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Saving the Arribada — India's Sea Turtle Crisis Is a Governance Failure

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Saving the Arribada — India's Sea Turtle Crisis Is a Governance Failure

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INTERVIEW ANGLE

"India's Olive Ridley sea turtles nest at three of the world's most important Arribada sites, all in Odisha. Yet fishing bycatch continues to kill tens of thousands of turtles annually despite legal protections and mandatory Turtle Excluder Devices. What does this say about India's environmental enforcement capacity, and how should it be reformed?"

Every February, something extraordinary happens on Odisha's coastline. Hundreds of thousands of Olive Ridley sea turtles — creatures that have existed for 65 million years — converge on three beaches in a mass nesting ritual so vast and ancient that it staggers imagination. Then, over the following weeks, tens of thousands of them will die in fishing nets within a few kilometres of those same shores.

This is not a natural tragedy. It is a governance failure — one that India has been documenting, discussing, and failing to fix for three decades.

THE SCALE OF THE PROBLEM

The Olive Ridley is classified as Vulnerable by the IUCN, but this designation masks an important distinction: globally, the species is reasonably abundant; at the level of individual nesting populations, however, the picture is alarming.

India's Gahirmatha aggregation is one of the three largest Olive Ridley nesting concentrations on Earth (the other two are in Mexico and Costa Rica). In the 1990s, **50,000 to 1 lakh dead turtles** were washing ashore on Odisha beaches annually — the vast majority drowned in trawl nets.

The response was clear: Turtle Excluder Devices (TEDs), mandatory for all trawlers, and seasonal fishing bans in the nesting zone. Both were formalised in law and regulation.

Twenty-five years later, strandings continue. The numbers have reduced, but "reduced" is a low bar when tens of thousands of animals are still dying.

WHY REGULATIONS ARE NOT TRANSLATING TO OUTCOMES

TEDs work — when used. Studies consistently show that TEDs reduce sea turtle bycatch by 97% without significantly affecting fish catch. The technology is not disputed. The problem is compliance.

Trawler operators resist TEDs for three reasons. First, TEDs require modification of existing nets — an upfront cost. Second, some operators believe (incorrectly) that TEDs reduce catch volume. Third, and most importantly, **enforcement is episodic**. Inspections happen before the season, not during it. Once trawlers are at sea, no one checks whether TEDs are actually deployed.

The fishing ban has a similar problem. The restricted zone is theoretically 20 km around Gahirmatha and 5 km around Rushikulya. But the zone boundary is invisible at sea. Trawlers routinely fish within the restricted area, knowing that the Odisha Marine Police has inadequate patrol capacity — the marine police fleet is old, underfunded, and does not operate at night.

THE STRUCTURAL ISSUE — FISHERMEN ARE NOT THE ENEMY

A critical error in India's sea turtle conservation approach has been framing fishermen as the primary problem. They are not. They are rational economic actors operating in a system that makes compliance economically costly and non-compliance largely cost-free.

The Gahirmatha and Rushikulya coastal communities are among Odisha's poorest. The seasonal fishing ban deprives them of income for 5-6 months — without adequate compensation. The TED compliance cost falls entirely on the fisherman, with no subsidy.

Effective conservation requires **co-management** — bringing fishing communities into the enforcement and monitoring system, compensating them for foregone income, and giving them a genuine stake in the turtles' survival (through eco-tourism income, for instance). The *Vanjeevi Didi* model being piloted at Palamau Tiger Reserve — tribal women as conservation facilitators — offers a template worth adapting for coastal communities.

WHAT IS ACTUALLY NEEDED

1. Robust real-time patrol capacity. The Odisha Marine Police needs 20-30 additional high-speed patrol vessels, with night operation capability and GPS tracking integrated with coast guard systems. The capital cost is modest compared to the ecological stakes.

2. TED subsidisation. The central government should subsidise TED purchase and installation for all trawlers operating in critical sea turtle habitats — removing the economic argument against compliance.

3. Seasonal fishing compensation. The PMMSY (Pradhan Mantri Matsya Sampada Yojana) or a dedicated state programme should provide direct income support to fishing households during the seasonal ban, in exchange for demonstrated compliance.

4. Community monitoring. Local fishermen, given proper training and incentives, can be the most effective monitors. Successful programmes in Costa Rica and South Africa show that community-based monitoring reduces bycatch more effectively than police-based enforcement alone.

India's Olive Ridleys are a natural heritage of planetary significance. The question is not whether we can afford to save them. The question is whether we can fix the governance and incentive structures that are currently letting them die.

UPSC RELEVANCE

Olive Ridley, Arribada, Gahirmatha, TED (Turtle Excluder Device), IUCN Vulnerable, Schedule I WPA, PMMSY (Pradhan Mantri Matsya Sampada Yojana).

MAINS GS-3:

Marine biodiversity conservation; environmental enforcement challenges; co-management models; fishing community livelihoods; climate change and biodiversity.

INTERVIEW:

"India's environmental laws are comprehensive but enforcement is weak. Is this a capacity problem, a political economy problem, or both? What is the solution?"

📌 FACTS CORNER — KNOWLEDGEPEDIA

KEY CONSERVATION DATA:

TED effectiveness: Reduces turtle bycatch by **~97%** (without significantly reducing fish catch)

Historical strandings: **50,000 to 1 lakh dead turtles/year** in 1990s at Odisha beaches

Restricted zones: **20 km** around Gahirmatha; **5 km** around Rushikulya and Devi

Seasonal fishing ban: **November-May** in turtle nesting zones (Odisha)

PMMSY:

Full form: Pradhan Mantri Matsya Sampada Yojana

Launched: **2020** | Outlay: **Rs 20,050 crore** (FY21-25)

Focus: Blue revolution — aquaculture, fisheries infrastructure, insurance for fishermen

CO-MANAGEMENT MODELS:

Definition: Sharing management authority between government and resource users

Success examples: Costa Rica (turtle eco-tourism), South Africa (community rangers)

India analogy: Vanjeevi Didi (Palamau TR); Forest Protection Committees (FPCs) under JFM

Sources: The Hindu, WII, Odisha Forest Department

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