

Combating ghost gear in the East Asian Seas

Case study series

Net Free Seas, Thailand



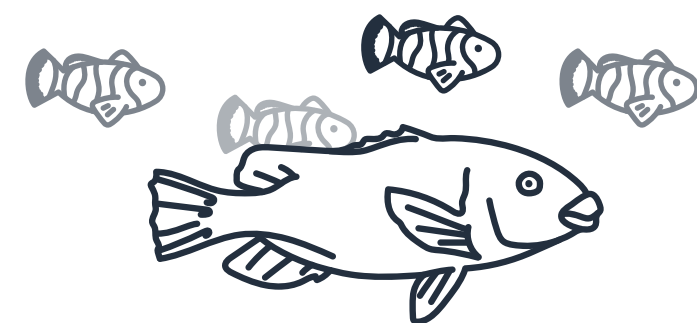
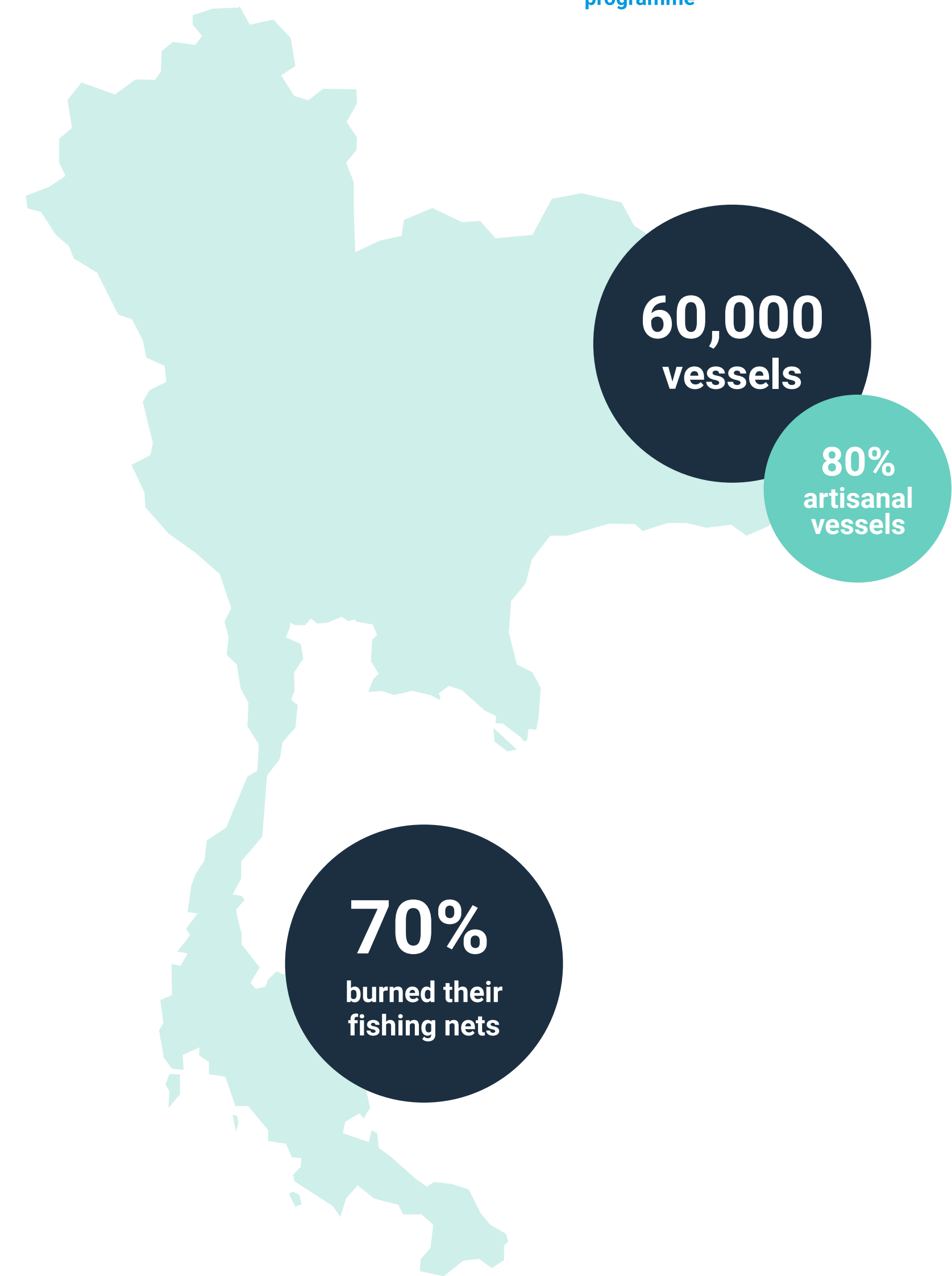
Case overview:

