

Tackling Ghost Gears Together: Impact Narratives of Community-Led Initiatives



**Coastal Resources and Fisheries Programme
M.S. Swaminathan Research Foundation**



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This booklet is developed as the outcome of UNDP–Small Grants Programme
supported project on ‘Minimizing the Impact of Ghost Gears to Conserve
the Biodiversity of the Gulf of Mannar Coast through a Community–Centric
Collective Approach’ in Ramanathapuram Coast.

Team Contribution

Leadership, Framework, Review and Editing

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Documentation

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Data Collection

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Dedication

This book is dedicated to the visionary leadership of the late Prof. M.S. Swaminathan, whose pioneering philosophy of science rooted in social relevance continues to inspire and guide our endeavours. We honor his legacy by carrying forward his ideals with responsibility and hope.





Foreword

The health of our oceans is deeply intertwined with the well-being of coastal communities and the planet as a whole. This case study booklet, “Tackling Ghost Gear Together: Impact Narratives of Community-Led Initiatives,” documents the collective efforts of coastal communities in addressing the critical issue of ghost gear along the Gulf of Mannar coast.

For generations, fishing communities in this region have lived in harmony with the ocean’s rhythms. However, this balance is increasingly under threat due to habitat degradation, overfishing, climate change, and marine debris—particularly abandoned, lost, or discarded fishing gear, commonly known as ghost gear.

This booklet captures a quiet yet powerful transformation unfolding along the Rameshwaram coast, where local communities are taking the lead in confronting the ghost gear crisis. With support from the UNDP Small Grants Programme and the leadership of the M.S. Swaminathan Research Foundation, this initiative reframes ghost gear not merely as marine waste, but as a shared ecological, social, and economic challenge—one that can be overcome through awareness, community engagement, and collaborative action.

The program has empowered local communities, with fishers voluntarily retrieving ghost gear, women’s groups leading innovation in upcycling and environmental



Dr. Soumya Swaminathan,
Chairperson, MSSRF

entrepreneurship, and young divers and community leaders becoming frontline stewards of marine ecosystem.

I commend our Coastal Resources and Fisheries Team for their committed groundwork and grooming change-makers from the community.

This compilation serves as a guiding example of how community-led conservation can build both ecological resilience and social equity, and I hope this booklet serves as a valuable resource for policymakers, practitioners, and communities working towards a more sustainable and equitable future for our oceans.

Foreword

Over three (3) billion people in the world depend on and source their proteins from fishing resources. Up to 80% of the world's commonly fished species are overharvested and are in danger of declining significantly without possibility of self-repopulating. It presents a threat to the community who are mainly dependent on fishing for their livelihood. The GEF-UNDP- Small Grants program (SGP) focuses on improving the marine habitat and improving the well-being of the community.

As part of the SGP, project titled "MINIMIZING THE IMPACT OF GHOST GEARS TO CONSERVE THE BIODIVERSITY OF RAMANATHAPURAM COAST THROUGH COMMUNITY-CENTRIC COLLECTIVE APPROACH" has been implemented in the Ramanathapuram (Tamilnadu). This booklet covers the outcome of the project and highlights the role of various stakeholders, community groups, women self-help groups etc. who worked under the technical guidance of M S Swaminathan Research Foundation (MSSRF) team to improve the marine habitat through removal of various types of plastic waste (ghost gears) from the sea and converting them to very beautiful decorative products. The booklet also highlights the role of individuals who have taken small initiatives to address the issue of plastic waste disposal and create awareness among the fisherman community to collect it back.

I appreciate the effort of the entire team of MSSRF led by Dr Velvizhi for their



Dr. Manish Pandey
National Coordinator,
UNDP- SGP Programme

commendable work in improving the marine habitat through community participation in and around the Gulf of Mannar.

I hope that this booklet serves as a guide to stakeholders to replicate the similar initiative in other parts of the country.

Acknowledgement

This collection of stories is a culmination of sustained collective efforts, built through conversations, shared experiences, and hands-on work in the field. It embodies the trust, cooperation, and quiet determination that transformed ideas into lasting action.

We extend our heartfelt gratitude to Dr. Soumya Swaminathan, our Chairperson for her visionary leadership and unwavering commitment to inclusive and community-led conservation efforts. I'm grateful to our Executive Director, Dr. R. Rengalakshmi for her timely support and guidance.

We acknowledge the Ministry of Environment and Forest, UNDP-SGP programme's financial support and partnership, which enabled us to address a pressing issue. Special thanks to Dr. Manish Pandey, SGP-India National Coordinator, Dr. Asha, Regional Coordinator, and the entire SGP team for their support and guidance throughout the project period. We also thank HCL Foundation for their support to extend the idea in other clusters in GoM with lot of innovation and intensifying the work.

Our local partners, including the Department of Fisheries, Gulf of Mannar Biosphere Trust, Forest Department, Tourism Department, Indian Coast Guard, Local Municipality, Panchayat Leaders, Boat Owner Associations, and Women's Self-Help Groups, have been instrumental in this initiative. Their institutional support and partnership have fostered clarity and coordination.

I acknowledge the dedication of our team members, whose perseverance on the ground



Dr. S. Velvizhi
Area Director,
Coastal Resources and
Fisheries, MSSRF

made these stories possible. Specifically, I thank Mr Sibinthar, Mr Kevikumar for their dedicated work on the group to mobilize the communities and also Mr. Abdul Salam, Dr. Siva, and Ms Kanmani for their contributions. Shwetha Tony deserves special mention for her support in documentation of the case studies.

Lastly, I express deep appreciation to the fishing communities – men, women, and youth – who welcomed us into their lives, sharing their time and effort despite the costs to their daily routines. Their commitment to change is truly commendable.





*Tackling
Ghost Gears
Together: Impact
Narratives of
Community-
Led Initiatives*







In the Wake of the Waves: A Coast's Unseen Struggle

The Ramanathapuram coastline, stretching across the rich marine corridors of the Gulf of Mannar and the Palk Strait, has long sustained a way of life deeply rooted in the rhythms of the sea. For generations, the communities here have trusted the ocean—its bounty, its seasons, its moods. Fishing is more than an occupation in this part of Tamil Nadu; it is an inheritance passed from parent to child, a quiet knowledge of currents, tides, and shoals that cannot be taught in classroom

This region contributes over 27% of Tamil Nadu's marine fish landings and accounts for more than 24% of the state fisher population, depending directly on the sea. But beneath this rich livelihood tapestry lies an increasingly frayed thread. Over the last four to five decades, overfishing, habitat degradation, and pollution have slowly changed the nature of the ocean these communities rely on. Fisherfolk speak of declining catches, altered fish migration patterns, and rising operational costs. Yet, one of the most persistent threats to both livelihoods and marine life is one that rarely makes itself visible at first glance—ghost gear.

Unlike the storms that batter boats or the industrial waste that stains the shore, ghost gear is subtle. It has no shape until it tangles, no sound until it tears. These are the abandoned nets, broken lines, and discarded traps that continue drifting under the surface, long after their owners have forgotten them. With no owner and no purpose, they continue to trap, entangle, and destroy—silently, relentlessly. But this is not just an ecological story. It is a human one. It is the story of fishing communities pushed into uncertainty by a problem they didn't create alone, but must now face together.



27%

Ramanathapuram coastline,
Contributes over of Tamil Nadu's
marine fish landings



24%

24% of the state fisher
population under this coastline

What the Eye Can't See, the Sea Still Bears

Ghost gear—Peivalai (tamil) as it has come to be known locally—is a quiet intruder. It does not wash ashore in heaps, nor does it float visibly on the surface. Often made of synthetic fibres designed to last, these discarded fishing tools drift below the waves, clinging to coral, snagging on rocks, and trailing behind in currents like forgotten threads of the past.

The damage they cause is far-reaching. Turtles, dolphins, dugongs, Sharks and even whales get caught in them, many suffering a slow and painful death through suffocation or exhaustion. Coral reefs, Seaweed and seagrass beds vital breeding and feeding habitats, are smothered under the weight of nets. These habitats—nurseries for countless fish species—are degraded physically and chemically, altering the seabed that supports marine life.

