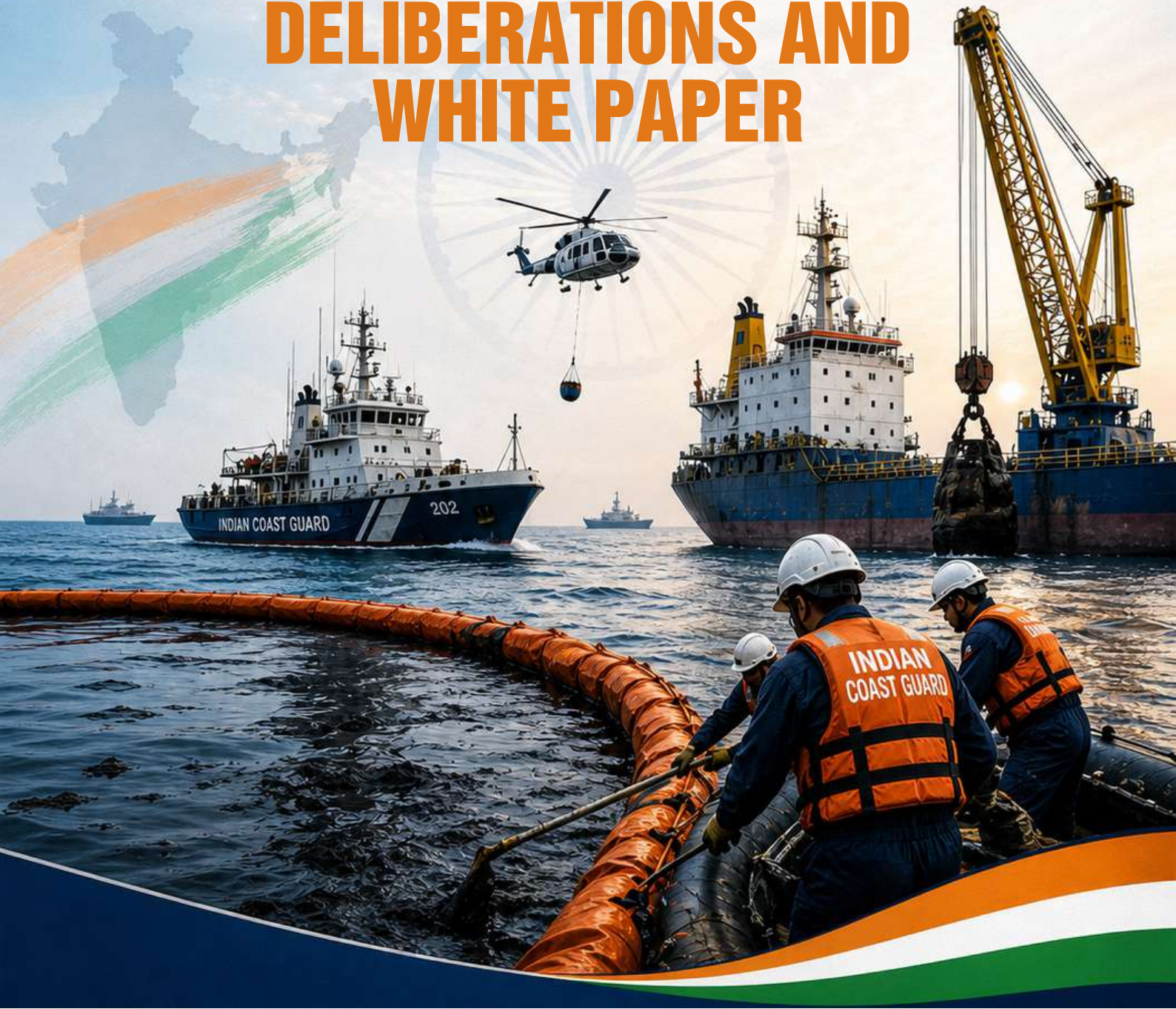


# INDIA'S PREPAREDNESS IN OIL SPILL RECOVERY — AND SALVAGE OPERATIONS — DELIBERATIONS AND WHITE PAPER





# Samudra Manthan Foundation

**Symposium - 2025**  
**India's Role in Oil Spill Recovery and Salvage Operations**  
Unlocking India's Potential in Maritime Disaster Response





## Introduction

The Samudra Manthan Foundation, in collaboration with the Directorate General of Shipping and with Bhandarkar Publications as Knowledge Partner, hosted a landmark two-day Symposium on India's Role in Oil Spill Recovery and Salvage Operations on 18th and 19th November 2025 at the Jio World Convention Centre, Mumbai.

At a time when global developments are placing heightened emphasis on maritime preparedness and environmental responsibility, the symposium brought together India's foremost maritime leaders, global experts, and operational specialists for a significant convergence of policy insight, technical expertise, and strategic dialogue.

The event opened to a packed hall, with registration counters witnessing brisk activity, reflecting the overwhelming response from the maritime community. Delegates from the Indian Navy, Indian Coast Guard, Port Authorities, classification societies, salvage companies, maritime lawyers, insurers, academicians, and international organizations assembled for two intensive days of knowledge exchange and deliberation.

The symposium commenced with a solemn lamp-lighting ceremony symbolising collective commitment to maritime safety and environmental stewardship.



## Why India Must Lead: Advancing Maritime Resilience in Oil Spill Response and Salvage

The symposium on 'India's Role in Oil Spill Recovery and Salvage Operations: Unlocking India's Potential in Maritime Disaster Response' was conceived as a timely and strategic initiative to position India at the forefront of global maritime resilience. As maritime incidents grow in scale and complexity, the need for a coordinated, capable, and future-ready response ecosystem has become imperative. India's unique geographical positioning along critical international sea lanes, coupled with its expanding regional influence, places it at the center of the Indian Ocean Region (IOR), making it a pivotal stakeholder in safeguarding its own coastline while maintaining regional maritime stability.

In this context, the symposium organized by the Samudra Manthan Foundation in collaboration with the Directorate General of Shipping, with Bhandarkar Publications as the Knowledge Partner on 18th & 19th November 2025 at the Jio World Convention Centre, Mumbai, sought to catalyze dialogue, foster collaboration, and drive collective action towards establishing India as a global leader in oil spill recovery and maritime salvage operations.

**Why India Must Lead: Advancing Maritime Resilience in Oil Spill Response and Salvage**

It is notable that owing to the increasing frequency and complexity of maritime incidents in recent years be it from oil spills or due to hazardous cargo accidents and related to vessel fires and geopolitical disruptions across key sea corridors, a stark reality has unfolded; maritime risk is no longer episodic, but systemic. As global trade continues to rely overwhelmingly on sea routes, the consequences of mishaps are no longer confined to environmental damage alone, but cause collateral damage, bring supply chain disruptions, hampering coastal livelihoods, and regional stability.

India finds itself at a critical inflection point. Positioned at the heart of major international shipping routes and proximate to ecologically sensitive coastlines, the country carries both a strategic responsibility and an opportunity to act as a strong responder, and emerge stronger as a leader in maritime emergency preparedness, oil spill response, and salvage operations. The ongoing geopolitical climate, marked by heightened tensions in key maritime corridors, has further reinforced the need for resilient, coordinated, and forward-looking response mechanisms.

It is against this backdrop that this symposium brought together policymakers, maritime administrators, salvage experts, legal practitioners, and industry stakeholders. The objective was to deliberate on past incidents while critically examining existing frameworks, identify systemic gaps to help chart a pathway towards a more robust, responsive, and collaborative maritime ecosystem.

The discussions reflected a shared recognition that effective oil spill response and salvage operations are no longer the domain of isolated agencies, but require an integrated approach one that spans regulation, capability building, technological readiness, and international cooperation. As India advances its maritime ambitions, strengthening these pillars will be central to safeguarding its coasts and securing its trade routes, while reinforcing its role as a trusted and responsible partner in the global maritime community aligned with the broader vision of establishing itself as the 'Vishwa Bandhu' (Global Ally), contributing to collective resilience and stability at sea.

In this context, the insights emerging from this symposium assume particular significance for policy and decision-making. They offer a timely foundation to inform regulatory evolution, institutional coordination, and capacity enhancement across stakeholders, enabling India to transition from a reactive posture to a proactive, globally benchmarked framework for maritime emergency response and environmental protection.





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# Shri Rajiv Jalota, IAS (Retd.), Chief Guest Address, Former Chairman, Mumbai Port Authority, Former Director General of Shipping



**Shri. Rajiv Jalota, IAS,  
Former Chairman, MbPA and DG Shipping**

**Reflecting on his tenure as Chairman of the Mumbai Port Authority and as Director General of Shipping, he noted the complexity of such incidents, where every minute counts, coordinated action shapes outcomes, and the absence of a unified framework can magnify damage**

Shri Rajiv Jalota drawing upon his extensive experience across the maritime ecosystem, and from having witnessed operational challenges at sea firsthand, he observed that oceans are far more than expanses of water. They are the arteries of global trade and custodians of ecological balance, yet remain highly vulnerable.

He stated that while maritime security discussions often focus on piracy, illegal fishing, trafficking, and natural disasters, oil spills and salvage operations represent an equally urgent domain. These situations rigorously test national preparedness, inter-agency coordination, and environmental responsibility.

With one of the world's longest coastlines and a strategic position across busy sea routes, India carries both advantage and responsibility. Oil spills arising from tanker accidents, operational discharges, or unforeseen incidents extend their impact beyond commercial loss. They threaten marine biodiversity, coastal livelihoods, port operations, and regional stability.

Shri Jalota underscored that maritime preparedness is not optional; it is essential and non-negotiable.

He emphasized that the symposium was designed to address precisely these challenges and urged participants from the Indian Navy, Indian Coast Guard, maritime police, port authorities, salvors, classification societies, ship operators, and academic institutions to engage in transparent discussion and candid sharing of experiences. He expressed confidence that such engagement would

help position India as a proactive regional hub for oil spill response and salvage readiness.

Shri Jalota also urged the prioritisation of responsible resource management. He cautioned that while some economies treat oceans as limitless resources, India must remain guided by sustainability, ESG principles, and cross-border cooperation, acknowledging that maritime challenges rarely respect boundaries.

He further observed that the true test of maritime governance lies not only in addressing present challenges but in anticipating future ones. This necessity has become more urgent with rapidly evolving ship sizes, cargo profiles, trade complexities, and environmental expectations.

The Former MbPA Chairman called for future-ready predictive frameworks, advanced modelling systems, interoperable command structures, and strengthened public-private partnerships. He expressed confidence that India possesses the intellectual depth and institutional strength required for such transformation.

He underscored the importance of using the symposium as a platform to build integrated strategies, promote joint operations, and adopt technologies that enable faster and more precise responses. With global organisations and technical experts present, he noted that the forum was uniquely positioned to facilitate best-practice sharing.

He concluded by expressing confidence that the discussions would strengthen India's maritime capabilities, contribute to policy refinement, and help build a safer, cleaner, and more resilient maritime future. He conveyed his eagerness to learn from the collective wisdom emerging from the symposium and wished the event great success.



# Managing oil spill and Salvage: Effective policy framework for fostering a more sustainable marine environment.

**DIG Bibhuti Ranjan, Maritime Security and Operations Specialist with the Indian Coast Guard and Principal Director, Indian Coast Guard, emphasized that effective oil-spill response depends fundamentally on real-time coordination among agencies and the strength of a comprehensive coastal surveillance network.**

DIG Bibhuti Ranjan underlined that the operational discipline, structured command mechanisms, and swift mobilization capability of the Indian Coast Guard continue to constitute India's first line of defence in protecting the marine environment from pollution incidents and maritime emergencies.

DIG Bibhuti Ranjan expressed that he was very happy to be present at such a significant event. In his address, he described the symposium as particularly meaningful for someone who had spent the early part of his professional career on land and the later years at sea. He reflected that it is only after observing the world from the ocean's perspective that one truly understands the magnitude of responsibility that rests upon maritime institutions. From that vantage point, he noted, it becomes clear how much more remains to be done to preserve and protect the marine environment.

He explained that the subject under discussion could be understood in two distinct parts. In the first part, he stated that all stakeholders present would agree that India has made considerable progress over the years in strengthening maritime response capability. Agencies across the maritime domain have enhanced their inventories, upgraded equipment, improved coordination protocols, and developed preparedness for large-scale response operations. These efforts, he observed, have enabled the preservation of the marine environment in numerous instances where timely intervention prevented escalation.

He reminded the audience that even in the broader narrative of human evolution, the continental ecosystem originated from the oceanic world. Therefore, he emphasized, the marine environment is not merely an economic resource but the foundational system upon which global weather patterns and ecological balance depend. Protecting the ocean is thus a responsibility that extends beyond national interest and enters the realm of global environmental stewardship.

Transitioning to the second part of his remarks, DIG Ranjan emphasized that despite progress, much more remains to be done. To illustrate this, he recounted a personal experience from nearly twenty years ago when he was posted in Porbandar at the onset of the monsoon season. During that time, a massive vessel was grounded near the lighthouse. The immediate questions that arose were how the vessel had reached that location and what had gone wrong in terms of navigation, monitoring, or environmental conditions.

As soon as reports of an oil spill were received, he and his team responded immediately. They rushed to the site, identified the source of the breach, plugged it, and initiated recovery of the leaking oil using the systems and technology available at that time. The initial pollution control phase was handled with urgency and discipline.

However, he explained that the more complex and enduring challenge arose subsequently in relation to the grounded vessel itself. There were no clearly defined institutional takers for the responsibility of wreck removal. The rulebooks had to be opened and examined in detail to determine accountability and procedural direction. The district administration looked toward the Coast Guard for guidance, uncertain about how to proceed with the removal of such a large and complex maritime casualty.

Eventually, salvage assistance was mobilized from SMIT Singapore, which successfully undertook and completed the salvage operation. DIG Ranjan noted that even today, India continues to depend largely on overseas salvors for major operations. While some of these salvors may have local partners in India, full domestic salvage capacity, supported by comprehensive infrastructure and equipment within the country, remains limited.

He stressed that salvage operations constitute a niche and highly specialized domain requiring substantial development. The sector demands technical expertise, heavy investment, and regulatory clarity. India, he emphasized, must build salvage capabilities supported by strong rules, clear regulations, and enabling legislation. Without a robust legal and institutional framework, private investors and industry players may remain hesitant to commit capital toward developing full-scale salvage infrastructure.



**DIG Bibhuti Ranjan,  
Principal Director, Indian Coast Guard,**

He further explained that for investors or private operators to establish and sustain salvage operations, there must be a clear downstream revenue model, predictable engagement mechanisms, and institutional support. In the absence of these elements, domestic salvage capacity will struggle to mature. He pointed to established templates in countries such as Singapore and Sri Lanka, where structured frameworks and policy clarity have enabled the development of reliable salvage ecosystems. These examples, he suggested, could serve as guidance for India's strategic roadmap.

He concluded by expressing hope that the two days of deliberations would generate concrete ideas and actionable recommendations capable of guiding India's future course in salvage operations. He thanked the organisers for inviting him to share his perspective and reiterated the urgent need for a structured, implementable roadmap that moves beyond discussion and into sustained institutional development.



# Keynote Address: India as a Hub for Oil Spill Recovery and Salvage Operations - Capt. Abul Kalam Azad

**Capt. Abul Kalam Azad, Nautical Advisor, Govt of India, MoPSW commenced his address by congratulating and expressing appreciation to the Samudra Manthan Foundation for convening a platform that brought together insurers, legal experts, shipping companies, salvors, the Indian Coast Guard, and representatives of the maritime administration.**

Capt. Abul Kalam Azad acknowledged that such convergence is not merely symbolic but essential, as maritime emergency response demands alignment between operational capability, regulatory oversight, financial assurance mechanisms, and legal clarity.

Reflecting on recent institutional efforts, he recalled that the Directorate General of Shipping had organized a Salvage and Emergency Response Conference on 4 March 2025 at IRS. The intent of that conference was to sensitize stakeholders across the maritime industry and move collectively toward the aspirational goal of a “zero-incident, zero-spill” maritime environment. That initiative was conceived as a proactive step toward prevention, preparedness, and industry awareness.

However, Capt. Azad observed that the subsequent months presented a series of serious maritime incidents that underscored the complexity and unpredictability of maritime risk. He referred to the sinking of MSC Elsa 3, followed closely by significant fire incidents involving Wan Hai 503, Interasia Tenacity, and Wan Hai 613, all occurring within a short span of time. These events, he stated, were sobering reminders that while zero incidents remain a strategic objective, the maritime domain operates within dynamic risk parameters influenced by operational practices, cargo characteristics, weather patterns, and global trade pressures.

He emphasized that such incidents reinforce the urgent need for a responsive, well-coordinated, and legislatively empowered emergency management system. Preparedness cannot remain theoretical or reactive. It must be institutionalized, tested, and continuously upgraded.

Capt. Azad highlighted the importance of coordinated response frameworks and acknowledged positive examples such as the New Mangalore Port’s pre-monsoon preparedness workshop. He noted that this initiative demonstrated how anticipatory planning, seasonal risk assessment, and stakeholder sensitization can contribute significantly to risk mitigation. He stressed that such practices should not remain isolated examples but should become standard across ports and coastal states.

He further elaborated that preparedness must extend beyond operational readiness. During maritime emergencies, misinformation, speculation, and alarmist media narratives can escalate public anxiety and complicate administrative response. Therefore, sensitization programmes, awareness workshops, and structured communication mechanisms are equally important components of emergency management. Ports and coastal states, he emphasized, must proactively educate stakeholders and establish transparent communication systems to prevent panic and ensure informed reporting during crisis situations.

As Nautical Adviser to the Government of India, Capt. Azad outlined the Directorate General of Shipping’s strategic decision to conduct emergency-preparedness conferences across all coastal states, beginning with Andhra Pradesh and Gujarat. This initiative aims to decentralize awareness, build regional capacity, and extend engagement beyond traditional maritime circles. By broadening participation, the administration seeks to create a culture of preparedness that permeates port authorities, coastal administrations, and local governance structures.

Capt. Azad then elaborated on the legislative strengthening undertaken through the Merchant Shipping Act, 2025. He emphasized that for the first time, a dedicated chapter addressing marine incidents and emergency response has been incorporated into the statute. This represents a significant structural shift from advisory guidance to statutory mandate. The Act now requires the Government to formulate formal procedures, designate nodal authorities, and establish clear frameworks for reporting, categorization, mobilization, and coordination during maritime incidents.

He explained that a detailed draft emergency response plan has already been circulated among stakeholders and will be placed in the public domain for consultation. This consultative approach ensures transparency and allows industry participation in refining operational protocols before final implementation.



**Capt. Abul Kalam Azad,  
Nautical Advisor, Govt of India, MoPSW**

Capt. Azad clarified the newly defined structure of nodal responsibilities. The Coast Guard will act as the nodal authority for weather-related emergencies. Port authorities will be responsible for incidents occurring within port limits. Pollution incidents beyond port limits will fall under the Coast Guard's jurisdiction. The Directorate General of Shipping will function as the coordinating authority, ensuring systemic alignment, oversight, and integration across agencies. This structured allocation of responsibility aims to eliminate ambiguity during crisis situations and accelerate decision-making.

Turning to salvage reforms, Capt. Azad explained that the administration is actively working to promote domestic salvage capacity. The proposed measures include the development of salvage hubs within India and mandatory tie-ups between vessels and approved salvors. He also referred to the drafting of Port Entry Rules requiring vessels operating in Indian waters, including passing vessels, to maintain valid emergency-response agreements. These measures are intended to ensure that contractual readiness exists before incidents occur, rather than being negotiated under crisis pressure.

He informed participants that draft criteria for empanelment of salvors have been published on the DG Shipping website and that extensive stakeholder feedback is being reviewed. The administration's objective, he stated, is to design rules that are realistic, enforceable, and compatible with industry practices. He welcomed further expert suggestions during the symposium to ensure that the framework remains both robust and workable.

Capt. Azad also highlighted a significant reform under the Merchant Shipping Act, 2025, empowering DG Shipping to adjudicate disputes relating to salvage contracts. This provision addresses the longstanding issue of delays caused by extended court proceedings. By enabling administrative adjudication, the Act seeks to ensure faster resolution and operational continuity during emergencies.

He elaborated on the requirement for salvage operators to establish facilities across India, initially mandating at least one centre on each coast. Additionally, ports handling more than 10 million tonnes of cargo are now required to maintain at least one tug capable of operating beyond port limits. He noted that this requirement has already proven beneficial in managing recent container fire incidents, demonstrating the practical impact of policy reform.

Reinforcing the importance of prevention, Capt. Azad stated that DG Shipping has begun producing safety videos based on real incident investigations. He emphasized that India is the first maritime administration globally to adopt this structured visual learning approach. These videos serve as practical learning tools for ship operators and seafarers, transforming incident investigations into preventive education.

He further explained that a global maritime safety portal is under development to systematically map incidents, analyze risk patterns, and identify high-risk operators. This data-driven approach aims to target training interventions where they are most needed, moving from generalized compliance oversight to focused risk mitigation.

Capt. Azad candidly addressed operational challenges involving non-IG insurers, sanctions-affected vessels, and delays in executing salvage contracts. Such complexities, he noted, can significantly hinder timely response and create uncertainty in mobilization. In exceptional circumstances, DG Shipping may direct Indian entities to provide immediate assistance where international salvors are unable or unwilling to intervene, thereby ensuring that response is not compromised by contractual or geopolitical barriers.

