

Minimizing the Impact of Ghost Gears to Conserve the Biodiversity through a Community-Centric Collective Approach in Ramanathapuram Coast



Guardians of the Blue: A Mission to Revive Our Oceans



The oceans, the beating heart of our planet, are in peril. While they sustain life—providing oxygen, food, and livelihoods—they are drowning under the weight of human neglect. Among the most sinister threats lurking beneath the waves is ghost gear: abandoned, lost and discarded fishing gears and tools that turn into silent killers, strangling marine life and suffocating ecosystems.

In the Gulf of Mannar, a UNESCO-recognized marine biodiversity hotspot, this crisis is unfolding with devastating consequences. But hope emerges where communities, science, and governance unite.

In a landmark collaboration, the M.S. Swaminathan Research Foundation (MSSRF), with support from the Small Grant Programme (SGP) of the United Nations Development Programme (UNDP) embarked on a mission to combat ghost gear pollution—protecting marine life, securing fisheries, and empowering coastal communities.

WHY THE RAMANATHAPURAM COAST? A PARADISE AT RISK

Ramanathapuram district along Tamil Nadu's coast having a unique marine ecosystem comprising of both the Gulf of Mannar and Palk Bay marine hotspots stretching 271 km, are ecological treasures, home to



Endangered dugongs, the “sea cows” on the brink of extinction.



Ancient coral reefs, among the richest in India.



Sea turtles, dolphins, and vibrant fish stocks that sustain 1.2 lakh fishers.



Yet, decades of overfishing, habitat destruction, and pollution have pushed this fragile ecosystem to collapse. Abandoned, lost and discarded gears are one such menace of marine pollution which :

Entangle and drown marine animals in endless suffering.

Choke coral reefs, transforming once-vibrant habitats into barren landscapes.

Deplete fish stocks and threatening livelihoods.

Without intervention, this marine heritage could vanish forever.

OUR APPROACH TO GHOST GEAR MANAGEMENT

Restrict: Prevention through Responsible Gear Use

Training and Capacity Building:

Educate fishers, fisheries stakeholders, and coastal communities on best



practices for gear use, maintenance, and disposal.

Gear Management: Promote responsible gear handling and storage to minimize loss and abandonment.

Community Engagement: Foster a culture of sustainability and environmental stewardship, Ocean guardians among fishing communities.

Recovery: Large-Scale Clean-Ups

Mobilization: Organize and mobilize boat owners, fishers, youths, divers, and coastal communities to participate in large-scale clean-up initiatives in coast, sea and islands

Clean-Up Operations: Conduct regular clean-up operations in coastal areas, sea, and marine ecosystems to retrieve abandoned, lost, or discarded fishing gear.

Community Participation: Encourage active participation from local communities, promoting ownership and responsibility for marine conservation.

Recycling: Transforming Retrieved Gears into Sustainable Products

Establishing Industry Linkages:

Collaborate with industries and organizations to develop sustainable products from retrieved gears, promoting a circular economy.

Product Development: Transform retrieved gears into valuable products, such as foot mats, decorative, or other innovative materials.

Promoting Circular Economy: Support the development of a circular

economy by encouraging the reuse and recycling of fishing gear, reducing waste, and promoting sustainable practices

MISSION GROUND

Our conservation journey is rooted in one of India's most ecologically significant yet vulnerable marine and coastal regions – Mandapam block of Ramanathapuram Coast

We focused our efforts across Coastal stretch, islands and the open sea spanning around 300 hectares (Map) starting from Dhanuskodi to Vedhalai Stretch

These interconnected seascapes are lifelines – sheltering endangered marine species and sustaining thousands of fisher families. Protecting them safeguards biodiversity, livelihood security, and coastal resilience for generations to come.



OUR INTERVENTIONS

01

Mapped the hidden journey of ghost gear through participatory research, uncovering where, why, and how gears were abandoned, lost, discarded along the Mandapam Coast

02

Sparked a wave of awareness by bringing fishers together through engaging workshops and trainings, equipping them with real-world solutions to prevent gear loss.