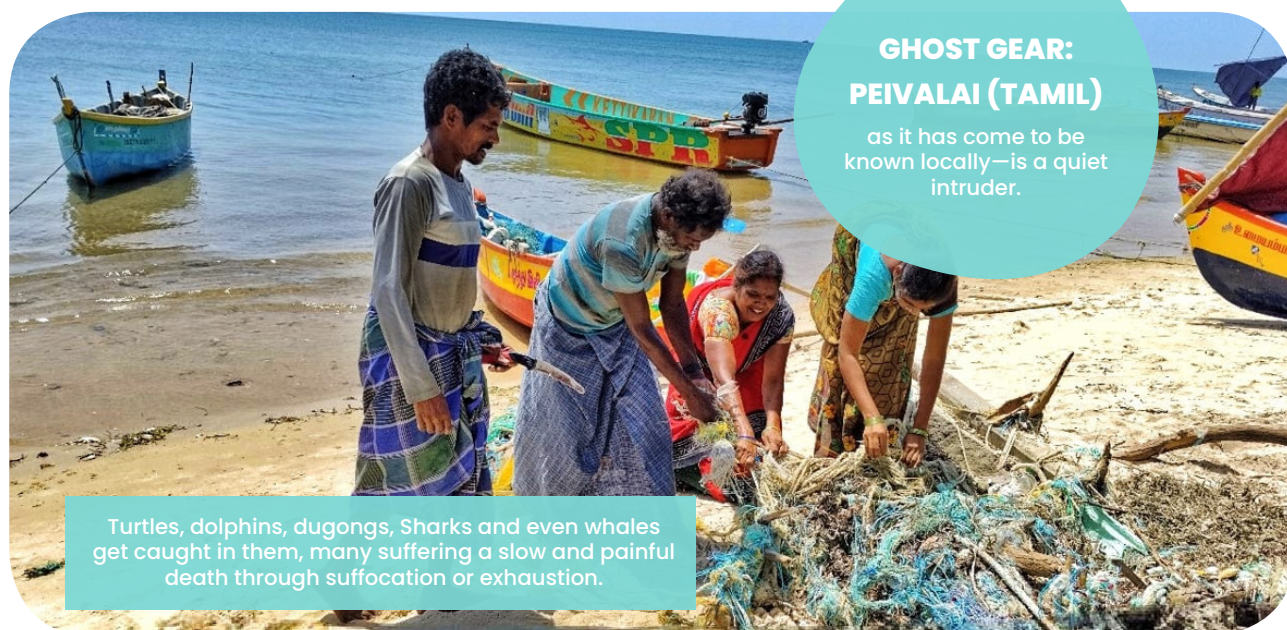
But the threat doesn't end with the ocean floor. Ghost gear creates direct and daily hazards for those at sea. Propellers jam, engines stall, and nets tangle during hauling. Fisherfolk, already working under tight margins, must spend precious hours disentangling debris, repairing equipment, and

sometimes abandoning trips entirely. A journey meant to bring home catch becomes a battle with submerged waste. The losses—fuel, time, effort, and income—add up quickly.

The economic strain is often invisible to the outside world, but deeply felt in these communities. A single incident of gear entanglement can wipe out a day's earnings. The costs of repairs, fuel wastage, and lost catch come directly out of a household's weekly budget. In many cases, families are forced to borrow or cut expenses in other areas—medicines delayed, school fees postponed, drop outs, meals thinned out.

And so the problem grows—not only beneath the surface of the sea, but in the daily lives of those who live beside it. It grows in the silence between two fishing seasons, in the hesitation of a father wondering if it's worth taking the boat out again, in the quiet shift of a young boy choosing to migrate inland for work instead of learning to fish.

Ghost gear isn't just a marine waste issue—it is a livelihood issue of millions depending on the sea, a biodiversity crisis, and a social challenge intertwined.



GHOST GEAR: PEIVALAI (TAMIL)

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Responding from Within

It was against this backdrop, the M.S. Swaminathan Research Foundation (MSSRF), with the support from the UNDP– Small Grants Programme (UNDP–SGP), piloted a response in Mandapam block of Ramanathapuram district. But this wasn't a program dropped from above. It was a process—built slowly, steadily, sustainably, and with deep community roots with inclusivity of all players.

When MSSRF entered the picture, they did not begin with announcements or banners. They began with a question: "What do you see out there?" They sat with boat owners, fishermen associations, trawler operators, boat drivers, conch divers, women fish vendors, boat mechanics, and local leaders—not to instruct, but to understand. What emerged was

The approach was threefold:-

RESTRICT

helping fishers avoid or prevent the loss and abandonment of gear through awareness, behavioural shifts, and simple but effective systems

RETRIEVAL

supporting community-led removal of ghost gear through clean-up drives and practical equipment.

RECYCLING AND UPCYCLING

converting marine waste into usable products through skill-building and economic empowerment, particularly for women.

These interventions were never isolated. They were layered into the life of the coast—shaped by local knowledge, refined through feedback, and anchored in shared purpose.



MSSRF with the support from the UNDP–SGP piloted a response in Mandapam block of Ramanathapuram district.

a complex picture: of a community aware that something was wrong, but unsure of how to fix it. Of people willing to act, if only someone would walk beside them.

So, MSSRF didn't arrive with solutions in hand. Instead, they built the solution with the community. They showed images, data's and held interactions, various level of discussions. Slowly, what was once seen as "Marine Debris" became recognized as a serious environmental hazard. Rather than offering one-time solutions, the programme aimed to build local understanding and collective ownership.



Fishing Community were not just beneficiaries—they were the architects of this change. Trawler operators mapped their own gear-loss patterns. Women's self-help groups (SHGs) learned how to turn ghost nets into craft and income. Boat owners received collection boxes, Divers and seaweed collectors received equipment that allowed them to retrieve nets safely and effectively. Panchayats, forest, fisheries, tourism departments, municipality, and marine police were brought together in coordinated support. Participation was voluntary, but the motivation was strong. Boats carried ghost gear collection boxes alongside

their nets. WhatsApp groups sprang up as digital noticeboards—sharing sightings, coordinating action, and celebrating small wins. Local leaders emerged—some known, others new—who carried the message further and deeper within their communities.

What truly changed wasn't just practice—it was perception. Ghost gear was no longer invisible. It had a name. A cause. A solution. People began to talk about Peivalai not as someone else's problem, but as everyone's responsibility.

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Voices of Change: A Prelude to Collective Transformation

The stories that follow are drawn from real people, real places, and real decisions.

The stories that follow are drawn from real people, real places, and real decisions. They come from coastal communities where life is closely tied to the sea where changes are felt not in reports or headlines, but in daily routines, in the work people do, and in the choices they make when no one is watching. These are not success stories in the usual sense. They are stories of responsibility taken, habits changed, and actions shared often quietly, but with lasting impact.

What you are about to read are not stories written after the fact, shaped to impress. These are real accounts of people who did not wait for perfect conditions. They began with what they had—with what they knew—and found new ways to respond to the realities around them. A problem once ignored slowly became something they chose to

face. A routine task became a chance to do better. A lone effort became a shared commitment. Each of these stories reveals something different. A fisherman who took the first step, not knowing who would follow. A women's group that turned unused skills into opportunity. A crew that turned responsibility into routine. A network that grew not because someone told them to act, but because they chose to care. These are stories where decisions made at the margins began to influence how systems function, how groups work together, and how communities carry forward what they have started.

The strength of these stories lies not in how dramatic they are but in how grounded they remain. The change here is practical. It is shaped by constraints. It grows through learning. But within that, there is imagination, leadership, and hope—expressed not in speeches, but in choices repeated day after day.

As you read, you may find that no single story holds all the answers. But together, they offer something more valuable—a picture of how change becomes possible when it is built with patience, owned by the people who live it, and carried forward not as a project, but as a way of doing things differently. Following is not just a collection of impact stories. It is a reflection of how systems shift—quietly, gradually, and often most powerfully, from within.