He urged all empanelled responders to maintain equipment that is fully functional, deployable, and suited for offshore conditions. He referred to recent instances where inadequate or unfit equipment delayed operations, emphasizing that declared capacity must match operational reality.

In concluding his address, Capt. Azad expressed sincere gratitude to the Indian Coast Guard and the Indian Navy for their extraordinary support during recent maritime incidents, particularly their efforts in preventing major disasters during the monsoon season. He reiterated that maritime emergencies cannot be managed by any single institution. They demand collaboration, coordination, shared accountability, and continuous readiness.

He reaffirmed the Directorate General of Shipping's commitment to working closely with industry stakeholders, operational agencies, and international partners to build a maritime governance framework that is proactive, resilient, and capable of safeguarding India's marine environment and trade infrastructure.



# *India's Preparedness In Oil Spill Recovery And Salvage Operations*

## **Introduction**

### **White Paper on Developing India's Indigenous Salvage and Oil Spill Response Capabilities Unlocking India's Potential in Maritime Disaster Response**

The Samudra Manthan Foundation and Bhandarkar Publications are pleased to present this White Paper on India's Preparedness in Oil Spill Recovery and Salvage Operations. The paper is based on extensive discussions, expert consultations, and stakeholder deliberations held during the Samudra Manthan Symposium 2025, which brought together policymakers, maritime leaders, regulators, port authorities, environmental experts, and industry professionals.

The symposium highlighted India's growing maritime capabilities while identifying critical gaps in oil spill response, salvage operations, coastal resilience, environmental protection, and maritime disaster management. The discussions emphasized the urgent need to strengthen India's emergency response framework through improved coordination, indigenous capabilities, skill development, and public-private collaboration.

India's efforts toward establishing its own Protection & Indemnity (P&I) framework demonstrate the Government's commitment to maritime self-reliance, reducing dependence on foreign entities, and enhancing preparedness in maritime risk management and environmental response.

Under the visionary leadership of Hon'ble Prime Minister Shri Narendra Modi Ji, transformative initiatives such as Maritime Vision 2030, Maritime Amrit Kaal Vision 2047, Sagarmala, Skill India, and Viksit Bharat have significantly strengthened India's maritime ecosystem, infrastructure, logistics, and sustainability goals.

Inspired by the Hon'ble Prime Minister's emphasis on citizen participation and nation-building through platforms like Mann Ki Baat, this White Paper aims to contribute meaningfully to India's maritime resilience and disaster preparedness.

The Samudra Manthan Foundation and Bhandarkar Publications have previously published White Papers on coastal transformation, maritime finance, hazardous materials management, and multimodal logistics, many of which received recognition from the Prime Minister's Office and contributed to policy discussions and sectoral reforms.

This White Paper provides strategic recommendations and actionable insights to enhance India's preparedness in oil spill response, salvage infrastructure, emergency coordination, environmental protection, training, and indigenous maritime capabilities.

We hope this initiative supports India's journey toward becoming a resilient, self-reliant, and globally respected maritime nation capable of effectively responding to future maritime emergencies and environmental challenges.

# White Paper

## *Inaugural Session*

### DELIBERATIONS

#### 1. Preparedness: Strengths and Gaps

Participants acknowledged that India has made notable progress in oil spill response, particularly through the Indian Coast Guard's structured systems, surveillance networks, and pollution response capabilities.

However, this progress is not uniformly distributed, and operational readiness varies across ports and coastal regions. While response mechanisms exist, their speed, scalability, and interoperability require further strengthening.

#### 1.2 Salvage Capability: The Core Vulnerability

A central theme across sessions was the limited domestic salvage capacity.

##### Key observations included:

- Continued reliance on foreign salvors for complex operations
  - Limited availability of heavy-duty salvage equipment and assets
  - Absence of a commercially viable domestic salvage ecosystem
- Salvage operations, being capital-intensive and technically demanding, remain underdeveloped without policy-driven incentives.

#### 1.3 Institutional Coordination and Command Structure

While roles of agencies such as the Indian Coast Guard, DG Shipping, and Port Authorities are broadly defined, real-world incidents reveal:

- Delays in decision-making during multi-agency operations
- Lack of a unified command-and-control mechanism

- Need for real-time coordination platforms

#### 1.4 Legislative Developments

The Merchant Shipping Act, 2025 was recognized as a transformational step, introducing:

- A structured framework for marine incident response
  - Defined jurisdictional responsibilities
  - Faster adjudication mechanisms
- However, stakeholders emphasized that effective implementation will be critical, requiring detailed rules, clarity, and enforcement.

#### 1.5 Financial and Insurance Challenges

Salvage and emergency response operations are often hindered by:

- Delays in insurance approvals
  - Complexities involving non-IG insurers
  - Uncertainty in cost recovery
- This creates hesitation among operators and delays mobilization during critical situations.

#### 1.6 Technology and Data Limitations

There is limited integration of:

- Predictive analytics
  - Real-time monitoring systems
  - Incident modelling tools
- The absence of a centralized digital ecosystem restricts proactive and data-driven decision-making.

#### 1.7 Human Capital and Training

While expertise exists within key institutions, the system lacks:

- Standardized national training frameworks
- Regular multi-agency drills
- Structured knowledge-sharing platforms

### RECOMMENDATIONS AND SUGGESTIONS

#### 2.1 Formulation of a National Salvage Framework

Develop a comprehensive salvage policy that:

- Defines roles and responsibilities
- Establishes operational standards
- Creates a structured regulatory environment

#### 2.2 Development of Domestic Salvage Capability

Encourage indigenous capacity through:

- Fiscal incentives
- Public-private partnerships
- Infrastructure support

#### 2.3 Establishment of Regional Salvage Hubs

Create strategically located hubs equipped with:

- Salvage vessels

- Heavy-lift systems
- Emergency response infrastructure

#### 2.4 Strengthening Legal and Financial Mechanisms

- Standardize salvage contracts
- Simplify insurance processes
- Enable faster dispute resolution

#### 2.5 Mandatory Emergency Preparedness Measures

Require all vessels to:

- Maintain pre-arranged salvage agreements
- Comply with emergency response protocols

#### 2.6 Integrated Command and Control System

Develop a centralized maritime emergency platform for:

- Real-time coordination
- Data sharing
- Unified decision-making

### 2.7 Capacity Building and Training

- Conduct regular multi-agency drills
- Introduce certification programmes
- Promote international collaboration

### 2.8 Technology Adoption Invest in:

- AI-based risk prediction
- Satellite monitoring systems
- Oil spill trajectory modelling

### 2.9 Structured Communication Framework Develop protocols for:

- Media communication
- Public information dissemination
- Crisis management

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

### 3.1 Strong Legislative Foundation

The Merchant Shipping Act, 2025 provides:

- Legal clarity
- Enforcement authority
- Institutional accountability

### 3.2 Institutional Strength

India benefits from:

- Indian Coast Guard
- Indian Navy
- Directorate General of Shipping

These institutions form the backbone of a robust maritime governance system.

### 3.3 Policy Momentum

Government initiatives reflect:

- Shift toward proactive preparedness
- Increased stakeholder engagement
- Focus on capacity building

### 3.4 Strategic Opportunity India is well-positioned to:

- Become a regional leader in salvage operations
- Enhance maritime environmental protection
- Strengthen global maritime credibility

## WAY FORWARD

### Short-Term (0–2 Years)

- Implement rules under the Merchant Shipping Act, 2025
- Mandate salvage and emergency contracts
- Begin empanelment of salvors
- Conduct national preparedness assessments

### Medium-Term (3–5 Years)

- Establish operational salvage hubs
- Develop a national digital response platform
- Strengthen coastal state preparedness

### Long-Term (5–10 Years)

- Achieve self-reliance in salvage operations
- Position India as a regional response hub
- Lead global best practices in maritime safety

## MISSING LINKS IDENTIFIED

### 5.1 Absence of a National Salvage Policy

India currently lacks a comprehensive, long-term salvage strategy, resulting in fragmented development and limited private sector participation.

### 5.2 Underdeveloped Domestic Salvage Ecosystem

There is no integrated ecosystem supporting:

- Indigenous salvors
- Equipment financing
- Skilled manpower development

### 5.3 Lack of Commercial Viability

The salvage sector suffers from:

- High capital investment requirements
- Irregular demand cycles
- Absence of financial incentives

### 5.4 Fragmented Command and Control

Despite defined roles, operational command

remains diffused, particularly during large-scale incidents.

### 5.5 Inadequate Pre-Incident Preparedness

Many vessels lack:

- Pre-arranged salvage agreements
- Defined emergency response contracts

### 5.6 Regional Disparities in Preparedness

Preparedness levels vary across:

- Coastal states
- Port authorities
- Local administrations

### 5.7 Limited Technological Integration

India lacks a unified platform for:

- Maritime risk analysis
- Incident prediction
- Real-time coordination

## KEY TAKEAWAYS

The deliberations clearly establish that while India has made significant progress in oil spill response, salvage capability, institutional integration, and commercial viability remain critical gaps.

**The path ahead requires:**

- Policy clarity
- Infrastructure investment

- Coordinated governance
- Technological advancement

India now has the opportunity to transition from reactive response to proactive maritime resilience, ensuring the protection of its coastline, marine ecosystems, and strategic maritime interests.

## CONCLUSION

**Conclusion**

The deliberations clearly establish that while India has made significant progress in oil spill response, salvage capability, institutional integration, and commercial viability remain critical gaps.

**The path ahead requires:**

- Policy clarity

- Infrastructure investment
- Coordinated governance
- Technological advancement

India now has the opportunity to transition from reactive response to proactive maritime resilience, ensuring the protection of its coastline, marine ecosystems, and strategic maritime interests.

# SESSION 1 - Regulatory Frameworks and Compliance

**Regulatory Frameworks & Compliance: Insights into evolving global maritime laws and how operators can align with new environmental mandates was moderated by Capt. L. K. Panda, Former Nautical Adviser, Directorate General of Shipping. Capt Harinder Singh, NS, DG Shipping, DIG Bhanu Gupta, Coast Guard, OIC, MRCC Mumbai The session focused on unpacking evolving global mandates and examining India's legislative alignment with international maritime conventions.**

Opening the session, Capt. L. K. Panda set a strategic and cautionary tone by underscoring India's critical maritime position and the urgent need to strengthen ocean governance. He highlighted that more than 50,000 vessels pass close to Dondra Head annually, with nearly one-third of global energy resources transiting dangerously close to India's coastline. This geographic reality, he emphasized, places India at the center of global maritime energy flows while simultaneously exposing it to substantial environmental risk.

Capt. Panda drew attention to the fragile and ecologically sensitive regions of Lakshadweep and the Andaman and Nicobar Islands. He stressed that as an energy-hungry nation and a significant contributor to global maritime compensation and liability funds, India carries both responsibility and exposure. Vigilance in environmental protection is therefore not optional but integral to national maritime governance.

He observed that pollution incidents are occurring with concerning regularity, almost every quarter, either in the Indian Ocean or the Bay of Bengal. He linked this trend to the rising intensity of offshore oil exploration activities and the increasing frequency of casualties involving container vessels. A significant contributor to these casualties, he noted, is the misdeclaration of cargo, including inaccuracies in declared weight and cargo quality. Such misdeclarations compromise vessel stability and firefighting capability, leading to major marine casualties.

Capt. Panda further observed that many of the vessels involved in such incidents are more than twenty years old and now fall within high-risk operational profiles. This raises legitimate concerns regarding the aging global fleet and whether the frequency and severity of such incidents may intensify in the coming years.

Turning to legislative alignment, Capt. Panda remarked that although India has ratified a series of international conventions ranging from Civil Liability Convention frameworks to international fund mechanisms and salvage conventions, domestic legislation historically lagged due to structural constraints within the legacy Merchant Shipping Act of 1958. He recalled that efforts to align national laws with global standards began as early as 2014, recognizing the evolving maritime risk landscape in the Indian Ocean and Bay of Bengal.

However, he candidly noted that despite these efforts, India has not yet officially processed claims from international compensation funds. This, he suggested, calls for introspection. The question arises whether Indian waters have genuinely remained free of pollution incidents warranting claims, or whether systemic procedural gaps have prevented the operationalization of international compensation mechanisms.

Capt. Panda observed that after nearly a decade of sustained effort, the new Merchant Shipping Act has finally been enacted, establishing a modernized legal architecture more closely aligned with international protocols. The new Act strengthens provisions relating to dispute resolution, claims facilitation, procedural clarity, and statutory authority. It also introduces a structured chapter-based framework allowing for future expansion and adaptability as maritime risks evolve.

With this legislative context established, Capt. Panda invited Capt. Harinder Singh, Nautical Surveyor and Deputy Director General of Shipping, to elaborate on the key reforms introduced under the new Act and explain how these changes would strengthen India's capacity in claims processing, recovery procedures, and comprehensive maritime incident management.



**Capt. L. K. Panda,  
Former Nautical Adviser,  
Directorate General of Shipping**



**Capt. Harinder Singh delivered an extensive and detailed presentation outlining the major regulatory reforms undertaken by the Directorate General of Shipping to modernize India's maritime emergency response ecosystem.**

He began by noting that, as part of the opening team of speakers, some of his points would continue themes already introduced. However, he emphasized that these reiterations were necessary to appreciate the scale and depth of reforms currently underway.

Capt. Singh stated that India's maritime safety framework is central to the nation's economic security, environmental protection, and global credibility. In this context, the Directorate General of Shipping has initiated comprehensive legislative, operational, and institutional reforms aimed at building a resilient and future-ready maritime ecosystem.

He explained that the Merchant Shipping Act, 2025 introduces, for the first time, detailed statutory provisions concerning marine incidents and emergency response. It formally incorporates international wreck removal and salvage conventions into domestic law. The Act clearly defines the powers and duties of the Central Government during salvage operations and authorizes the Director General of Shipping to adjudicate disputes arising from salvage activities. This represents a significant departure from the previous legislative framework under the 1958 Act, which lacked such structured authority and clarity.

Capt. Singh highlighted the ongoing process of empaneling and retaining qualified salvors through clearly defined capability criteria and structured stakeholder consultations. Draft guidelines have already been published, and the final framework will ensure that empanelled salvors demonstrate proven operational experience, technical competence, financial strength, and credible performance records. The new Act also empowers the Government to protect coastlines more effectively and establishes transparent procedures for dispute resolution, features that were absent in the earlier statute.

He informed delegates that detailed rules for Part 10 and Part 12 of the Merchant Shipping Act are currently under formulation. This process involves active participation from the Indian Coast Guard, the Indian Navy, state maritime authorities, and industry representatives to ensure that the resulting framework is both practical and implementable.

Capt. Singh drew attention to the National Maritime Emergency Response Standard Operating Procedure developed following the recent MSC Elsa and Wan Hai 503 incidents. This comprehensive 120-page unified framework details agency roles, inter-agency coordination mechanisms, risk assessment methodologies, and operational response procedures. It provides a standardized structure for managing complex maritime emergencies across jurisdictions.

He further noted that a complementary legal advisory is being prepared to guide coastal state administrations regarding claim mechanisms and engagement with international compensation funds. This initiative is supported by capacity-building workshops already underway, aimed at strengthening administrative understanding of international claims processes.

Addressing operational readiness, Capt. Singh acknowledged the availability of two Emergency Towing Vessels but candidly recognized their limitations during recent incidents. These experiences have reinforced the need for expanded standby capacity and improved distribution of response assets.

He pointed to new requirements mandating that every port handling more than 10 million tonnes of cargo maintain at least one tug capable of immediate deployment with certified coastal operations crew. These measures stem from high-level recommendations issued by the Prime Minister's Office, which has classified national preparedness objectives into short-term, medium-term, and long-term mandates.

Capt. Singh identified the concept of "Place of Refuge" as a significant national gap. He stressed that Indian ports often hesitate to accept or facilitate entry for disabled ships, primarily due to environmental and commercial concerns. He recalled how foreign ports such as Jebel Ali demonstrated stronger institutional resolve and infrastructure readiness in accepting the Wan Hai 503 after her rescue. India, he emphasized, must adopt a similar mindset and transform this challenge into an opportunity to strengthen maritime capability and global confidence.

On the subject of salvor empanelment, Capt. Singh reiterated the importance of demonstrable expertise, financial stability, proven operational success, and sustained capability-building. Drawing parallels with China's development of large, homegrown salvage enterprises, he emphasized the need to nurture India's domestic salvage industry over the coming decade through structured policy support and institutional encouragement.



**Capt Harinder Singh,  
Nautical Surveyor,  
Directorate General of Shipping**

He also presented details of the Directorate General of Shipping's upcoming Global Maritime Safety Portal, envisioned as a real-time digital dashboard integrating incident reporting, casualty investigation findings, learning modules, and multilingual safety videos. Three such videos have already been released, with over thirty planned. These educational tools have received strong engagement and are expected to significantly enhance safety outreach and awareness across the maritime sector.

In concluding his address, Capt. Singh reaffirmed that the Directorate is mandating formal tie-ups between vessels and approved salvage and oil spill response organizations, strengthening port-level readiness, encouraging the establishment of salvage hubs along both coasts, and ensuring that all regulatory reforms remain grounded in practical operational realities. He thanked the audience for their engagement and reiterated the administration's commitment to collaborative, transparent, and forward-looking maritime governance.

Certainly. Below is the fully refined and elaborated White Paper transcript of this session segment, preserving every name, institutional reference, legal framework, policy concern, and intervention exactly as provided. No important views have been shortened or omitted. The structure has been formalized for continuity within the larger White Paper.



**DIG Bhanu Gupta, Indian Coast Guard, shared detailed operational insights on real-time response mechanisms, inter-agency coordination structures, and enforcement imperatives that underpin India's oil-spill recovery and salvage preparedness. His address provided a focused and authoritative overview of the legal and operational architecture governing marine pollution response, using the recent MSC Elsa 3 incident as a case study to illustrate both institutional strengths and persisting gaps.**

He began by situating India's preparedness within the global maritime regulatory regime, referencing UNCLOS, SOLAS, MARPOL, and the OPRC framework. He emphasized that these instruments collectively establish the foundation for coastal state obligations, pollution response standards, and international cooperation. He further highlighted the importance of regional agreements and cooperative initiatives that bind coastal states to shared preparedness, coordinated response, and mutual assistance during transboundary marine pollution incidents.

On the national front, DIG Gupta outlined India's layered response architecture. He referred to the National Oil Spill Disaster Contingency Plan as the foundational domestic framework and reiterated that the Indian Coast Guard functions as the nominated national contact point for oil spill incidents. He described the inherently multi-agency character of marine emergency response in India, noting that operations routinely involve coordination among the Indian Navy, Indian Coast Guard, Directorate General of Shipping, Ministries concerned with environment and shipping, port authorities, pollution control boards, and scientific institutions.

He detailed the standard oil-spill response sequence, beginning with surveillance and detection, followed by containment through deployment of booms and skimmers, judicious use of approved dispersants where scientifically justified, and structured shoreline clean-up operations. He also noted the promulgation of updated OPRC Guidelines (2025), which have been circulated to stakeholders to standardize equipment specifications, operational procedures, and reporting mechanisms.

Turning specifically to the MSC Elsa 3 incident, DIG Gupta described how timely Maritime Rescue Coordination Centre alerts triggered immediate operational mobilization. Coast Guard vessels and aircraft were rapidly diverted, aerial surveillance was sustained for continuous assessment, and on-scene operations were maintained around the clock. He highlighted that oil sheens were contained and drifting containers were managed following the vessel's sinking off Alappuzha. The scale of the response was significant, involving multiple ships, including specialized pollution control vessels, and twelve aircraft sorties. Continuous monitoring was maintained to track spill patterns and shoreline impact.

While acknowledging the effectiveness of the response, DIG Gupta candidly recognized that localized shoreline impacts did occur and temporary fishing bans were imposed. These consequences underscored the socio-economic dimensions of maritime pollution incidents and the vulnerability of coastal communities dependent on marine resources.

He then addressed the broader operational challenges revealed by recent events. Increasing vessel traffic closer to coastlines, ageing high-risk ships, and larger vessel sizes complicate firefighting and salvage operations. Additionally, India's long coastline presents logistical challenges for rapid deployment of assets. These realities, he emphasized, require sustained investment in readiness and infrastructure.

DIG Gupta stressed the necessity of translating policy into practice. This includes identifying designated places of refuge, expanding emergency towing capacity, strengthening spill-response infrastructure, empanelling credible and capable salvors, and ensuring that port tugs are equipped and certified for prompt sea deployment beyond port limits. He welcomed the legislative and procedural reforms initiated by the Directorate General of Shipping, including the new Marine Incident and Emergency Response chapters under the Merchant Shipping Act and draft empanelment criteria available on the DG Shipping portal. He urged stakeholders to engage actively with these draft rules to ensure practical implementation.

Affirming India's forward trajectory, DIG Gupta noted that preparedness is being strengthened through short-, medium-, and long-term measures. These include mandatory tug readiness requirements, the proposed development of salvage hubs along both coasts, and the establishment of a national maritime safety portal equipped with multilingual learning resources. He concluded his formal remarks with a call for sustained cooperation, practical drills, and operational readiness, emphasizing that response frameworks must not only be well designed but fully functional when incidents occur. He linked these efforts to broader national initiatives such as Swachh Bharat Abhiyan and Swachh Sagar Abhiyan.

