Food and Agriculture Organization of the United Nations

INTERNATIONAL MARITIME ORGANIZATION

Reducing ghost fishing from lost gillnets in Kenya

The problem

Abandoned, lost, or otherwise discarded fishing gear (ALDFG) causes:

- marine pollution
- economic harm to fishers
- **ghost fishing:** When ALDFG continues to fish, causing injury and death to marine species

Gillnets, widely used in Kenya's small-scale fisheries, can be prone to being lost due to the unattended nature of their operations. This raises the risk of ghost fishing and resource damage. Reducing gillnet losses and their ghost fishing capacity are important measures to protect fisheries resources and the livelihoods of the fishing communities that depend on them.



The solution

A project by **KMFRI**, supported by the **GloLitter Partnerships** project, tested **biodegradable cotton twines** to modify gillnets. These twines:

- replace synthetic twine connecting the headrope to the net;
- **degrade after 8–16 weeks**, collapsing the net's structure;
- **reduce ghost fishing** following collapse of the net;
- allow easier recovery of lost gillnets

OceanLitter Programme

Key project activities

1 Lab tests

• Natural (sisal, jute and cotton) and synthetic (nylon) twines were tested for their tensile strength after submersion in the marine environment. 2mm twisted cotton twine was determined to the be most effective material due to its retained tensile strength that can reduce frequency and costs of net repairs, and degradation time (8-16 weeks).

2 Gillnet modification

• Cotton twines were used to attach the netting to the headrope (Figure 1 and Figure 2, top). After degradation, the net collapses, losing its fishing ability (Figure 2, bottom).

• The collapsed net is still attached to the footrope, connecting rope and buoy, which facilitates retrieval of the entire lost gear (Figure 2, bottom).

3 Fishing trials + Cost-benefit analysis

• Fishing trials showed **no significant differences in catch quantity or quality** between the modified and conventional gillnets.

• A cost-benefit analysis showed greater environmental and economic benefits from the modified nets.

4 Awareness raising campaigns

• Highlighted the harm from ALDFG and promoted gear innovations.

• Five coastal county workshops reached **266 local stakeholders** and a national workshop brought together **government representatives, researchers, NGOs and the private sector**.

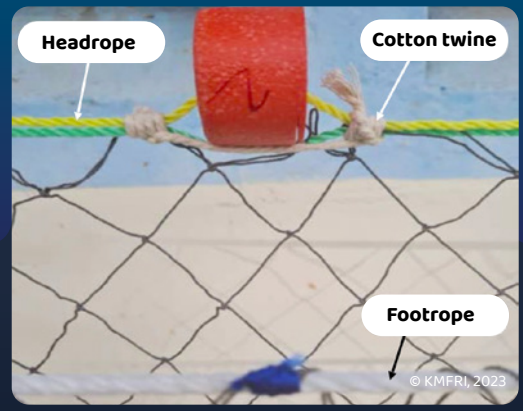


Figure 1. Cotton twines used to attach the headrope of a gillnet to the netting panels instead of non-degradable synthetic twines

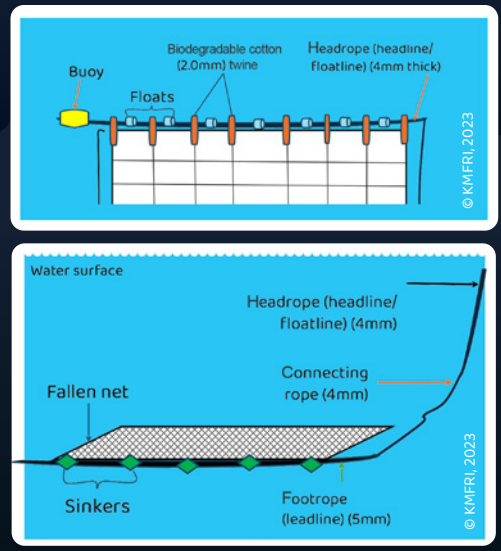


Figure 2. Gillnet modifications incorporating cotton twines in the headrope (top), and the collapsed gillnet once the twine has degraded following gear abandonment, loss or discard (bottom)

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Project Summary

Lead: Dr. Eric Okuku
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Duration: Jan 2022 – Apr 2023
Funding Support: GloLitter Partnerships
Focus: Fishing gear innovation to reduce ghost fishing in Kenya

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