CASE STUDY 1

ANCHORED IN ACTION: THE STORY OF A VOLUNTARY SHIFT IN MARINE DEBRIS RECOVERY

In Pamban, a coastal village in Ramanathapuram district where over 110 trawl boats head out to sea regularly, the issue of marine debris—especially plastic waste and abandoned fishing nets—has grown steadily over the years. For the fishers whose lives depend on these waters, the consequences are hard to ignore. Prasanna Leone, aged 44, with nearly three decades of fishing experience, is not just one among them—he is the head of the Fishermen Association in Pamban, a respected voice in the community. Recognizing the mounting threat to their shared marine environment, he began taking steps not just for himself, but for the collective good of all fishers in the region.

THE FIRST STEP: A FISHERMAN'S EARLY STAND AGAINST MARINE PLASTIC

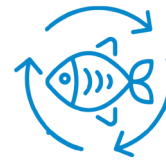
Back in 2022, concerns around plastic pollution were steadily growing among the fishers of Pamban. Prassana had been noticing troubling signs for a while—Determined not to ignore the problem, he took his first independent step on World Fisheries Day, November 21, 2022. He reached out to boat owners in his area—many of whom he knew well through his association role—and distributed 80 collection boxes, urging them to start bringing back plastic waste from the sea instead of throwing it overboard. The message was simple: if we bring back the fish, we can also bring back the waste. It was the first self-led initiative of its kind in Pamban, led entirely by the local community and not by any external agency.

Initially, the idea caught on. Some boat owners made efforts to collect waste, and there was a noticeable sense of responsibility in the air. But the enthusiasm didn't last. There was no formal system in place to collect or safely dispose of the waste once it was brought ashore. Without a proper disposal mechanism, and lacking ongoing support or awareness sessions, the boxes were gradually set aside. By the end of the year, the same plastic that had begun to disappear from the waters slowly returned, floating once again around propellers and entangling nets.

Prasanna faced disappointment, he found it hard to sustain momentum on his own. Despite the initial enthusiasm, the absence of a structured collection or disposal mechanism saw the effort fade over time. By the year's end, the problem of marine



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litter had re-emerged, reminding the community of the need for a more sustainable and supported solution.

INTRODUCING 'PEIVALAI': WHEN KNOWLEDGE LEADS TO LANGUAGE CHANGE

The momentum from Prasanna's 2022 initiative had slowed, but it had not disappeared. The spark he ignited caught the attention of the team at the M.S. Swaminathan Research Foundation (MSSRF), who had been working on strengthening community capacity and marine conservation efforts in the Gulf of Mannar region. A turning point came in 2023 with the intervention of the MSSRF. Through a series of community level sensitization workshops led by the team, the concept of ghost gear—locally termed Peivalai—was introduced. Until then, fishermen referred to it colloquially as Kachchavalai, a less precise term.

The effect was striking. Language began to shift, and with it, the consciousness of the community. Fishers started referring to MSSRF's sessions as "Ghost Gear training", using the term casually but confidently, indicating how deeply they had internalized the concept.

As Prasanna recalls, "We used to just say Kachchavalai for any lost net. But now, after those sessions, everyone—boat owners, crew, even the younger boys—started using the word Peivalai. Some of them even use the English term 'ghost gear' comfortably. That's when I knew something had changed."

The term itself became symbolic of a deeper understanding of the environmental threat posed by lost or abandoned fishing nets. Beyond language, it signified a shift in collective consciousness.

GHOST GEAR: AN OPERATIONAL HAZARD

For mechanized fishers, ghost gear isn't just an environmental issue—it's a daily occupational operational hazard. With their boats moving at high speeds during fishing, even a small piece of abandoned net in the water can cause serious trouble to engine. Nets wrapped around engine propellers lead to sudden speed drops, affect net spreading, and sometimes even force crews to abandon a trip midway.



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These incidents don't just cause irritation—they mean lost income, wasted fuel, damaged equipment, and long hours spent in repairs instead of fishing. The financial hit is particularly tough for small-scale operators who are already working on tight margins.

These repeated challenges highlighted to the community the urgent need for a systematic approach to retrieving ghost gear and managing marine debris more effectively.

EVERYDAY PLASTICS, EVERYDAY POLLUTION

While ghost nets created visible and immediate problems, another quieter source of pollution came from daily life on board the boats. On a typical 5- to 7-day fishing trip with around 10 crew members, it was common to carry:

- Milk sachets for tea
- Packets of snacks like biscuits and chips
- Masala sachets for cooking on board
- Plastic pouches of oil, sugar, and salt

Altogether, a minimum 70–80 plastic wrappers per trip would be consumed and thrown into the ocean—a routine act with devastating environmental consequences.

VOLUNTARY ACTION

The repeated awareness sessions by the MSSRF began to leave a deeper impact on fishers in Pamban. For Prasanna, the message



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was clear—and he knew change had to start with him. On his own trawl boat, he introduced a simple but powerful practice: every single plastic item used during a fishing trip—milk sachets, oil pouches, masala wrappers—was now carefully collected in separate covers or bags, instead of being tossed into the sea.

Once back onshore, these bags were taken to designated dustbins placed at proper collection points. The action wasn't backed by law or any enforcement—it was driven purely by awareness and a sense of duty. This conscious step marked a shift in how waste was treated—not as something to discard and forget, but as something that needed to be dealt with responsibly. "This shift was not mandated by law, but voluntarily adopted as a result of awareness and responsibility." Over time, this also extended to collecting any marine debris—especially ghost nets and floating plastic—spotted during their fishing trips. Instead of avoiding it or ignoring it, they started bringing it back to shore too.

FROM ONE BOAT TO FIFTY: A COMMUNITY ADOPTS CHANGE

The real power of Prasanna's effort was not just in his own boat—it was in how it inspired others. In the evenings, as fishers relaxed and exchanged stories across boats, Prasanna would casually talk about the plastic collection practice he had started. There was no campaign, no banners—just conversation.

What began with one boat soon spread across the fleet. Today, nearly 50 trawl boats operating in and around Pamban have adopted the same system: collect all plastic waste used during

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Today, nearly 50 trawl boats operating in and around Pamban have adopted the same system: collect all plastic waste used during the trip, bring it back, and dispose of it responsibly.



the trip, bring it back, and dispose of it responsibly. Alongside, fishers also began retrieving any ghost gear or marine litter they came across at sea, integrating this extra effort into their regular routines.

This quiet but steady movement didn't need regulations to succeed. It grew because fishers saw the value in it—cleaner waters, safer operations, and a sense of doing the right thing together.

STRUCTURED INTERVENTIONS: SCALING UP GHOST GEAR RETRIEVAL

As community engagement deepened, MSSRF stepped in to support and scale the effort. A total of 25 ghost gear collection boxes were distributed to selected boat owners in Pamban, each of whom had already shown interest and commitment to cleaner seas. Among the first to respond was Prasanna.

He received his collection box just two days before the annual fishing ban. Instead of waiting for the next season, he acted immediately—taking the box out to sea on his final trip before the ban. It wasn't just symbolic—it was impactful. On that one trip alone, he collected 8 kilograms of ghost gear, a tangle of nets, ropes, and plastic debris, and responsibly disposed of it in the designated bin back at shore.

"When I got the collection box, I didn't want to keep it aside—I took it the very next day. I wanted to show my team that this isn't a showpiece—it's for action," he adds

Prasanna now sees this box as an essential item onboard, just like a net or other device. He confidently shared that once the seasonal fishing ban is lifted, his team is aiming to collect 40–50 kg of ghost gear on every trip, based on the volume they often encounter. This represents not just a new habit, but a new mindset—where waste recovery becomes part of the fishing operation, not an extra burden.

STRENGTHENING THE NETWORK

Understanding that one-time actions alone wouldn't sustain the change, Prasanna turned to digital tools. As the head of the Fishermen Association in Pamban, he created a separate WhatsApp group for the members—a space to stay informed, connected, and engaged with the growing marine conservation movement.



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What began as a coordination tool soon transformed into a community knowledge hub. Today, the group hosts a dynamic stream of:

- Updates on ghost gear collection efforts
- Announcements of upcoming training sessions or meetings
- Shared news articles, videos, and summaries on marine conservation

The group has become a lifeline of information flow across the fishing community. Even those who were initially unaware or hesitant have begun to engage more actively—commenting, sharing, and participating in discussions.

