2026

Lost Fishing Gear:

Retrieval, recycling, and preventive actions for abandoned recreational fishing gear in the central Baltic Sea

D.2.1.2 Cooperative framework and recommendations for collection and recycling of fishing gear

Interreg
Co-funded by the European Union
Central Baltic Programme
Re:Fish

Lost fishing gear is found in all seas, lakes, and waterways where recreational fishing takes place. It causes unnecessary suffering for fish, birds, and marine mammals. In the EU project Re:Fish, we are working towards a cleaner and healthier Baltic Sea.

Project period: 2023–2026
Funded by Interreg, Central Baltic Programme
Project partners: Keep Sweden Tidy (SE, lead partner), Keep the Archipelago Tidy (FI), University of Tartu (EE), Finland Environmental Institute (FI)

Read more at **centralbaltic.eu/project/refish/**

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Project information

Funded by the EU's Interreg Central Baltic Programme under its "Improved Coastal and Marine Environment" priority, the Re:Fish project "Retrieval, recycling, and preventive actions for abandoned recreational fishing gear in the central Baltic Sea" (project period from March 2023 to February 2026) was coordinated by the Keep Sweden Tidy Foundation in cooperation with partners from Finland, Keep the Archipelago Tidy Association and the Finnish Environment Institute, and from Estonia, the University of Tartu.

The Re:Fish project addressed the problem of ghost fishing and plastic pollution caused by lost recreational fishing gear in Sweden, Finland, and Estonia. Through activities such as gear retrieval operations, end-of-life gear collections, citizen-based science initiatives, educational training and awareness campaigns, the project engaged anglers and fishers using passive gears, manufacturers, NGOs, research institutions, and authorities to prevent gear loss and advance practical measures for gear recovery and material recycling.

More information, project materials, and results can be found on the project webpage.

Citation: *Kolmeder, C., Niemi, N., Wuolamo, J., Põldma, M., Möller-Raid, T., Kôivupuu, A. and Blidberg, E. (2026). D.2.1.2 Cooperative framework and recommendations for collection and recycling of fishing gear. Final report of the project Re:Fish: Retrieval, recycling, and preventive actions for abandoned recreational fishing gear in the central Baltic Sea. Interreg Central Baltic Programme 2021-2027.*

Content

Project information 2
1 Introduction 4
2 The SUP recycling networks for EOL gear 5
2.1 Sweden 5
2.2 Finland 6
2.3 Estonia 7
3 Collections of EOL fishing gear 7
3.1 Sweden collections 7
3.2 Finland collections 9
3.3 Estonia collections 12
4 Discussion and conclusion 17
References 19

1 Introduction

The issue of plastic-containing fishing gear entering marine systems is a shared concern for us all, including the significant risks fishing gear poses to the environment and marine organisms through entanglement and plastics eventual degradation into microplastics in the environment. The introduction of the EU Directive on Single Use Plastic 2019/904 (SUP – directive; European Commission, 2019) which includes plastic-containing fishing gear aims to address this issue. The directive brings the responsibility of recognizing the products' full life cycle to those who introduce the product to the market, the so-called extended producer responsibility. This includes providing recycling systems. It does not further regulate the character of these systems. This presents at the one hand side an advantage as country specific characteristics can be taken into account. In the case of the countries covered in the Interreg Central Baltic project Re:Fish i.e. Sweden, Finland and Estonia, this means targeting systems for countries with a difference in recreational fishers. A recent estimate for fishers in Sweden is 1.2 million (SwAM, 2025), in Finland 1.6 million (Luke, 2024) and in Estonia 145.000 (Turu-uuringute AS, 2025). On the other hand, it does not encourage collaborating across countries and rather results in isolated solutions. However, the project Re:Fish piloted collection systems for end-of-life fishing gear in Finland and Estonia and collected data from the already existing collection system in Sweden. The project partner University of Tartu (UT) placed EOL fishing gear containers in Pärnu Bay, Keep the Archipelago Tidy Association (KAT) placed containers around the Archipelago Sea and Keep Sweden Tidy (KST) collected data on fairs and from municipalities. This document gives a short overview on the recycling systems in the three countries, summarizes the collection results from the years 2024 and 2025 and concludes with development opportunities.

