

REPORT

# BEYOND THE SHAPE

design and prototyping workshop

Palermo

June 04-05, 2025

SCALO 5B



ENABLED BY



IN PARTNERSHIP WITH




WORKSHOP TECHNICAL PARTNER









A large yellow and black spotted eel is entangled in a red fishing net in a coral reef environment. The eel is coiled, and the net is draped over it. The background shows various coral species and the blue water of the ocean.

## fishing nets: problems and opportunities

Discarded fishing nets make up to 46% of the plastic in the oceans and are among the most harmful forms of marine pollution. Each year, over 3,000 km<sup>2</sup> of gillnets, 75,000 km<sup>2</sup> of purse seine nets, and 740,000 km of longlines are lost at sea, **contributing to the death of 79% of entangled marine animals** (World Animal Protection, 2018).

90% of species caught in “ghost nets” have commercial value, resulting in severe economic consequences. These nets take **600 years to degrade**, releasing microplastics into the food chain: by 2050, 95% of fish may have ingested plastic.

However, these nets can be turned into **secondary raw materials**, generating new production chains, jobs, innovation, and objects through art, design, and recycling. From waste to resource: an opportunity for ecological and economic transition.



## the *Untangling The Sea* project and the *Beyond the Shape* workshop

**Untangling the Sea** is a project promoted by the **Sicily Environment Fund** (SEF) and funded by the **TUI Care Foundation**. Its goal is to assess the feasibility of a circular economy model applied to abandoned, lost, or discarded fishing gear (ALDFG) and create a **regional network of stakeholders** committed to addressing this serious environmental threat.

The project involves diving centers for reporting and retrieving seabed nets, fishing companies for better ghost net management, artisans and recycling facilities for exploring reuse and recycling solutions, and public authorities for developing **long-term governance strategies**.

As part of the project, ***Beyond the Shape*** was held: a design and prototyping workshop exploring new uses for discarded fishing nets through reuse and recycling practices. The initiative brought together creatives and technical experts to develop **sustainable and socially impactful solutions**.

**Sicily Environment Fund** is an Italian foundation supporting projects for environmental protection and biodiversity conservation in Sicily, promoting sustainable solutions rooted in local territories and developed with the involvement of communities, institutions, and scientific partners.

The project was implemented by SEF in collaboration with **Abyss Clean Up**, an organization specializing in identifying and removing marine waste and ghost nets, and with the scientific support of **CNR-IGAG**, responsible for environmental impact assessment.





## the workshop

The *Beyond the Shape* design and prototyping workshop was held on June 5–6, 2025 at Scalo 5B in Palermo, aiming to **explore the expressive and functional potential** of reusing discarded fishing nets.

Curated by **Diego Emanuele** (Forward Studio / Abadir Academy), the two-day workshop combined sustainability, design experimentation, and cultural activation. It involved university students, artisans, and professionals in an intensive experience of **design, material research, and prototyping**.

The need to critically address the **issue of fishing nets** and marine waste through design led to a teaching and operational pathway that, despite time constraints, generated tangible outcomes and applicable visions. Starting from a shared reflection on the ecological and social implications of recovering fishing nets, the workshop fostered a design mindset capable of **transforming discarded materials into everyday objects**.





## Structure, Content, and Phases

The 20-hour workshop was held over two days (9:00–18:00), involving 12 selected participants—students, artisans, and designers. After an introductory session by **Gaia Agnello** (SEF Director) and **Carlo Roccafiorita** (Project Manager of SEF and Untangling the Sea), **Diego Emanuele** provided methodological and technical guidance.

The workshop took place entirely at **Scalo 5B**, a space equipped with semi-industrial machines for processing and transforming fishing nets. These nets were shredded and fused to create new plastic materials.

**Participants, divided into three interdisciplinary groups**, went through observation, material research, design ideation, and rapid prototyping. Activities also included **evaluating the physical and mechanical properties** of the nets (mainly nylon and HDPE), testing workability of the materials, and identifying use contexts for the prototypes.





## the creative process

In the initial phase, participants explored the reuse potential of the material through intensive brainstorming. The challenge: working with a resistant yet shapeless substance, somewhere **between solid and fluid**.

Interactions with tutors and professionals opened up **design possibilities ranging** from fashion to furniture. The process fostered transversal creative thinking, merging aesthetics, functionality, and sustainability.

From this exploration, the most promising ideas were selected for **prototyping**.







## the workshop space

Participants had access to **Scalo 5B's** workshop and machinery, enabling the transition from design sketches to final prototypes. This hands-on experience brought workshop ideas to life.

The affinity between Scalo 5B and the project lies not only in their approach to sustainable, shared production but also in their shared goal of **strengthening social bonds and territorial growth** through collaborative and inclusive practices.



## Prototypes

The three groups developed prototypes **combining aesthetics, functionality, and sustainable reuse**.

**Group 1** designed a customizable **seating unit**, starting from a pre-existing metal frame at Scalo 5B. It featured net-based seat supports, cushions, a storage pocket, and a flowerpot holder-personalized with the **Lisca Bianca Association** logo. Nets were attached with hooks and cords, allowing form flexibility. The group also created a toroidal **plant holder** using two interlocking nets for variable-sized pots.