LEADING BY EXAMPLE

This powerful example shows that large-scale behavior change doesn't always require formal policies or enforcement. With focused awareness, strong local leadership, and peer-to-peer sharing, it's possible to shift the mindset of an entire community. Prasanna, who extended his gratitude for the continued support from MSSRF, believes that the success of this journey lies in collaboration.

"Without the constant motivation and structured support from MSSRF, this would have never reached this level. The community's active role today is the result of their groundwork," he recalls, reflecting on the collective journey.

Today, what began as one fisherman's personal initiative has grown into a community-led movement for marine conservation.



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CASE STUDY 2

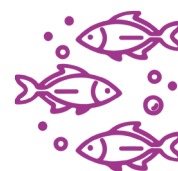
KALANJIYAM'S JOURNEY FROM FISHERMAN TO OCEAN GUARDIAN

BACKGROUND

Kalanjiyam, a 27-year-old fisherman from the coastal village of Mandapam in Tamil Nadu, has been deeply connected to the sea since his early teens. Born into a traditional fishing family, Kalanjiyam's livelihood and identity are intertwined with the rhythms of the ocean. His father, a seasoned fisherman, was his first teacher passing down the knowledge and skills essential for survival in the challenging waters of Palk Bay.

At the age of 17, Kalanjiyam began fishing, joining his father on daily expeditions. The family relies on their small fiber boat equipped with a gill net to

catch crabs and fish adjusting their methods according to the ever-changing weather and sea conditions. For Kalanjiyam, the sea has always been both a source of sustenance and a way of life. His mother and younger sister manage the household while he and his father focus on fishing to support their family. In the early years fishing was challenging due to the physical demands, unpredictable weather and his inexperience. However, with persistence and his father's guidance, Kalanjiyam grew into a skilled fisherman. The monsoon season, with its abundant catch became the most rewarding time of the year for him. But as the years passed, Kalanjiyam noticed a worrying trend as the fish stocks were declining and the catch was not as plentiful as it once was.



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THE CHALLENGE OF DECLINING FISH RESOURCES

Kalanjiyam has observed several key factors contributing to the decline in fish resources in his fishing grounds. Climate change has led to unpredictable weather patterns and rising sea temperatures disrupting traditional fishing and causing inconsistent catches. Overfishing has intensified pressure on fish stocks with an increase in the number of fishermen and the use of advanced technologies like mechanized boats and trawlers depleting fish populations more rapidly. Industrial pollution, particularly from export companies dumping waste into the ocean has severely damaged marine habitats destroying breeding grounds and leading to a significant reduction in fish populations. Destructive fishing practices such as bottom trawling have further disrupted the ocean floor destroyed coral



Kalanjiyam estimates that ghost gear accounts for about 20% of the reduction in fish resources he believes that 50% of the decline is due to the increasing number of fishermen and other anthropogenic activities.



reefs and killed non-target species including juvenile fish crucial for sustaining future populations. While Kalanjiyam estimates that ghost gear accounts for about 20% of the reduction in fish resources he believes that 50% of the decline is due to the increasing number of fishermen and other anthropogenic activities.

AWARENESS AND INTERVENTION: LEARNING ABOUT GHOST GEAR

Kalanjiyam's understanding of ghost gear—abandoned, lost, or discarded fishing gear that continues to harm marine life was non-existent until the intervention of the UNDP_SGP programme of M S Swaminathan Research Foundation (MSSRF). Before this intervention, neither Kalanjiyam nor the broader fishing community in his region were aware of the significant impact ghost gear had on the marine environment. The foundation's educational efforts brought to light the dangers posed by ghost gear including the entanglement of marine animals' damage to fishing boats and the depletion of fish stocks which collectively threaten the sustainability of their livelihoods.

TAKING ACTION: VOLUNTARY COLLECTION AND RESCUES

Kalanjiyam's transformation from a fisherman to an environmental advocate began after he participated in several ghost gear clean-up drives organized by MSSRF. These drives were important in shifting his perspective on the importance of addressing the ghost gear problem. Inspired by what he learned and experienced during these clean-up efforts he decided to take proactive steps to combat the issue on his own.

He began voluntarily removing ghost gear whenever he encountered it while out at sea. However, his commitment did not stop there. Recognizing the scale of the problem, Kalanjiyam formed a group of five fellow fishermen to join him in his efforts. Together, they undertook the significant task of collecting ghost gear and other marine debris along the Mandapam coast. Over time he and his group successfully covered a total of 10.5 hectares collecting an impressive 1,500 kgs of marine litter including ghost gear.

"We used to walk past these nets thinking someone else would clear them. But after the clean-up drives, I realized if we don't remove them, they'll end up back in the sea—hurting both the fish and us," he recalls.



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One of the most remarkable aspects of Kalanjiyam's efforts is his dedication to rescuing marine animals trapped in ghost nets. Throughout his time on the water he has rescued more than seven turtles and a few dolphins that were entangled in ghost nets, saving them from almost certain death. These rescues are not only a testament to his commitment to marine conservation but also highlight the severe threat that ghost gear poses to marine life.

The waste collected by the group is compiled and stored where it is later collected by MSSRF for upcycling—a process that transforms the waste into useful products, thereby reducing environmental harm. Beyond his own efforts, Kalanjiyam has taken on the role of a mentor training other fishers in his community to identify and collect ghost gear and marine debris wherever they find it. His dedication to cleaning the ocean has made him a respected fellow within his community and a role model for others.

RECOGNITION AND MOTIVATION: THE KADAL KAPPAN AWARD

In recognition of his tireless efforts to protect the marine environment, Kalanjiyam was honored with the prestigious “Kadal Kappan” award by Dr. Soumya Swaminathan during the 14th annual celebration of the Fish for All Centre in 2024. This award not only brought him personal recognition but also validated the importance of his work. Receiving such an accolade has served as a powerful motivator for Kalanjiyam, encouraging him to continue and expand his efforts to make the ocean a plastic-



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In recognition of his tireless efforts to protect the marine environment, Kalanjiyam was honored with the prestigious “Kadal Kappan” award



free zone. The recognition has inspired him to do even more to protect the marine environment that his livelihood depends on further cementing his role as a guardian of the sea.

“This award isn’t just mine—it’s for every fisherman who took time to clean the shore with me. It shows that even simple efforts from people like us can bring big change,” he adds with quiet pride.

LOOKING AHEAD: ENCOURAGING A COLLECTIVE EFFORT

Kalanjiyam’s journey from an unaware fisherman to a committed steward of the marine environment illustrates the importance of education, awareness, and community involvement in tackling environmental issues. He now actively encourages other fishermen in his community to become more aware of the impact of ghost gear and to take similar proactive steps to address it. Kalanjiyam also stresses the need for stricter regulations and control over trawler boats, which are often responsible for the disposal of significant amounts of ghost gear into the sea. He believes that collective action is essential for the preservation of the marine environment and the sustainability of fishing livelihoods.

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CASE STUDY 3

BENEATH THE BLUE: HOW CONCH FISHERS OF OLAIKUDA ARE TACKLING GHOST GEAR FOR CLEANER SEAS

In the coastal hamlet of Olaikuda, near the historic town of Rameswaram, conch fishing has long been a way of life. For Androse Fernando, 48, the sea has been both a livelihood and a legacy. For nearly two decades, he has led conch harvesting trips — a skill-intensive, traditional practice sustained by deep knowledge of marine rhythms and teamwork. Around 50 motorized boats operate daily in the Olaikuda and Sangumal region for conch collection, each boat carrying six members who follow a unique rotational diving system. While three dive into the sea to harvest conches, the others rest and prepare, rotating every 10 minutes to maintain rhythm and energy.

But in recent years, Androse and fellow fishers have observed an unsettling pattern: a visible decline in marine resources, a shift even traditional expertise couldn't ignore. "The sea has changed," Androse says. "We don't see the same richness we used to. Something invisible is hurting our grounds."

THE UNSEEN THREAT BENEATH THE SURFACE

The answer came unexpectedly — not from the surface, but from beneath it. During their routine dives, Androse and his crew began noticing strange patterns underwater — dark clumps, floating shrouds, tangled nets silently swaying in the current. These were not part of nature. They were remnants of human neglect: ghost nets, discarded fishing gear that continued to haunt marine life long after its use was over. These ghost nets, often made of synthetic materials, continue to trap fish, turtles, and other marine life, long after being discarded. But the community, largely unaware of the gravity of the issue, never intervened.

