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SALT Report 1085

Final Report: MARESSOL

Project results and the way forwards to prevent marine litter from fisheries in the Gulf of Mannar and Palk Strait

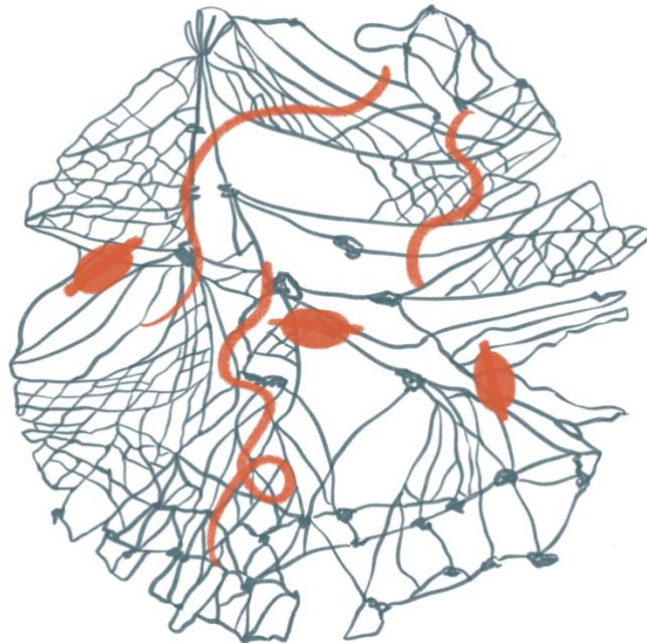


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Report title

Final Report: MARESSOL - Project results and the way forwards to prevent marine litter from fisheries in the Gulf of Mannar and Palk Strait

Published by

Salt Lofoten AS (SALT), International Union for Conservation of Nature (IUCN), Suganthi Devadason Marine Research Institute (SDMRI), Lanka Environment Fund (LEF)

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Summary

This report summarizes results from the project 'Mannar Region Systemic Solutions (MARESSOL)', with the overall goal to reduce the amount of marine litter deriving from fisheries within the Gulf of Mannar and the southern section of the Palk Bay. The project (2021 – 2024) was funded by the Norwegian Retailers' Environment Fund and carried out as an international partnership between SALT (Norway), Suganthi Devadason Marine Research Institute (SDMRI) in India, Lanka Environment Fund and International Union for Conservation of Nature (IUCN) in Sri Lanka.

The project has produced a common knowledge basis for relevant stakeholders, catalyzed engagement and dialogue amongst key stakeholders and between India and Sri Lanka, as well as provided policy recommendations and initiated pilot programs to demonstrate action.

Citation

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About the project partners

SALT (salt.nu) is a Norwegian private advisory and research enterprise based in Norway. SALT specializes in services related to enabling sustainable marine environments and coastal communities. SALT has been the project manager of MARESSOL.

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Lanka Environment Fund (LEF) (lankaenvironmentfund.org) is a not-for-profit organization established in 2019 in Sri Lanka. The aim of the Fund is to support existing conservation and environmental initiatives with their work and to foster a sense of stewardship of the island's exceptional beauty and natural value.

Contact person: Hafsa Jamel (hafsa@lankaenvironmentfund.org)

International Union for Conservation of Nature (IUCN) Sri Lanka, (iucn.org) is the Sri Lankan chapter of the international membership union IUCN. IUCN supports sustainable natural resource management initiatives of Members and partners, covering conservation and management of critical habitats, policy/legal and institutional support and environmental education and awareness.

Contact person: Dinithi Samarathunga (dinithi.samarathunga@iucn.org)

Suganthi Devadason Marine Research Institute (SDMRI) (sdmri.in) is a research and higher education organization, based in Tamil Nadu, India. Research is focused on the needs of marine and coastal ecosystems in India; to promote higher education in marine science; and to enhance societal involvement in marine resource conservation and to assist the coastal folk in the improvement of socio-economic conditions.

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ENDORSEMENTS

«The MARESSOL project has inspired to focus on marine litter from fisheries in Tamil Nadu, which has so far not been addressed properly. Research results from MARESSOL were presented to the Government of Tamil Nadu during the partnership meeting held in Chennai during October 2022, which inspired the Government to launch the Tamil Nadu Fishnet Initiative to focus exclusively on addressing the issue of discarded nets and ghost nets. The Initiative has moved forward to set up collection centers for discarded fish nets in fishing harbors and villages and also to begin detailed studies to collect baseline data along the coast of Tamil Nadu.»