The Net Free Seas (NFS) project was launched to build a circular economy approach to deal with derelict fishing gear and to empower local communities to become part of the solution. Currently, the Environmental Justice Foundation (EJF) works with over 100 artisanal fishing communities in 11 southern provinces across the Gulf of Thailand and along the Andaman Sea. The NFS project recycles three main types of plastic gear: Nylon 6 (or polyamide 6), which is predominantly used in gillnets and other nets, fishing ropes made of polypropylene (PP), and high-density polyethylene (HDPE), used in trawl nets. Collected fishing gear is recycled into a wide range of lifestyle products and industrial components by business partners.

The situation in Thailand:

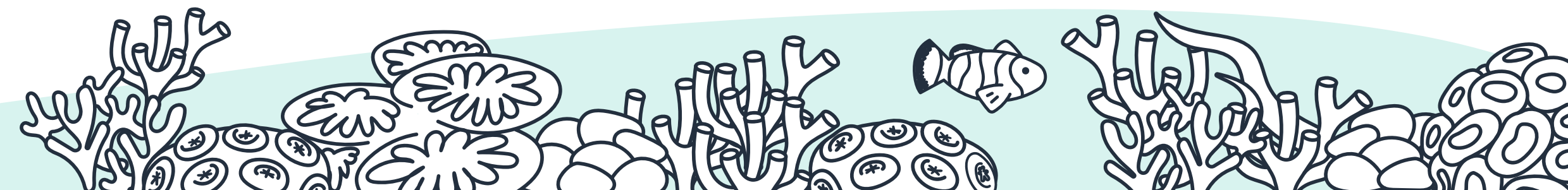
Thailand is one of the largest seafood exporters worldwide with around 1.56 million tonnes of seafood exported in 2018 valued at USD 6.9 billion¹. The domestic fishing fleet included over 60,000 vessels in 2022, of which around **80% are artisanal vessels** under 10 gross tonnes that predominantly use fishing nets such as gill nets for crab, shrimp, and mackerel. **85% of larger commercial vessels use some form of netting as primary fishing gear.**¹

Almost **70% of respondents (N=69)** of an EJF community survey stated they **burned their fishing nets to discard them**. Burning gillnets releases toxic fumes, including carbon monoxide, nitrogen dioxide and hydrogen cyanide. These chemical compounds damage the environment and are extremely hazardous to human health if inhaled.¹



¹ Environmental Justice Foundation. (2021). Net Free Seas Progress Report 2020-2021. Available at: <https://ejfoundation.org/resources/downloads/2021-Net-Free-Seas-report-EN.pdf> (Accessed: 12 May 2023).

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Case description:




Work in communities

EJF prioritizes the local needs of participating communities and encourages them to design their own collection strategies and tailor their incentive model. NFS introduces the project to communities, supporting them with training, a hub, water pressure, mesh bags, and anything else needed to implement the collection, cleaning, separation, and storage of nets. NFS keeps records of the fishing gear volume and incentives received by each community and conducts site visits to ensure quantities match and products are made from materials supplied from NFS communities. Surveys with participating community members are conducted to understand their capacity and needs, ensuring future uptake and retention of the recycling project.



Funding

NFS was started when the EJF received a grant from the Norwegian Retailer’s Environment Fund. Initially funded for one year, they secured an additional three years of funding the following year. These funds supported project management, stakeholder engagement, and seed funding for communities to initiate the processing of fishing nets, creating a network of stakeholders in the fishing net recycling supply chain in Thailand.