"I have seen it with my own eyes," recalls Androse. "Ghost nets floating, resting on the bottom, even catching turtles. But we never brought them back. We just left them and returned."

This passive response wasn't due to indifference — it stemmed from a lack of awareness and capacity. Without proper knowledge, tools, or a system to deal with ghost gear, the fishers felt powerless against an issue literally beneath the surface.

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A SHIFT BEGINS: AWARENESS AND ACTION THROUGH MSSRF

Everything began to change when Androse and his team were invited to a training workshop on 'Management of Ghost Gears in the Marine Environment – Issues, Challenges, and Preventive Measures', organized by the M.S. Swaminathan Research Foundation (MSSRF). The event, held in their own village of Olaikuda, opened their eyes to the wider ecological implications of ghost gear and introduced ways the fishing community could take ownership of the solution.

This wasn't a one-time activity. MSSRF's approach was rooted in consistent engagement – monthly follow-ups, capacity-building sessions, and hands-on awareness drives, which gradually helped fishers develop confidence and clarity about their role in restoring marine health.

"Other organizations and institutions with similar efforts came once and left. MSSRF stays, works with us every month, and walks with us," says Androse, acknowledging the foundation's long-term commitment.

THE FIRST RETRIEVAL: ON SEA DRIVE

Soon after the training, Androse and his five-member crew embarked on their first on sea ghost gear retrieval drive. It was a moment of transformation – both symbolic and practical. That day, they recovered 12 kg of ghost nets from the seabed. What once went ignored was now actively being removed, and the sea began to feel like theirs again – cared for and respected.

This action was not only fuelled by awareness but also enabled by essential equipment support. MSSRF provided each diver with snorkelling kits, which proved to be a game-changer.

"These kits give us a 360-degree view under the water, and they protect our eyes and nose from salt. It's because of these that we can collect more ghost gear effectively."

The kits allowed divers to stay underwater longer, scan the area clearly, and retrieve ghost gear safely, reducing the risk of injury from sharp or tangled nets. The comfort and protection minimized fatigue and eye irritation, especially during long retrieval dives. This practical intervention encouraged even younger and less experienced fishers to join, building a new



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"snorkelling kits give us a 360-degree view under the water, and they protect our eyes and nose from salt. It's because of these that we can collect more ghost gear effectively."



generation of environmentally conscious fishers.

FROM ROUTINE FISHING TO ROUTINE CLEAN-UP

Today, retrieving ghost gear has become an integrated part of conch fishing for Androse and his crew. On average, they now recover 7 to 8 kg of ghost nets per trip. The process is simple but effective — whenever they spot ghost gear during fishing, they immediately bring it back to shore.

But Androse didn't stop at his own boat. Understanding the importance of community effort, he began spreading awareness among fellow fishers. Over time, he personally mobilized around 50 nearby fishers, including small-scale country boat operators, encouraging them to participate in marine debris recovery. These efforts laid the foundation for a grassroots ghost gear retrieval network rooted in local leadership and ownership.

"Whenever we see ghost gear now, we don't ignore it — we bring it back. It's become part of our fishing routine."

BUILDING A CIRCULAR ECONOMY FROM WASTE

The collected ghost gear doesn't just pile up. Once brought ashore, it is segregated and sold to local scrap vendors, creating a circular model that converts marine waste into a small but meaningful source of income:

- Plastic-based nets are sold for ₹6 per kg



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"Whenever we see ghost gear now, we don't ignore it — we bring it back. It's become part of our fishing routine."



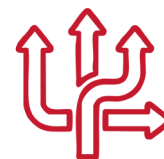
- Iron components and sinkers fetch up to ₹50 per kg

Scrap mediators from nearby areas collect the material every two days. This micro-enterprise model has added economic value to the retrieval process and incentivized more fishers to participate in the clean-up voluntarily. The initiative proves that marine conservation and livelihood improvement can go hand in hand.

SCALING THE VISION: A FISHER'S CALL FOR EXPANSION

While progress has been remarkable, Androse sees even greater potential in the initiative. He recommends deploying 10 dedicated boats weekly or twice a month solely for ghost gear collection, with small incentives to encourage broader participation. He believes this could create visible, large-scale impacts in a short period and set an example for coastal communities elsewhere.

Androse Fernando's story — and that of his team and peers — is a powerful example of community-led marine conservation, grounded in local knowledge, strengthened by institutional support, and sustained by shared purpose.



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CASE STUDY 4

KNOTS OF CHANGE: HOW ONE WOMAN SPARKED A GROUP-LEVEL CHANGE IN HER COMMUNITY

AN UNCERTAIN BEGINNING

Christinal, a 31-year-old mother of two from a traditional fishing community of Thangachimadam, started her journey in marine conservation with hesitation. As Treasurer of Jeeva Nathi SHG, a group of 13 women, she had little faith in training programs after years of unfulfilled promises and wasted investments.

"I was skeptical," she recalls. "The past programs I attended promised a lot but delivered very little. It felt like a waste of time and money. But when MSSRF's Ghost Gear Upcycling Initiative was

introduced, something felt different—it was free and practical.”

This initiative, organized under the UNDP-SGP programme, aimed to tackle the growing issue of abandoned fishing nets (ghost gear) by turning them into valuable products, combining environmental conservation with livelihood enhancement.

FROM INDIVIDUAL GROWTH TO GROUP TRANSFORMATION

The two weeks training workshop held at the MSSRF Village Resource Centre (VRC) became a turning point for both individual growth and collective transformation. During the training, Christinal learned to craft mats, bags, table mats, bookmarks, and flower vases using discarded fishing nets. Her creativity and determination quickly earned her recognition, sparking curiosity among her peers. Although some self-help group (SHG) members initially doubted the value of the training, Christinal’s persistence and visible success gradually motivated them. “I told them, let’s just try—it costs nothing to learn, but it might change everything,” she said, recalling her early conversations with hesitant members. By the end of the workshop, her efforts inspired other women to learn from her and replicate her achievements. This momentum led to expanded participation, with four SHG members—Suganya, Shagaya, Amali, and Avilthers—enthusiastically joining advanced training sessions. Additionally, two neighbors from outside the SHG also took part, further widening the circle of change. What began as an individual journey for Christinal soon evolved into a collective



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movement, fueled by the group's newfound enthusiasm and confidence.

BECOMING A TRAINER: A CATALYST FOR GROUP EMPOWERMENT

Becoming a trainer marked a significant milestone in Christinal's journey, transforming her from an empowered individual into a catalyst for group empowerment. After excelling in the initial training program, she stepped into the role of mentor for her SHG members, not merely teaching them crafting techniques but instilling a spirit of collaboration, self-reliance, and shared purpose. Empowered with knowledge and hands-on skills, she quickly rose to become a community trainer, taking it upon herself to participate MSSRF training Ghost Gear Upcycling training as TOT and train 93 fisherwomen in ghost gear upcycling. Her influence quickly extended beyond the group, drawing interest from other women in the community who joined the training sessions. Recognizing the importance of sustainability, the SHG members began mobilizing resources by actively collecting ghost nets from their fishermen husbands, ensuring a steady supply of raw materials

But she didn't stop there. With quiet conviction and bold imagination, she began innovating new products beyond the basics—transforming ghost gear into:

- Stylish laptop mats
- Intricate wall hangings
- Dreamy dream catchers
- Practical pen stands
- Handy pouches and bags
- Elegant bangles

Each piece reflected her deep commitment to the ocean and her community's future.

"When I hold a finished product in my hand—a bag, a mat, even a small bangle—I feel like I've given the sea something back,". "It's not just a product; it's proof that we can rebuild from what was once thrown away." says Christinal.

LEADERSHIP AND THE RISE OF THE WOMEN GROUP

Today, Christinal leads the Samudra Women Group, a Joint Liability Group (JLG) comprising five dynamic and dedicated



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women: Christinal (Head), Shagayajara Rani (Treasurer), Salesi, Rosei and Shayayam. Together, this collective has emerged as a creative and sustainable force, designing and producing a diverse range of eco-friendly, upcycled products from ghost gear that are both marketable and meaningful. What began as a training initiative has now evolved into a self-sustained, women-led enterprise, where each member brings her own creative spark, craftsmanship, and entrepreneurial vision to the table.