Dr. Jayanthi, M., IFS, Chairperson, Tamil Nadu Pollution Control Board

«We express our deepest gratitude to the Mannar Region Systemic Solutions (MARESSOL) project, spearheaded by the International Union for Conservation of Nature (IUCN) and the Lanka Environment Fund (LEF). This initiative has been realized through the collaboration and guidance of the Ministry of Fisheries, the Ministry of Environment, and the Department of Fisheries and Aquatic Resources. By preventing pollution and promoting sustainable fishing practices, we are ensuring the vitality of our marine ecosystems for future generations. The introduction of the Handbook and Standard Operating Procedures for Abandoned, Lost, or Otherwise Discarded Fishing Gear (ALDFG) Management exemplifies our unwavering dedication to this cause. Together, let us continue to work towards a sustainable and prosperous future for our fisheries and our oceans.»

Department of Fisheries and Aquatic Resources, Sri Lanka

«It is my great pleasure to write a message at a time when we have a critical need to address marine and coastal pollution and the environmental impact caused by Abandoned, Lost, and Otherwise Discarded Fishing Gear (ALDFG). I deeply appreciate the initiative led by the International Union for Conservation of Nature (IUCN) and the Lanka Environment Fund, in collaboration with the Ministry of Environment, through the Mannar Region Systemic Solution (MARESSOL) project. This project, guided by the Ministry of Environment, demonstrates the impactful effect of interagency collaboration. By connecting relevant Government, Non-Government, and Private Sector organizations through a National Advisory Committee for ALDFG management, we have not only produced the ALDFG handbook but also completed the standard operating procedures for ALDFG management and initiated a pilot project in Mannar to reduce marine litter. I extend my heartfelt gratitude to all stakeholders involved in this project. Your dedication and hard work are instrumental in protecting our marine environment and ensuring a sustainable future for our coastal communities.»

B. K. Prabath Chandrakeerth, Secretary, Ministry of Environment, Sri Lanka

ABOUT THE PROJECT

The project “Mannar Region Systemic Solutions” (MARESSOL¹) is an international partnership between the project manager in SALT (Norway), Suganthi Devadason Marine Research Institute (SDMRI) in India, Lanka Environment Fund and the IUCN (International Union for Conservation of Nature) in Sri Lanka. The project is funded by the Norwegian Retailers’ Environment Fund. Since its initiation in 2020, the project has carried out research, stakeholder engagement, awareness building and policy advisory to enable a structured and targeted approach to limit marine plastic pollution from fisheries in the region of the Gulf of Mannar and Palk Strait. The project was finalized in Q3 in 2024, and this document summarizes project activities, outcomes and results, as well as outlines the way forward for involved parties.

The overall goal of the project has been to reduce the amount of marine litter deriving from the fishing industry within the Gulf of Mannar and the southern section of the Palk Bay.

Who	<p><i>Partnership structure:</i></p> <ul style="list-style-type: none"> - SALT, research and advisory, Norway - Suganthi Devadason Marine Research Institute, India - The International Union for Conservation of Nature, Sri Lanka - Lanka Environmental Fund, Sri Lanka - Norwegian Retailers Environment Fund, Norway
What	<p><i>What do we aim to accomplish?</i></p> <p>Sustainable, clean and nutritious oceans for the future, with focus on solutions found both with support in theory for policy and practical intervention tests with fisheries and fishery gear producers</p>
Why	<p><i>Why the focus on upstream solutions for marine litter from fisheries and ocean related industries?</i></p> <p>The fisheries and ocean based industries in the region is responsible for a great portion of the plastic pollution by volume and weight. However, the responsibility goes beyond the users; the quality of gear, options for handling of waste in the harbour, ability to sort and recycle, regulation of the production and choice of gear in the industry are all considered parts of the problem.</p>
How	<p><i>How do we envision targeting upstream marine litter through policy programmes?</i></p> <p>By sharing best practices for research, to develop a common scientific ground, that can aid a streamlined program for dialogue, awareness and advisory targeted to public and private sector, as well as local communities and NGO sector initiatives.</p>



Latter parts of the project outline are composed of “Policy orientation and Dialogue” as well as facilitating “Pilot projects” in India and Sri Lanka. In its final step, systemic solutions will be advocated to policymakers and key stakeholders.