In closing, he reaffirmed the Indian Coast Guard's operational philosophy, describing the service as the Guardians of the Sea. Referencing the Coast Guard's motto "Yatra, Tatra, Sarvatra," meaning Here, There, Everywhere, he underscored the organization's widespread presence and readiness to protect India's maritime interests. His address concluded with an audio-visual presentation demonstrating the Coast Guard's operational efforts and commitment.



**DIG Bhanu Gupta,**  
Coast Guard, OIC, MRCC Mumbai

# Question on India's Global Leadership Ambitions

**In response to a question from Bhandarkar Publications regarding what would be required for India to emerge as a global leader in oil-spill recovery, DIG Bhanu Gupta stated that India is already progressing steadily in that direction by keeping pace with technological advancements and strengthening institutional readiness.**

He highlighted that the Indian Coast Guard has published the 2025 Oil Spill Guidelines, a comprehensive document detailing equipment standards, operational systems, and response requirements for ports, oil-handling agencies, and response organizations. He further referenced Coast Guard Circular 05/2025 dated 4 November 2025, which lists approved oil spill dispersants and response organizations, demonstrating the administration's commitment to continual updating and global alignment.

DIG Gupta emphasized that these operational measures are reinforced by ongoing regulatory reforms under the new Merchant Shipping Act, with draft rules being prepared to operationalize provisions on marine incident management, emergency response, and salvage. He noted that a dedicated body at Coast Guard Headquarters in New Delhi is working closely with the Directorate General of Shipping to refine these regulatory mechanisms.

He also clarified how conventions, amendments, and protocols evolve within the International Maritime Organization system. Conventions originate when member states recognize emerging needs, amendments maintain their relevance, and protocols represent significant updates adopted by signatory nations. He stated that India's updated guidelines, modernized legislation, and strengthened inter-agency frameworks collectively demonstrate its intention to position itself as a global force in oil-spill recovery and maritime emergency response.

**Capt. L. K. Panda added that many initiatives remain in formative stages.** He pointed out that the Merchant Shipping Act had only recently been amended in October and that the National Oil Spill Disaster Contingency Plan of 2015 would likely be revised to align with the new Act. He articulated the broader objective of keeping the Indian Ocean and Bay of Bengal as clean as possible. While acknowledging that absolute targets such as maintaining 15 ppm discharge levels may be unrealistic given increasing oil transport volumes and stringent HNS Convention requirements, he described the objective as aspirational yet necessary, emphasizing the importance of striving toward higher environmental standards.

**Ms. Rakhee Sadhu, Deputy Secretary, National Disaster Management Authority, emphasized the importance of robust local Hazard Action Plans and tailoring response mechanisms to the specific needs of coastal communities.**

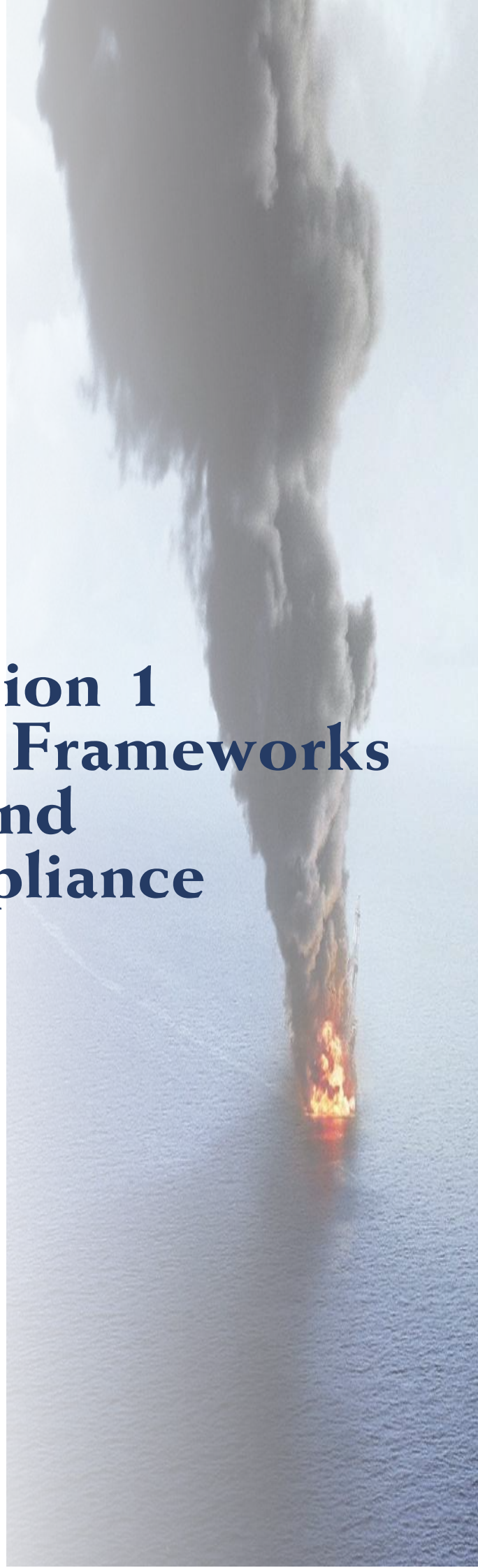
Capt. L. K. Panda concluded the session by thanking his colleagues for their presentations and acknowledging Ms. Rakhee Sadhu from the NDMA. He noted that further queries could be routed through Bhandarkar Publications, which would endeavour to respond to them to the best of its ability.

The Question and Answer session reinforced the collective need for capacity building, consistent compliance, and transparent decision-making across the maritime governance framework.



# WHITE PAPER

## Session 1 Regulatory Frameworks and Compliance



# White Paper

## DELIBERATIONS

The session on Regulatory Frameworks and Compliance brought forward a comprehensive examination of India's evolving maritime legal architecture against the backdrop of increasing operational risks and global regulatory expectations.

Discussions led by Capt. L. K. Panda highlighted India's unique geopolitical exposure, with dense global shipping traffic and critical energy routes passing close to its coastline. This reality positions India not only as a beneficiary of maritime trade but also as a frontline state in managing environmental and navigational risks. The deliberations underscored that maritime governance must transition from reactive compliance to proactive risk anticipation.

A key theme emerging from the session was the growing mismatch between operational realities and legacy regulatory structures. While India has ratified major international conventions, including civil liability and compensation regimes, the operationalization of these frameworks has remained limited. The absence of processed claims from international compensation funds raised important institutional questions regarding procedural readiness, administrative awareness, and systemic responsiveness.

Speakers, including Capt. Harinder Singh, emphasized that the Merchant Shipping Act, 2025 represents a turning point by embedding salvage, wreck removal, and emergency response provisions into statutory law. The Act introduces clarity in authority, dispute resolution, and procedural mechanisms, addressing longstanding regulatory ambiguities.

Operational insights shared by DIG Bhanu Gupta reinforced that India's response capability is structurally sound but uneven in execution. While inter-agency coordination frameworks exist, their effectiveness depends heavily on real-time decision-making, infrastructure availability, and clarity of roles during crises.

**The deliberations also brought attention to emerging risk factors:**

- Increasing frequency of pollution incidents
- Ageing global fleet and substandard vessels
- Misdeclaration of hazardous cargo
- Rising complexity of container and chemical shipments
- Limited domestic salvage capacity

Stakeholder interventions further highlighted the human dimension of maritime incidents, particularly the prolonged socio-economic impact on coastal communities and fishermen, bringing compensation mechanisms into sharper focus.

## RECOMMENDATIONS AND SUGGESTIONS

### Regulatory and Policy Measures

- Accelerate finalization and notification of rules under the Merchant Shipping Act, 2025
- Establish a dedicated national maritime claims authority to streamline compensation processes
- Expedite ratification of pending international conventions, particularly HNS and Bunker regimes
- Simplify legal drafting to ensure clarity, accessibility, and enforceability

### Operational Strengthening

- Develop and designate national network of Places of Refuge with clear protocols
- Expand and strategically position Emergency Towing Vessels (ETVs) along both coasts
- Mandate regular multi-agency simulation exercises and drills
- Strengthen port-level readiness with offshore-capable tugs and trained crews

### Capacity Building and Infrastructure

- Promote domestic salvage industry development through fiscal incentives and policy support
- Establish salvage hubs on both eastern and western seaboard
- Enhance training programmes for coastal states, port authorities, and disaster management agencies
- Build specialized expertise in HNS and alternative fuel spill response

### Technology and Data Systems

- Fast-track deployment of the Global Maritime Safety Portal
- Integrate real-time incident reporting, analytics, and predictive risk modelling
- Develop digital dashboards for inter-agency coordination

### Community and Compensation Frameworks

- Institutionalize fishermen compensation mechanisms within national SOPs
- Establish on-ground claims facilitation centres during incidents
- Strengthen awareness on compensation rights and procedures

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

The Government of India, through the Directorate General of Shipping and in coordination with the Indian Coast Guard and other stakeholders, is positioned to drive a transformative shift in maritime governance.

**The enactment of the Merchant Shipping Act, 2025 signals strong policy intent. Ongoing initiatives such as:**

- Draft salvage empanelment frameworks
  - National Maritime Emergency Response SOP
  - Oil Spill Guidelines (2025)
  - Development of maritime safety digital platforms
- Demonstrate a clear movement toward institutional strengthening and global alignment.

Government focus on categorizing preparedness into short-, medium-, and long-term goals reflects a structured approach. However, the success of these initiatives will depend on timely implementation, stakeholder engagement, and continuous monitoring.

## WAY FORWARD

India stands at a critical juncture where it can transition from a compliant maritime nation to a global leader in maritime emergency response and environmental protection.

**The way forward requires:**

- Moving from policy formulation to operational execution
- Building self-reliant salvage and response capabilities
- Strengthening federal coordination between central and state authorities
- Embedding technology and data into decision-making frameworks
- Ensuring community inclusion and socio-economic resilience
- Positioning India as a regional hub for oil spill response and salvage operations

Sustained collaboration between government, industry, international organizations, and coastal communities will be essential.

## MISSING LINKS IDENTIFIED

- Absence of a fully operational claims processing ecosystem for international compensation funds
- Lack of designated and operational Places of Refuge
- Limited emergency towing vessel capacity and uneven asset distribution
- Inadequate domestic salvage infrastructure and investment incentives
- Gaps in real-time coordination protocols and decision-making authority clarity
- Insufficient training and awareness at state and local administrative levels
- Weak integration of fishermen and coastal community compensation frameworks
- Limited preparedness for HNS (Hazardous and Noxious Substances) incidents
- Underdeveloped data-driven risk monitoring systems

## KEY TAKEAWAYS

- Alignment with global frameworks is incomplete without domestic execution.
- Marine pollution is evolving, requiring new technical and regulatory approaches.
- Coordination and speed of response are decisive factors in minimizing impact.
- Legal clarity is essential to avoid disputes and ensure timely compensation.
- India has strong foundational capability, but must bridge gaps in:
  - ◆ Legislation
  - ◆ Capacity
  - ◆ Coordination
- The country is well-positioned to become a regional leader, provided reforms translate into practical, enforceable systems.

## CONCLUSION

Session 1 clearly established that India has entered a new regulatory era, supported by legislative reform and institutional commitment. However, implementation, coordination, and capacity gaps must be urgently addressed.

The transition from policy intent to operational excellence will determine India's effectiveness in managing maritime emergencies and safeguarding its marine environment.

# SESSION 2 - Global Regulatory Alignment – IMO, IOPC, ITOPF, OPRC Compliance in Indian Waters

Session 2 addressed Global Alignment within the framework of the International Maritime Organization, the International Oil Pollution Compensation Funds, the International Tanker Owners Pollution Federation, and the OPRC regime. The session was moderated by former IMO Director Capt. Ashok Mahapatra and featured perspectives from Dr. Annabelle Nicolas-Kopec, Senior Technical Advisor, ITOPF, who joined online, along with Adv. Aditya Krishanmurthy, Partner at Bose and Mitra.

## Opening Remarks by Capt. Ashok Mahapatra

Moderating the session, Capt. Ashok Mahapatra offered a candid and insightful perspective on the necessity of aligning global maritime regulations with national legislative frameworks. Drawing upon more than two decades of experience in international maritime governance, he emphasized that the effectiveness of any regulatory regime ultimately depends upon consensus-building. He observed that the IMO and other global institutions have historically succeeded because they create common ground among diverse member states, and this shared understanding becomes the essential foundation for implementing global frameworks.

He underscored that international conventions do not automatically acquire legal force within a nation's jurisdiction upon ratification. They must be formally incorporated into domestic legislation. Citing MARPOL as an example, he noted that although India ratified the convention, it took nearly fifteen years to domesticate its provisions. During such legislative gaps, foreign vessels involved in violations may evade liability because national courts cannot adjudicate provisions that have not been embedded in domestic law.

Capt. Mahapatra also highlighted structural challenges within India's legislative drafting system, particularly the persistence of archaic colonial-era language rooted in the drafting style of Lord Macaulay. He stressed that regulations must be written in clear, simple, and practical language so that industry stakeholders can understand compliance obligations without reliance on legal intermediaries. He observed with concern that some newly drafted statutes contain explanatory footnotes clarifying unclear clauses, which, in his view, reflect how difficult such laws are for industry users to interpret. He urged policymakers, especially within the law ministry, to adopt modern and accessible drafting standards to enhance compliance, clarity, and enforceability in maritime regulation.



**Moderator: Capt. Ashok Mahapatra,  
Former Director, IMO**





**Dr Annabelle Nicolas-Kopec,**  
Sr.Tech Advisor, ITOPF

**Dr. Annabelle Nicolas-Kopec delivered a comprehensive presentation examining global and regional challenges associated with oil, chemical, and alternative pollutant spill response. Drawing upon ITOPF's six decades of operational experience supporting more than 100 countries and attending between 20 and 30 incidents annually, over half of which occur in the Asia-Pacific region, she outlined the growing technical, regulatory, and operational complexities confronting coastal states.**

She informed the audience that ITOPF has supported India in more than 23 spill cases and is currently assisting with plastic-pellet cleanup, an increasingly prevalent and technically challenging pollutant type. Plastic pellets, she explained, disperse rapidly, contaminate extensive coastal areas within hours, and may reappear years later due to environmental re-suspension, making response both immediate and long-term in nature.

Focusing on the Indian Ocean Region, Dr. Nicolas-Kopec emphasized that India is strategically positioned to assist neighboring countries but must continuously strengthen its own systems to match the rising scale and complexity of maritime incidents. Across pollutant categories including oil, hazardous and noxious substances, and plastics, she identified four interconnected challenges: cooperation and communication, timely decision-making, expertise gaps, and legislative preparedness.

On cooperation and communication, she stressed that no single agency or nation can manage a large spill independently. Effective response requires seamless coordination among environmental authorities, coast guards, ports, customs, police, and scientific agencies. However, communication gaps often become

visible only during real incidents because exercises are inadequate or infrequent. Practical barriers such as customs clearance delays or incompatible procedures can significantly hamper operational response. Early stakeholder engagement and clearly defined communication protocols are therefore critical to preventing operational bottlenecks.

Regarding timely decision-making, she emphasized that rapidly evolving pollutant behaviors require adaptive and prompt action. Delays in response can multiply environmental damage and dramatically increase cleanup duration and financial cost, particularly in cases involving plastics and HNS cargo.

Addressing expertise gaps, she noted that while oil spill response techniques are relatively well established, response to hazardous and noxious substances is hazard-specific and highly specialized. With approximately 43 percent of newbuild vessels expected to operate on alternative fuels, she underscored the urgency of knowledge-sharing mechanisms. Regional workshops, joint exercises, and collaborative training programmes are essential because no single country can independently develop comprehensive expertise in all pollutant categories.

Turning to international compensation frameworks, Dr. Nicolas-Kopec explained that while India and most regional states have ratified the Civil Liability Convention and Fund Convention, gaps remain in relation to the Bunker Convention and the HNS Convention. Until these are ratified, compensation for spills involving bunker fuel or hazardous cargo defaults to national legislation, which may create inconsistencies and uncertainty.

She outlined ITOPF's recommended preparedness model, aligned with OPRC principles. This includes multi-agency coordination, structured risk assessment, pollutant-specific contingency planning, regular exercises, and strong legislative backing. She acknowledged that several countries in the region, including India, are updating their national contingency plans to incorporate HNS response, although practical experience remains limited due to the relatively small number of such incidents.

Concluding her remarks, Dr. Nicolas-Kopec observed that India has demonstrated strong commitment through regional exercises, training initiatives, and leadership within South Asian cooperative mechanisms. However, she stressed that sustaining India's emerging role as a regional maritime emergency responder requires continued legislative strengthening, ratification of pending conventions, systematic updating of national plans, and expansion of regional collaboration. The foundation, she stated, is already strong; the next step requires structured, long-term consolidation.



**Adv. Aditya Krishanmurthy presented an in-depth legal perspective on regulatory requirements and salvage jurisprudence. He described the Merchant Shipping Act, 2025 as a transformative development in Indian maritime law, noting that it finally codifies salvage and related international conventions into domestic statute.**

He highlighted that the Act introduces India-specific provisions, including recognition that saving life may attract a salvage reward and empowering the Directorate General of Shipping to adjudicate salvage disputes, thereby shortening historically prolonged legal proceedings.

Adv. Krishanmurthy distinguished between traditional salvage rewards and pollution-prevention compensation. He explained that salvage follows the principle of “no cure, no pay,” with rewards calculated based on salvaged property value. In contrast, pollution-prevention compensation under Article 14 provides fair market reimbursement for preventive measures and out-of-pocket expenses incurred in mitigating environmental harm, even when property is not ultimately saved. He emphasized the importance of rewarding first responders and clearly defining entitlement between initial responders and professional salvors to prevent disputes and confusion in claims allocation.

Turning to international lawmaking processes, he observed that many safety and environmental conventions historically emerge after major maritime disasters. However, he welcomed faster mechanisms such as tacit acceptance procedures that allow regulations to remain current. At the same time, he cautioned that rapid amendments can raise democratic and implementation concerns if they outpace national readiness.

He concluded by stressing that strong enforcement is as critical as sound legislation. Port-state control regimes, credible classification societies, charterer and insurer vetting practices, and meaningful deterrence mechanisms are all essential to prevent substandard shipping. He called for continued dialogue between regulators, industry stakeholders, and insurers to align incentives, enhance compliance culture, and ensure that legal frameworks support timely and practical responses at sea.



**Adv Aditya Krishanmurthy,  
Partner, Bose and Mitra**





**Session 2**  
**Global Regulatory**  
**Alignment –**  
**IMO, IOPC, ITOPE,**  
**OPRC Compliance in**  
**Indian Waters**

# White Paper

## DELIBERATIONS

### 1. Core Deliberations

Session 2 underscored that global maritime alignment is not achieved through ratification alone, but through effective domestic integration, operational readiness, and institutional coordination.

#### Key deliberations included:

- A persistent gap between international conventions and domestic legal enforceability, leading to delays in implementation and weakened compliance.
- The expanding scope of marine pollution, moving beyond traditional oil spills to include Hazardous and Noxious Substances (HNS) and plastic pollutants, requiring advanced and specialized response mechanisms.
- The multi-agency complexity of maritime emergency response, where coordination challenges become most visible during real incidents rather than planned exercises.
- The increasing operational risks driven by evolving maritime dynamics, including larger vessels, complex cargoes, and alternative fuels.
- The need to clearly distinguish between salvage law (property recovery) and pollution compensation frameworks (environmental protection) to avoid legal ambiguity.
- The critical importance of timely decision-making, as delays significantly amplify environmental damage, response costs, and recovery timelines.
- The recognition that global maritime regulations are continuously evolving, requiring nations to remain adaptive and responsive.

## RECOMMENDATIONS AND SUGGESTIONS

Based on the deliberations, the following strategic recommendations emerged:

### 2.1 Legislative Strengthening

- Fast-track ratification of pending conventions (Bunker & HNS)
- Ensure time-bound domestication of international regulations
- Simplify legal drafting to enhance industry compliance

### 2.2 Institutional Reforms

- Establish a Unified Maritime Emergency Command Framework
- Strengthen inter-agency coordination protocols
- Institutionalize joint operational drills

### 2.3 Capacity Building

- Develop specialized response capabilities for:
  - ◆ HNS spills
  - ◆ Plastic pollution
- Expand training programmes and regional knowledge-sharing platforms

### 2.4 Operational Enhancements

- Introduce risk-based contingency planning
- Improve real-time surveillance and decision-support systems
- Strengthen logistics for rapid deployment

### 2.5 Legal and Financial Clarity

- Clearly define:
  - ◆ Salvage vs environmental compensation frameworks
  - ◆ First responder entitlements
- Streamline claims processing mechanisms

### 2.6 Regional Cooperation

- Strengthen India's role in the Indian Ocean Region (IOR)
- Develop cross-border response agreements
- Promote shared training and joint exercises

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

The session highlighted strong policy momentum within the Government of India, indicating a positive trajectory:

- The Merchant Shipping Act, 2025 marks a transformative shift toward aligning domestic law with global conventions.
- Increasing emphasis on structured maritime governance frameworks and regulatory clarity.
- Ongoing development of national contingency plans and safety systems.
- Recognition of India's potential to emerge as a regional maritime emergency response hub.
- Growing focus on data-driven safety systems and digital monitoring platforms.

However, translating these initiatives into operational capability and enforcement remains the critical next step.