MSSRF provides them exposure to various design innovation, quality enhancement and identifying local and regional sales opportunities. The group holds regular meetings. These gatherings are more than planning sessions—they are spaces of collaborative learning, shared decision-making, and mutual empowerment, rooted in a culture of respect and collective ownership.

A core philosophy that guides the Christinal group is environmental responsibility. They have turned ghost nets—once seen as a marine hazard choking coastal waters—into a valuable resource. Through their work, they have not only cleaned up their seashores but also sparked awareness among their husbands and fellow fishermen, who now actively participate in ghost net collection and clean-up drives. This has fostered a deeper connection between the community and their marine ecosystem, transforming waste into livelihood.



MSSRF provides them exposure to various design innovation, quality enhancement and identifying local and regional sales opportunities.



RISING RECOGNITION: LOCAL ROOTS, NATIONAL STAGE

The SHG began showcasing their eco-products at local events, schools, and colleges, sparking curiosity and admiration. These stalls were more than selling points—they were spaces of storytelling and awareness, where each product carried a message of hope, resilience, and regeneration.

Their journey reached a new high when their upcycled products were displayed at the World Sustainable Development Summit (WSDS) 2025 in Delhi. The response was overwhelming. Policy-makers, NGOs, and other national & international experts appreciated the craftsmanship, praised the innovation, and expressed a desire to learn the process. Some even requested that online training sessions be arranged so that their teams could replicate the model in other regions.

A LEGACY OF COLLECTIVE CHANGE

Reflecting on their journey, Christinal shares, “This isn’t just about me. It’s about all of us coming together and realizing what we can achieve as a group. The training was just the beginning—our teamwork has turned it into something bigger.”

The SHG now plans to scale up their efforts by:

- Establishing direct market linkages for their products.
- Encouraging more SHGs to adopt similar upcycling practices.

The SHG’s journey underscores the potential of grassroots group action to drive both environmental sustainability and economic empowerment. By embracing collaboration, they have turned discarded nets into a symbol of resilience and opportunity for their community.



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CASE STUDY 5

SAILING TOWARDS SUSTAINABILITY: HOW A TRAWLER CREW FIGHTS MARINE DEBRIS

BACKGROUND: MANDAPAM'S DEEP CONNECTION WITH THE SEA

Mandapam a fishing village, located in Tamil Nadu's Ramanathapuram district, is home to a vibrant fishing community that depends on the rich biodiversity of the Gulf of Mannar. The sea not only supports their livelihoods but also defines their way of life. Among the key fishers Gnanaprakasam, a 44-year-old trawler boat owner and Vice President of the Deepakarpam Trawler Boat Fishermen's Association. For 25 years, Gnanaprakasam has been actively involved in fishing, starting with gill nets on a country boat and eventually purchasing his own trawler boat 19 years ago. He personally

operates this boat with a crew of six members. Their trawler operates from the Mandapam port, fishing in the Gulf of Mannar three times a week. Departing early morning, the crew uses trawl net to catch a variety of species, including prawns, crabs, squids, lobsters, kingfish, goatfish, and groupers. Despite their expertise, the increasing presence of ghost nets and other debris posed an urgent threat to their livelihood and the marine environment they depend on.

CHALLENGES: LEARNING FROM EXPERIENCE

Until a year ago, ghost nets and marine debris were a problem that the crew dealt with daily but understood only superficially. The turning point came when MSSRF introduced the issue of ghost nets created on the ocean during a meeting at the Village Resource Center in Thangachimadam. This initial meeting opened Gnanaprakasam's eyes to the extent of the problem and its hidden impacts on marine life, fishing operations, and human health.

Through SGP programs, he learned:

- Ghost nets trap fish, sea turtles, dolphins, and other marine life, reducing biodiversity and fish stocks.
- Coral reefs are damaged when ghost nets become entangled, destroying habitats critical for fish.
- Plastic waste and microplastics in the sea not only harm the ecosystem but also pose long-term health risks to humans through seafood.

Over time, with additional training and first-hand experience, he became deeply aware of these challenges and began



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communicating this knowledge to other fishermen, especially his crew. Today, he is equipped to articulate the importance of addressing these challenges and advocates for sustainable practices among fellow trawler operators.

During his daily fishing operations he faced several problems due to marine debris, particularly ghost nets. Operationally, these abandoned nets frequently got entangled in his boat's propeller, leading to unexpected delays and requiring time-consuming repairs while still at sea. Every fishing haul became more laborious as he and his crew had to spend significant time sorting plastic waste from the catch, ultimately reducing their productivity. Moreover, the extra time and resources needed to clear debris from the nets increased overall operational costs. The risks extended beyond economics—health and safety concerns were ever-present, with the threat of entanglement posing danger to divers and fishermen alike. The growing presence of microplastics in seafood also raised long-term health concerns for his family and crew, making the issue both a professional and deeply personal one.

ACTIONS TAKEN: KNOWLEDGE TO PRACTICE

Through his active participation in MSSRF's training programs, workshops, and community interventions, he transformed his boat's operations into a model of sustainability. He made sure to carry forward the training to his crew, ensuring collective action to address marine debris. His crew members began integrating these practices into their daily operations, becoming a model for other trawler crews.

Among their many initiatives, one of the most significant was their role in the Kurusadai Island clean-up drive—a biologically rich and ecologically sensitive site within the Gulf of Mannar. Gnanaprakasam personally led the effort, coordinating the approach to the island and ensuring that his team removed marine waste without disturbing the delicate coral habitats. They retrieved 480 kg of marine debris from the island's shores—no small feat given the complexity of the terrain and the care required.

"That day at Kurusadai Island made me realise how much damage we had allowed over time. Cleaning it with my own hands gave me a sense of duty I can never ignore again," he reflects.



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Their efforts extended beyond Kurusadai. The team participated in the Kunthukal shoreline clean-up, collecting 600 kg of debris alongside 11 other volunteers. Their commitment didn't end with organized drives—today, during every fishing trip, the crew retrieves 5–10 kg of marine debris, bringing back 15–20 kg daily, which they sort and responsibly dispose of in municipal bins. “When we bring back the debris, it's not just about cleaning up. It's about ensuring the sea is healthier for all of us,” Gnanaprakasam remarked. He signed a volunteer pledge to retrieve ghost nets and avoid discarding waste at sea, setting a strong example for his crew. Three of his crew members also signed similar commitment letters, reinforcing their shared accountability.

SYSTEMIC CHANGES: A SUSTAINABLE TRANSFORMATION OF THE CREW

The systemic transformation spearheaded by Gnanaprakasam and his crew has evolved into a replicable model of sustainable marine waste management, inspiring a broader shift within the Mandapam fishing community. What began as an individual commitment to responsible fishing gradually matured into a collective movement. Today, this movement is not just about one boat, but about a growing network of fishers working towards a cleaner sea.

In Mandapam, a total of 40 fisher boat owners have now signed the volunteer commitment letter, joining hands in this community-led effort to tackle marine debris. Together, they have successfully retrieved 6,534 kg of marine debris and 4,689.5 kg of ghost gear, preventing further ecological damage and making a tangible difference in ocean health.

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This change wasn't accidental—it was built on formal accountability and long-term vision. The signed commitment letters by boat owners and their crew have not only ensured adherence to responsible practices but also set a new standard for others in the region. Although Gnanaprakasam and his crew have currently adopted 20% of MSSRF's recommended practices, they have set their sights on 100% compliance, determined to further minimize the harmful impact of ghost nets through additional measures in the coming months.

The influence of their initiative has already begun to scale. Neighboring trawlers, witnessing the positive outcomes and have started mirroring similar sustainable practices.

TOWARDS A CLEANER SEA

The transformation, led by this trawler crew, exemplifies the power of knowledge, training, and proactive leadership in solving one of the most pressing environmental issues faced by the fishing community. Through MSSRF's comprehensive training programs, Gnanaprakasam not only learned about the devastating impacts of ghost nets and marine pollution but also shared that knowledge with his crew, instilling a sense of responsibility and action.