¹ Project webpage: <https://salt.nu/en/projects/maressol>



PROJECT RESULTS

Previous to the MARESSOL project, there was little knowledge and attention among stakeholders and public authorities on the issue of ALDFG around the Gulf of Mannar. During the course of the project, a critical knowledge base has been created, both thanks to MARESSOL’s efforts but also as a result of a general activity from external partners, projects, research and other activities which are bringing attention to the issues of ALDFG. Today, as the project is closing, there is a broad acceptance and understanding among key stakeholders, public and private, of the causes, scope and impacts of ALDFG. Policy is under development and regulatory processes are under way in both Sri Lanka and Tamil Nadu. Meanwhile, the MARESSOL project has been instrumental in reaching out to local fishing communities and local governments to involve, educate and engage around solutions to prevent ALDFG. The below figure illustrates a summarized and general “then” vs “now” in ALDFG management in Sri Lanka and India, referring to before and after the MARESSOL project.

Then Vs Now in ALDFG Management in India and Sri Lanka



The basis for the project’s **initial work package** was the lack of data on marine litter from fisheries in the Gulf of Mannar. Hence, the research design, data collection and analysis was required during the project’s first part to better understand the roots and scope of the issues related to marine litter from fisheries in the Gulf of Mannar (GoM) and southern Palk Strait. A secondary aim with the first work package was also to create a common knowledge basis between India and Sri Lanka - upon which further collaboration on mitigation measures would build in the steps ahead. After more than two years in the making, the research report was published and launched on May 16th 2023 at a high level hybrid (in room and on web) conference in Colombo, hosted by the project partners. The conference reached approx. 100 participants.



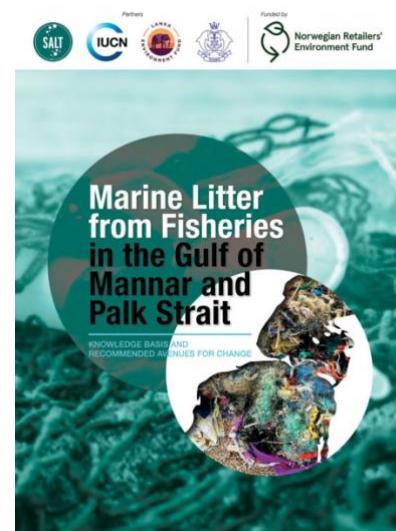
The MARESSOL Knowledge report handed over to Dr. Ananda Mallawatantri, Advisor to the President of Sri Lanka (Environment, Climate Change, and Green Finance) by Vinod Malwatte, director at the Lanka Environment Fund. Colombo, 16th of May, 2023.

“We have many opportunities to work together in India and Sri Lanka. The Gulf of Mannar has great potential because it has rich biodiversity on both ends and to make it into a green zone in the future.”

Dr. Ananda Mallawatantri, Advisor to the President of Sri Lanka (Environment, Climate Change, and Green Finance), at the MARESSOL conference, Colombo 16th of May, 2023.

The report “Marine Litter from Fisheries in the Gulf of Mannar and Palk Strait – Knowledge basis and recommended avenues for change” is available in full as well as a summary report for policy makers. The report points out that:

- Based on sampling from beaches, research found that fisheries related litter items compose a significant share of stranded marine litter on both the Sri Lankan and Indian shores. Pieces of rope were the most commonly found items.
- Based on interviews with fishermen, gillnets were regarded as the most commonly lost gear type, with bad weather and bottom snagging being the leading causes for losses. Designated locations to dispose of used gear were lacking for both Indian and Sri Lankan fishers. However, fishers in both countries are largely positive about supporting a system that would collect old fishing gear.



- To scan for solutions with potential to be tested in Sri Lanka and India, the report exemplifies a list of practical as well as policy solutions from around the world that have been proven to prevent litter from fisheries.
- Finally, the report provided a structured list of recommendations for change, categorized by measures with potential to be implemented on short/medium/long-term relating to “Awareness and Education”, “Building resilience”, “Regulation & Policy”, “Waste management”, “Litter removal” and “Further research”. For each measure, key target stakeholder groups were identified.