2 The SUP recycling networks for EOL gear

2.1 Sweden

In Sweden, the SUP-directive has been implemented through ordinances in national legislation. The main legal act is the Ordinance on Extended Producer Responsibility for Fishing Gear (SFS 2021:1001). For a company to place fishing gear on the Swedish market, it must be affiliated with a producer responsibility organisation. There is one at the time being, called Fiskekretsen AB. It was established in autumn 2024 and currently has 135 members. Its primary function is to help facilitate the collection and recycling of fishing gear made of plastics, promote the use of recycled plastics in new products, reduce the amount of plastic waste in the oceans and other aquatic environments, and provide support and information to all its members.

The collection system for fishing gear is nationwide and covers gear from both recreational and commercial fishing. Swedish municipalities are responsible for providing dedicated collection containers, primarily at recycling centres, for fishing gear used by private individuals. When the containers are full, the municipality orders collection from a waste management company contracted by Fiskekretsen. The municipalities receive compensation for the additional workload. Fiskekretsen offers collection points for professional fishers at easily accessible locations adapted to the spatial distribution of the fishery. The collected fishing gear is transported to certified recycling facilities, where the gear is processed.

The result for recycled fishing gear from recreational fishing in Sweden is 56 tonnes, according to information from the Swedish Environmental Protection Agency EPA. Photos from the collection of EOL fishing gear from recreational fishing at the recycling centre in Botkyrka municipality, Sweden, are seen in Figure 1.



Figure 1. A recycle bin with its content for EOL fishing gear from recreational fishing. Located at a recycling centre in Botkyrka municipality, Sweden.

2.2 Finland

In Finland, the system has been implemented by the Finnish SUP Producer Group Ltd., introducing separate collection and recycling for fishing gear containing plastics. The directive entered into force on 1 January 2025, following preparatory work that began earlier, including a requirement for producers to join a producer registry by 31 December 2023. Producers have since established a dedicated division within the SUP producer group.

According to a press release published on 5 November 2024, collection bins were introduced at 13 locations nationwide, with plans to expand to 150 bins by 1 May 2025, including 75 rotating and 75 permanent sites. In March 2026, the 75 fixed collection sited had been installed and there was a plan to have, including mobile stations, 350 collection sites altogether. Fishing gear is sorted into three categories: fixed and mesh-type gear, recreational fishing equipment, and aquaculture equipment. Collection is organised by the SUP producer network and fishing gear producers, with the Pirkanmaa Centre for Economic Development, Transport and the

Environment acting as the authorised representative for producer responsibility. Rinki, a service company operating under the SUP producer network, manages the collection of household fishing nets and other passive fishing gear. Recycling methods depend on plastic quality, determining whether materials are reused or recovered for energy.

2.3 Estonia

As of January 2026, there are about 10 known companies placing fishing gear on the Estonian market. They have not established a producer responsibility organisation nor joined any existing one. The producers have not set up any public collection containers but are taking back used fishing gear directly from their clients. The collected gear is either refurbished and sold as second-hand gear or sent to a recycling facility in Lithuania. According to the Waste Act § 124, the violation of the obligation to take back, collect, recycle, or dispose of waste generated from fishing gear is punishable by a fine of up to 200.000 euros.

3 Collections of EOL fishing gear

Each of the partner countries collected information regarding their own country's collection efforts of EOL gear or organised collections themselves by placing collection bins in their countries close to the target group, fishers. This collection campaign was organised during the second and third year of the project.

3.1 Sweden collections

When the application for the Re:Fish project was written in 2022, the Ordinance on Extended Producer Responsibility for Fishing Gear (SFS 2021:1001) was already in place in Sweden. There was also a system for collecting fishing gear through the Fiskereturen project and a marine recycling station in Sotenäs municipality on the Swedish west coast.

KST conducted trial collections of fishing gear at the Swedish Sport Fishing Fairs in 2023 and 2024. The purpose was to gauge visitors' interest in handing in gear on-site and to inform them about the new regulations.