Their commitment to retrieving marine debris, particularly ghost nets, and their integration of sustainable practices into their daily operations have turned this single trawler into a beacon of change in Mandapam. The leadership shown by Gnanaprakasam and his crew not only ensures the future of their own livelihoods but also contributes to the preservation of the Gulf of Mannar's rich marine biodiversity for generations to come.



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CASE STUDY 6

FROM NETS TO NORMS: A COMMUNITY-LED MOVEMENT AGAINST GHOST GEAR IN RAMESHWARAM

In the coastal town of Rameshwaram, a remarkable transformation is underway—one that reflects not just environmental consciousness but an unprecedented shift in collective behavior. At the heart of this change is N.J. Bose, a respected veteran in Tamil Nadu's fishing community with over four decades of experience in mechanized trawl boat fishing. Through his unwavering commitment, deep-rooted community ties, and visionary leadership, what once was an invisible threat in the sea has now become a unifying cause for action across the mechanized fishing sector.

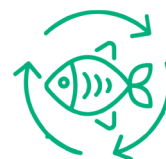
As President of the Mechanized Fishermen Boat Association, Leader of the Port Mechanized Boat

Owners Welfare Association, and Secretary of the Tamil Nadu Mechanized Boat Owners Welfare Association, Bose plays a vital role in representing the concerns and needs of boat owners at both local and state levels. His extensive field experience and deep understanding of marine resource dynamics make him a key stakeholder in fisheries policy dialogues and marine conservation efforts.

REALIZING THE UNSEEN

Bose recalls that the signs of fishery resource decline were evident as early as 1977. Within the fishing community, it was commonly believed that the primary culprits were destructive fishing practices—such as the widespread use of trawl nets, pad trawling, high-powered engines, and increasing mechanization. These methods, they observed, had severely disrupted spawning habitats, hindered the natural reproductive cycles of marine organisms, and contributed to a rapid drop in fish diversity and abundance.

However, the understanding of this crisis began to evolve as deeper conversations and evidence-based learning unfolded through the engagement platforms created by MSSRF. It wasn't a single moment of realization but a process—built through focused training sessions, field dialogues, and participatory consultations—that gradually uncovered an overlooked, yet equally damaging threat: ghost gear. Through powerful imagery, case studies from similar coastal ecosystems, and scientific breakdowns, these sessions revealed how abandoned, lost,



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or discarded fishing nets and gear continue to float or settle in marine environments, trapping marine life indiscriminately, damaging coral and seabed structures, and silently undermining the health of fisheries.

This shift in perception, Bose notes, was eye-opening for many in the community. “We always blamed what we could see—our nets, our engines. But the real enemy was also what we couldn’t see beneath the surface,” he says, echoing the voice of the fisher that now drives a new era of awareness and responsibility.

FROM AWARENESS TO ACTION

What followed was not merely a shift in individual mindsets but the genesis of a larger, community-led transformation. As Bose shares, there are nearly 800 mechanized trawl boats operating in and around the Rameshwaram region. Until recently, only a handful of fishers had any understanding of what ghost gear was, let alone its devastating ecological impact. But through consistent awareness campaigns, hands-on training sessions, and real-life demonstrations facilitated by MSSRF, this knowledge has now reached every corner of the mechanized fishing fleet. Every fisherman—whether he retrieves ghost gear or not—now knows what it is, where it comes from, and what damage it continues to inflict on marine life long after being discarded.

“Earlier, ghost nets were just sea trash. Today, every net we pull out is a net saving a life under the sea,” shares Bose, giving voice once again to the silent yet powerful shift in community consciousness. His words reflect not only a deep personal evolution but also a collective awakening that has reshaped how fishers view their role in marine conservation

Crucially, under Bose’s leadership, the awareness around ghost gear did not remain a passive understanding—it was transformed into direct and practical action at sea. In collaboration with MSSRF, 25 mechanized trawl boats from Bose’s association were equipped with specially designed ghost gear collection boxes. These boxes are kept onboard the boats and serve a vital function: when fishers encounter ghost nets or entangled gear while trawling, they now have a dedicated space to store and transport the retrieved debris safely back to shore. This innovation enabled the fishers to act immediately and responsibly during their regular operations. For the first time, a structured mechanism was in place that allowed retrieval and

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safe disposal of ghost gear at sea—bridging the gap between knowledge and on-ground action, and creating a tangible model for integrating environmental responsibility into everyday fishing practices.

Simultaneously, Bose stood at the forefront of this behavioural shift—not as a distant leader, but as an engaged catalyst of change. He personally participated in high-level stakeholder consultation, contributing field-level realities that grounded the discussions in lived experience. Beyond this, he mobilized all 25 boat owners within his association to submit formal letters of commitment to the ghost gear retrieval movement—an unprecedented action that signalled collective ownership of the problem. This decisive step became a powerful precedent, prompting neighbouring associations and individual boat owners to follow suit, effectively triggering a chain reaction of responsibility and action

SCALING THE IMPACT

Today, this effort has scaled far beyond a single association. Through relentless persuasion and advocacy by Bose, 78 boat owners have voluntarily joined the initiative, each submitting signed pledges. Their commitment has translated into nine successful shoreline clean-up drives, with a staggering 3,544.06 kg of marine debris recovered—2,906 kg of which was ghost gear. These numbers are not just statistics — they represent a deep transformation in fisher attitudes, increased environmental accountability, and a significant reduction in potential threats to



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marine biodiversity.

“We no longer see ourselves just as fishers. We are guardians of the sea,” says Bose—his words a resounding Voice of the Fisher, now echoed by hundreds across Rameshwaram.

What began as a simple awareness campaign has grown into a community-wide behavioural shift. Ghost gear retrieval is no longer an isolated act but an embedded norm—strengthened through infrastructure, policy engagement, and social accountability. Fishermen now hold each other accountable. Commitment letters are not mere formalities—they are public declarations of shared values and responsibility.

LEGACY OF LEADERSHIP

What began as an awareness effort has evolved into a remarkable system-level transformation in Rameswaram’s mechanized fishing sector. The leadership of Bose and the active participation of boat owners have institutionalized ghost gear retrieval as a standard practice within the fishing routine. This is no longer an individual effort but a community norm, reinforced through infrastructure (ghost gear collection boxes), formal commitments, regular clean-up drives, and peer accountability.

This is a model of community-led marine stewardship, showing how consistent awareness, practical demonstrations, and stakeholder engagement can lead to sustainable behaviour change at scale.

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*“We no longer see
ourselves just as fishers.
We are guardians of the
sea,” says Bose*

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***This is a model of community-led marine stewardship,
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CASE STUDY 7

BEYOND THE SHORELINE: WOMEN SEAWEED COLLECTORS TURNING PROTECTORS IN SAMBAI

THE LIFE AND LIVELIHOOD

In the coastal village of Sambai in Rameshwaram, 46-year-old M. Mutha has spent over two decades harvesting her livelihood from the sea. Widowed at a young age after the death of her husband, she stood firm without looking back, raising her children and managing her household through her unwavering connection with seaweed collection. The sea, despite its unpredictability, has been her only means of survival.

Mutha's day begins at dawn. Some days, she works as a harvesting labourer for seaweed farmers who cultivate *Kappaphycus alvarezii*, a red seaweed

known for its industrial value. These seaweeds are grown on ropes, submerged in shallow waters for around forty days until ready for harvest. During this period, she is called upon to help in the harvesting process—she removes the matured seaweed from the lines, washes it clean of silt and shells, and lays it out to dry under the open sky. The income from this work, though seasonal and modest, is steady enough to keep her home running during the cultivation periods.

But when cultivation pauses, she depends on collecting wild seaweed, mostly *Gracilaria* species, from the intertidal zones. She ventures into the shallow sea with a sack slung over her shoulder, carefully plucking seaweed from natural beds. On an average day, she collects around five to eight kilos. She dries the harvest near her home and sells it to local vendors for a small return. She works independently—not part of any women’s group or association—which means no access to collective savings or bargaining. She manages everything on her own.