The second stage of the MARESSOL project started after the launch of the report at the conference in Colombo. The concept of “Abandoned, lost or otherwise discarded fishing gear” (ALDFG) had now become a recognized issue by the Sri Lankan government. A “National Advisory Committee” on fisheries related plastic waste was established in Sri Lanka, chaired by the Ministry of Environment and co-chaired by the Ministry of Fisheries and Marine Environment Protection Authority, where 14 key stakeholders representing Govt., non-govt., international organizations and individual experts were invited, including the MARESSOL partner IUCN. Meanwhile, IUCN and LEF had identified key stakeholders within the private and non-governmental sectors, locally as well as internationally, and initiated dialogues on strengthening the collection, processing and recycling in Sri Lanka. As a result, these dialogues led to discussions about introducing a Standard Operating Procedure (SOP) for ALDFG management, strengthening the outreach capacity and introducing technology for recycling.

In November 2022, the project partners convened in Chennai, India. The visit involved several meetings with relevant stakeholders in Tamil Nadu. Foremost, the partners were invited to the office of the Additional Chief Secretary for the department of Environment, Climate Change and Forests of the Government of Tamil Nadu, with representatives of staff from several relevant departments.



MARESSOL project team with representatives from the Government of Tamil Nadu. Chennai, 2022.

The project with its preliminary findings were presented and discussed with the officials. The meeting has likely inspired the state government to the establishment of the Tamil Nadu Fishnet Initiative, where SDMRI has been sanctioned to conduct a shoreline litter survey from 52 coastal villages as part of the Tamil Nadu Fishnet Initiative covering 14 coastal districts, based on expertise and methodology gained through MARESSOL. The partner meetings in Tamil Nadu also included field visits to recycling agents in Chennai, visits to fisheries communities in Tuticorin and a visit to a large fisheries gear manufacturer in Kerala.

Partly funded by MARESSOL, SDMRI has carried out a comprehensive and unique underwater survey on the abundance of ghost nets on 21 coral reefs in the Gulf of Mannar during 2022-2023. The survey is documented in a published report in [SDMRI's webpage](#), targeting mainly fisheries managers, marine national park managers, researchers, NGOs who are working on conservation and management, and administrators. The study results show that 86% of registered litter items stem from fisheries, with nets being the most commonly found category of lost fisheries gear. Following the coral reef study, SDMRI has undertaken a cleanup of ghost nets from nine artificial reef sites, covering a coastline of 40 km and eight fishing villages. 435 artificial reef modules were cleaned from ALDFG, mostly consisting of nets (81% of collected weight).

Based on the result of the coral reef survey, SDMRI has carried out removal of 135 kg of ghost nets from 9 artificial reef sites in the Gulf of Mannar, documented [here](#) (2024). This action helps increase productivity and ecological status of the artificial reefs, which in turn is beneficial for local fisheries. SDMRI will therefore initiate actions to help train the fishermen to conduct such reef cleanups themselves.



Ghost net cleanup. Photo: SDMRI, 2023



SDMRI holding workshops about ALDFG (2024).

Based on the knowledge and results accrued to SDMRI through MARESSOL, SDMRI has conducted two one-day workshops to propagate the results of the MARESSOL study, focusing on the importance and need to understand fisheries related litter and its management. Each workshop had 40-50 participants. The first workshop was held in the local language and involved representatives from eco development committee and Self Help Group members. The second workshop targeted participants from enforcement departments, like forest officials from four states.

Additionally, a four-page awareness brochure about ALDFG, written in Tamil, has been distributed among 12 fisheries communities in Tuticorin district.





