SPECIAL REPORT

JAIF Marine Debris Project Makes Strides in the Fight Against ALDFG

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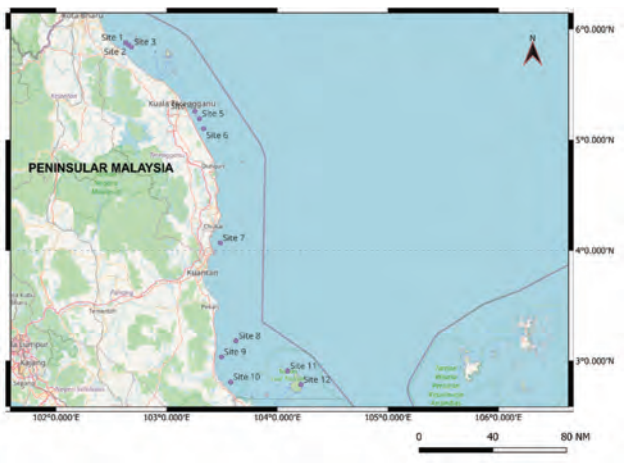
Abandoned, lost or otherwise discarded fishing gear (ALDFG) is one of the most persistent and harmful forms of marine litter worldwide. Defined by the FAO as fishing gear that has been abandoned, inadvertently lost, or intentionally discarded (Macfadyen *et al.,* 2009), ALDFG poses serious threats to marine ecosystems, fisheries resources, coastal livelihoods, and navigation safety. Made up mostly of nylon and polyethylene, they can persist for decades and continue to entangle marine fauna and damage habitats in a phenomenon called ghost fishing.

Through the Project "Regional Collaborative Research and Capacity Building for Monitoring and Reduction of Marine Debris from Fisheries in Southeast Asia" implemented at project site in Malaysia by SEAFDEC/MFRDMD, a survey was conducted across 25 coastal districts in Peninsular Malaysia from July to September 2025, where a total of 759 local fishers were interviewed using a questionnaire. About 69 % reported experiencing gear loss, often losing entire sets of gear. The main causes of gear loss varied by fishing method, with trawlers and drift netters citing net snapping and bad weather conditions, while trap fishers noted accidents with other fishing gear, strong currents, and theft. The economic impacts are significant, with trawl operators spending over RM10,000 to replace lost gear; trap and drift net fishers also experienced financial losses.



Pilot sites in Terengganu and Pahang waters

Awareness of ALDFG was moderate among fishers. About 61 % were aware of the issue, and 62 % considered ALDFG a serious problem. Fishers noted that ALDFG has been increasing over time and is likely to continue. The most affected resources identified were fish, shrimp/crabs, coral reefs, and turtles.

To study ALDFG distribution and its impacts, MFRDMD conducted monitoring surveys at artificial reef structures along the east coast of Peninsular Malaysia. The survey covered 12 pilot sites in Terengganu and Pahang using SCUBA diving and supported by photo and video documentation. The activity aimed to gather data on the type, volume and condition of ALDFG and come up with removal guidelines.

The results showed that most sites had low to moderate ALDFG severity with a coverage rate of less than 10 percent. A clear correlation was observed between local regulations and ALDFG severity: sites within marine protected areas had lower severity scores, while sites in active fishing grounds had higher scores. It was observed that the entanglement found on the reef structures were largely degraded and does not pose a severe threat to mobile organisms. However, abandoned fish pots remain a threat, as they significantly contribute to ghost fishing.

Field surveys conducted between December 2025 and January 2026 in Terengganu and Kelantan waters, covering ten trips with different gear types, showed the prevalence of

ALDFG and revealed that offshore areas are hotspots for heavy fishing gear accumulation.

Based on the results, a structured framework for ADLFG management and removal was developed to support ASEAN Member States (AMSs), which includes pre-survey activities, data collection, retrieval assessments, stakeholder coordination, retrieval operations, and post-removal management.

Fish trap caught together with marine catch (left); Discarded trawl net recorded from fishing operation (right)

To conduct the assessments, AMSs may use the proposed ALDFG severity index, which is based on the intensity of the entanglement, quantity, and environmental impact. After detection and scoring, AMSs can evaluate how to tackle ALDFG, whether to do a full or partial retrieval or to leave the gear in situ to avoid further damage to the site. This ensures that the best course of action taken is the most ecologically sound and logistically feasible.

Coordination is essential to ensure ALDFG retrieval is safe, efficient and compliant. AMSs must notify stakeholders such as the fisheries department, local authorities and communities, as well as maritime agencies. Removal methods depend on water depth, gear type, and available resources.

Planning the retrieval involves selecting from a range of methods such as manual driving, ROVs and mechanical retrieval based on ALDFG condition and budget. Successful operations depend on specialized cutting and lifting tools, sea-to-land logistics, and skilled personnel. A safety plan and emergency protocols must be in place to protect the team and to ensure that the debris is recovered without further environmental damage.

ALDFG condition and retrieval decision

Post-retrieval management is a triage process that decides the fate of recovered gear. Clean gear is recycled or repurposed; contaminated gear is sent to landfills or incineration plants. This ensures optimum resource recyclability and efficient waste management.

While most AMSs have tackled the issue of general marine litter, there is a notable gap in studies or that specifically address ALDFG. In response, MFRDMD has led efforts to develop the Technical Guidelines, which was formulated using a collaborative and evidence-based process. The Guidelines, which are voluntary in nature, are organized into three core pillars: assessment, prevention, and removal. They are informed by two questionnaire assessments, expert consultations, regional and international research, and regional workshops. Key events conducted included the Regional Technical Meeting held in Seremban, Malaysia in January 2026 and the Regional Workshop in Bangkok, Thailand in March 2026.

Participants of the Regional Workshop on the Development of Technical Guidelines to Assess, Prevent and Remove ALDFG in the Southeast Asian Region conducted on 31 March 2026, Bangkok, Thailand

The Guidelines aim to enhance regional cooperation while allowing flexibility to align with each country's priorities and institutional capacities. Successful implementation will depend on robust coordination and stakeholder participation. As such AMSs are encouraged to adopt these frameworks, which are in the final stages of revision and refinement.

To strengthen long-term strategies to reduce ALDFG and promote sustainable fisheries management in the region, SEAFDEC proposes the following: 1) establishing a harmonized ALDFG database and reporting system; 2) standardizing data collection protocols; and 3) adopting a gear-based monitoring approach.

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