**Group 2** created "**Seperate**", a modular dividing wall. A rectangular-cut net was stretched between two wooden slats, one suspended from the ceiling with cords. By integrating small mobile components made from shredded and re-fused plastic (inspired by *Precious Plastic* methods), they designed a **flexible system** of hanging pockets and containers. The same group also designed **bike side pockets** using nets, applying them to a bike on site.

**Group 3**, formed by two students and one artist, developed **headwear**: one cap and three hats of different shapes, experimenting with the flexibility and elasticity of fishing nets. This exercise became an investigation of the limits and possibilities of a humble material reimagined through fashion design.

In addition, two types of **hooks** were created to turn any net piece into a bag, as well as a **lamp**.

In the **final presentation**, each group publicly showcased its work, explaining processes and results to an engaged audience. The initiative will continue with a second workshop in Palermo, involving local artisans in further design and production development.







**Adaptable Seating**

Welded galvanized iron structure, white nylon net, red nylon + HDPE net, metal hooks and fused nets, polyester cords.

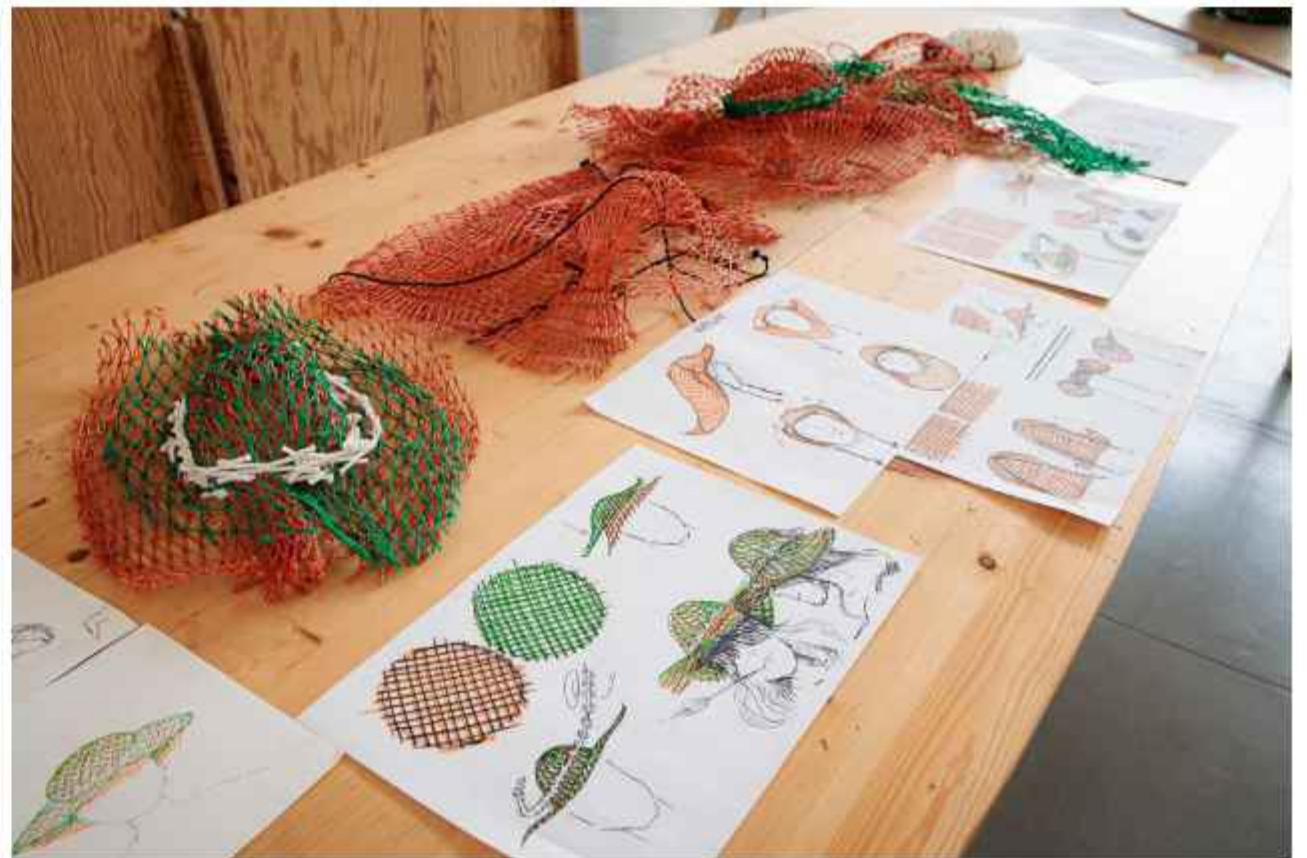




**Separate**

Vanilla-colored nylon net, red and green nylon + HDPE nets, plastic hooks from bottle caps (fused), wood support, polyester cords.





**Headwear**  
Nylon + HDPE nets, polyester cords.





**Plant Holders, Lamp, Bike Pockets**  
Nylon + HDPE nets, polyester cords.





**Hooks**  
For transforming net edges into storage bags – Prototype 1: CNC-cut and hand-finished wood. Prototype 2: 3D-printed PLA.





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