03

Mobilized hands-on clean-up missions across fragile coastal stretches and islands and open sea water, transforming community concern into collective conservation action.

04

Gave discarded gears a second life by empowering women SHGs to upcycle ghost gear into beautiful, marketable crafts – proving waste can become worth.

05

Co-created a Voluntary Code of Practice with local fishers – a grassroots commitment to protecting the sea, even after the project's close.

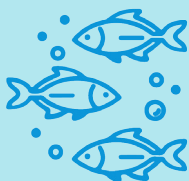




CHALLENGES & STRATEGIC RESPONSES IN GHOST GEAR CLEAN-UP

Implementation Challenge

How We Tackled It



Fisher Availability was Limited

Daily livelihood needs made it hard for fishers to join clean-up drives regularly



Scheduled clean-up and training during non-fishing hours and off-seasons to maximize participation.



On-Sea Retrieval Faced Harsh Conditions

Strong sea currents and poor visibility posed safety and operational risks in on sea retrieval



Used forecasting tools to select safe days; implemented strict marine safety protocols for divers and snorkelers.



Shoreline Clean-ups Affected by Weather

High tides and winds disrupted volunteer activities on the coast.



Planned activities around favorable tidal windows and weather forecasts to ensure safety and effectiveness.



Volunteer Participation

Initial enthusiasm faded due to fatigue and competing fishing priorities.



Mobilized local youth, volunteers, Women SHGs and provided necessary safety tools, recognition as Ocean guardians and certificates to sustain efforts.



Limited Perception of Long-Term Impact

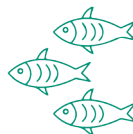
Fishers did not always connect ghost gear to declining fish catch.



Ran targeted awareness campaigns linking ghost gear to reduced income and ecosystem health to shift mindsets.

INDICATOR-BASED RESULTS AT A GLANCE (2023-2025)

01 Area of Marine Habitat under Improved Practices to Benefit Biodiversity



Over **300 hectares** of critical coastal and marine habitat – from Dhanushkodi to Vedhalai region in the Gulf of Mannar and Olaikuda to North Vedalai in Palk Bay – were actively restored and protected through community-driven actions.

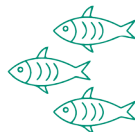


Co-financing support extended our reach to another **103 hectares**, resulting in the removal of added **14.1 metric tons** of debris, including **11.5 metric tons** of abandoned fishing gear, breathing life back into fragile ecosystems.



More than **16.2 metric tons** of marine debris was cleared, including **12.9 metric tons** of deadly ghost gears, giving marine species a fighting chance.

02 Number of Community Members Engaged in Conservation Practices



A force of **559 dedicated volunteers** — including **453 men** and **106 women** — united across **28 fishermen associations** and **100 boat** owner groups, taking ownership of their seas by actively minimizing ghost gear pollution.



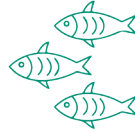
Through co-financing, **961** more volunteers joined hands, turning every fishing hamlet into a hub of conservation action.



Their efforts weren't just about removing waste — they were about restoring balance, protecting livelihoods, and preserving tradition.

03

Number of New/ Sustained Fisher Groups Practicing Responsible Ghost Gear Disposal



28 fishermen associations and **100 boat** owner groups evolved into guardians of the sea, consistently practicing and promoting responsible ghost gear disposal.

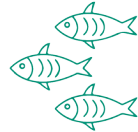


Local heroes like the **Kalanjiyam Volunteer Group** made headlines by **rescuing 3 sea turtles and a dolphin** trapped in ghost gears — living proof of what community action can achieve.



In Mandapam, responsible fishing took a new meaning — fishers now recover ghost gear during daily trips, collecting over **2,000 kg** in clean-up follow-ups, weaving sustainability into their livelihoods.