## WAY FORWARD

**To achieve effective global alignment, the following roadmap is essential:**

### **Short-Term**

- Ratify pending international conventions
- Strengthen existing contingency plans
- Conduct multi-agency simulation exercises

### **Medium-Term**

- Build specialized infrastructure for complex spill response
- Develop national-level integrated command systems
- Enhance training and certification frameworks

### **Long-Term**

- Establish India as a regional centre of excellence in spill response and salvage
- Lead regional cooperation frameworks in the Indian Ocean
- Develop predictive and technology-driven response systems

## MISSING LINKS IDENTIFIED

**The session clearly identified several structural and operational gaps:**

### **5.1 Legislative Gaps**

- Delay in incorporating international conventions into domestic law
- Non-ratification of key frameworks such as:
  - ◆ Bunker Convention
  - ◆ HNS Convention

### **5.2 Institutional Coordination Gaps**

- Lack of real-time unified command structures
- Limited inter-agency interoperability during emergencies

### **5.3 Operational Preparedness Gaps**

- Insufficient readiness for non-oil pollutants (HNS, plastics)
- Limited specialised expertise and training

### **5.4 Communication and Decision-Making Gaps**

- Delays in critical response decisions
- Inadequate communication protocols across agencies

### **5.5 Legal and Compensation Gaps**

- Ambiguity between:
  - ◆ Salvage reward frameworks
  - ◆ Pollution prevention compensation
- Lack of clarity in first responder entitlement and claims hierarchy

### **5.6 Capacity and Knowledge Gaps**

- Limited exposure to complex spill scenarios
- Need for continuous knowledge-sharing and simulation exercises

## KEY TAKEAWAYS

- Alignment with global frameworks is incomplete without domestic execution.
- Marine pollution is evolving, requiring new technical and regulatory approaches.
- Coordination and speed of response are decisive factors in minimizing impact.
- Legal clarity is essential to avoid disputes and ensure timely compensation.
- India has strong foundational capability, but must bridge gaps in:
  - ◆ Legislation
  - ◆ Capacity
  - ◆ Coordination
- The country is well-positioned to become a regional leader, provided reforms translate into practical, enforceable systems.

## CONCLUSION

Session 2 reinforced that global alignment is not a static achievement but an ongoing process of adaptation. While India has made significant progress in strengthening its legislative and institutional framework, the next phase must focus on execution, integration, and capability enhancement.

Bridging the identified gaps will require policy continuity, institutional coordination, and sustained investment in expertise and infrastructure. With these measures, India can transition from compliance to leadership in global maritime emergency response.

## Day 2

Capt. Bhandarkar expressed immense pleasure in welcoming all participants to the second day of the Symposium on India's Role in Oil Spill Recovery and Salvage Operations, organised by the Samudra Manthan Foundation in collaboration with the Directorate General of Shipping, with Bhandarkar Publications serving as the Knowledge Partner. He reflected that Day 1 had commenced on a remarkable note, marked by an overwhelming turnout and highly engaged participation. The inaugural address by Shri Rajiv Jalota, IAS (Retd.), Former Chairman of Mumbai Port Authority and Former Director General of Shipping, had provided exceptional clarity and administrative insight. Shri Jalota's emphasis on preparedness, integrated response mechanisms, environmental responsibility, and collaborative governance had set a purposeful and pragmatic direction for the symposium.

Throughout Day 1, the technical sessions and panel discussions had addressed regulatory frameworks, compliance mechanisms, international cooperation, oil-spill modelling, and India's growing readiness to assume a regional leadership role in spill response and salvage operations. The interactive question-and-answer exchanges had further demonstrated the maritime sector's appetite for deeper dialogue and collective problem-solving. Capt. Bhandarkar observed that the central message emerging from Day 1 was unmistakable: meaningful maritime progress demands sustained dialogue, shared learning, and a forward-looking mindset that anticipates risks rather than merely reacting to crises.

He stated that Day 2 would build upon this foundation with an intensive series of sessions focused on salvage operations, case studies, regional cooperation, infrastructure development, liability and P&I structures, and the integration of modern technology to strengthen India's maritime emergency response capabilities. Expressing heartfelt gratitude to all participants for their enthusiasm and commitment, he remarked that the overwhelming response underscored the urgency and national importance of the subject. He encouraged delegates to continue deliberating openly, challenging assumptions, learning from one another, and collectively expanding the possibilities of what India could achieve in maritime safety and environmental protection. He concluded by wishing everyone a productive and inspiring second day of the symposium.



## SESSION 3 - Salvors Case Studies, Lessons learnt and Challenges faced

**Session 3 on Salvors' Case Studies, moderated by Mr. Bas Wiebe of Resolve Marine Singapore, brought together leading voices from the global salvage community to share first-hand operational experiences. With contributions from Mr. Joshua Hutchinson of Ambrey and Ms. Kajal Festen-Purohit of Marine Masters, the session provided a comprehensive and practical perspective on the complexities of modern salvage operations, including equipment constraints, shifting on-scene decisions, and the indispensable role of trained personnel.**

Setting the tone for the session, Mr. Bas Wiebe reflected on his nearly two decades of professional engagement in and around India. He observed that while there has always been a strong intent within the country to drive reform, procedural challenges and administrative processes have often slowed progress. However, he expressed cautious optimism that recent developments indicate a tangible shift, with growing momentum likely to translate into a more structured and forward-looking maritime framework. He emphasized that while international models such as the United States' OPA 90 offer valuable reference points, India must develop solutions tailored to its own geography, scale, and operational realities rather than attempting direct replication.

Mr. Wiebe outlined Resolve Marine's operational model, which integrates global emergency response with compliance and client services, including marine firefighting and technical advisory support. He highlighted the importance of structured preparedness mechanisms, noting that leading salvage organizations maintain extensive databases covering between 7,000 and 10,000 vessels, each linked to designated emergency response arrangements. In this context, he raised a critical operational question for India—how such systems would be organized, where these databases would be housed, and how authorities such as the Indian Coast Guard would monitor and verify compliance at the moment an incident occurs.

Drawing on international experience in jurisdictions such as China and Alaska, Mr. Wiebe emphasized that salvage operations are inherently dynamic and cannot be treated as static or predictable processes. Each incident evolves in real time, requiring constant reassessment and flexibility, particularly in scenarios involving fire, flooding, or rapidly changing weather conditions. He also highlighted the increasingly international nature of salvage operations, where owners, insurers, managers, and technical experts are often spread across multiple jurisdictions, including the United Kingdom, Scandinavia, Japan, Taiwan, and China. In such an environment, timely and structured communication becomes critical to ensuring coordinated and effective response.

Reinforcing a key theme of the broader symposium, Mr. Wiebe reiterated that the primary concern of governments—particularly as demonstrated by the United States Coast Guard—is the prevention of environmental damage, especially the involuntary release of hydrocarbons. In this framework, safety, environmental protection, and security take precedence over commercial considerations such as vessel, cargo, or bunker value. This represents a fundamental shift in mindset, where decisions regarding port of refuge, response strategy, and even acceptance of controlled damage are guided by public and environmental interest rather than purely commercial imperatives.

He also addressed the practical limitations of response timelines, noting that even in highly developed systems, strict deployment targets—such as six-hour response requirements—are not always achievable due to resource constraints. This challenge is closely linked to the availability and distribution of assets such as tugs, as well as the financial implications of maintaining readiness over extended periods.

Referring to the DALI incident in Baltimore, Mr. Wiebe illustrated the scale and complexity of modern salvage operations. He clarified that the role of salvors is not to determine causation but to stabilize the situation and enable recovery. The response involved the rapid establishment of a large-scale incident command structure, with over 400 personnel engaged daily and, at peak, as many as 1,600 individuals. This structure brought together a wide range of stakeholders, including media representatives, financial controllers, insurers, shipowner representatives, qualified individuals responsible for expenditure approvals, non-governmental organizations, and legal teams managing claims.

He emphasized that managing such a structure is itself a major challenge, with salvage teams representing only a small component of the overall response ecosystem. Operations were driven by frequent reporting cycles, often involving multiple updates each day to maintain alignment across stakeholders.



**Moderator: Bas Wiebe,  
General Manager (Resolve Singapore),  
Resolve Marine**

Reflecting on the nature of salvage operations, Mr. Wiebe observed that while they are often perceived as highly complex, their essence lies in the coordination of numerous simple tasks executed simultaneously. The challenge is not individual technical actions, but maintaining coherence and focus across all elements while shipowners continue their core business activities. Delegation to professional salvors allows for specialized focus while maintaining necessary communication with stakeholders.

He explained that a salvage plan is developed early in the response and treated as a living document. Once approved by authorities, particularly in jurisdictions like the United States, it assumes a quasi-legal status and must be adhered to, with modifications introduced as conditions evolve. He also highlighted the importance of cargo assessment, noting that even seemingly benign cargo—such as milk powder or soybeans—can become hazardous under certain conditions, producing toxic gases like hydrogen sulphide and complicating operations.

Despite the unprecedented challenge of a bridge collapse onto the vessel's bow, the DALI was ultimately stabilized and refloated with limited structural damage, preserving its overall integrity. Subsequent operations focused on debris removal and the management of hazardous materials, including chemical tanks and dangerous goods. However, he noted that even in advanced jurisdictions, regulatory constraints such as the Jones Act can limit operational flexibility by restricting the use of foreign-flag heavy-lift equipment.

Mr. Wiebe concluded by highlighting that the DALI incident offers valuable lessons for India in terms of scale, coordination, regulatory constraints, and the importance of realistic planning, setting the stage for further discussion among the panelists.



# Mr. Joshua Hutchinson: Evolving Salvage Roles amid Geopolitical and Operational Complexity

Mr. Joshua Hutchinson of Ambrey provided a complementary perspective, outlining the company's operational scale and global reach. With a fleet of approximately 40 vessels and 1,500 seafarers, and an operations centre supporting nearly 30,000 vessels daily, Ambrey has significant situational awareness across global shipping routes. He noted that the company's entry into the salvage domain was largely driven by necessity, as crises often demand immediate response regardless of prior specialization.

Reflecting on recent geopolitical developments, he recalled the early stages of the Houthi crisis, where the industry, including Ambrey, was initially slow to react, even as the first casualty vessel, MV Rubymar, remained grounded in the Red Sea. He also highlighted Ambrey's involvement in the MT Sunnion operation, a prolonged mission lasting six to seven months and involving over 400 personnel. He emphasized that many major salvage operations remain invisible to the public, as their success lies in preventing escalation.

Mr. Hutchinson identified three key themes shaping modern salvage operations: changing roles, regional geopolitics, and the need to reconsider capabilities. He noted that salvors today are increasingly required to act as humanitarian responders in conflict-driven environments, with incidents involving missile attacks, drones, and naval mines. In nearly 90% of cases attended by Ambrey in the past year, crews had already abandoned the vessel before responders arrived, underscoring the evolving nature of maritime risk.

He further highlighted India's strategic importance along major global shipping corridors, from the Persian Gulf—which accounts for approximately 30% of global oil and gas flows—to the Indian Ocean, where piracy and targeted attacks are resurging. He noted that deliberate attacks using advanced technologies are increasingly designed to create salvage scenarios. In addition, he pointed to growing challenges such as navigation system spoofing, which is contributing to maritime incidents and requires regulatory attention.

Addressing regional capabilities, Mr. Hutchinson emphasized that the Indian Ocean region currently lacks sufficient salvage infrastructure and rapid response assets. Drawing on Ambrey's engagements across Eritrea, Somalia, Djibouti, Oman, and Saudi Arabia, he noted that many states have limited capacity to respond effectively. In this context, he described India's ongoing efforts to strengthen regional capability as both timely and forward-looking.

He also stressed the importance of predictive planning, noting that maritime incidents often follow identifiable seasonal and geographic patterns. Strategic placement of assets based on such data can significantly enhance response effectiveness. He



**Joshua Hutchinson,**  
Chief Commercial Officer, Ambrey

further highlighted the interconnected nature of maritime incidents, where impacts frequently extend beyond national boundaries, citing examples where pollution originating in one country affected neighbouring coastlines lacking response capability.

In his concluding remarks, Mr. Hutchinson emphasized that strengthening India's capacity is not only a national priority but also a regional necessity. Building robust response infrastructure would contribute to a safer and more resilient maritime environment across the Indian Ocean. He expressed confidence that continued dialogue and collaboration would help translate these insights into practical outcomes.



# Ms. Kajal Festen-Purohit: Salvage Realities, Infrastructure Gaps, and the Need for Indigenous Capacity

## Building India's Salvage Ecosystem: Operational Realities, Infrastructure Gaps, and the Road Ahead

Session 3 of the symposium, *Salvors' Case Studies*, continued to offer deep operational insight into the realities of maritime emergency response, with Ms. Kajal Festen-Purohit of Marine Masters bringing a grounded, practitioner-led perspective. While acknowledging that several themes had already been covered by earlier speakers, she chose to focus on critical gaps and practical needs from the standpoint of a professional salvor.

She began by thanking Capt. Bhandarkar for organizing the symposium and noted that the discussions were a continuation of the momentum created by the Directorate General of Shipping's earlier programme in March. While recognizing that criticism of Indian authorities has historically been valid, she emphasized that it was equally important to acknowledge the progress now being made. She commended the leadership at DG Shipping for its openness, transparency, and willingness to engage with stakeholders across the industry, including salvors, insurers, and operators. She also appreciated the efforts of the DG Shipping team, noting that they had been working tirelessly—even during holidays—to develop a framework that is not merely theoretical but practical and implementable.

Encouraging broader industry participation, she urged stakeholders to actively share ideas and expertise with authorities, stressing that such frameworks must remain living documents that evolve through continuous learning. Reflecting on past operations, she cited the Seagull incident as a defining experience that exposed both operational challenges and political sensitivities, while also serving as a valuable learning opportunity, particularly for younger professionals in the field.

Providing context on her organisation, Ms. Purohit highlighted that Marine Masters, through its Indian arm IndiMaritime Solutions, has built a strong operational presence despite being only a decade old. As a full member of the International Salvage Union, the team collectively brings over 100 years of experience and has completed more than 100 successful operations globally, including significant engagements in Europe, Africa, Asia, and the Middle East.

She then posed a fundamental question: What does a salvor truly need?

Her answer was direct—robust infrastructure. She emphasized that effective infrastructure must enable rapid containment of casualties, minimize environmental damage, and ensure that coastal ecosystems and local economies recover quickly. Referring to earlier discussions on fishing communities affected by incidents such as the Kochi fires, she pointed out that India lacks well-defined commercial frameworks to compensate affected groups, unlike more developed jurisdictions. This, she noted, remains an unresolved issue.

From an operational perspective, she stressed that infrastructure must support quick containment, environmental protection, and continuity of economic activity. She highlighted the absence of clarity on responsibility for compensating affected communities, even when multiple authorities are involved.

Ms. Purohit illustrated these challenges through a series of operational case studies. One example involved a capsized fishing vessel in conditions of strong currents—ranging from three to five knots—combined with zero underwater visibility and extensive fishing nets that obstructed diving operations. Despite these challenges, oil removal was successfully carried out using hot-tapping techniques, with local teams and equipment deployed and a tug mobilized from northern Mozambique. The vessel was eventually beached safely. This case brought her back to a recurring concern: the absence of clearly designated ports of refuge in India where such complex operations could be conducted effectively.

Another case involved a sunken concrete salmon-feed barge in the United Kingdom, located near an environmentally sensitive zone. The decomposition of feed created hazardous gas conditions, and the absence of local heavy-lift equipment required the mobilization of specialized gear from abroad. The operation involved removing 400 tonnes of feed, cutting anchor chains, and carefully lifting the structure while protecting the surrounding ecosystem. Though successful, it was time-consuming and highlighted the importance of environmental safeguards.



**Kajal Festen-Purohit,**  
Marine Masters

She also described an operation in Israel involving a crane collapse, where a free-walking crane without brakes collided with a pier and fell into the water, damaging port infrastructure. In this case, effective local collaboration proved critical, with Marine Masters working as subcontractors alongside a local company to remove approximately 1,500 tonnes of steel.

A particularly significant example from India was the Donna Paula syncrolift collapse, where she served as project manager. A barge had submerged nose-first following the failure of a ship lift. Except for one salvage master brought in from the Netherlands, the operation was executed entirely by Indian personnel, including divers, riggers, welders, and local equipment. The vessel was successfully refloated and returned to service, demonstrating that India possesses strong technical capability that must now be expanded and supported.

Turning to emerging risks, Ms. Purohit highlighted the growing challenge posed by new-energy cargoes, particularly electric vehicles and battery consignments. Fires involving such cargo are extremely difficult to extinguish and often result in total loss of the vessel, making salvage nearly impossible. She emphasized that this is a global issue, not limited to India, and that the industry must prepare for increasing volumes of such hazardous cargo.

She also pointed to persistent challenges in India related to the availability of specialized equipment, trained personnel, and technical expertise, which often forces salvors to mobilize resources internationally. Reiterating a point made in earlier discussions, she noted that India's current capacity remains inadequate, particularly given the length of its coastline. While the country has two Emergency Towing Vessels, this is insufficient for over 10,000 kilometers of coastline. She raised a critical question regarding funding—who will bear the cost of building a comprehensive national response infrastructure.

Operational realities, she added, further complicate deployment. Even when assets are available, weather conditions may prevent timely response, particularly along the western coast. Discussions on establishing regional hubs and positioning dedicated vessels at major and minor ports are therefore essential, especially as offshore response remains a significant gap compared to coastal response capabilities.

She also drew attention to inland waterways, which are expected to expand significantly in India. She cautioned that even minor incidents in narrow river channels can disrupt entire transport systems and severely impact local fishing communities. Emergency response planning, she stressed, must therefore extend beyond coastal areas to include rivers, canals, and national waterways.

Concluding her remarks, Ms. Purohit emphasized that India stands at a critical juncture in developing a future-ready salvage ecosystem. She called for continued collaboration between industry and authorities and encouraged stakeholders to engage actively in shaping practical and effective solutions.

The discussion then shifted to the critical issue of ports of refuge, with moderator Mr. Bas Wiebe highlighting its complexity and sensitivity. He noted that while shipowners expect authorities to provide refuge, coastal administrations often hesitate, fearing the introduction of additional risks. This challenge, he clarified, is not unique to India but is observed globally, including in advanced jurisdictions such as Singapore.

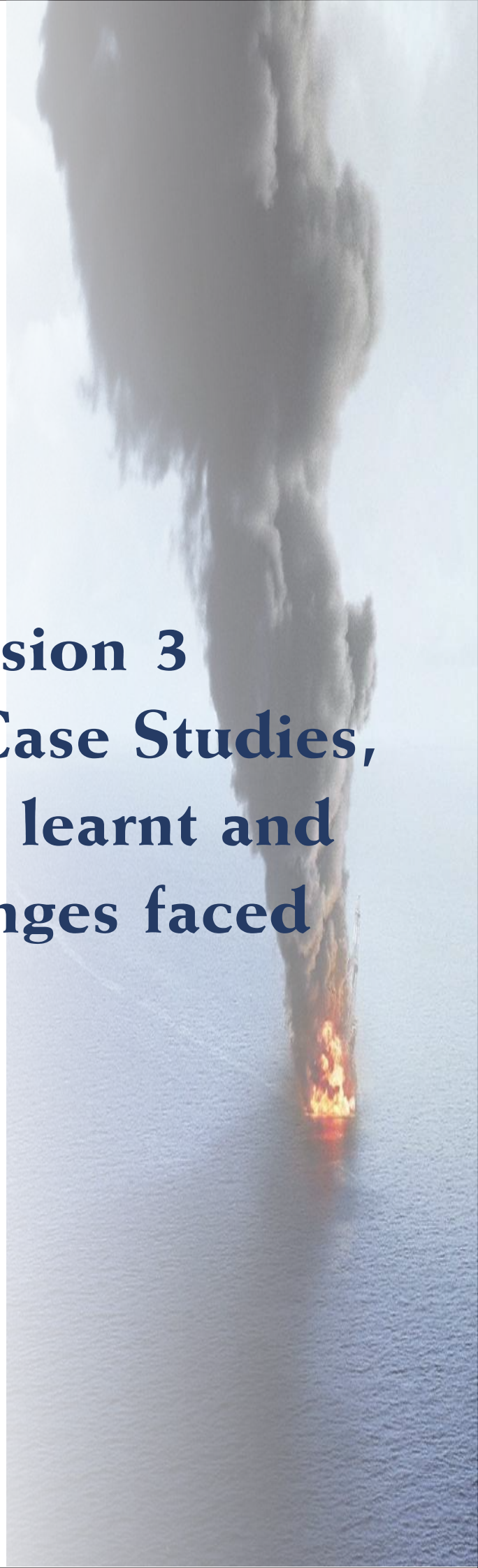
He explained that ports of refuge must operate within a controlled framework, ensuring vessel stability, pollution prevention, and clear exit strategies. Such facilities require coordinated engagement among salvors, authorities, insurers, and other stakeholders. He emphasized that once a vessel is stabilized and deemed safe for transit, authorities should seriously consider granting refuge, particularly as leaving vessels offshore during monsoon conditions can significantly worsen their condition. A well-structured port-of-refuge system, he noted, could dramatically accelerate salvage operations and reduce risks.

Responding to this, Mr. Joshua Hutchinson suggested that authorities should view ports of refuge not as risks but as opportunities. He noted that several countries have leveraged such situations to build capability and institutional knowledge. Ms. Purohit added that while the issue is under active consideration by Indian authorities, translating legislation into operational capability remains complex, requiring infrastructure, manpower, and coordinated systems. However, she acknowledged the growing commitment within DG Shipping and emphasized that ongoing dialogue is already shaping more effective policy frameworks.