On June 7th 2024, the MARESSOL team was invited to Chennai to present the project when the Royal Norwegian Embassy in New Delhi hosted “The International Conference of Circular Economies in Marine and Riverine Ecosystems”. The MARESSOL team played a critical role in pitching the original concept of the event to the embassy, as well as supported the event’s reference group. The MARESSOL team contributed to two panel discussions as follows:

1. Leveraging Social Innovation in the Informal Waste Economy to Drive Circular Economy Solutions for Marine and Riverine Ecosystems and moderated by Swati Singh, expert in Capacity Development for the Waste and Marine Litter Programme at GRID-Arendal. The panel members were, Dinithi Samarathunga, Programme Officer/Project Manager of MARESSOL project, IUCN Sri Lanka; Vinamra Mishra, Director, Ministry of Micro, Small and Medium Enterprises; Bharati Chaturvedi,, Founder and Director, Chintan; Suraj Nandakumar, CEO and Co-founder, Recity; Emmy Nøklebye, Research Scientist, INOPOL, NIVA Siddhard Hande, Founder and CEO, Kabadiwalla Connect
2. Fireside Chat-Policy Dialogue moderated by Girija Bharat, Managing Director, Mu Gamma Consultants and the panel members were, Prof. Terney Pradeep Kumara, MARESSOL project representative from Sri Lanka and former General Manager, Marine Environment Protection Authority Sri Lanka; Semund Haukland (NORAD), Nitu Kumari Prasad, Joint Secretary (Marine Fisheries), Department of Fisheries and National Focal point for the GIolitter Project and Dr. Jayanti Murali, Chairperson, Tamil Nadu Pollution Control Board

Text about concrete opportunities for establishing collection and recycling value chains in Sri Lanka. Opportunities and obstacles for the establishment. What has MARESSOL contributed, where are we now and what’s next after the project is over?

Strengthening the collection process is crucial, and there are opportunities to develop partnerships with existing Material Recovery Facilities (MRFs) and integrate the ALDFG collection with them. Enhancing the logistics network is also important for efficient collection and processing. Encouraging recycling and upcycling among smallholders and connecting them to markets can further support sustainable practices.

The MARESSOL project has initiated several dialogues with different recyclers, leading to research efforts by various private sector entities for product development. Additionally, the project has

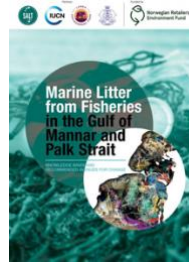
started discussions with Mannar communities, in collaboration with Sarvodaya, to initiate ALDFG collection. These communities have been linked with Lanka Upcycle for recycling purposes.

Alongside collection mechanisms, the lack of recycling opportunities were also identified, and a social entrepreneur organization, SPM tech, based in Batticaloa was identified for developing small scale recycling technologies built using Precious Plastic open source plans. Through the LEF, SPM secured an independant grant of USD 3,253 to research and design technology to upcycle ALDFG into marketable and sustainable products.

During the project period, foundational steps were established, but further work is needed. This includes continuing dialogues, raising awareness, and working closely with communities while providing technical assistance and resources for collection, cleaning, and gear marking. These efforts are essential to effectively address the problem. The project has also developed partnerships between the private sector and communities to ensure the continuation of these processes.

Published outcomes from the project

Knowledge report with findings from research in MARESSOL and recommendations for mitigation actions, available in a [summary version](#) and [full report](#).



A [handbook guide](#) for conducting community workshops on ghost gear and fisheries waste, including an illustrated step-by-step guide for how to sort and clean discarded fishnets.



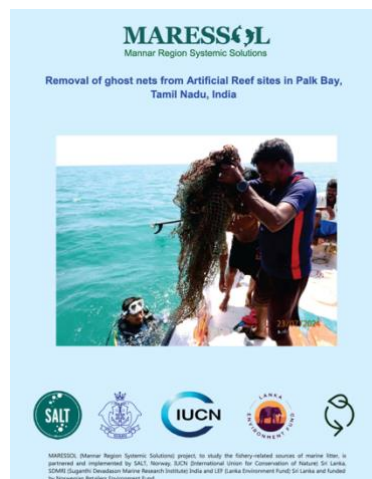
Longer [video](#) of MARESSOL (IUCN) to introduce the concepts and issues related to ALDFG in Sri Lanka to a wider public.



Short [video](#) of MARESSOL (IUCN)



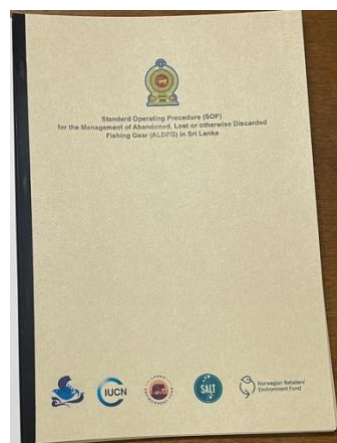
Report about the underwater survey on the abundance of ghost nets on coral reefs in the Gulf of Mannar, published on [SDMRI's webpage](#). Based on the result, SDMRI has carried out removal of 135 kg of ghost nets from 9 artificial reef sites in the Gulf of Mannar, documented [here](#) (2024).