Long term sustainability, transparency & traceability

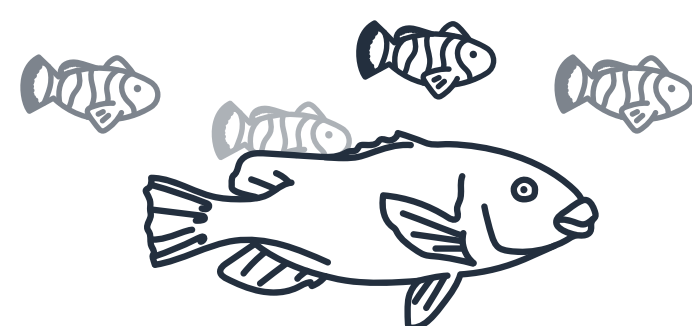
To ensure financial long-term sustainability, transparency, and traceability of the waste management systems, EJF partnered with communities, the public sector, and recyclers and encouraged private sector participation. Each stakeholder provided unique expertise on net collection, cleaning, recycling, manufacturing, and advocacy, enabling EJF to learn and adapt the project as necessary. These collaborations have allowed NFS to expand sustainably and to adapt its implementation strategies to match the diversified contexts within different fishing communities across Thailand. EJF’s equal participation approach enabled private sector partners to see the triple impact of their involvement: environmental, social, and economic benefits. This approach paved the way for other companies to follow suit, allowing communities to earn money through net sales and NFS to set up additional storage hubs.



Expansion

Currently, the communities only clean the nets, they do not bale them. Hubs are starting to have baling requirements, to address this, NFS is looking for baling machines that are capable and adapted for the situation in communities. They intend to then create an agreement with the communities who will take the responsibility of taking care of the machines.

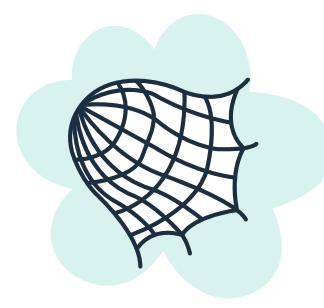
Additional funding from the Rufford Foundation and Fisheries and Oceans Canada was used to expand the project to island communities and host national and regional workshops.



Achievements:



16 community centres in the Gulf of Thailand and along the Andaman Sea (3-5 communities per centre) joined the NFS network. Communities choose implementation strategies to fit their needs – empowering ownership to ensure long-lasting and sustainable impact.



Over 75 tonnes of discarded fishing nets have been recycled and diverted from entering the environment or landfills or prevented from being burnt.



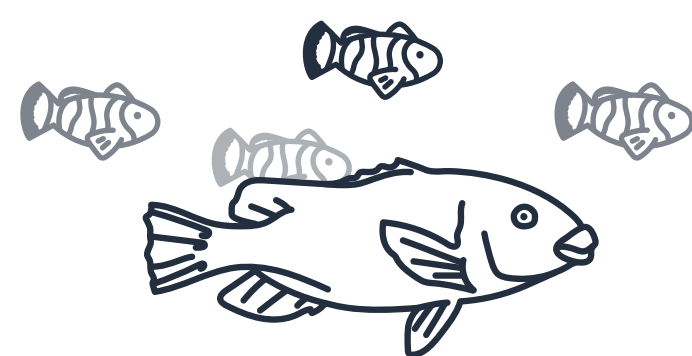
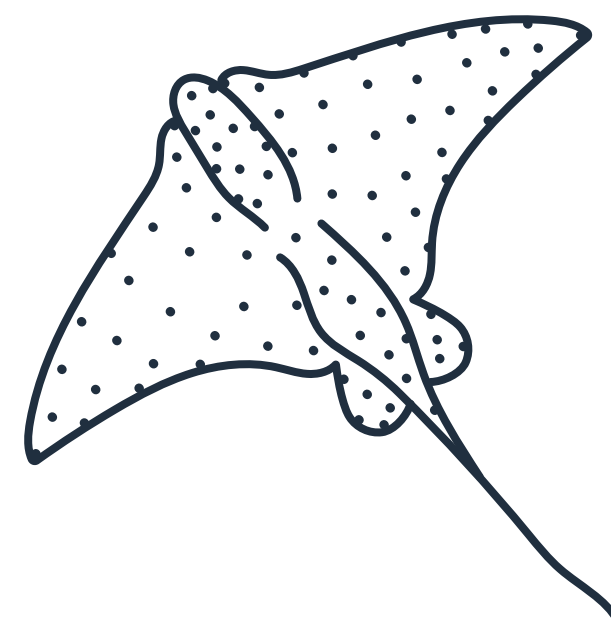
Over USD 22,000 (THB 900,000) have been paid to fishers for their nets, offering higher than market price for raw material as financial incentives. Communities are using this extra revenue in community emergency funds, conservation activities and additional income.