The session concluded with a clear message: India must move toward a coordinated, well-resourced, and integrated national response system, combining infrastructure development, institutional alignment, and stakeholder collaboration to build a robust and future-ready maritime emergency response ecosystem.



## **Session 3** **Salvors Case Studies,** **Lessons learnt and** **Challenges faced**



# White Paper

## DELIBERATIONS

- Session 3, Salvors' Case Studies, highlighted the evolving complexity of global salvage operations through operational insights from Resolve Marine, Ambrey, and Marine Masters. The discussions collectively reflected that modern salvage is no longer a purely technical recovery function but a multi-layered emergency ecosystem involving environmental protection, geopolitical risk, insurance mechanisms, legal frameworks, and real-time coordination across jurisdictions.
- A central theme was the dynamic nature of casualty response, where incidents evolve rapidly due to fire, flooding, structural failure, weather volatility, or conflict-related risks. Salvage operations were consistently described as fluid, requiring adaptive decision-making rather than pre-defined procedural responses.
- The Baltimore DALI incident illustrated the scale of coordination required in modern salvage, where hundreds to over a thousand stakeholders operate under an incident command system involving insurers, regulators, contractors, legal teams, and government agencies. Salvors were positioned as stabilizers rather than investigators, with responsibility limited to recovery and risk control.
- Ambrey's contribution emphasized the increasing geopoliticalization of maritime risk, where salvors now operate in environments influenced by missile attacks, drones, piracy resurgence, and navigation system spoofing. It was highlighted that crew abandonment is now common at the time salvors arrive, reflecting the heightened severity of incidents.
- Marine Masters underscored operational gaps in infrastructure, particularly the absence of designated ports of refuge, limited availability of specialized salvage equipment, and insufficient trained manpower in India. Case studies demonstrated both international dependency for heavy-lift capabilities and strong indigenous capability, as seen in the Donna Paula syncrolift recovery.
- Across all presentations, the discussion consistently pointed to a structural gap between global salvage expectations and India's current preparedness framework.

## RECOMMENDATIONS AND SUGGESTIONS

- Establish a National Salvage Authority or Coordination Cell under a unified command structure
- Mandate response readiness compliance registration for all commercial vessels operating in Indian waters
- Develop a tiered funding mechanism for salvage infrastructure involving government, ports, and industry stakeholders
- Introduce legal clarity on ports of refuge activation protocols, including environmental risk thresholds
- Standardize incident command systems across ports and coastal states
- Invest in domestic manufacturing of salvage equipment and heavy-lift capabilities
- Create regional salvage hubs at strategic port locations with pre-positioned assets
- Strengthen insurance-industry integration mechanisms for faster claim resolution and funding mobilization
- Expand joint exercises and simulation drills involving international partners
- Develop community compensation frameworks for fisheries and coastal livelihoods affected by incidents

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

- India is positioned to emerge as a regional salvage and maritime emergency coordination hub
- The Directorate General of Shipping is actively evolving policy frameworks toward practical implementation
- The Indian Coast Guard is already functioning as a central coordinating authority for marine pollution response
- Legislative evolution under the Merchant Shipping Act provides stronger alignment with international conventions (CLC, Bunker, Nairobi Wreck Removal, Salvage Convention)
- Regional cooperation under IORA, BIMSTEC, and ASEAN provides a foundation for structured spill response collaboration
- Government initiatives indicate movement toward integrated public-private response models
- Infrastructure expansion plans (ports, shipyards, and ETVs) support long-term national salvage capability development
- India's strategic geography positions it as a critical node in Indian Ocean maritime risk management
- Increasing policy focus on training, audits, and compliance enforcement reflects institutional strengthening
- Future frameworks are expected to evolve toward a hybrid governance model combining regulation, industry participation, and international cooperation.

## WAY FORWARD

- Development of a national salvage coordination framework integrating Coast Guard, ports, DG Shipping, insurers, and private salvors
- Establishment of a real-time vessel emergency database system linked with mandatory response readiness protocols
- Creation of designated ports of refuge with pre-approved environmental and operational clearance mechanisms
- Expansion of Emergency Towing Vessel (ETV) capacity and strategic coastal deployment hubs
- Strengthening of regional cooperation mechanisms under IORA, BIMSTEC, and ASEAN frameworks
- Development of predictive risk mapping systems based on seasonal and geographic casualty patterns
- Integration of incident command system protocols for standardized multi-agency response structures
- Expansion of training and certification programs for salvage professionals and first responders
- Establishment of public–private operational partnerships for salvage readiness and infrastructure investment
- Inclusion of inland waterways in national emergency response planning

## MISSING LINKS IDENTIFIED

- While the session demonstrated that South Asia possesses significant operational capability in emergency response and salvage, it also exposed a critical gap—the absence of structured coordination frameworks and standardized procedures across the region.
- Despite strong institutional support from agencies such as the Directorate General of Shipping, Indian Coast Guard, and other stakeholders, the lack of pre-defined SOPs, designated salvage coordination roles, and clarity on port-of-refuge policies continues to delay decision-making during high-pressure incidents.
- The discussion highlighted that India does not lack capability—it needs predictability, preparedness, and alignment between regulators, responders, and industry stakeholders to ensure faster and more effective outcomes during maritime emergencies.

## KEY TAKEAWAYS

Salvage is network-driven: No single company can operate in isolation; success depends on global partnerships and rapid access to specialized assets.

Preparedness over reaction: Early-stage decisions and clarity of roles significantly influence the outcome of maritime incidents.

Port of refuge remains a major gap: The absence of clear policies can delay critical decisions during emergencies.

Mismatch of expectations: Operational realities at sea often differ from onshore administrative priorities, highlighting the need for specialized training.

Regulatory and logistical bottlenecks: Cabotage restrictions, limited tug availability, and procedural uncertainties can hinder response time.

Environmental response complexity: Even relatively small spills can have large-scale coastal and economic impacts.

India's strength lies in institutional support: Agencies demonstrated strong responsiveness, adaptability, and commitment during crisis situations.

## CONCLUSION

The session on Emergency and Salvage Operations underscored a fundamental truth—maritime accidents are inevitable, but disasters are preventable. As emphasized by Capt. Anuj Sahai, the effectiveness of response lies not just in resources, but in speed, coordination, and technical clarity.

The case of Wan Hai 503 stands as a powerful example of how a potentially catastrophic incident can be contained through collective effort, expertise, and decisive action. At the same time, it highlights the urgent need for structured frameworks, clearer policies, and enhanced preparedness within the region.

As maritime traffic continues to grow in South Asia, the focus must now shift from reactive capability to proactive readiness - ensuring that when the next emergency arises, response systems are not being built in real time, but are already in place.

Ultimately, the success of salvage operations is often invisible to the public - measured not by what is seen, but by what is prevented.

## SESSION 4 - Emergency & Salvage Operative in South Asia – Opportunities and Challenges

Session 4 on Emergency & Salvage Operations in South Asia featured a thoughtful and experience-rich address by Capt. Imam Farhat, who brought to the discussion decades of practical expertise, including his tenure with Resolve, and a reflective, semi-retired perspective. Rather than relying on detailed case-by-case narration, he chose to focus on first principles and systemic realities, using his experience to underscore how far India must still progress to achieve a mature, world-class maritime emergency response framework.

He began by defining salvage services as any act undertaken to assist a vessel or property in danger, regardless of where the incident occurs. From this foundation, he outlined the fundamental priorities that govern all salvage operations. The protection of life, including both crew and the public, remains paramount. This is followed by environmental protection, particularly the prevention of pollution, and finally the safeguarding of assets belonging to shipowners, companies, and third parties. Overarching all these priorities is the constant obligation to maintain safety. At the same time, he acknowledged the inherent paradox in salvage work: ensuring safety may at times require undertaking operations that carry temporary risk, making it essential for response teams to be highly trained and capable of balancing judgment with action.

Capt. Farhat then mapped the ecosystem of stakeholders involved in maritime emergencies, which includes regulators and government authorities such as ports, harbour masters, and state agencies; shipowners and operators; charterers; insurers; and professional salvage contractors such as T&T, Resolve, and SMIT. He emphasised that effective response depends on clarity of roles, structured systems, and collaboration among these stakeholders, rather than improvisation during crises.

Placing the discussion in a global context, he explained how maritime emergency legislation has historically evolved in response to major disasters. The Titanic led to the development of SOLAS, while the Exxon Valdez spill drove the creation of the United States' Oil Pollution Act of 1990 (OPA 90). The Torrey Canyon disaster shaped modern liability conventions, and the Dalian incident influenced China's SPRO mechanism. He also referenced established frameworks such as the SOSREP system, Maritime New Zealand, Australia's AMSA, Singapore's MPA, and China's MSA, all of which reflect structured national responses developed through experience. The concept of a Port of Refuge, illustrated through cases such as Prestige and Nu Sheer Nalini, further reinforced the importance of preparedness and coordinated policy.

A key focus of his address was the Exxon Valdez incident of 1989 and the transformation it triggered through OPA 90. While regulations existed prior to the disaster, it was only after the incident that decisive enforcement emerged. OPA 90 introduced comprehensive requirements, including Vessel Response Plans, Spill Management Teams, Oil Spill Removal Organisations, and integrated Salvage and Marine Firefighting capabilities, all under the custodianship of the US Coast Guard. The result was a measurable improvement in response efficiency, accountability, and reduction in major incidents. From this, Capt. Farhat drew two critical lessons for India: the need for a clearly defined custodian authority and the importance of practical, well-resourced response plans that stakeholders can rely upon.

He further outlined the logical sequence that should guide maritime emergency preparedness and response, beginning with preparedness, followed by emergency response, spill management, rapid intervention, and the mobilisation of an adequate resource base. Within this framework, he highlighted two often underappreciated but critical requirements—the availability of capable tugs and the presence of accessible disposal facilities. Without these, even well-designed response plans can fail. He stressed the need for structured disposal chains capable of handling oily sludge, damaged containers, and other hazardous waste in a safe and compliant manner.

Capt. Farhat described effective emergency management as a measure of institutional maturity. Drawing on the United States' unified command model, he explained how coordinated incident command structures—with clearly defined roles across operations, logistics, planning, and finance under a designated authority—can transform a chaotic response into a disciplined and transparent operation. In contrast, he noted that ad hoc systems, often dependent on individual salvage masters navigating administrative delays, lack the predictability and accountability required in complex emergencies.



**Capt. Imam Farhat,**  
Former COO Resolve, Miami

Turning to India, he highlighted persistent challenges, including fragmented authority, bureaucratic delays, and the absence of a single empowered custodian. He stressed that legislation must be flexible, consultative, and supported by realistic timelines, cautioning that rigid frameworks without phased implementation risk poor compliance and ineffective outcomes.

Another important dimension of his address was the role of contracts and commercial certainty in salvage operations. He emphasised that salvage is not a charitable activity but a highly specialised and resource-intensive service requiring assurance of payment. Clear, fair, and internationally recognised contractual frameworks are therefore essential. He highlighted the importance of BIMCO standard contracts and Lloyd's Open Form (LOF) arrangements, including variations such as lump-sum agreements, staged payments, and SCOPIC provisions. These frameworks provide clarity, reduce disputes, and ensure alignment between shipowners, charterers, insurers, and salvors, thereby enabling rapid and effective mobilisation.

Drawing from practical experience, Capt. Farhat referred to several incidents that illustrate both capability and systemic gaps. He cited unresolved wrecks along Indian coasts where delays in decision-making led to prolonged risks and even vandalism. He referred to the Deepwater Horizon disaster to demonstrate the need for specialised technology, long-term commitment, and significant financial resources in extreme cases. He also highlighted the INS Sindhurakshak incident in Mumbai in 2013, where a catastrophic explosion required highly sensitive and complex salvage operations, including ordnance removal and recovery of personnel. The successful raising of the submarine by Resolve India in 2014, supported by global expertise and structured contracts, reinforced the importance of skilled leadership and internationally aligned frameworks.

He then mapped the legislative and institutional framework governing maritime emergencies in India, noting that multiple laws—including the Disaster Management Act, Indian Ports Act of 1908, Inland Vessels Act of 1917, provisions of the Indian Penal Code of 1860, and the Environment Protection Act of 1986—apply. Implementation responsibilities are distributed across several ministries, including Shipping, Defence, Home Affairs, and Earth Sciences, along with state disaster management authorities led by district administrations. This multiplicity of agencies, he observed, often leads to diffusion of accountability, delays in decision-making, and uncertainty for responders.

Addressing wreck removal and salvage in the Indian context, he raised the question of why globally accepted frameworks cannot be adapted and institutionalised in India. He emphasised the need for integration with International Group P&I structures, adequate insurance coverage, deployment of Emergency Towing Vessels, effective Vessel Traffic Services, and alignment with the Nairobi Wreck Removal Convention. He pointed out that India's coastline already contains numerous legacy wrecks, highlighting the urgency of moving from ad hoc responses to a structured national approach.

He also addressed shortcomings in existing government contracts, noting that many are one-sided, lack financial clarity, and are not aligned with global best practices. These contracts are often executed without clear payment responsibility or enforceable commitments, creating uncertainty for salvors. He called for reform through greater engagement with the Directorate General of Shipping to align contractual frameworks with international standards.

During the discussion, DIG S.K. Verghese of the Indian Coast Guard raised a practical concern regarding the complexity of contracts during emergencies, noting that government officials cannot realistically review extensive agreements during crisis situations. He questioned whether simplified, standardised formats could be developed. In response, Capt. Farhat explained that established frameworks such as LOF and BIMCO contracts already exist, offering structured solutions, though alignment between insurer preferences and salvor requirements remains a challenge. Capt. Anuj Sahai supplemented this by noting that multiple contract formats are already in use, including BIMCO agreements, hire-type contracts, LOF arrangements, and simplified marine service agreements, some of which are concise and publicly available. He emphasised that contractual clarity is critical, given the immediate mobilisation costs and financial exposure involved in salvage operations.

Capt. Farhat concluded with a strong call for a coordinated and forward-looking national approach. He emphasised the need for clear custodianship, robust and enforceable legislation, availability of critical resources such as tugs and disposal facilities, adoption of standardised contractual frameworks, and sustained dialogue among all stakeholders, including government



agencies, ports, insurers, and the private salvage industry. He also highlighted the importance of government intervention in areas such as regulatory clarity, accountability mechanisms, mandatory response planning, continuous risk assessment, and ensuring proper closure of incidents. He stressed that public interest must remain central, supported by training, capacity building, and federal coordination across national and state levels.

He closed with a reminder that while maritime accidents are inevitable, the true measure of preparedness lies in the effectiveness, coordination, and professionalism of the response.

**Capt. Anuj Sahai delivered an engaging and insightful presentation, offering a rare inside view into the realities of emergency response and salvage operations. He explained that T&T Salvage has deliberately positioned itself as a specialised global leader, focusing exclusively on salvage, firefighting, wreck removal, and complex casualty management. The company does not diversify into ancillary marine activities, choosing instead to maintain a sharp focus on rapid mobilisation, technical precision, and high-risk operations. Over the years, T&T has built a vast global network of partners—including tug operators, diving teams, and technical agencies—and today supports nearly 10,000 ships under its retainer services in accordance with the OPA-90 regime.**

He emphasised that no salvage company can operate in isolation. Success depends entirely on an extensive and reliable network capable of providing tugs, pumps, divers, firefighting units, and specialised equipment at short notice. This model enables T&T to deploy fit-for-purpose resources for each casualty, avoiding inefficiencies associated with maintaining all assets in-house.

To illustrate the complexities of spill response, Capt. Sahai narrated the Marine Honour incident in Singapore (June 2024). What initially appeared to be a routine call regarding a “small spill” quickly escalated into a full-scale emergency. Upon deployment of containment booms, it was discovered that the bunker barge Marine Honour had been struck by a dredger during bunkering operations, resulting in a significant hull breach and oil discharge.

He pointed out that under the Civil Liability Convention, compensation for vessels below 5,000 GT is extremely limited, and even with the Fund Convention, the financial ceiling remains modest—an important consideration for India when preparing for major coastal incidents.

Despite the relatively small spill—just a few hundred tonnes compared to global disasters—the impact on Singapore was substantial. Within hours, oil spread across beaches, marinas, and waterfronts. Cleanup operations quickly became the most critical and demanding aspect of the response, far exceeding the complexity of initial containment. Every marina, vessel, and stretch of coastline required intensive manual cleaning. He cautioned that a similar situation could occur in any major Indian coastal city and should serve as a warning.

Capt. Sahai also highlighted the difficulty of sourcing specialised equipment such as current busters within Asia. These had to be flown in from the United States and Europe, often arriving after tidal conditions had already dispersed the oil. Nevertheless, such deployments are necessary due to significant pressure from media, policymakers, and the public to demonstrate visible action, even when effectiveness may be limited.

He then shifted to the Wan Hai container ship incident off Kochi, a far more complex and high-risk scenario. He recalled that the vessel suffered a major explosion, resulting in the loss of 28 containers and, tragically, several lives.

On 9 June at approximately 09:50 hours, MV Wan Hai 503, a fully cellular, gearless container vessel en route from Colombo to Nhava Sheva, suffered an explosion in cargo hold number three, about 44 nautical miles off Azhikkal, Kerala. The explosion caused 28 containers to fall overboard. Of the 22 crew members onboard, 18 were rescued, four were reported missing, and six sustained injuries requiring hospitalisation.

The Indian Coast Guard responded immediately, deploying two vessels for firefighting and boundary cooling. On 10 June, T&T Salvage was appointed as salvor and began mobilising resources and specialised firefighting personnel. By 11 June, the vessel was taken under tow by the Coast Guard.

The vessel subsequently began drifting in rough monsoon conditions, moving dangerously close to critical coastal infrastructure. Capt. Sahai emphasised that the operation would not have succeeded without the unwavering support of the Indian Coast Guard, which played a crucial role in every stage—from bunkering support for tugs to aviation assistance.

A major setback occurred when the towline snapped within two days. Following an urgent request from the Directorate General of Shipping, the Indian Navy arranged a heavy-lift helicopter within half an hour—capable of transporting a large salvage team, unlike civilian alternatives. Eight personnel were airlifted and lowered directly onto stacked containers, as the deck was inaccessible. From there, they successfully secured a new towline under extremely hazardous conditions—an operation that required both technical expertise and exceptional courage.

The salvage strategy focused on containing the fire, preventing its spread, and implementing boundary cooling using CO<sub>2</sub>, foam, and Pyrocool systems. Simultaneously, efforts were made to identify a port of refuge, despite the practical challenge that no port is willing to accept a vessel that is still smoking.



**Capt. Anuj Sahai,**  
MD, T&T Salvage

A significant portion of the cargo consisted of containers carrying nurdles. Although parts of the fire continued to smoulder, the situation was largely brought under control as resources were deployed.

The response included the tug Offshore Warrior and ETV Water Lily, supported by an international salvage team from Singapore, India, and the United States. Marine firefighting specialists from Europe and the US were also deployed, along with seven firefighting packs and specialised equipment sourced globally. Additional support came from Indian Coast Guard vessels, the Indian Navy, Kochi port tugs, and tugs mobilised from Mumbai, Dubai, and Singapore.

Firefighting operations continued intensively, and by 5 August 2025, the fire was progressively brought under control. The vessel was eventually berthed safely at Jebel Ali, UAE, marking a significant milestone in a highly complex and coordinated salvage operation.

Capt. Sahai further highlighted the challenges of sustaining operations over weeks during monsoon conditions. Up to nine tugs and over forty salvage personnel were deployed, working under extreme conditions on a powerless vessel with no accommodation. Accumulated firefighting water created additional risks, necessitating the installation of generators and pumping systems to stabilise the vessel and prevent flooding. After months of continuous effort, the vessel was taken to Jebel Ali for disposal, with final work scheduled for completion in January.

He candidly addressed systemic challenges, emphasising the need for designated salvage liaison officers at major ports—professionals capable of bridging the gap between operational realities and administrative expectations.

During the Wan Hai incident, a clear mismatch emerged between on-ground expectations and technical realities. While authorities prioritised bunker removal, salvors considered it a final-stage activity post-stabilisation. Such gaps, he stressed, must be addressed through training and structured procedures.

He also highlighted broader challenges, including:

- Multi-agency coordination with varying levels of expertise
- Cabotage restrictions and limited availability of suitable tugs
- Dependence on a small pool of specialised salvage providers
- Uncertainty in salvage claims and liabilities

Stakeholder coordination involved the Indian Coast Guard, DG Shipping (Mumbai and Kochi), Immigration, Customs, Singapore Maritime and Port Authority, Kochi Port Authority, Disaster Management authorities, and Pollution Control Boards. It took nearly 90 days and multiple meetings to align all stakeholders before the vessel was permitted to proceed on 10 September 2025.

He also noted the difficulty in identifying a port of refuge, despite exploring options across India, Sri Lanka, Malaysia, Indonesia, Singapore, the UAE, and Oman. Disposal of hazardous cargo remains a challenge in India due to regulatory and customs-related constraints. For insurers and P&I Clubs, predictability is critical, highlighting the need for structured and reliable processes.

Despite these challenges, Capt. Sahai strongly commended Indian authorities for their responsiveness and support. He cited instances of expedited clearances, including his own entry into India from Iceland without a visa due to the emergency, and the ability of salvage personnel to mobilise rapidly with minimal procedural delays.