IUCN and LEF have produced a "Joint Action Plan" for all relevant stakeholders involved in the development of solutions to ALDFG in Sri Lanka. The joint action plan has then been further developed into a draft action plan and validated with about 40 stakeholders (governmental and non-governmental). The action plan is currently adopted under the leadership of the Marine Environment Protection Authority (Sri Lanka) to be integrated with the Reglitter programme, which will include shipping related waste.

Draft Action Plan for ALDFG Management Sri Lanka - [Draft ALDFG National Action Plan for ALDFG Management in Sri Lanka.pdf](#). A draft national action plan for ALDFG management was developed by IUCN in collaboration with the Ministry of Environment, the Ministry of Fisheries, Department of Fisheries, the Marine Environment Protection Authority and all the members of the national advisory committee for ALDFG management, based on the inputs received during the stakeholder consultations held on 16th and 17th of June 2024. The action plan was validated during the stakeholder consultation held on 11th July 2024.

Two discussions were conducted with the Department of Fisheries in Sri Lanka, which resulted in a decision to develop a Standard Operating Procedure for ALDFG management, including strengthening training protocols, as well as to amend the policies on fiberglass waste due to abandoned boats. After conducting two workshops in 2024, the standard Operating Procedure (SOP-[Standard Operating Procedure ALDFG Management.pdf](#)) for ALDFG management was launched and handed over to the Secretary of the Ministry of Fisheries and Additional Secretary of Ministry of Environment on July 30th at the national conference on ALDFG in Colombo. The SOP will be available in English, Sri Lankan and Tamil languages.



A series of informative and engaging infographics about ALDFG communicated in social media by Lanka Environment Fund (@lanka.environment.fund on Instagram) with support from the non-profit NGO Parrotfish Collective (@parrotfishcollective) in Sri Lanka



Fact Sheet on Multi-stakeholder Approaches of ALDFG Management in Sri Lanka - [Fact Sheet- Multi-stakeholder Approach for ALDFG Management in Sri Lanka.pdf](#)



A summary report on key insights of national conference on ALDFG management in Sri Lanka, 30th July 2024 - [Summary report of national conference on ALDFG management of Sri Lanka.pdf](#)

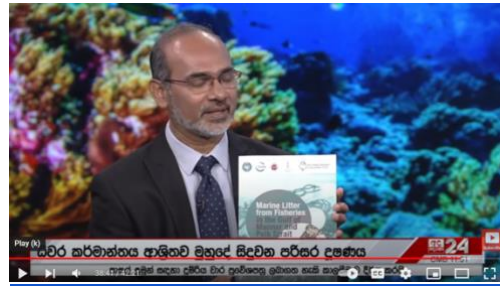




Photos from the national conference on ALDFG, 30th of July, 2024, Colombo.



MARESSOL findings were shared in the BIG FOCUS programme telecasted in Derana TV of Sri Lanka and the resource persons of the programme were Country Representative of IUCN Sri Lanka, Assistant Director for Highseas Operation of Department of Fisheries and Prof. Terney Pradeep Kumara of University of Ruhuna targeting the Ocean Day (2023). [Excerpt](#) available from Youtube.



MARESSOL report was mentioned and highlighted during the Thulawa Programme telecasted 2023-05-18 in ITN channel by Prof. Terney Pradeep, Sri Lanka.

[An excerpt](#) available from Youtube.com.



