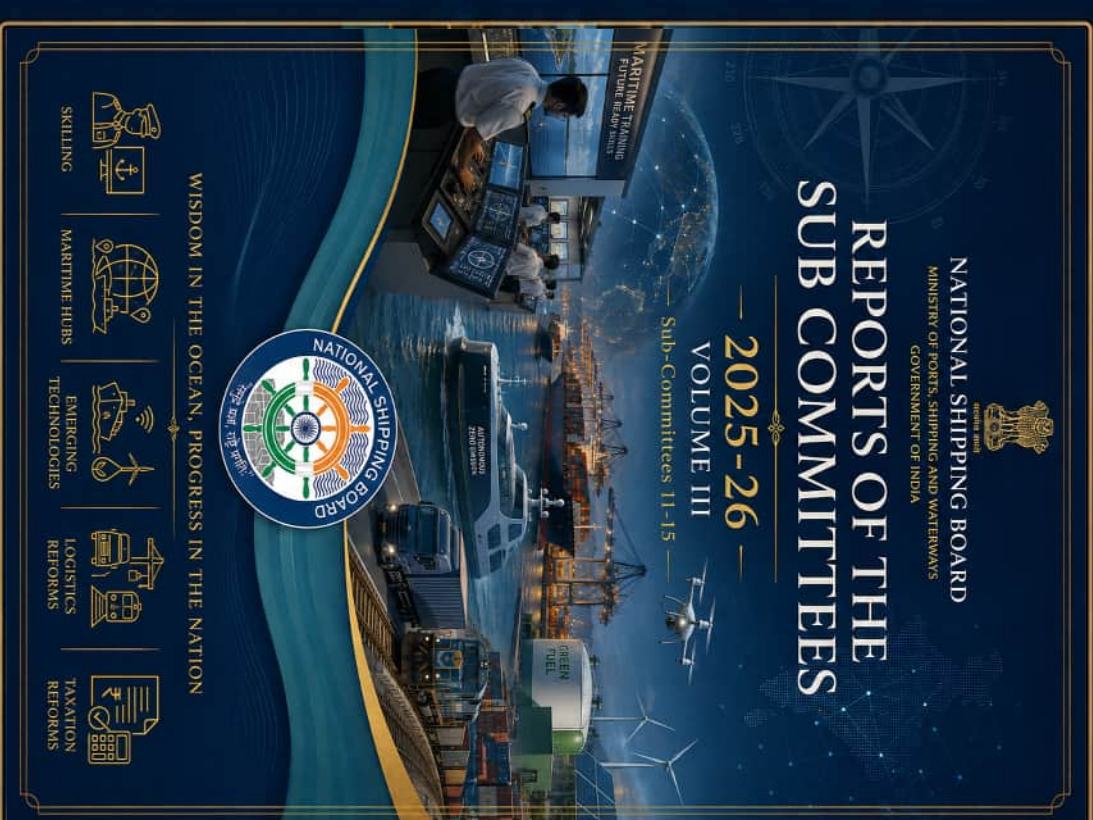
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