In the first year, a total of 128 items of end-of-life (EOL) fishing gear was received

(Table 3). Fishing lines accounted for the largest share. KST received help from Älvdalens Fiske gymnasium, which staffed a recycling station at the fair entrance. This gave the students a great opportunity to talk with visitors handing in gear. According to the students, visitors thought it was positive that the gear was recycled but had doubts about whether the fair was the right occasion. Several visitors, especially young people, also asked if they could take equipment left by others. Information about the opportunity to hand in sport fishing gear at the fair was included in the fair brochure distributed to all visitors.

Table 1. Collection of end-of-life fishing gear at the Sportfishing fair in Älvsjö, Sweden, in 2023.

Type of fishing gear	Number
Rods	5
Nets etc.	0
Lures, hooks, etc.	14
Lead sinkers	7
Angling reels	5
Float fishing lines	7
Leaders	21
Fishing lines	60
Flies	3
Bells	2
Floats	3
Spinning reels	1
Total	128

At the 2024 fair, KST left unmanned waste containers. The outcome was poor: only one rod and a few lures were handed in. Lack of information may have contributed to the poor result. It was suspected that visitors may have taken handed-in equipment, reasoning that reuse is better than disposal.

In June 2025, KST sent a survey to all 290 Swedish municipalities. The purpose was to find out how they perceive the collection of EOL fishing gear. We received responses from 23 municipalities, 18 of which had 1-6 recycling containers per municipality, mainly located at recycling centres and small boat harbours. Several of the respondents mentioned that they thought it was good that fishing gear was recycled. The five municipalities without separate containers stated that they saw no need for them or found it difficult to arrange them.

When asked how municipalities inform their residents about a separate collection of fishing gear, their websites were the primary channel. Communication channels were often used in combination, with the most common being municipality's website, signage, and information on the containers. Only four of them said using social media. Municipalities also reported receiving few or no questions from the public about the collection of gear.

Some municipalities reported difficulties in complying with the legal requirement. They highlighted delays in establishing the producer responsibility organisation, uncertainty around compensation for municipalities, and ambiguities in the collection process. It should be noted that the survey was distributed just six months after the requirement took effect, and we assume most of these issues have since been resolved as of February 2026.

At the time the survey was sent out, the amounts of collected gear varied between municipalities, ranging from 2 kg to 30 kg. Several respondents replied that they had not checked the amount yet. For the 2025 results, see section 1.1.2.

3.2 Finland collections

KAT maintains waste service stations, among others, spread over the Archipelago Sea. Nine of these service stations were selected (Figure 2) – by recommendation of the local staff - to place containers for collecting fishing gear. In addition, one container was placed on the service vessel M/S Roope which operates in the Archipelago Sea. The nine stations were serviced from May to October, both in 2024 and 2025. In addition, fishing gear could be placed on M/S Roope on the special waste collection tour taking place at the end of June/beginning of July. In 2025, this collection was supported by Rinki and carried out by the waste company Lounais-Suomen Jätehuolto LSJH which operates in South-West Finland. In general, advertisement about the possibility to return fishing gear was spread via KAT's media channels (newsletter, members' letter, webpage, social media and supported by LSHJ). The collection containers were serviced regularly and emptied when full. However, emptying was not necessary, and the containers were collected with their content at the end of the service season. Altogether, in 2024 30 kg were collected in the Archipelago Sea and in 2025 1664 kg. Out of the collected fishing gear in 2025, 39 kg were collected during the special collection tour 30.6.–3.7.2025, 990 kg were