Over the years, she and the other women collectors in Sambai have noticed a change in the sea. Seaweed beds that once flourished began to decline. They sometimes found their way blocked by torn and tangled fishing nets floating near the seabed. These abandoned nets—what fishers call “ghost gear”—were not just an obstacle, but often trapped seaweed, broke coral pieces, and injured their feet as they waded barefoot. Though they avoided talking about it, the danger and damage caused by these ghost nets were silently growing.



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A CONVERSATION BY THE SHORE: THE BEGINNING OF AWARENESS AND CHANGE

It was during one such routine day at sea that she and a group of fellow women seaweed collectors were approached by a team from the M. S. Swaminathan Research Foundation (MSSRF). The team had been working in the region to study marine biodiversity and the growing threat posed by marine litter, particularly ghost gear—old, discarded, or lost fishing nets that drift aimlessly in the sea, harming everything in their path.

The MSSRF team didn't arrive with a formal meeting or presentation. Instead, they came down to the shore, watched the women at work, and struck up conversations. They asked simple questions—where the women went to collect seaweed, whether they encountered floating nets, and what they did when they found them. The women, including Mutha, opened up. They spoke about the nets caught in the seabed, how sometimes they stepped on them unknowingly and got injured, and how the nets ruined seaweed patches that once grew thick and green.

It was through these open conversations that the MSSRF team began to share deeper insights. They explained how ghost gear not only posed risks to the women themselves but also caused serious damage to coral reefs, trapped marine creatures like turtles and fish, and ultimately reduced the health of the marine environment the community depends on. They spoke about how these nets don't decompose and instead stay for years in the water, silently killing and destroying. The women listened closely. For many, this was the first time they heard the full picture of what they had been silently dealing with for years.

What followed was not just information-sharing but an invitation. MSSRF offered to support the women in becoming part of the solution. They provided snorkeling kits—masks, fins, and gloves—so that whenever the women went for seaweed collection, they could also identify and retrieve ghost nets from the shallow areas. The kits were handed over with care, not as equipment from an institution, but as a shared tool to protect the sea the women depended on.

FROM SEAWEED HARVESTER TO MARINE PROTECTOR

What began as an informal exchange with the MSSRF team by the shore soon grew into a new chapter in Mutha's life—one



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where she no longer saw herself just as a seaweed labourer but as someone with a role to play in protecting the very waters that sustained her. Armed with the snorkeling kit she had received—mask, fins, and gloves—Mutha started observing the sea with a different set of eyes.

Every time she entered the water, sometimes wading chest-deep into the shallows and at other times diving into spots nearly six feet deep, she kept an eye out for more than just seaweed. She began retrieving ghost nets and lengths of fishing rope caught in the branches of coral reefs. With careful hands, she disentangled nets from fragile coral heads, sometimes even recovering coral structures that had been torn off and dragging them to the shore for safe handling and discussion with others in the village.

"I used to just walk past the nets stuck in the reef. Now I stop. I pull it out. I know what it's doing to our sea," Mutha shared.

Her efforts didn't stop at ghost gear. She began collecting other marine debris—plastic wrappers, discarded gear, stray bottles—and bringing them ashore for proper disposal. Occasionally, she salvaged old ropes and nets in good condition and sold them to scrap buyers, earning a small side income. But for her, the motivation wasn't monetary—it was a sense of responsibility. The more she learned, the more she felt that protecting the sea was not someone else's job. It was hers too.

JOINING HANDS: COLLECTIVE ACTION IN THE GHOST GEAR CLEAN-UP DRIVE

Mutha's commitment deepened further when she participated in a special Ghost Gear Clean-up Drive organized by MSSRF in Sambai. The drive brought together twelve other seaweed workers—most of them women like her—who had also begun to care more deeply about the marine environment following the foundation's awareness sessions.

Before the clean-up, MSSRF provided snorkelling kits and hands-on guidance, enabling participants to safely reach deeper sections of the reef and seabed. For many, including her, this marked their first experience diving into deeper waters with proper gear and support. With determination and shared purpose, the team spent nearly three hours in the water, retrieving over 13 kg of ghost gear—entangled nets, stray ropes, and marine debris that had long been damaging the delicate

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Among those who took part were women from Mutha's circle—her fellow seaweed harvesters and collectors from nearby stretches of the coast nearly 12 of them. What began as a one-time drive soon began to influence daily habits. Inspired by the experience, the participating women—including Mutha—started incorporating marine debris collection into their routine seaweed foraging trips. Now, whenever they spot plastic wrappers, broken gear, or pieces of net while working in the lagoon or shallow reef areas, they bring them back to shore for safe disposal.

"Nowadays, whenever we go for collecting seaweed, we don't just come back with seaweed—we bring back the marine debris too," She shared

Moreover, several of them—including Mutha—have also begun attending training workshops on ghost gear management conducted by MSSRF. These sessions offer practical knowledge on underwater retrieval techniques, safety measures, sorting collected materials, and understanding the broader ecological impacts of ghost gear. The training has helped them become more confident and informed as they take on their evolving roles as marine stewards.

SUSTAINING THE SEA, TOGETHER

Mutha's story is just one thread in a larger net of quiet, everyday heroism along our coasts. What began as a means to earn a living has grown into something deeper—a sense of care and responsibility for the waters that give life. Today, Mutha walks the shore not only as a seaweed collector, but as a protector of her marine environment. Her hands, once busy only with harvest, now carry both seaweed and waste, and her eyes scan not just for opportunity, but for threats to the sea she knows so intimately. In her footsteps, other women are beginning to see the ocean not just as a livelihood, but as a legacy worth protecting.

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WAY FORWARD

This case studies has proven that community-led solutions can drive lasting change. To build on this success, the continuous efforts with committed actions and deeper institutional anchoring is needed. Some of the key actions which list below



SCALING THROUGH POLICY AND SYSTEMS INTEGRATION

Institutionalize ghost gear prevention and retrieval practices in state and national policies and laws to secure resources and recognition.



BUILDING ECONOMIC PATHWAYS FROM WASTE

Transform discarded nets into utility items, accessories, or construction inputs through design inputs, vocational training, and market linkages, creating new income streams for local communities.



FOSTERING MULTI-STAKEHOLDER PLATFORMS

Establish an inter-agency working group comprising fisheries, forest, environment, marine police, panchayats, and civil society to co-develop and co-monitor interventions across Tamil Nadu's coastlines, ensuring collaboration and sustainability.



DEEPENING COMMUNITY OWNERSHIP

Establish Village Level Marine Debris Monitoring and Management Committees to oversee local efforts, include fishers in coastal zone management planning to ensure their voices are heard, and equip Women Self-Help Groups (SHGs) and youth groups with micro-entrepreneurship models to promote sustainable livelihoods.



INVESTING IN TECHNOLOGY AND KNOWLEDGE NETWORKS

Develop digital platforms for real-time reporting and tracking of ghost gear, and partner with academic institutions for research and innovation, such as biodegradable nets and trackable gear.





CONCLUSION: HEALING THE SEA, RESTORING THE SHORELINE OF HOPE

The case studies in this booklet have illustrated a quiet but powerful truth that resilience is not a top-down policy—it is a lived practice. Along the shores of Ramanathapuram, ordinary men and women have taken extraordinary steps to protect the waters they call home. They have turned adversity into innovation, and neglect into action.

Discarded ghost nets—once invisible hazards beneath the surface—have now become visible symbols of collective responsibility. Where once there was silence around marine debris, today there is conversation, creativity, and commitment. Communities have moved from being passive victims of environmental degradation to becoming active custodians of marine health.

This transformation is not defined by large-scale infrastructure or heavy funding—but by belief. Belief that the sea, if respected, can continue to provide. Belief that a fisherman's net, when turned around, can capture not just fish, but dignity. Belief that women who were once invisible in the value chain can become visible changemakers, one upcycled product at a time.

As we look ahead, this is not just a conclusion. It is a beginning. The journey to restore marine ecosystems will be long, but these stories light the way. Let the momentum continue—not as a project, but as a shared movement. Let every net returned, every woman trained, every boat that brings back debris, be a step closer to a sea that breathes freely again—and to coastal communities that thrive with pride, prosperity, and purpose.



Stop Ghost Gears, Save Marine Life



SGP The GEF
Small Grants
Programme

