



# Waste Management Infrastructure - managing fishing gear from deck to port

## How can this brief support you

As part of its work towards objectives laid out in the [European Green Deal](#) and [Circular Economy Action Plan \(2020\)](#), SEARCULAR has focused on circular smart port-based solutions which provide the practical infrastructure required for effective waste collection and management. Specifically, under the [Port Reception Facilities Directive](#), [EU Ocean Pact](#), and [EU Ports Strategy](#), ports are legally required to provide adequate waste management facilities to handle fisheries specific waste and prevent gear from reaching landfill.

To directly address this, SEARCULAR has tested and simulated a '**Smart Blue Point**' which enables collection, characterization, sorting, and conditioning of end-of-life (EOL) fishing gear at port, ensuring material traceability<sup>1</sup>. This provides a scalable model for EOL waste management and the blueprint for a dedicated pathway for recyclable materials to enter the circular economy<sup>2</sup>.

**This brief provides a summary of SEARCULAR's key policy recommendations for scaling up fisheries circularity in European ports.**

## Key Recommendations

1

**Support the deployment of a smart 'Blue Point' and link these to optimised reverse logistics systems across regions.** Strengthen existing port infrastructure and rollout **SEARCULAR's Blue Point model** to significantly reduce marine litter and improve the traceability of EOL fishing gear<sup>1,2</sup>. Facilitating harbour-side collection, sorting and conditioning can incentivise and maintain demand for high quality recyclable materials at port<sup>3</sup>.

2

**To improve the efficiency of chemical and mechanical recycling of EOL fishing gears, their waste management should be integrated into existing processing pathways and plants.** Our research indicates that the volume of fishing gear waste collected in ports across the Basque region is insufficient at a regional scale for a stand-alone chemical or mechanical processing plant.<sup>2</sup> Thereby, collected, sorted and conditioned fishing gear should be fed into existing chemical or mechanical processing plant pathways under a plastic-2-plastic strategy<sup>4</sup>.

3

**Make digital product passport<sup>5</sup> mandatory for fishing gear and devices.** Aimed at supporting the EOL management from the outset and focused on the [design of gear under standards](#), certified fishing gears should be incentivised to support EOL waste management. **Digital product passports – in the form of a gear tag or gear lifecycle factsheet** – that provide transparency on material composition and sources, and guidance on EOL management could support increased recycling<sup>5,6</sup>.

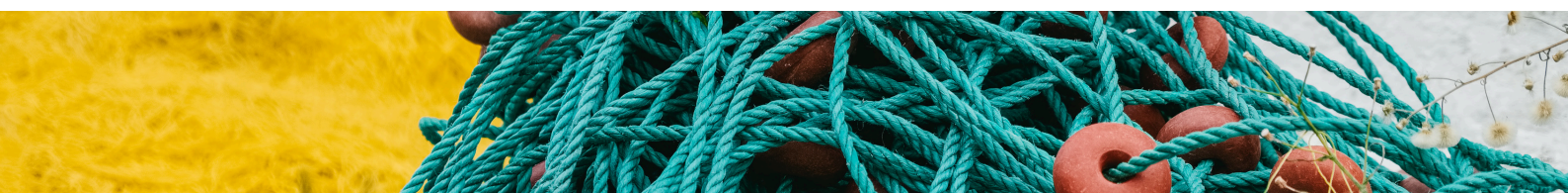


## Background Research

To develop the roadmap for circular fishing ports across Europe, inclusive of a **scalable 'Blue Point' model for EOL gears**, SEARCULAR has worked with Basque Government, port authorities and ports to understand their needs and requirements for gear collection and sorting<sup>1,2</sup>. Fishing gear waste management infrastructure needs to be carefully tailored to the specific needs of the port and the region, and at the same time, aligned with existing waste management streams at a regional and national scale<sup>2</sup>. SEARCULAR has trialled and refined a Smart Blue Point design for fishing gear waste collection, sorting and conditioning in a Basque County port in Northern Spain. **The results of this trial have informed a 3D digital model of this smart port based solution<sup>2</sup>**, which can be in turn rolled out and adapted to fit individual port and regional requirements.