Summary of short-term outputs

Provided opportunities for about 25 undergraduate students from University of Ruhuna and Open University to join the research activities (2021-2022)

IUCN partnered with the Ministry of Environment and Open University for a reef cleanup programme organized in Mannar for the Ocean Day (2023)

IUCN visited the “Net Free Seas” project in Thailand to gain insights from a functional take-back scheme for discarded fishing gear (2023)

IUCN shared the MARESSOL initiatives during the panel discussion organized by the Open University under the theme Story of Plastics: Past, Present and Future Trends (2023)

Sri Lankan partners initiated and spearheaded a multistakeholder large-scale project application for a follow-up project on circular marine waste management schemes in Sri Lanka, involving key stakeholders (“Parley for the Oceans together with Help-O, Pearl Protectors, Good Life X), with geographic focus on Galle, Negombo, Kalpitiya, Mannar. (2023)

SDMRI and SALT applied to NITI Aayog for a LiFE Global Call for Ideas and Papers on the theme «Sustainable waste management for fisheries in Tamil Nadu, India» in 2022. The application was selected for the final round (full application) but did not gain funding.

Dialogue with relevant recycling agents in Sri Lanka to understand and document recycling capacity, points of collection, logistics and market barriers and research needs to scale investments to pilot scale. (2022-2023)

IUCN presented MARESSOL research findings at a national workshop in Sri Lanka on ALDFG, hosted by CEFAS (2023)

Empower.eco is launching a marketplace for buyers and sellers of plastic credits, and hope to onboard informal waste collectors to benefit from the platform. Through MARESSOL, Empower Eco and LEF will explore opportunities to establish the platform in Sri Lanka and reach out to stakeholders in the seafood industry to register as buyers. (2023)

IUCN joined the SACEP organized high-level round table discussions on plastic waste management (2024)

IUCN presented the MARESSOL project in a GloLitter Regional Workshop (2023)

Discussion with Climate Fund Manager on funding bankable proposal for ALDFG recycling on Sri Lanka

Discussion with Sea2See and WaterHaul to identify collaboration options for management of nylon-6 to develop sunglasses (2023)

Discussion with the COBSEA initiative for ALDFG management in SE Asia (2023)

A dialogue was initiated with GGGI, and they would like to be collaborators in workshops and alike on ALDFG. (2023)

The MARESSOL project and the established partnerships for net collection was briefed to the District Secretary of Mannar

A Trainer of Trainer programme for Regional level Fisheries have been conducted in Mannar in a first round, Kalpitiya, Negambo, Galle and Fisher Communities to design the operationalize mechanism (2024)

Partnership with Sarvodaya and Lanka Upcycle established for Net collection in Mannar and with INSEE Ecocycle for other type of marine litter collection (2024)

More than 100 Awareness posters on gear regulations, environment impact and Net recycling were disseminated to Fisheries Offices of Mannar, Kalpitiya, Galle, Matara, Batticaloa and Trincomalee (2024)

Community awareness programme for about 250 community members was conducted in Mannar at the District Secretariat and District Secretary for Mannar and Divisional Secretaries from Musali, Nanddan and Mannar Divisional Secretariats were joined the programme (2024)

Establishing Fishing Gear Registration Procedure with Department of Fisheries and Regional Fisheries, Sri Lanka (2024)
Collaborations with CEFAS and OCCP project during the National Conference on ALDFG Management

A collaboration was established to continue the National Advisory Committee formed by the MARESSOL project for the activities of Reglitter programme implemented by Marine Environment Protection Authority, Sri Lanka (2024)

Based on expertise and methodology gained through MARESSOL, SDMRI is sanctioned to conduct a shoreline litter survey from 52 coastal villages as part of the Tamil Nadu Fishnet Initiative covering 14 coastal districts. (2022-2023)

SDMRI has carried out a comprehensive and unique underwater survey on the abundance of ghost nets on 21 coral reef islands in the Gulf of Mannar, providing baseline data on underwater marine debris in the Indian reefs of the Gulf of Mannar. The survey is documented in a [published report](#) (2023-2024), targeting fisheries managers, marine national park managers, researchers, NGOs who are working on conservation and management, and administrators. In summary, the study found that 86% of litter on reefs was ALDFG, with between 6-12 ALDFG items per 100 m² (composition: nets 38%, ropes 24%, lines 18%, traps 7%, other debris 14%) with highest densities nearer coastal populations.

SDMRI has carried out removal of 135 kg of ghost nets from 9 artificial reef sites in the Gulf of Mannar. [Link to report](#). (2024)

SDMRI has conducted two one-day workshops in 2024 to propagate the results of MARESSOL study, focussing on the importance and need to understand fisheries related litter and its management. Each workshop had 40-50 participants.