He concluded by emphasising that while accidents are inevitable in a busy maritime environment, the effectiveness of response—its speed, coordination, and technical execution—ultimately determines the outcome. The Wan Hai operation stands as a powerful example of a near-disaster that remained largely unnoticed because the worst was successfully prevented—demonstrating the silent success of effective emergency response.





**SESSION 4**  
**Emergency & Salvage**  
**Operative in**  
**South Asia -**  
**Opportunities**  
**and Challenges**

# White Paper

## DELIBERATIONS

- Salvage is defined as any act undertaken to assist a vessel or property in distress, irrespective of location or jurisdiction
- The universally accepted hierarchy of response priorities includes:
  - ◆ Protection of life (crew, responders, and the public)
  - ◆ Environmental protection, with particular emphasis on pollution prevention and mitigation
  - ◆ Preservation of property and assets, including those of shipowners, operators, and third parties
- Safety remains the overarching principle, guiding all actions, even in scenarios where controlled operational risk may be necessary
- Maritime emergencies involve a multi-stakeholder ecosystem, comprising:
  - ◆ Regulatory authorities, ports, harbour masters, and state agencies
  - ◆ Shipowners, operators, and charterers
  - ◆ Insurers and P&I Clubs
  - ◆ Professional salvage contractors (e.g., T&T, Resolve, SMIT)
- Effective response is contingent upon clearly defined roles, structured coordination, and system-led execution, rather than ad hoc or reactive approaches
- Global regulatory frameworks have evolved from major maritime disasters:
  - ◆ Titanic - SOLAS (Safety of Life at Sea)
  - ◆ Exxon Valdez - Oil Pollution Act (OPA 90)
  - ◆ Torrey Canyon - Modern liability and compensation regimes
  - ◆ Dalian - China's SPRO framework
- Established international response models include:
  - ◆ SOSREP (UK), AMSA (Australia), MPA (Singapore), MNZ (New Zealand), MSA (China)
- The concept of Port of Refuge remains critical, supported by international precedents such as Prestige and Nu Sheer Nalini
- The Exxon Valdez incident and OPA 90 serve as a benchmark model for structured preparedness and response, introducing:
  - ◆ Vessel Response Plans (VRPs)
  - ◆ Spill Management Teams (SMTs)
  - ◆ Oil Spill Response Organisations (OSROs)
  - ◆ Salvage and Marine Firefighting (SMFF) capabilities
- The effectiveness of OPA 90 demonstrates that robust legislation, supported by a clearly designated custodian authority and strict enforcement, leads to measurable improvements in response outcomes
- Key lessons for India include:
  - ◆ The need for a clearly identified and empowered custodian authority
  - ◆ The development of practical, well-resourced, and operationally viable response plans
- The structured sequence of emergency response should include:
  - ◆ Preparedness Immediate response Spill management Rapid intervention Resource mobilisation
- Critical operational enablers include:
  - ◆ Availability of Emergency Towing Vessels (ETVs) and salvage assets
  - ◆ Establishment of structured waste management and disposal systems
- Effective emergency response is a reflection of institutional maturity, exemplified by the Unified Command Model, which ensures:
  - ◆ Defined functional roles (operations, logistics, planning, finance)
  - ◆ Clear leadership and accountability
  - ◆ Transparency and coordinated decision-making
- In contrast, ad hoc or fragmented approaches result in delays, inefficiencies, and reduced effectiveness
- Case references highlight both capability and systemic gaps:
  - ◆ Deepwater Horizon – need for specialised capability and sustained resources
  - ◆ INS Sindhurakshak – complex salvage and successful recovery through global expertise
  - ◆ Legacy wrecks along Indian coasts – delays, environmental risks, and lack of closure
- The Indian framework currently operates under multiple laws and authorities:
  - ◆ Disaster Management Act, Indian Ports Act (1908), Inland Vessels Act (1917), IPC (1860), Environment Protection Act (1986)
  - ◆ Multiple ministries and state agencies leading to fragmentation and diffusion of accountability
- Alignment with global frameworks remains limited, including:
  - ◆ Nairobi Wreck Removal Convention

- ◆ IG P&I insurance structures
- ◆ Integration of ETVs and Vessel Traffic Services (VTS)
- Contractual frameworks remain a critical gap:
  - ◆ International standards (BIMCO, LOF, SCOPIC) provide clarity and balance
  - ◆ Existing government contracts in India are often one-sided, unclear, and not aligned with global practices
- Stakeholder discussions highlighted the need for simplified, standardised, and pre-approved contractual mechanisms for use during emergencies
- Overall, India possesses significant capability, but lacks structured systems, regulatory clarity, and alignment with global best practices

## RECOMMENDATIONS AND SUGGESTIONS

- Adopt standardised contractual frameworks (BIMCO, LOF, SCOPIC-based structures)
- Develop simplified, pre-approved emergency contract templates for rapid deployment
- Clearly define and empower a single custodian authority
- Ensure availability and accessibility of response resources at key maritime hubs
- Streamline multi-agency coordination mechanisms to minimise delays
- Reform existing government contracts to align with international best practices
- Initiate a national programme for wreck removal and legacy case resolution
- Strengthen technical training, institutional capacity, and professional expertise
- Promote continuous stakeholder engagement and consultation
- Prioritise public safety, environmental protection, and operational efficiency

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

- Opportunity to establish a centralised custodian authority for maritime emergencies
- Strengthening of regulatory frameworks aligned with international standards
- Enhancement of accountability across shipowners, operators, and insurers
- Implementation of mandatory and practical Vessel Response Plans (VRPs)
- Improved federal coordination between central and state authorities
- Leveraging existing institutional strengths (Indian Coast Guard, DG Shipping, ports)
- Expansion of training, capacity-building, and technical expertise development
- Development of a structured framework for wreck removal and environmental management
- Positioning India as a globally competitive maritime emergency response jurisdiction

## WAY FORWARD

- Establish a Unified Command Structure with clearly defined authority and accountability
- Develop and implement operationally viable, well-resourced response plans (VRPs)
- Invest in critical infrastructure, including ETVs, salvage equipment, and disposal facilities
- Create integrated waste management and disposal chains across major ports
- Adopt and operationalise international conventions and best practices
- Strengthen insurance, liability, and compensation frameworks
- Institutionalise training programmes, simulation exercises, and drills
- Introduce specialised roles, including salvage liaison officers and technical coordinators
- Ensure predictability, transparency, and efficiency in regulatory processes

## MISSING LINKS IDENTIFIED

- Absence of a clearly defined and empowered custodian authority
- Fragmented governance due to involvement of multiple ministries and agencies
- Lack of a unified incident command and control structure
- Limited availability of critical response resources, including ETVs and salvage assets
- Inadequate waste disposal infrastructure and hazardous material management systems
- Partial or limited alignment with international conventions and frameworks
- Presence of numerous legacy wrecks without structured removal strategies
- Non-standardised and imbalanced contractual frameworks
- Gaps in training, capacity building, and technical expertise
- Misalignment between administrative processes and operational realities

## KEY TAKEAWAYS

- Maritime emergency response in South Asia is constrained less by capability and more by fragmented coordination, infrastructure limitations, and the absence of standardized operational protocols.
- Effective salvage operations rely on rapid access to global networks of tugs, equipment, and specialised expertise—no single entity can operate independently in high-risk scenarios.
- Incidents such as Marine Honour and MV Wan Hai 503 illustrate how even seemingly contained situations can escalate rapidly, demanding sustained, large-scale, and multi-agency responses.
- The Indian Coast Guard remains central to operational response; however, the establishment of a clearly defined national custodial authority and unified command structure is critical for efficiency.
- Availability of critical assets - including Emergency Towing Vessels, marine firefighting systems, and pollution response equipment - is essential for timely and effective intervention.
- The absence of designated ports of refuge and limited hazardous waste disposal infrastructure continues to pose significant operational challenges.
- Adoption of internationally recognized contractual frameworks such as LOF and BIMCO agreements is essential to ensure swift mobilisation and reduce financial and legal uncertainties.
- Multi-agency coordination gaps, regulatory delays, and cabotage-related constraints can significantly hinder response timelines during emergencies.
- Preparedness must transition from a reactive approach to a structured, system-driven model supported by regular training, simulations, and capacity building.
- India holds strong potential to emerge as a regional leader in maritime emergency response, provided institutional frameworks are strengthened and aligned with global best practices.
- The evolving risk landscape extends beyond oil spills to include container fires, hazardous and noxious substances (HNS), and complex, long-duration salvage operations.
- The effectiveness of emergency response is often measured by disasters prevented rather than incidents observed—making preparedness a critical yet understated success factor.

## CONCLUSION

- Session 4 highlighted the complex and high-stakes nature of emergency response and salvage operations in South Asia. While the region possesses growing technical expertise and operational capability, the effectiveness of response continues to be constrained by fragmented institutional frameworks, infrastructure gaps, and the absence of streamlined systems.
- Insights from real-world incidents reinforced that maritime casualties can escalate rapidly, requiring immediate, coordinated, and resource-intensive interventions. Successful outcomes depend not only on specialised equipment and technical proficiency, but equally on timely decision-making, institutional clarity, and seamless coordination among government agencies, ports, insurers, and salvage operators.
- The discussions underscored the urgent need for India to adopt a structured and proactive approach to maritime emergency management. Key priorities include establishing a clear custodial authority, strengthening unified command mechanisms, ensuring the availability of critical response assets, and developing robust frameworks for ports of refuge and hazardous waste disposal. Alignment with internationally accepted contractual and operational standards will further enable rapid mobilisation and reduce uncertainty during crises.
- At a regional level, increasing maritime traffic and evolving risk profiles necessitate greater interoperability and cooperation among South Asian nations. India, given its strategic position and institutional capabilities, is well placed to lead the development of a coordinated regional response architecture supported by strong public-private partnerships.
- In conclusion, while maritime incidents are inevitable, their impact can be significantly mitigated through preparedness, coordination, and professionalism. Building a resilient emergency and salvage ecosystem will require sustained policy focus, infrastructure investment, and continuous collaboration among national and international stakeholders to ensure safe, efficient, and environmentally responsible maritime operations.

## Panel Discussion: Developing Indian Salvage Infrastructure – Tugs, Yards, and Regional Centers



**Capt. Ashok Mahapatra**, former Nautical Surveyor and later Nautical Adviser to the Government of India, who also served as Director in the Maritime Safety Division at the IMO before retiring and establishing his consultancy in January 2018, introduced the panel comprising Capt. Aditya Gaur of Ocean Sparkle Ltd., Capt. Sachin Srivastava of Adani Karaikal Port, and Mr. Vinit Badani of Polestar Maritime Services Ltd.

He opened the discussion by emphasizing the critical importance of salvage infrastructure not only for ports but for India's wider maritime ecosystem, including assets operating within and beyond the Exclusive Economic Zone (EEZ).

**Capt. Aditya Gaur** responded that although the discussion came at a late stage of the symposium, it addressed a vital operational gap. He noted that Ocean Sparkle operates a fleet of approximately 113 tugs across India and that towage providers frequently serve as first responders and key operational partners to salvors, carrying significant responsibility and accountability.

He explained that in most distress situations, towage operators are among the first to be contacted by vessels or stakeholders. However, he raised concerns about whether available resources can always be mobilized at the required moment. He cautioned that deploying inadequately prepared assets in emergencies is akin to sending "a paramedic into an ICU without protection."

He acknowledged that there is no definitive clarity on whether existing infrastructure is sufficient. Without assured availability of response assets, he noted, it becomes difficult to establish the trust and confidence required for salvage operations, which must be grounded in safety, security, and sustainability rather than ad hoc or opportunistic interventions.

He further stated that discussions around Emergency Towing Vessel (ETV) frameworks have exposed significant gaps in legal, commercial, and financial structures. While assets may physically reach casualties within hours, tug masters on site often face confusion regarding command and authority despite the presence of the Navy or Coast Guard, resulting in procedural bottlenecks.

He stressed that although legislation exists, operational clarity during critical moments remains inadequate, and then handed the discussion back to the moderator.

**Capt. Sachin Srivastava**, drawing on over fourteen years of experience with the Adani Group across fifteen ports and five terminals, highlighted that upcoming legislation expected in January 2026 requires careful alignment with maritime stakeholders.

He emphasized that ports of refuge are not a new concept in India and cited operational precedents.

Gulf of Kutch Incident (Atlantic Grace and Aviator)

**He described a collision in the Gulf of Kutch involving Atlantic Grace and Aviator, where:**

- An ocean-going tug was dispatched from Mundra within hours
  - Required approvals were obtained from the Mercantile Marine Department (MMD)
  - The Coast Guard provided operational support
  - The vessel was safely brought into port and subsequently repaired
- Karaikal Port Incident (Vessel 1503)

**He also referenced an incident involving vessel 1503 at Karaikal Port, where:**

- The absence of a predefined SOP initially created operational challenges
- The port subsequently developed a structured response procedure
- Key stakeholders were identified, including customs, pollution control authorities, immigration, marine police, and fishing communities

He further noted that while pollution risk remains a significant concern, coordinated approvals and documentation—including MSDS and cargo declarations - can improve preparedness. However, he also observed that limited confidence among shipowners in Indian processes sometimes discourages vessels from seeking refuge.

He welcomed the ongoing efforts of the Directorate General of Shipping to address these gaps and expressed optimism that broader stakeholder engagement would improve trust and operational outcomes.

**Mr. Vinit Badani** questioned why adequate salvage infrastructure has not yet developed in India, attributing this primarily to the absence of a clear regulatory framework and limited commercial viability.

He observed that non-maritime stakeholders often expect immediate salvage response, whereas in reality asset mobilisation may take days. During this period, contradictory instructions and the absence of a single command authority can significantly complicate operations.

He noted that while the Emergency Towing Vessel (ETV) policy and DG Shipping-led SOP initiatives have improved coordination, they are not yet fully institutionalized. This has led to operational confusion, including instances where tugs followed conflicting instructions and were forced to return to port.

**He further highlighted persistent structural challenges:**

- Funding limitations
- Crew availability constraints
- Seasonal concentration of incidents, particularly in May
- Difficulty in asset sharing during peak casualty periods
- Underutilization of assets during low-demand periods

**Capt. Mahapatra** agreed that investment in salvage infrastructure is dependent on assured returns and emphasized the economic realities governing such investments. He also highlighted the absence of key stakeholders such as customs and immigration in emergency preparedness discussions.

**Capt. Gaur** reiterated that time is the most critical factor in salvage operations. He noted that despite improved inter-agency engagement involving more than thirty entities, boarding of crew onto emergency towing vessels can still take up to 48 hours due to procedural approvals.

He questioned whether such delays are due to procedural gaps, lack of intent, or missing operational standards. He further emphasized that operators such as Ocean Sparkle and Adani Ports prioritize immediate assistance decisions over commercial or legal formalities, which can be addressed subsequently. The highlight was Government Role, Time Sensitivity, and Operational Priorities.

**SOP Standardization, Funding Models, and Global Alignment**

**Mr. Badani** stressed the need for a formalized SOP framework aligned with international standards such as the Oil Pollution Act (OPA). He also called for structured funding mechanisms for salvage equipment beyond tugs, many of which are currently sourced from abroad.

He raised concerns regarding “dark fleet” and uninsured vessels operating in Indian waters, arguing that stronger government-led SOPs and funding mechanisms are necessary to address these risks.

Capt. Gaur traced the evolution of India’s ETV concept to around 2011 and compared global approaches in the US, UK, Germany, and Turkey. He noted that India initially explored state-owned ETV models but later shifted to a tender-based approach due to cost considerations.

He highlighted the US Coast Guard system as a benchmark, where a single emergency call triggers immediate coordinated response, and suggested that India may need a hybrid model combining state-owned assets with a unified national response framework.

Capt. Srivastava emphasized the need for clearly defined hierarchies, standardized SOPs, and a strong leadership role for the Coast Guard as the primary first responder. He stressed that all stakeholders must operate on a unified platform to ensure safety, particularly for salvors operating in high-risk environments.

Mr. Badani added that India should not merely replicate global systems but should aim to leapfrog them through the adoption of emerging technologies such as drones and advanced monitoring systems. He suggested that the Coast Guard could evolve from an operational role into a supervisory and coordination-focused authority.

Capt. Mahapatra highlighted deeper institutional challenges, including inter-ministerial turf protection and fragmented authority structures. He argued that maritime emergencies should be treated as national disaster situations requiring a unified response mechanism and a fundamental shift in institutional mindset.

He further proposed that India could lead the development of an international convention on salvage and oil spill response under the International Maritime Organization (IMO). He emphasized that such an initiative would require direction from the Prime Minister's Office rather than being limited to the shipping ministry.

He added that a global framework would enable sustainable retainer-based salvage vessels, allowing long-term investment in equipment, training, and manpower. He also urged India, as a leading Global South maritime nation, to take a leadership role in proposing a new IMO work programme item.

The discussion further acknowledged that salvage responders already possess operational systems under existing frameworks. However, international obligations are necessary to ensure that shipowners bear response costs through regulatory mechanisms rather than voluntary compliance.

#### **During the Q&A session:**

- Capt. Vivek Bhandarkar called for strong political leadership and single-point coordination
- Capt. Mahapatra responded that governance must be principle-based and collective rather than dependent on individual entities, reiterating the need for an IMO-backed international convention with audit mechanisms
- Mr. Bas Wiebe cautioned against over-engineering solutions and advocated parallel implementation strategies, citing Australia's MECO/MARCOM model as an effective distributed towing system

Capt. Mahapatra acknowledged the value of this approach while emphasizing that both national and international implementation must proceed simultaneously.

An Indian Coast Guard officer from the audience shared insights into the origins of India's ETV initiative following grounding incidents in 2006. He described his involvement in early deployments and noted recent DG Shipping policies mandating high-capacity tugs at ports, while raising concerns regarding funding responsibility.

He cited successful operational responses to the Aviator–Grace Mary collision and the Pratibha Cauvery grounding, demonstrating that systems can function effectively when supported by regulatory intent and coordination.

In response, Capt. Mahapatra stressed that reliance on individual goodwill or ad hoc arrangements is not sustainable and that uniform, institutionalized processes are essential.

**Capt. L. K. Panda** highlighted Gujarat's inland water regulations, which mandate salvage tie-ups for vessels entering the Gulf of Kutch. He noted that salvage infrastructure is already emerging in certain regions, although resistance persists among ports regarding funding contingency preparedness.

He also observed that India's position as a major oil importer increases systemic risk exposure, making such frameworks increasingly essential.

Another participant highlighted DG Shipping's recent multi-agency coordination mechanisms involving daily calls and structured reporting. He cautioned that such systems must be institutionalized rather than dependent on individual initiative or private sector leadership.

Capt. Philip Matthews proposed the establishment of a maritime think tank under organizations such as the Samudra Manthan Foundation and the Company of Master Mariners of India, aimed at sustaining policy dialogue and engagement with government institutions.

Capt. Mahapatra reiterated that while domestic systems must be strengthened immediately, effective coordination will ultimately require high-level policy direction and institutional alignment from the central government.

Capt. Aditya Gaur concluded the discussion by invoking a Sanskrit shloka emphasizing that intent, effort, and execution together determine outcomes, underscoring that the foundation for collective maritime action has already been firmly established.

# WHITE PAPER

## **Panel Discussion Developing Indian Salvage Infrastructure – Tugs, Yards, and Regional Centers**



# White Paper

## DELIBERATIONS

- The session highlighted the importance of aligning India's domestic maritime framework with global institutions, including IMO, IOPC Funds, ITOPF, and OPRC, to ensure consistent and enforceable regulations.
- Capt. Ashok Mahapatra emphasized that international conventions, such as MARPOL, require formal incorporation into national law to acquire legal force; delays in domestication can create enforcement gaps.
- Dr. Annabelle Nicolas-Kopec underscored operational challenges in spill response, including cooperation, timely decision-making, expertise gaps, and legislative preparedness, particularly for hazardous and noxious substances (HNS) and plastics.
- Legal complexities were discussed by Adv. Aditya Krishanmurthy, distinguishing between traditional salvage rewards and pollution-prevention compensation, while stressing enforcement, clarity in entitlement, and rapid adjudication to avoid delays.

## RECOMMENDATIONS AND SUGGESTIONS

- Streamline domestic incorporation of international conventions to ensure immediate enforceability and clear liability provisions.
- Enhance multi-agency coordination across ports, coast guards, customs, police, and scientific bodies with standardized communication protocols.
- Develop expertise and training for emerging pollutant types, alternative fuels, and complex cargoes through workshops, joint exercises, and regional collaboration.
- Introduce clear legislative and regulatory definitions for salvage rewards, pollution-prevention compensation, and first-responder recognition to avoid disputes.

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

- Streamline domestic incorporation of international conventions to ensure immediate enforceability and clear liability provisions.
- Enhance multi-agency coordination across ports, coast guards, customs, police, and scientific bodies with standardized communication protocols.
- Develop expertise and training for emerging pollutant types, alternative fuels, and complex cargoes through workshops, joint exercises, and regional collaboration.
- Introduce clear legislative and regulatory definitions for salvage rewards, pollution-prevention compensation, and first-responder recognition to avoid disputes.

## WAY FORWARD

- Operationalize India's Merchant Shipping Act 2025 provisions to codify international conventions and empower DG Shipping to adjudicate disputes efficiently.
- Update the National Oil Spill Disaster Contingency Plan to incorporate HNS response, plastics, and new cargo types, aligned with OPRC principles.
- Maintain proactive monitoring of IMO convention amendments, tacit acceptance procedures, and evolving environmental regulations to ensure compliance and readiness.
- Expand regional cooperation through India's leadership in South Asian maritime emergency exercises, risk assessment, and capacity-building programs.