Additionally, SEARCULAR has undertaken a regional trial in the Basque region, in which almost **14 tonnes of fishing gear were collected, characterized, sorted and separated for chemical recycling**. Furthermore, **1 tonne of this material was thoroughly processed and successfully converted into pyrolysis oil<sup>2,4</sup>**. This additional recycling route has proven effective in reducing the volume of fishing waste typically destined for landfill, and contributes to recycling within the framework of a circular economy.

**SEARCULAR has evidenced the benefits of a standardised, but simultaneously, locally tailored port reception and management model, designed for connectivity between ports, and regional and national facilities. This brief provides three core focus areas to realise these benefits.**



## Support the deployment of smart 'Blue Points' and link these to optimised reverse logistics systems across regions

SEARCULAR has developed a model to prioritise the deployment and scaling up of smart Blue Points across Europe<sup>2</sup>. **The Blue Point should act as an operational hub for the collection, dismantling, and conditioning of discarded fishing gear, supported by a network of satellite collection points at smaller ports and linked via an optimised reverse logistics system across regions.**

The EU should promote and regulate the collection, classification, conditioning, and recycling of EOL fishing gears and utilise the connected EU Blue Point system to monitor compliance, promote effective local management. To incentivise the usage of the Blue Points by fishers<sup>3</sup>, the disposal of dismantled fishing gear should be free of charge or with reduced flat waste fees under the [Port Reception Facilities Directive](#) and [EU Ports Strategy](#). Additional eco-modulation of waste fishing gear disposal could be attributed to the recyclability of the products and materials delivered.

## Integrate fishing waste into existing waste management facilities

High costs of sorting, waste management logistics, and a lack of traceability mean that a lot of fishing gear still ends up in landfill or incinerators<sup>1,2</sup>. To address this and targets in the [Zero Pollution Action Plan \(2021\)](#), SEARCULAR explored the feasibility of dedicated fisheries waste management plants. However, the results of **regional Basque trials indicated that the tonnage of fisheries waste collected at ports is not sufficient for its own waste management facility and should instead be integrated into existing local or regional recycling facilities<sup>2</sup>**.

To map this process, SEARCULAR has used a reverse logistics model<sup>2</sup>, and identified that **effective integration with existing waste management is dependent on collecting, sorting, and conditioning gears in Blue Points at port to ensure materials are of a sufficient quality for recycling**. Once processed, the materials should be directed to established recycling routes, such as mechanical and chemical recycling<sup>4</sup>, supporting the development of a plastic-2-plastic strategy. It is advised that case specific environmental assessments should be undertaken to minimise the risk of unforeseen impacts, including those related to port logistics and recycling emissions<sup>6</sup>.



# POLICY BRIEF 4

## Make the digital product passport mandatory for fishing gear and devices

A fundamental barrier to the efficacy of Blue Points and utilising existing waste management streams is providing a steady stream of recyclable gears<sup>2</sup>. This starts with their design, **gears should be manufactured in line with circular design standards and design-for-recycling principles, for easy disassembly and recycling**. This will lead to higher quality recyclates and secondary raw materials, ultimately adding value to materials that would otherwise be landfilled and, therefore, lost from the circular economy<sup>2,4</sup>.

Building on existing policy recommendations regarding certified gears (See Policy Brief 1 and 2), **the EU should promote the implementation of a Digital Product Passport that allows materials to be tracked throughout their entire lifecycle<sup>5,6</sup> – from manufacture to second life**. This could be facilitated by extended producer responsibility schemes and a gear labelling concept such as SEARCULAR's Gear Tag and Gear Lifecycle Factsheet (GLF)<sup>6</sup>.

**SEARCULAR is a European Horizon-funded research and innovation project under Mission Protect our Oceans and Waters. SEARCULAR has 13 partners, from across Europe and is working with the fishing industry to co-develop solutions that reduce marine litter and microplastic generated by fishing gear.**

Tailored to the requirements of diverse fisheries, SEARCULAR has developed and tested **4 innovative solutions** to tackle marine plastics from fishing gears at source, and ultimately, support sustainable fisheries and healthy marine environments for generations to come.



## References and Resources

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- 6 Benedict Wilson, Emily Easman, Stephan Kabasci, Oihane C. Basurko, 2026. SEARCULAR's Gear Lifecycle Factsheet (GLF)a Digital Product Passport for fishing gear
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