04 Fisher Groups Advocating Improved Marine Fisheries Practices

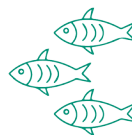


From the docks to decision tables, **28 fishermen** associations and **100 boat** owners became **loud voices for sustainable fisheries** – championing better practices, safer ecosystems, and smarter gear management.



Their grassroots advocacy is transforming fishing villages into models of eco-conscious action, influencing peers far and wide.

05 Number of Beneficiaries with Improved Capacity



651 fishers – 328 men and 323 women – underwent hands-on training to master sustainable fishing techniques and conservation literacy.



A visionary group of 123 fisherwomen learned to turn ghost gear into gold, crafting high-demand eco-products like:

Foot mats,
Tea coasters

Wall hangings
Laptop mats

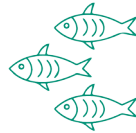
Dream catchers
Stylish bags



Four passionate women leaders – now Master Trainers who light the path for new women entrepreneurs, anchoring a new wave of empowerment and circular economy in their communities.

06

Stakeholder Consultations on Marine Litter and Ghost Gear management



Two high-impact stakeholder consultation meetings were organized to confront the escalating marine litter crisis in the Gulf of Mannar and Palk Bay regions.



A diverse group of **98 participants** — including **75 men and 23 women** — came together, representing a unified force of government agencies, research institutions, fishing communities, and NGOs.



The consultations fostered meaningful dialogue and strategic planning, emphasizing the need for **collaborative, cross-sectoral** approaches to ghost gear recovery and sustainable marine practices.



A major outcome was the collective deliberation and groundwork for a **Voluntary Code of Practice** to tackle ghost gear and plastic waste — a blueprint for joint accountability and action in marine conservation.



COMMUNITY & PARTNERS AT THE HEART OF CHANGE

This project proved that real conservation begins with people. By engaging:

Fishing communities as
frontline defenders of
the sea.

Women's self-help
groups in ghost gear
upcycling enterprises.

Youth, boat owners
& local leaders in
awareness campaigns.

We didn't just clean the ocean—we built a movement.

This success was possible through collaboration with:

- Fishing Communities & Local NGOs
- Coastal Panchayats & Eco-Development Councils
- Gulf of Mannar Biosphere Reserve Trust
- Tamil Nadu Fisheries & Forest Departments &
- District Administration of Ramanathapuram district

CONCLUSION & WAY FORWARD

The initiative has laid a strong foundation for community-led marine conservation by successfully linking environmental action with sustainable livelihoods. By empowering women, youth, and fishers, it has demonstrated that inclusive participation is key to tackling marine pollution and enhancing coastal resilience.

Looking ahead, the momentum built through this project must be sustained and scaled:

INSTITUTIONALIZE CLEAN-UP EFFORTS

- 01 Integrate ghost gear retrieval into local governance and fisheries management frameworks for long-term continuity.

REPLICATE SUCCESS MODELS

- 02 Expand eco-enterprise models and skill-building programs to other coastal communities across the region.

FOSTER MULTI-STAKEHOLDER COLLABORATION

- 03 Continue partnerships with government, NGOs, and research institutions to strengthen policy support and innovation.

MONITOR & EVALUATE

- 04 Establish community-based monitoring systems to track environmental outcomes and adapt strategies as needed.

ENGAGE THE NEXT GENERATION

- 05 Introduce marine conservation education in schools and youth clubs to build a culture of ocean stewardship early on.

This initiative has proven that fishers and coastal communities are not just beneficiaries—but key drivers of marine conservation. With sustained investment, inclusive policies, and grassroots leadership, this model can evolve into a regional blueprint for ocean health and coastal prosperity.

Our oceans cannot wait. Every retrieved gear saves lives.
Every recycled and upcycled gear protects the future.
Together, we've taken a bold step—but the journey continues.
Join us in ensuring cleaner seas, safer marine life, and thriving
coastal communities.

For Our Oceans For Our Future