Workshop 1: The participants from coastal communities like members of eco development committees and Self Help Group who play lead role on the shore in the removal of discarded nets. Local language was used for this workshop. SDMRI organized this workshop jointly with The Gulf of Mannar Marine National Park and the Gulf of Mannar Biosphere Reserve Trust of the Government of Tamil Nadu.

Workshop 2 : Focused on enforcement officials particularly from the forest department who are the custodian of the coastal areas. Forest officials from four states attended the workshop. SDMRI organized this workshop jointly with The Central Academy for State Forest Service in Coimbatore, Tamil Nadu - an institution of the Ministry of Environment, Forest and Climate Change, Government of India.

Outcomes and Impacts

The project has contributed to the following mid-term **Outcomes**, with associated long-term **Impacts**.

Outcomes	Impacts
Significantly expanded and strengthened scientific capacity and competence on marine litter from fisheries amongst project partners and key stakeholders	Local capacity building is regarded as key for independent and long-term engagement in the continuation of work for solutions against ALDFG.
The report from WP1 has functioned as a foundation of knowledge for all further activities in the project.	Robust knowledge provides legitimacy towards developing solutions preventing ALDFG.
Significantly contributed to the establishment of knowledge, awareness and a legitimate discussion about ALDFG as a national interest amongst national and regional authorities in Sri Lanka and Tamil Nadu.	Public authorities' support and focus on ALDFG is regarded as critical to enable for the development of policy and regulation, which might in turn have societal impact towards mitigating the problems of ALDFG.
Providing baseline data on marine debris in the reef areas of GoM as well as along the coastline.	This data is essential for the proper management and removal of debris are highly warranted to conserve the fragile coral reef ecosystems of GoM, to conserve biodiversity and to protect the livelihood of the dependent fisher folk.
Providing data to the global FAO survey on ALDFG	Strengthening the global knowledge basis on ALDFG might impact international policy and decision-making.
Catalyzed efforts in establishing new and expanded take-back schemes and recycling opportunities for discarded fishing gear in Sri Lanka. High operational costs at low scale, and capital investment constraints are identified as the main barriers from further implementation by key stakeholders. The need for incentivizing regulation has been identified and advocated to public authorities.	Functional take-back schemes are regarded as critical for long-term and scaleable prevention of ALDFG.
Underwater coral reef cleanups conducted as part of the project have provided empiric evidence and experience of such actions, which can inform discussions on systemic solutions on underwater reef rehabilitation.	Reefs less affected by ghost gear provide healthy oceans and better livelihoods for fishermen depending on the fishing grounds.

THE WAY FORWARD

As the MARESSOL project concludes, it has laid a solid foundation with policy, research, pilot approaches, and strong partnerships. Building blocks are in place to launch a comprehensive effort to combat marine pollution from the ground up.

Going forwards, the Sri Lankan stakeholders will need to secure partnerships and opportunities through grants and blended financing and sustainable business models to ensure that momentum and involvement of key stakeholders is kept at pace. It is necessary to raise awareness about the standard operating procedures for handling of ALDFG that now are developed, and to provide both technical and financial assistance to implement them. Additionally, it is important to provide the necessary information infrastructure, such as support to build a centralized system for recording gear usage. Another important track is to continue dialogues to initiate the process of implementing extended producer responsibility for fishing gear, starting with nets and ropes. To move forward with this process, financial, coordination, and technical support are needed.

In India, the state government of Tamil Nadu is currently implementing the Tamil Nadu Fishnet Initiative (TNFI). This initiative's main focus is on collection of discarded nets (ALDFG) and ghost nets and send them to collection centers for recycling. It is also aimed to inform a potential design for developing an Extended Producer Responsibility (EPR) program for fishing gear. In continuation of MARESSOL assessment work, TNFI has taken up the survey on discarded nets in selected 52 coastal villages in 13 coastal districts covering the entire Tamil Nadu coastline of 1,076 km. The Government is also focusing on technological adaptation through the scheme "Tamil Nadu: Sustainably Harnessing Ocean Resources and Blue Economy (TN-SHORE)", funded by World Bank, which is broadly outlined into four thematic sectors namely Pollution Abatement, Marine Litter Management, Circular Economy and Capacity Building to ensure long-term sustainable solutions to ALDFG in Tamil Nadu.

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