Perception of waste management has changed in small-scale fishing communities. Net waste collection and management is increasingly being recognized as a tangible source of income.



Approximately 500 kg of ghost gear has been recovered at sea. NFS organized four cleanup dives with dive centres and local authorities to safely remove ghost nets from famous dive sites and national parks.



Stakeholders:

▶ **Artisanal fishing communities:**

Over 100 communities participate in the network to manage end-of-life fishing gear through 16 community centres and 6 storage hubs.

▶ **Government:**

Department of Fisheries, Department of National Parks, and Department of Marine and Coastal Resources supported the development of the NFS network and provided access to marine parks for recovery of ghost gear.

▶ **Recycling and business partners:**

Cirplas (subcontracted through Qualy since end of 2021) and Teamplas recycle material. Qualy creates end-user products and Kitamura-UMC is a retailer that exports products to Japan.

▶ **Civil society organizations and social enterprises**

Save Andaman Network, NatureMind-ED, and Krabi Sustainability Foundation supported expansion of the network. Ranong Recycle collects and pre-processes material from communities for Cirplas and Teamplas.

▶ **Dive community:**

5 cleanup dives to recover ghost gear were organized with dive centres and divers. EJF collaborated with the Aow Thai Marine Ecology Center (ATMEC) to apply the Marine science Citizens Initiative (MARsCI) protocol to collect data on location and quantity of ghost gear.

Funding:

▶ **Norwegian Retailers' Environment Fund:**

Initial project funding for one year, funding extension for three additional years.

▶ **Rufford Foundation:**

Expansion to island communities in the Andaman Sea.

▶ **Fisheries and Oceans Canada, Ghost Gear Fund:**

Funding for national and regional workshops, two storage hubs in Thailand, and expansion of NFS to Indonesia.

Overcoming challenges:



Connecting with recyclers

Before the launch of NFS, no formal recycling efforts existed in Thailand. EJV conducted a baseline study to estimate the volume of nets that could be collected and the turnover rate, and nets were sent to independent labs for testing. This information and one tonne of cleaned nets were shared with recyclers to test recyclability. As a result, EJV was able to establish a partnership with two local businesses, Qualy and Cirplas, to recycle nets into new products.



Creating a market for recycling

EJV signed a Memorandum of Understanding with recyclers outlining pricing details to ensure fair and timely compensation for communities. EJV researched market prices in various provinces and identified a price point that was attractive to both parties, creating an economic incentive for communities and recyclers.



Reducing transport costs

Transporting nets from multiple remote and island communities to recycling warehouses is costly. The volume of nets collected by seasonal fishers was too low to make transportation financially viable. In response, EJV established community hubs to collect nets from three to five communities each, allowing for more cost-efficient transportation at scale (16 hubs were in operation in 2023). With the establishment of hubs, EJV was able to streamline operations and make better use of available resources.

Key success factors:

Community participation:

Meaningful engagement with communities allowed for adaptability, flexibility, and scalability to meet the unique needs of each community. Communication between fishing communities and recyclers ensured project efficiency, transparency, and sustainability.

Market for recycling:

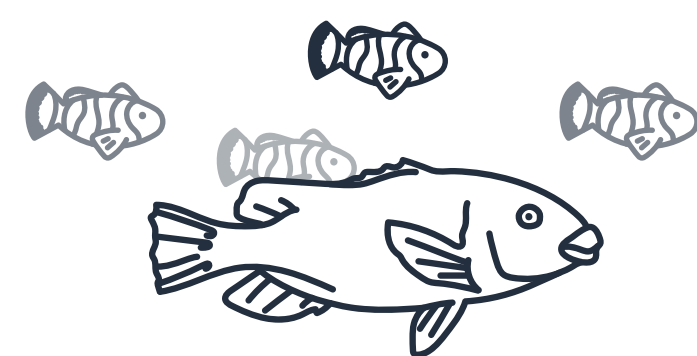
The initiative created a compelling business case for recyclers based on evidence, and income opportunities for communities based on fair pricing.

Financing mechanism:

Communities had access to individual or communal bank accounts and were able to receive same-day payments for nets sold to recyclers.

Scalability and cost-efficiency:

The initiative was able to overcome transport cost by establishing community hubs. Direct partnerships with recyclers without go-betweens, and low-cost cleaning and storage processes and facilities increased efficiency.