## MISSING LINKS IDENTIFIED

- India has demonstrated capacity and readiness to emerge as a regional leader in salvage and emergency response, leveraging institutional expertise and international best practices.
- Implementation of clear legal frameworks, standard operating procedures, and commercial protocols will enhance operational certainty and investor confidence in domestic salvage enterprises.
- Government-led initiatives in port facilitation, inter-agency coordination, and regulatory clarity position India to handle complex maritime casualties efficiently, reduce environmental impact, and safeguard livelihoods.
- Strengthened regional engagement under BIMSTEC, IORA, and South Asian cooperation frameworks enhances India's leadership role, enabling cross-border assistance during major maritime incidents.

## KEY TAKEAWAYS

- Hardware alone is insufficient; governance and coordination are the real enablers
- Time is the most critical factor, and current procedural delays undermine response effectiveness
- Unified command and clear authority are essential during emergencies
- Financial sustainability is key to attracting private investment
- Trust deficit among shipowners must be addressed through reliable systems
- India must move from ad hoc responses to institutionalized frameworks
- Global leadership opportunity exists for India in shaping international salvage regulations

## CONCLUSION

- India's maritime salvage preparedness is at a pivotal stage, where existing capabilities must be supported by a unified institutional and operational framework. The discussions highlighted that infrastructure alone is insufficient without clear command authority, streamlined coordination, and sustainable financial models.
- Moving forward, establishing a single-point command structure, institutionalizing SOPs, and strengthening public-private partnerships will be critical to ensuring timely and effective emergency response. With the right policy direction and stakeholder alignment, India has the potential to build a resilient, globally benchmarked salvage ecosystem and emerge as a leader in maritime emergency response.

# SESSION 5 - P&I and Liability – Decoding the Financial and Legal Backbone of Spill Response

Session 5 on P&I and Liability, moderated by Adv. Pankaj Kapoor, provided a detailed examination of the financial, contractual, and legal architecture that underpins modern maritime casualty response. The panel brought together Adv. Aditya Krishnamurthy, Partner at Bose & Mitra, Ms. Leena Mody, Average Adjuster, Leena Mody and Associates, Mr. Neale Rodrigues, Group Director – Insurance Services at TMC Marine Consultants Ltd, and Capt. Amol Deshmukh of Aeghiscorp Maritime. Collectively, they unpacked the complex interplay between compensation mechanisms, liability allocation, insurance triggers, and the growing importance of documentation discipline, digital reporting, and regulatory compliance. The discussion consistently returned to the need for clearer liability frameworks, faster claims resolution pathways, and stronger coordination between shipowners, insurers, salvors, and public authorities.

Capt. Pankaj Kapoor opened the session with a compelling fictitious case study centered on an imagined vessel, Fortunate Star. He described how the ship, en route from China to India, encountered a cascading emergency just 25 miles off Colombo first a fire, followed by an oil spill, and ultimately resulting in a wreck. He emphasized that within moments, such an incident triggers a highly complex chain of events, activating multiple jurisdictions, legal regimes, conventions, and contractual obligations simultaneously.

He explained that a casualty of this nature immediately brings into play a wide spectrum of international frameworks, including those related to environmental protection, oil pollution, salvage, the Civil Liability Convention (CLC), and both P&I and H&M insurance regimes. At the same time, he reminded the audience that every vessel at sea operates within numerous overlapping commercial arrangements ranging from employment contracts and charter parties to cargo agreements and layered insurance structures often spanning different nationalities, flags, and legal systems.

When an incident occurs, all of these elements converge at once, creating a dense web of interlinked responsibilities, liabilities, and claims. Against this backdrop, Capt. Kapoor invited Capt. Amol Deshmukh to take the discussion forward, using the Fortunate Star scenario to unpack the financial, legal, and operational complexities that arise in such maritime casualties.



**Moderator: Adv. Pankaj Kapoor,**  
Mg. Partner, Quadraant Legal



**Capt. Deshmukh focused on the fundamental principle that the viability of any salvage response depends on financial certainty. He noted that in every major casualty, the immediate operational question is not only what must be done, but who will fund the response. While multiple stakeholders exist, insurers ultimately form the financial backbone of maritime casualty response due to their capacity to absorb large-scale liabilities, including salvage costs, pollution mitigation, wreck removal, and compensation to affected coastal communities and authorities.**

Capt. Deshmukh introduced the financial dimension of salvage operations by stressing that the viability of any response ultimately depends on who pays and when. He noted that salvage is not sustainable unless the financial pathways are clear, and therefore, in every major maritime incident, the first question that arises is about funding. According to him, while many stakeholders are involved, the industry invariably looks toward insurance companies, as they are the only entities with the financial depth to settle the wide spectrum of liabilities from salvor costs and coastal clean-up to compensation for fishermen, state agencies, and other affected parties.

He explained that confusion frequently arises because different insurances activate at different stages of a casualty. This leads to overlapping domains, uncertainty, and delays, particularly when responders approach the wrong insurer or when insurers remain silent until the correct liability is triggered. To demystify this, he focused on distinguishing the two principal insurances on the vessel's side: Hull and Machinery (H&M) and Protection and Indemnity (P&I).

Using the fictitious Fortunate Star scenario, he broke the chain of events into three stages fire, oil spill, and wreck to illustrate which insurer takes charge at each point. He clarified that during a fire or explosion, H&M insurers are responsible because they cover physical damage to the vessel. Their mandate includes supporting efforts to save the ship, contracting salvors, funding repairs, and taking all reasonable measures to minimise loss.

He added that when pollution risk emerges either actual oil spill or imminent threat P&I and H&M overlap. While H&M may still oversee the salvage attempt, P&I begins covering preventive measures, pollution liabilities, and environmental damage. He highlighted that in collisions, the sharing of liabilities between H&M and P&I can become even more complex.

Finally, when a ship becomes a wreck, he stated that the responsibility shifts decisively to P&I. At this stage, the vessel is no longer treated as property to be saved. Once the H&M insurer declares a total loss and the owner issues a notice of abandonment, P&I assumes responsibility for wreck marking, wreck removal, environmental protection, and third-party liabilities. This includes everything from beach clean-ups and fisheries compensation to the wider socio-economic impacts on coastal communities.

He summarized by stating that H&M covers damage to the ship itself, the cost of saving it, and its insured value if lost, while P&I covers pollution, liabilities, cleanup costs, and wreck removal. He concluded by reminding the audience that in every major casualty, "somebody has to pay," and that understanding these insurance triggers is essential for authorities, salvors, and maritime responders to work efficiently and without avoidable delays.



**Capt. Amol R. Deshmukh,  
Head-Marine Claims & Insurance,  
Aeghiscorp Maritime Venture LLP**



**Expanding on the operational dimension, Capt. Neale Rodrigues drew attention to the unpredictable and rapidly evolving nature of maritime casualties. With over three decades of experience ashore and fourteen years at sea, including extensive involvement in P&I operations, he described casualty management as the controlled handling of chaos, where decisions must be made under pressure with incomplete information. He referenced the U.S. Navy Salvage Engineers' Handbook, which characterises salvage as a discipline built on uncertain data, imperfect tools, and rapidly changing conditions, executed by professionals trained to operate under extreme stress.**

Capt. Neale Rodrigues expanded the discussion by focusing on the practical realities of casualty management, drawing on more than three decades of shore-based experience and 14 years at sea, including extensive involvement in P&I operations. He began by highlighting a fundamental truth of maritime emergencies: casualties occur suddenly, often without warning, and once initiated, they evolve rapidly and unpredictably. In this context, casualty management becomes an exercise in controlling chaos where decisions must be made under pressure, with incomplete information and continuously changing conditions.

To underscore the inherent complexity of salvage work, he referenced the U.S. Navy Salvage Engineers' Handbook, which characterizes salvage as a science built on "vague assumptions, debatable figures, inconclusive instruments, and equipment of questionable accuracy," carried out by individuals willing to confront significant risk. This, he noted, captures why salvage demands both technical expertise and a distinct operational mindset.

He then illustrated these challenges through real-world cases. The MV Rena, which grounded on a reef in 2011, demonstrated how a casualty can be instantaneous in impact yet prolonged in resolution, with recovery efforts extending over months and ultimately leading to structural failure and cargo loss. He also highlighted the growing environmental threat posed by plastic nurdles once underestimated but now recognized as a persistent pollutant drawing parallels with incidents such as X-Press Pearl and Wan Hai 503.

Capt. Rodrigues emphasized that even well-developed contingency plans cannot fully anticipate variables such as sudden weather changes, cyclones, delayed tug availability, or misdeclared cargo. The response to Wan Hai 503, he noted, underscored the advantage of having Coast Guard resources nearby an advantage not always available in remote maritime incidents.

A key principle he stressed was "prudent overreaction": the need to act early, respond decisively, and deploy resources before the full scope of the situation is known, while ensuring that the right expertise is engaged promptly. However, this approach inevitably raises questions of financial security, as initial response efforts are limited to what is considered "reasonable" until insurers and shipowners formally commit to covering the escalating costs.

He also addressed the external pressures surrounding major casualties, including intense media scrutiny, public perception, misinformation, and competing stakeholder interests. Managing these dynamics requires disciplined project management, thorough documentation, rigorous risk assessment, and the flexibility to adapt to rapidly changing circumstances.

To illustrate the prolonged and uncertain nature of salvage operations, he cited cases such as the MT Stolt Valor, which faced repeated port refusals before eventually securing a discharge location, and the Kea Trader, whose salvage extended over four years due to remoteness, weather constraints, and technical challenges.

He concluded by highlighting the critical role of the Special Casualty Representative (SCR), a neutral expert appointed under Lloyd's Open Form. The SCR serves as a central coordinating figure in complex salvage operations, ensuring transparency, impartial oversight, accurate documentation, and accountability among all stakeholders, including owners, salvors, insurers, and authorities. This role is essential in minimizing disputes and maintaining trust throughout the process.

Capt. Pankaj Kapoor closed the session by noting that while maritime casualty management is inherently complex, it remains manageable when supported by robust planning, clear communication, mutual respect, and genuine collaboration among all involved parties.

At the foundation of this framework lies the Special Compensation P&I Club (SCOPIC) clause, which provides an alternative compensation mechanism to ensure that salvors are fairly remunerated, even when salvage efforts do not result in a successful recovery of property. It was noted that its practical application would be explored in greater detail by the next speaker, Ms. Leena Mody, setting the stage for the continuation of the panel.



**Neale Rodrigues,  
Group Director, TMC**

**Adv. Leena Mody traced the historical development of salvage remuneration from early voluntary rescue traditions, where payment was based on a percentage of saved property value, through the establishment of Lloyd's Open Form, which introduced standardized arbitration-based remuneration under the "no cure, no pay" principle. She explained that while this system worked in principle, it created significant gaps in cases involving environmental risk, where salvors might incur substantial costs without corresponding property value recovery.**

Adv. Leena Mody guided the audience through the historical evolution of salvage remuneration before situating LOF and SCOPIIC within the modern legal regime. She began by emphasizing that salvage law has always evolved in response to changing maritime realities. In earlier times, salvage was largely voluntary, with responders compensated based on a percentage of the value of property saved; insurance structures developed only later. With the rise of contractual salvage in the late 19th and early 20th centuries, Lloyd's introduced the standardized Lloyd's Open Form (LOF), under which remuneration remained "open" and was determined subsequently through arbitration or court proceedings. The Brussels Convention later formalized the "no-cure, no-pay" principle, meaning salvors were rewarded only if the salvage was successful.

However, these frameworks left salvors exposed in high-risk situations where preventing environmental damage particularly pollution required significant effort despite little or no recoverable property value. To address this imbalance, several corrective mechanisms were introduced over time. The 1980 LOF "safety net" provided reimbursement of expenses plus a 15% uplift for pollution prevention in oil tanker cases, shared between hull underwriters and P&I clubs, though it proved limited in scope. The 1989 Salvage Convention expanded the criteria for determining salvage awards taking into account factors such as the value of property, degree of danger, level of success, risks undertaken, and equipment deployed while also recognizing environmental protection efforts. Crucially, Article 14 introduced the concept of "special compensation," allowing salvors to recover costs incurred in preventing or minimizing pollution, even when no traditional salvage award was payable.

Yet, even Article 14 fell short in certain scenarios, leading to the development of SCOPIIC, which was incorporated into LOF contracts from 1999/2000 onward. Adv. Mody explained that SCOPIIC must be expressly included in the LOF and then formally invoked in writing by the salvor; it does not apply automatically. Once invoked, the salvor's entitlement continues to be assessed under traditional Article 13 principles, but SCOPIIC operates as a fallback mechanism offering a more predictable and structured compensation regime for pollution mitigation efforts when conventional salvage awards are unlikely.

She emphasized that salvors may choose to invoke SCOPIIC when the prospects of earning a traditional award diminish, particularly where the value of the ship or cargo is negligible, but substantial resources are still required to prevent environmental harm. Although complex in operation, SCOPIIC plays a critical role in incentivizing high-risk, environmentally focused salvage operations that are increasingly central to modern maritime incidents.

Her presentation stood out for its interactive and engaging style, using questions, quick polls, and audience prompts to demystify complex legal concepts and make the discussion both accessible and intellectually stimulating.

Capt. Pankaj Kapoor thanked Adv. Mody for simplifying one of the most intricate aspects of salvage law the incorporation and invocation of SCOPIIC and noted her ability to break down even the most challenging provisions with clarity. He then returned to a fundamental concept raised earlier by Capt. Amol Deshmukh: that "danger" lies at the heart of any salvage claim.

To illustrate this, he recounted a real incident involving the fully laden vessel Cleopatra Dream, which experienced a sudden steering failure while still within pilotage limits in a narrow channel. With the vessel unable to manoeuvre, the pilot quickly called back the tugs that had just completed unberthing operations. Within minutes, the tugs secured the vessel and towed it to safety, preventing a potentially serious casualty.

Capt. Kapoor then posed a thought-provoking question to the audience: would those tugs be entitled to salvage remuneration?

He linked this to an earlier question whether a master who orders abandonment must be the last to leave the ship encouraging participants to reflect on both legal and ethical dimensions.

Capt Pankaj introduced Adv. Aditya Krishnamurthy, from one of the country's most respected maritime law firms, to continue the discussion.



**Leena Mody,  
Average Adjuster,  
Leena Mody & Associates,**

**Adv. Aditya Krishnamurthy then addressed the legal framework governing liability and compensation, focusing particularly on direct action rights against Protection and Indemnity insurers. He highlighted that modern maritime operations often involve single-ship companies under flags of convenience, making it difficult to enforce large-scale claims directly against owners. As a result, compulsory insurance regimes such as the Civil Liability Convention and Bunker Convention become essential in ensuring compensation availability.**

Adv. Aditya Krishnamurthy focused on the rights of third parties to initiate direct action against P&I insurers an issue that has gained renewed attention following the MSC Elsa 3 incident, in which the Kerala government raised claims exceeding ₹9,000 crore. He explained that most shipping companies operate through single-ship entities under flags of convenience, and only in exceptional cases do courts pierce the corporate veil to hold group entities liable. This makes compulsory insurance indispensable, as catastrophic maritime claims require access to substantial financial resources. Conventions such as the Civil Liability Convention (CLC), he noted, establish layered compensation systems that allow claimants to progress from shipowner liability limits to international compensation funds where applicable.

He elaborated that in cases involving pollution, bunker spills, or wreck removal, international conventions mandate compulsory third-party liability insurance and provide claimants with a legally recognized right to proceed directly against P&I clubs or other security providers if the shipowner is unavailable. However, he stressed that limitation of liability remains a cornerstone of this system no insurer accepts unlimited exposure. Under established frameworks, shipowners and salvors may limit liability based on vessel tonnage, a principle now formally recognized in India through the updated Merchant Shipping Act. This legislation incorporates key international instruments previously absent from the 1958 Act, including the Bunker Pollution Convention, the Nairobi Wreck Removal Convention, and the Salvage Convention.

Adv. Krishnamurthy observed that India's major pollution incidents in recent decades have largely arisen not from laden tankers but from bunker spills and cargo releases, making the Bunker Convention particularly significant. He highlighted that the convention broadens the definition of "shipowner" to include managers and operators, thereby expanding the scope of liability. He also explained the constitution of limitation funds under the 1976 LLMC and its subsequent amendments, including the enhanced limits introduced by the 2013 Protocol.

He emphasized that both public authorities and private claimants - including fishermen - can bring direct claims against P&I clubs. This approach proved effective in cases such as MT Dawn Kanchipuram and LPG Carrier BW Maple, where coordinated efforts between maritime authorities, the Tamil Nadu government, and P&I clubs resulted in a ₹240-crore settlement. Of this, ₹140 crore was deposited before the court and subsequently distributed by the National Green Tribunal to over 9,000 affected fishermen in the Ennore region.

Turning to evolving jurisprudence, he referred to the NGT's order in the MV Rock Carrier matter, where the shipowner was directed to pay ₹100 crore, and the applicability of the P&I club's liability under the "pay-to-be-paid" rule was examined, though the final outcome remains uncertain. He also discussed interim developments in the MSC Elsa case, where the Kerala High Court permitted the release of a sister vessel upon securing ₹1,300 crore against a ₹9,000-crore claim. While not determinative of final liability, the order outlined the categories of environmental damage under consideration. He expressed the view that, once adequate security estimated at around ₹1,400 crore is furnished, the parties may move toward negotiated settlement rather than prolonged litigation.

He also recalled the container collision off Jawaharlal Nehru Port Authority (JNPA), where the Maharashtra government constituted an expert committee to assess compensation for fishermen and vessel owners, though the matter remains unresolved. Concluding his remarks, he suggested that the new Merchant Shipping Act could be strengthened by empowering the Directorate General of Shipping, or a similar authority, to act as a mediator in such disputes, enabling faster and more structured resolutions.

Capt. Pankaj Kapoor closed the session by noting that the panel had successfully navigated technical challenges while keeping the audience engaged. He highlighted Adv. Krishnamurthy's explanation of strict liability regimes under the CLC and Bunker Convention, which uniquely allow claimants to proceed directly against insurers without needing to establish the shipowner's solvency or identity. He observed that these legal frameworks become effective only when practitioners are able to integrate operational, contractual, insurance, and regulatory elements into a coherent response.



**Adv Aditya Krishnamurthy,**  
Partner, Bose and Mitra

Reflecting on the session as a whole, Capt. Kapoor remarked that it had vividly illustrated the real-world complexity and urgency of maritime casualty management. From operational challenges and SCOPIC mechanisms to legal enforcement and compensation frameworks, the discussion underscored that shipping is a continuous, 24-hour industry requiring constant readiness.

Before concluding, he revisited two deliberately provocative questions posed earlier: whether a master must always be the last to abandon a vessel, and whether the tugs involved in the Cleopatra Dream incident were entitled to salvage remuneration. In the discussion that followed, an audience member argued that the tugs were performing statutory port duties under pilotage and therefore not entitled to salvage. Capt. Kapoor agreed, clarifying that while salvage is broadly defined as assistance to property in danger, the existence of a pre-existing contractual or statutory obligation precludes a separate salvage claim in such circumstances.

A subsequent question addressed insurance coverage for salvors. Adv. Leena Mody explained that damage to salvors' equipment or craft during operations is considered within the framework of salvage remuneration under Article 13, rather than as a separate liability claim. Professional salvors typically maintain their own insurance, including charterers' liability cover, although complications may arise where non-specialist or improperly insured parties are involved. In such cases, primary liability rests with the engaging shipowner, with recovery mechanisms depending on contractual and insurance arrangements.

In a final observation, Mr. Bas Wiebe reflected on the future of the Lloyd's Open Form (LOF). While describing it as one of the most effective and balanced salvage contracts, he noted a sharp decline in its usage from over 200 cases annually in the late 1990s to around 20 today. He cautioned that this decline could erode industry familiarity and expertise over time, potentially weakening the effectiveness of an otherwise robust system.

Capt. Kapoor concluded by expressing the hope that the knowledge shared would remain largely theoretical, noting that while salvage operations are essential, they arise from situations of danger that all maritime professionals would prefer to avoid.



**SESSION 5**  
**P&I and Liability -**  
**Decoding the**  
**Financial and**  
**Legal Backbone of**  
**Spill Response**

## DELIBERATIONS

- The panel discussions highlighted the inherently complex and multi-layered nature of maritime casualty management, using the Fortunate Star scenario to demonstrate how a single incident can simultaneously trigger operational, legal, financial, and environmental responses across jurisdictions.
- A central theme was the interdependence of stakeholder's shipowners, salvors, insurers (H&M and P&I), governments, and affected communities. The discussions underscored that maritime casualties are not isolated operational failures but systemic events involving overlapping contracts, conventions, and liabilities.
- The financial dimension emerged as a critical driver. It was emphasized that salvage operations are only viable when funding mechanisms are clear, with insurance particularly P&I clubs serving as the backbone of compensation for pollution, wreck removal, and third-party claims.
- Operationally, casualty response was described as "managing chaos", requiring rapid decision-making under uncertainty. The concept of "prudent overreaction" early and decisive deployment of resources was identified as essential to minimizing long-term damage.
- From a legal standpoint, the evolution from "no-cure, no-pay" to SCOPIIC reflects a shift toward incentivizing environmental protection, even when property salvage is not economically viable. The increasing importance of direct action rights against insurers and limitation of liability regimes was also emphasized, particularly in large-scale pollution incidents.

