

OIL SPILL INCIDENT: ENVIRONMENT

NEWS: Capsized ship off Kerala coast triggers oil spills concerns: All you need to know

WHAT'S IN THE NEWS?

The sinking of the MSC ELSA 3 cargo ship off the Kerala coast in May 2025 caused an oil and chemical spill, raising serious environmental and marine safety concerns. The incident highlights India's vulnerability to maritime pollution and the urgent need for robust oil spill preparedness and legal enforcement.

I. Recent Oil Spill Incident: Kerala Coast – May 2025

- **Date of Incident:** May 25, 2025
- **Vessel Involved:** Liberia-flagged **MSC ELSA 3**
- **Location:** Capsized **38 nautical miles off Kerala**, en route from **Vizhinjam to Kochi**
- **Environmental Concern:** Significant **oil and chemical spill** threatening marine ecosystems and coastal livelihoods

II. What Are Oil Spills?

- **Definition:** Accidental release of **petroleum hydrocarbons** (crude oil, diesel, bunker fuel) into water bodies like oceans, rivers, or coastal zones
- **Common Causes:**
 - **Shipping accidents** (collision, grounding, capsizing)
 - **Offshore drilling blowouts**
 - **Pipeline ruptures or corrosion**
 - **Refinery or storage leaks**
 - **Natural disasters** (e.g., cyclones)
 - **Human error, negligence, or sabotage**
 - **Illegal dumping or operational discharge from ships**

III. Why Are Oil Spills Dangerous?

1. Environmental Damage

- **Oil slicks** prevent sunlight penetration, harming photosynthesis in marine flora
- **Toxic hydrocarbons** damage fish, birds, mammals, and invertebrates
- **Long-term loss of habitats** like coral reefs, mangroves, and wetlands

2. Marine Biodiversity Threat

- Birds' feathers and mammals' fur get coated in oil, causing **hypothermia or drowning**
- **Fish gills and respiratory systems** are damaged
- Increased mortality among **juvenile and breeding species**, disrupting food chains

3. Economic Impact

- **Fishing bans** lead to livelihood losses for coastal communities
- **Tourism decline** due to polluted beaches
- **High cost of cleanup operations** strains public and private funds

4. Human Health Risks

- Exposure to **toxic vapors** causes respiratory and skin disorders
- **Contaminated seafood** poses food safety threats

5. Cleanup Challenges

- Oil residues can persist for **years** in sediment and water
- Cleanup is **technically complex, expensive**, and often **incomplete**

6. Broader Crisis Risk

- Oil spills can trigger **multi-sectoral emergencies**—ecological, economic, and health
- Increased maritime activity raises **spill frequency and severity**

IV. Major Oil Spills in India (Recent Examples)

Incident	Year	Location	Cause	Impact
Chennai Oil Spill	2017	Tamil Nadu	Collision of ships	Polluted coast, marine deaths, fish ban
Nagapattinam Oil Spill	2023	Tamil Nadu	Pipeline leakage	Coastal contamination, fish loss
Kerala Spill (MSC ELSA 3)	2025	Arabian Sea (Kerala)	Ship sinking	Marine pollution, ecosystem threat

V. Oil Spill Response: Global Frameworks

1. MARPOL Convention (1973/78)

- Treaty by the **International Maritime Organization (IMO)**
- India is a **signatory**
- Covers **six pollutant types**:

1. Annex I: Oil
2. Annex II: Noxious liquids
3. Annex III: Harmful packaged goods
4. Annex IV: Sewage
5. Annex V: Garbage
6. Annex VI: Air emissions

2. OPRC Convention (1990)

- Framework for **international oil spill preparedness and cooperation**
- India is a **party**

3. Civil Liability Conventions

- **CLC (1992)**: Assigns **liability and compensation** responsibility for oil damage
- **Bunker Convention (2001)**: Ensures liability for **bunker oil spills**; ratified by India in **2015**

4. Regional Cooperation

- **South Asian Cooperative Environment Programme (SACEP)**
- **Nairobi Convention**: Joint emergency drills and ecosystem protection

VI. India's National-Level Oil Spill Management

Nodal Agency:

- **Indian Coast Guard (ICG)** is the **central authority** for oil spill response (outside port limits)

Legal and Regulatory Framework:

- **National Oil Spill Disaster Contingency Plan (NOS-DCP) (1996)**
 - Updated regularly
 - Outlines response coordination and responsibilities
- **Merchant Shipping Act, 1958** (amended for marine pollution)
- **Environment Protection Act, 1986**

Infrastructure & Technology:

- **Pollution Response Teams (PRTs)** in Mumbai, Chennai, Port Blair, and Vadinar
- Equipment includes:

- **Booms** (floating barriers)
- **Skimmers** (oil recovery)
- **Dispersants and bioremediation**
- **Oil Spill Advisory System and INCOIS models** for spill trajectory forecasting

Mock Drills & Exercises:

- **NATPOLREX (National Pollution Response Exercise)**
 - Conducted by ICG since **2009**
 - **NATPOLREX-IX (2023)** held in **Gulf of Kutch**
 - Objectives: Improve readiness, validate NOS-DCP, enhance coordination

VII. Challenges in India's Oil Spill Management

1. Fragmented Legal Structure

- Overlapping laws and agencies
- **NOS-DCP lacks statutory authority**, affecting enforcement

2. Overlapping Jurisdiction

- Multiple stakeholders (ICG, Shipping Ministry, Ports, State Govts.)
- Absence of a **single-window command** delays responses

3. Inadequate Equipment & Personnel

- Many **ports and states lack pollution response gear**
- Gaps highlighted during **Chennai spill (2017)**

4. Poor Preparedness

- **Limited training** at district/state levels
- Some states haven't fully adopted **NOS-DCP protocols**

5. Accountability Issues

- **Weak enforcement and delays in compensating victims**
- No strict deterrent for polluters

6. Public Health & Awareness Gaps

- Lack of protocols for **worker protection**

- Limited **community awareness** on spill safety

7. Data and Monitoring Limitations

- **Incomplete real-time forecasting** in some regions
- **INCOIS systems underutilized** at operational levels

Source: <https://indianexpress.com/article/explained/kerala-ship-sinking-oil-spills-concerns-10028102/>