What do you need to replicate this practice?

01

Seed funding to set up partnerships and infrastructure in communities for collection, cleaning, drying and storing of nets

02

Access to local fishing communities and willingness to join the network

03

Existing recycling infrastructure or a recycling company willing to buy end-of-life nets

04

Availability of bank accounts in communities or a payment mechanism for collected nets

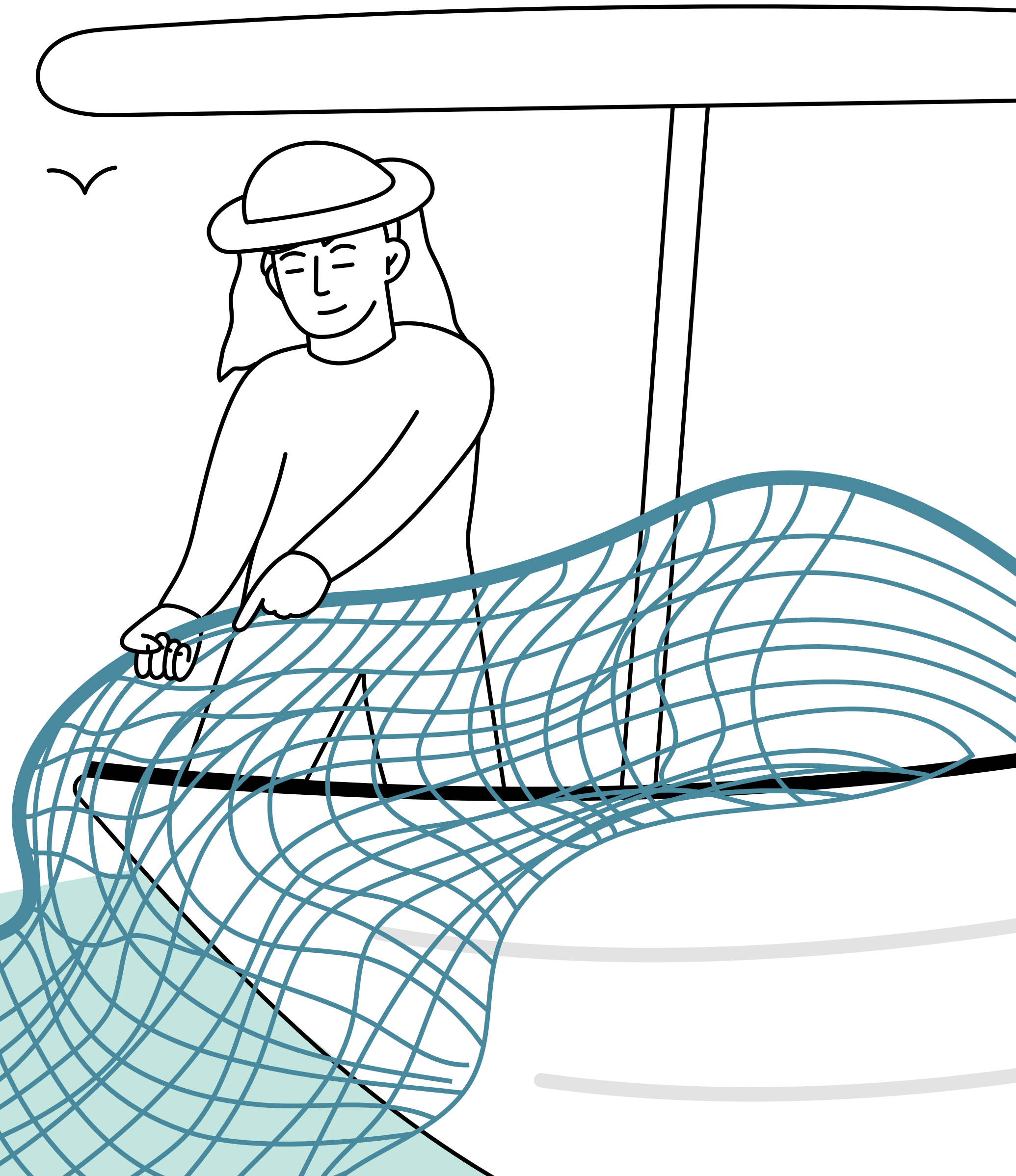
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Access to cost-effective transport, in particular in remote and island communities

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