## RECOMMENDATIONS AND SUGGESTIONS

### A. Operational Framework

- Establish pre-approved emergency response protocols with clearly defined insurer engagement triggers.
- Strengthen coastal response infrastructure, including availability of tugs and salvage equipment in high-risk zones.
- Promote joint training exercises involving Coast Guard, salvors, ports, and insurers.

### B. Legal & Regulatory

- Develop standardized national guidelines for invoking SCOPIIC and LOF to reduce hesitation and delays.
- Encourage wider adoption and awareness of international conventions (CLC, Bunker, Nairobi WRC, Salvage Convention).
- Clarify jurisdictional overlaps to streamline multi-agency response.

### C. Financial & Insurance

- Create fast-track financial security mechanisms to ensure immediate availability of funds during casualties.
- Improve awareness among authorities on insurance triggers to avoid misdirected claims.
- Encourage transparent communication protocols between insurers, salvors, and authorities.

### D. Capacity Building

- Build specialized expertise pools in salvage law, marine insurance, and casualty management.
- Introduce simulation-based training for maritime professionals and regulators.

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

The newly updated Merchant Shipping Act presents a significant opportunity for India to modernize its maritime legal framework. Key policy directions include:

- Institutional Mediation Mechanism: Empower the Directorate General of Shipping (DGS) or a designated authority to act as a mediator in maritime casualty claims.
- Dedicated Maritime Claims Tribunal / Fast-Track System: Reduce delays in compensation distribution, especially for vulnerable stakeholders like fishermen.
- National Maritime Emergency Fund Framework: Ensure immediate liquidity before insurance payouts are finalized.
- Strengthening Convention Implementation: Effective enforcement of Bunker Convention, Nairobi WRC, and Salvage Convention provisions.
- Environmental Risk Preparedness: Develop specialized protocols for emerging threats such as plastic nurdle pollution.
- Data & Incident Repository: Establish a national database of maritime casualties to inform policy and improve response strategies.

## WAY FORWARD

The discussions indicate a clear need for a more integrated and proactive maritime casualty response ecosystem. Future efforts should focus on:

- Moving from reactive to anticipatory response models
- Strengthening public-private coordination between government agencies and insurers
- Leveraging technology for real-time decision-making, including tracking, risk modelling, and environmental impact assessment
- Preserving and modernizing LOF and SCOPIC frameworks to ensure continued relevance
- Promoting early settlement mechanisms to reduce prolonged litigation and economic disruption

A shift toward collaborative governance, where operational, financial, and legal actors work in sync from the outset, will be critical.

## MISSING LINKS IDENTIFIED

The deliberations highlighted several critical gaps that continue to affect the efficiency and predictability of maritime casualty response and salvage operations:

### 1. Institutional and Coordination Gaps

- Absence of a unified command structure during multi-jurisdictional incidents
- Limited integration between operational agencies, legal authorities, and insurers
- Lack of a clearly designated neutral coordinating mechanism (e.g., structured SCR-like oversight in all major incidents)

### 2. Financial and Insurance Clarity Gaps

- Limited awareness among authorities and responders on the triggers between H&M and P&I insurance
- Delays in response due to uncertainty on funding responsibility in early stages
- Inadequate understanding and application of mechanisms such as LOF and SCOPIC

### 3. Legal and Contractual Gaps

- Declining use and familiarity with standardized global frameworks like LOF
- Lack of simplified, pre-approved contractual templates for rapid deployment during emergencies
- Limited institutional mechanisms for dispute resolution and mediation

### 4. Operational Preparedness Gaps

- Delays in mobilisation due to procedural approvals and logistical constraints
- Limited access to specialised equipment and trained personnel in the region
- Absence of structured port-of-refuge policies and coordinated decision-making

### 5. Capacity and Awareness Gaps

- Insufficient training of authorities and stakeholders on salvage principles and insurance frameworks
- Limited preparedness for emerging risks such as container fires, HNS cargo, and plastic pollution
- Inadequate public communication strategies to manage media and stakeholder pressure

## KEY TAKEAWAYS

- Maritime casualty response is fundamentally governed by insurance trigger logic and liability allocation structures.
- H&M insurance covers vessel damage and salvage during early stages, while P&I insurance governs pollution, wreck removal, and third-party liabilities.
- Effective casualty management depends on early intervention supported by clear financial backing.
- LOF and SCOPIC remain central to structured salvage remuneration in high-risk environments.
- SCR mechanisms enhance transparency, neutrality, and operational trust.
- Increasing complexity of cargo types, environmental risks, and geopolitical factors is expanding the scope of salvage operations.
- Real effectiveness lies not in the existence of legal frameworks, but in their coordinated, timely, and disciplined implementation.

## CONCLUSION

The session highlighted that maritime casualty management is a complex interplay of operational, legal, and financial elements requiring clear coordination and swift decision-making. Effective response depends on clarity of command, well-defined insurance triggers, and the use of established frameworks such as LOF and SCOPIC

## Panel Discussion: Regional Cooperation – India’s Role in Bay of Bengal & IORA Spill Response Plans



The final session of the symposium, moderated by Capt. L. K. Panda, focused on strengthening regional cooperation for marine pollution preparedness and spill response across the Bay of Bengal and the Indian Ocean Rim Association (IORA) region. It brought together senior officials from the Indian Coast Guard, international experts, and maritime professionals to discuss how India can play a stronger role in coordinated regional response systems. The discussion underlined that marine pollution incidents do not respect national borders and therefore require joint planning, shared resources, and closer cooperation between countries.

Capt. L. K. Panda opened the session by emphasizing that the discussions over the previous two days had consistently shown cooperation as the most important requirement in dealing with maritime emergencies. He noted that oil spills and hazardous cargo incidents can spread quickly and often outpace the ability of any single nation to respond effectively. He highlighted India’s strategic maritime location, with more than 50,000 vessels passing through nearby waters every year, many of them through environmentally sensitive areas.

He further explained that although India has designated the Indian Coast Guard as the central authority for marine pollution response, large-scale incidents still require support from neighboring countries. He pointed out that several countries in the Bay of Bengal and IORA region still have limited response capacity and uneven implementation of international conventions such as CLC, Fund Convention, and OPRC. He therefore stressed the need for stronger regional coordination mechanisms and invited the Indian Coast Guard to share its experience.

DIG S. K. Verghese explained that the Indian Coast Guard is legally responsible for coordinating marine pollution response in India. He traced the development of India’s system from the National Oil Spill Disaster Contingency Plan (NOSDCP) of 1993 to the current expanded version, NOS-HNSDCP, which includes hazardous and noxious substances and is regularly updated.

He described India’s structured response system, which includes specialized pollution response units on the west coast, east coast, and in the Andaman & Nicobar region. These units work with ports and oil-handling facilities to ensure preparedness, validate procedures, and maintain Tier-1 response capability.

He also highlighted India’s strong focus on regional cooperation. This includes OPRC training programs for countries across Asia, Africa, and the Indian Ocean region, as well as regular exercises with neighboring countries like Sri Lanka and Maldives. He mentioned India’s assistance in major incidents such as MV Wakashio, X-Press Pearl, and New Diamond, where Indian teams provided timely support.

He further noted that growing shipping traffic, especially container vessels and emerging transshipment hubs, is increasing regional risk. While cooperation exists, he emphasized the need for stronger legal and institutional frameworks to formalize regional spill response systems, with the Coast Guard potentially serving as a nodal agency.

Dr. Annabelle Nicolas-Kopec shared a global perspective, explaining that strong spill response systems are built over time through cooperation, trust, and continuous communication between countries. She stressed the importance of sharing information, expertise, and best practices to ensure effective response during emergencies.

She pointed out that one of the biggest global challenges is managing responsibility between offshore and coastal authorities during pollution incidents. She acknowledged India's evolving legal framework, including updates to the Merchant Shipping Act, and expressed interest in how different agencies will work together under a unified system.

She added that modern maritime risks, especially large container ships and hazardous cargo, require coordinated preparedness and shared technical understanding. While recognizing India's growing leadership role in the region, she emphasized that long-term success depends on strong institutions, clear laws, and well-defined coordination and liability systems.

Capt. Panda responded by stressing the need for a balanced model that combines government leadership with private sector participation. He stated that preparedness cannot be the responsibility of government alone and must include ports, terminals, and shipping operators.

He gave examples from Gujarat's Gulf of Kutch, where industry participation has improved response readiness. He also pointed out that differences in how countries apply international conventions create challenges in compensation and coordination across the region. He stressed that operators of maritime infrastructure must develop their own emergency plans while governments provide oversight and coordination.

Capt. Amol Deshmukh provided the insurance and liability perspective. He explained that Protection & Indemnity (P&I) Clubs play a key role in handling compensation during major marine pollution incidents. Since such incidents often affect multiple countries, claims management becomes complex and requires coordination across jurisdictions.

He highlighted emerging developments such as infrastructure projects in the Nicobar region, which could become major shipping and bunkering hubs but also carry environmental risks. He suggested that regional cooperation systems should include designated contact points to interact with P&I Clubs and streamline compensation processes. He noted that while operational coordination is possible, legal enforcement depends on countries adopting international conventions.

In his closing remarks, Capt. Panda summarized that while legal differences between countries will continue to create challenges, the immediate focus must be on improving operational cooperation. He emphasized that ports, shipping companies, and government agencies must work together with support from international training and technical expertise.

He noted that regional platforms such as BIMSTEC and IORA are gradually moving toward stronger cooperation structures, but stressed that practical preparedness and joint response must come first. He concluded that legal alignment will take time, but operational coordination and capacity building cannot be delayed.

During the final discussion, Capt. Vivek Bhandarkar raised concerns about ecologically sensitive island regions along India's eastern maritime boundary and nearby strategic areas. He highlighted increasing development in these zones and expressed concern about limited preparedness for major marine pollution incidents.

Responding to this, DIG Verghese acknowledged the sensitivity of these regions and clarified that India's preparedness systems under NOSDCP and NOS-HNSDCP apply to all ports and oil-handling facilities. He explained that Tier-1, Tier-2, and Tier-3 response systems are clearly defined, with escalation procedures and audit mechanisms in place.

He added that while systems exist, ensuring consistent compliance remains a challenge. He confirmed that regional cooperation mechanisms under BIMSTEC and ASEAN are already active, and India continues to participate in joint training and preparedness programs. However, he emphasized that stronger monitoring, better enforcement, and greater public-private participation are needed to improve overall readiness.

The session concluded with the understanding that India plays a central role in regional maritime spill response. While frameworks and cooperation mechanisms already exist, the panel agreed that stronger coordination, better legal alignment, increased industry participation, and continuous capacity building are essential to effectively manage future marine pollution incidents.

**Panel Discussion  
Regional Cooperation -  
India's Role in Bay of  
Bengal & IORA  
Spill Response Plans**



## DELIBERATIONS

- The session underscored that maritime pollution response is fundamentally a cross-border challenge requiring structured regional cooperation across the Bay of Bengal and Indian Ocean Rim Association (IORA) frameworks.
- It was emphasized that India's maritime preparedness must evolve beyond national capability to a coordinated regional response architecture involving neighbouring coastal states.
- Capt. L.K. Panda highlighted that over 50,000 vessels transit annually through ecologically sensitive waters in India's proximity, increasing systemic risk exposure.
- Historical pollution disasters such as Torrey Canyon and Exxon Valdez were referenced to stress the necessity of early, pooled, and coordinated response mechanisms before escalation.
- The session reaffirmed the Indian Coast Guard's role as the designated national coordinating authority for marine pollution response under the NOSDCP framework.
- It was noted that despite established national systems, disparities in implementation of international conventions (CLC, Fund Convention, OPRC) across regional states remain a major limitation.
- Regional cooperation mechanisms such as BIMSTEC, ASEAN-linked frameworks, and South Asia Seas Programme were identified as existing but still evolving platforms.
- The importance of integrating port authorities, oil-handling agencies, and coastal administrations into a unified command structure was repeatedly emphasized.
- Dr. Annabelle Nicolas-Kopec highlighted that effective regional systems require long-term institutional coordination, information sharing, and clearly defined responsibility boundaries between offshore and shoreline authorities.
- The discussion recognized that pollution risks now extend beyond oil to include HNS cargoes, plastics, and containerized hazardous materials.

## RECOMMENDATIONS AND SUGGESTIONS

- Develop a unified regional maritime emergency response protocol aligned with IMO standards.
- Strengthen Tier-1 preparedness enforcement at all ports and oil-handling facilities through mandatory audits.
- Expand investment in dedicated spill response assets, including tugs and specialized containment equipment.
- Create regional joint command simulation exercises involving India, Sri Lanka, Maldives, Myanmar, Bangladesh, and ASEAN partners.
- Establish formal liaison channels between Coast Guards and P&I Clubs for faster claims and operational coordination.
- Promote private-sector contingency planning obligations for terminals, refineries, and major shipping stakeholders.
- Enhance early-warning and monitoring systems for high-traffic ecological corridors and sensitive maritime zones.

## GOVERNMENT INITIATIVES AND ITS OUTCOMES

- Opportunity to evolve India as the regional anchor for spill response coordination in the Bay of Bengal and IORA region.
- Strengthening of NOSDCP framework into a more dynamic, regionally interoperable system.
- Expansion of Indian Coast Guard's mandate as a regional training and coordination hub for pollution response.
- Scope to formalize bilateral and multilateral agreements for mutual assistance during major maritime incidents.
- Integration of private sector participation (ports, terminals, end-users) into national and regional preparedness frameworks.
- Need to address uneven implementation of international conventions across neighbouring states through diplomatic and technical engagement.
- Development of structured audit mechanisms to ensure preparedness compliance at ports and oil-handling facilities.

## WAY FORWARD

- Establish a structured regional spill response framework under Bay of Bengal and IORA cooperation mechanisms.
- Develop standardized protocols for cross-border mobilization of assets, personnel, and response equipment.
- Strengthen real-time information-sharing systems among regional maritime authorities and Coast Guards.
- Create designated regional nodal points for coordination with P&I Clubs and international insurers during major incidents.
- Institutionalize joint exercises, simulations, and capacity-building programs across littoral states on a recurring basis.
- Formalize escalation pathways for Tier-1, Tier-2, and Tier-3 spill response across national boundaries.
- Enhance integration between national contingency plans and regional cooperation frameworks.

## MISSING LINKS IDENTIFIED

- Opportunity to establish a centralised custodian authority for maritime emergencies
- Strengthening of regulatory frameworks aligned with international standards
- Enhancement of accountability across shipowners, operators, and insurers
- Implementation of mandatory and practical Vessel Response Plans (VRPs)
- Improved federal coordination between central and state authorities
- Leveraging existing institutional strengths (Indian Coast Guard, DG Shipping, ports)
- Expansion of training, capacity-building, and technical expertise development
- Development of a structured framework for wreck removal and environmental management
- Positioning India as a globally competitive maritime emergency response jurisdiction

## KEY TAKEAWAYS

- Maritime pollution incidents require immediate regional cooperation; no single nation can manage large-scale events alone.
- India holds a strategic geographic advantage and emerging leadership role in regional spill response coordination.
- Effective response depends on integration of national systems with regional frameworks and private sector participation.
- Preparedness is both an institutional and human capability challenge, requiring continuous training and simulation.
- Legal frameworks exist, but operational effectiveness depends on enforcement consistency and cross-border alignment.
- Future preparedness must expand beyond oil spills to include HNS cargoes, plastics, and complex containerized risks.
- Sustainable regional readiness requires institutional trust, shared responsibility, and predictable cooperation mechanisms across jurisdictions.

## CONCLUSION

The deliberations reaffirm that maritime pollution response in the Bay of Bengal and IORA region is inherently a shared responsibility that demands structured regional cooperation. While national frameworks such as India's NOSDCP provide a strong foundation, effective response to large-scale incidents requires harmonized protocols, real-time coordination, and interoperable systems across neighbouring states.

India is well positioned to emerge as a regional anchor for spill response, supported by its institutional capacity and strategic location. Moving forward, the focus must be on strengthening cross-border collaboration, aligning implementation of international conventions, and integrating public and private stakeholders into a cohesive response architecture.

A coordinated, proactive, and regionally aligned approach will be essential to ensure environmental protection, operational resilience, and sustainable maritime growth across the Indian Ocean region.

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# INTERNATIONAL 12<sup>th</sup> Samudra Manthan Awards & Symposium 2025

18<sup>th</sup> & 19<sup>th</sup> November 2025 6.30pm onwards  
at Jio World Convention Centre,  
Lotus Ballroom, BKC, Mumbai

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## PROGRAM

# India's Role in Oil Spill Recovery and Salvage Operations Symposium on

**Theme: Establishing India as a Leader in Oil Spill Recovery and Salvage Operations**

### Day 1: Tuesday, 18th November 2025

Time	Duration	Session/Event	Speaker/Details
14:30 15:00	30 min	<b>Opening Ceremony</b> - Welcome Address - Lighting of Lamp - Introductory Remarks - Inaugural Session: <i>Managing oil spill &amp; Salvage: Effective policy framework for fostering a more sustainable marine environment.</i>	Organizing Committee, Capt.Vivek Bhandarkar  Chief Guest, Rajiv Jalota, IAS, Former Chairman, MbPA and DG Shipping  DIG Bibhuti Rajan, TM, Indian Coast Guard
15:45 16:05	15 min	<b>Keynote Address: India as a Hub for Oil Spill Recovery and Salvage Operations</b>	Capt. Abul Kalam Azad, Nautical Advisor, Govt of India, MoPSW
16:05 16:25	20 min	<b>Tea/Coffee Break (Sponsored by - Pole Star)</b>	
16:25 17:20	45 min	<b>Session 1: Regulatory Frameworks &amp; Compliance:</b> Insights into evolving global maritime laws and how operators can align with new environmental mandates.	Moderator: Capt.L.K.Panda, Former NA, DG Shipping ● Capt Harinder Singh, NS, DG Shipping ● DIG Bhanu Gupta, Coast Guard, OIC, MRCC Mumbai
	10 min	<b>Q &amp; A</b>	
17:20 18:10	40 min	<b>Session 2: Global Regulatory Alignment –</b> IMO, IOPC, ITOPF, OPRC Compliance in Indian Waters	<b>Moderator:</b> Capt. Ashok Mahapatra, Former Director, IMO ● Adv Aditya Krishanmurthy, Partner, Bose and Mitra ● Dr Annabelle Nicolas-Kopec, Sr.Tech Advisor, ITOPF ● Rakhee Sadhu, Dy. Sec. PP Div, NDMA

### Day 2: Wednesday, 19th November 2025

**Tea / Coffee & Snacks (Sponsored by Sadhav Shipping)**

09:30 09:40	10 min	Recap of Day 1	
09:40 10:50	60 min	<b>Session 3: Salvors Case Studies, Lessons learnt and Challenges faced</b>	<b>Moderator:</b> Bas Wiebe, General Manager (Resolve Singapore), Resolve Marine ● Joshua Hutchinson, Chief Commercial Officer, Ambrey ● Kajal Festen-Purohit, Marine Masters
10:50 11:35	35 min	<b>Session 4: Emergency &amp; Salvage Operative in South Asia – Opportunities and Challenges</b>	● Capt.Imam Farhat, Former COO Resolve, Miami ● Capt.Anuj Sahai, MD, T&T Salvage
	10 min	<b>Q &amp; A</b>	
11:35 12:40	55 min	<b>Panel Discussion: Developing Indian Salvage Infrastructure – Tugs, Yards, and Regional Centers</b>	<b>Moderator:</b> Capt.Ashok Mahapatra, Former Director, IMO ● Capt. Aditya Gaur, Head - Strategy & Planning, Ocean Sparkle Pvt. Ltd., ● Capt Sachin Srivastava, COO, Adani Karaikal Port Puducherry ● Vinit Badani, Director, Polestar Marine
	10 min	<b>Q &amp; A</b>	
12:40 13:40	60 min	<b>Lunch Break (Indian Register of Shipping)</b>	
13:40 15:00	70 min	<b>Session 5: P&amp;I and Liability – Role of Clubs in Compensation and Salvage Support</b>	<b>Moderator:</b> Adv.Pankaj Kapoor, Mg.Partner, Quadraant Legal ● Adv Aditya Krishanmurthy, Partner, Bose and Mitra ● Leena Mody, Average Adjuster, Leena Mody & Associates, ● Neale Rodrigues, Group Director, TMC ● Capt.Amol R. Deshmukh, Head-Marine Claims & Insurance, Aeghiscorp Maritime Venture LLP
	10 min	<b>Q &amp; A</b>	
15:00 16:10	60 min	<b>Panel Discussion: Regional Cooperation - India's Role in Bay of Bengal &amp; IORA Spill Response Plans</b>	<b>Moderator:</b> Capt.L.K.Panda, Former NA, DG Shipping ● DIG SK Verghese, OIC, Pollution Response Team (West) ● Capt. Amol R. Deshmukh, Head-Marine Claims & Insurance, Aeghiscorp Maritime Venture LLP ● Dr. Annabelle Nicolas-Kopec, Sr.Tech Advisor, ITOPF
	10 min	<b>Q &amp; A</b>	
16:10 16:45	30 min	<b>Tea/Coffee Break</b>	
16:45 17:00	10 min	<b>Closing Ceremony</b>	Organizing Committee & Guests

# SYMPOSIUM HIGHLIGHTS



Thank you