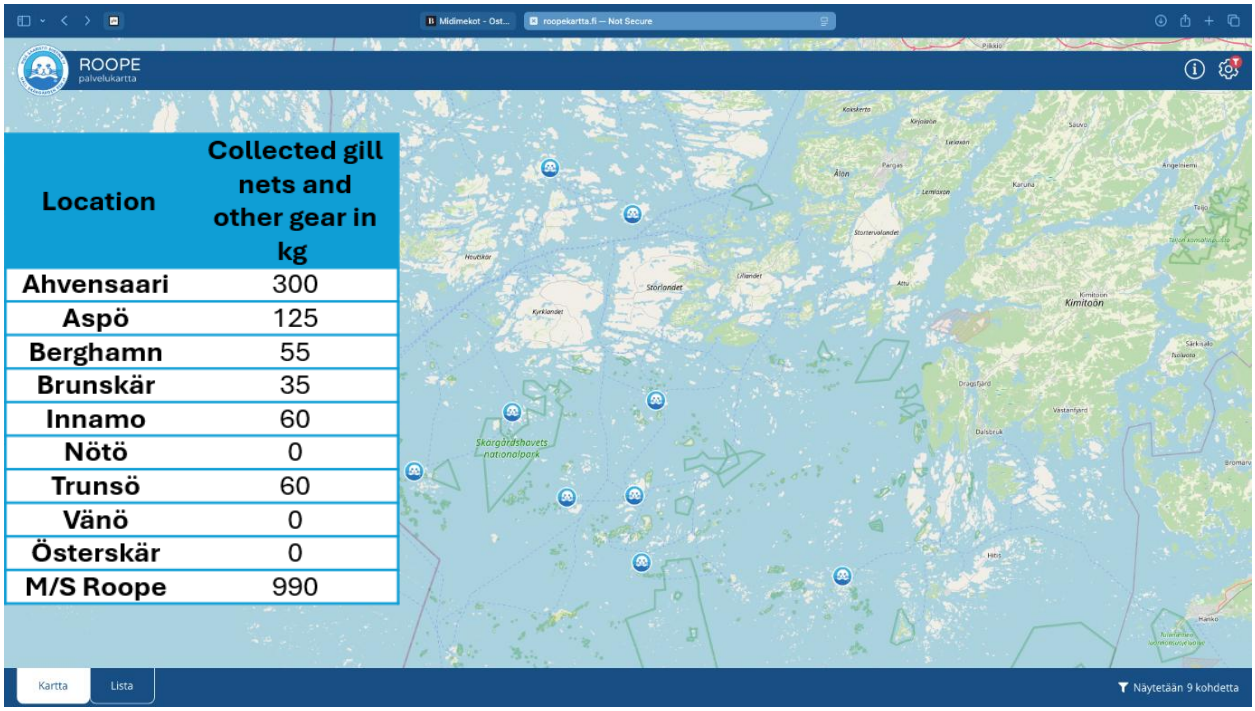
collected on M/S Roope and the remaining 674 kg were collected in the collection bins at the nine service stations (Table 2). Out of the 990 kg collected gear on M/S Roope 840 kg were from the island Stenskär, where commercial fishing is taking place. While the small amount of collecting fishing gear in 2024 was clearly distinguishable as 19 gill nets on M/S Roope, the collected fishing gear in 2025 was rather entangled and a clear distinguishing of the quality not possible. However, the collected gear appeared to consist of gill nets and waste other than fishing gear not to be a problem.

KAT had instructed their other service vessels to accept EOL gear in the Gulf of Bothnia, Saimaa and Päijänne, in case someone would want to provide them. A couple of inquiries were made, but no one brought any EOL gear to these districts.

One EOL gear collection bin was also situated in the premises of the Finnish recreational fishing gear retailer Ruoto in Kaarina. Those bringing their EOL fishing gill nets were provided with a -10 % discount coupon that could be used on the retailer's products. In the beginning, the container was placed in front of the shop. One net (1.5 kg) was collected, still containing fish. After that, the container was placed inside in sight of the staff, and no further nets were collected.

Once the campaign in 2024 had finished, 10 kg of the collected nets were sent to LAB University of Applied Sciences performing a desktop study on the recyclability of the nets (Keep the Archipelago Tidy Association, 2025). Also, a small amount of the nets was sent to University of Lapland in Rovaniemi to explore up-cycling possibilities. The nets collected in 2025 are still at the service vessel harbour.

Table 2. 2025 EOL fishing gear collection amounts from KAT at nine service stations and on service vessel M/S Roope (closing of collection 22.10.2025).



Location	Collected gill nets and other gear in kg
Ahvensaari	300
Aspö	125
Berghamn	55
Brunskär	35
Innamo	60
Nötö	0
Trunsö	60
Vänö	0
Österskär	0
M/S Roope	990

Figure 2. Location of the collection bins placed in the Archipelago Sea by Keep the Archipelago Tidy Association. Image taken from (https://www.roopekartta.fi/map)



Figure 3. EOL fishing gear collection bin marked with the EOL fishing gear collection stickers on the deck of M/S Roope service vessel.

3.3 Estonia collections

During the project, the University of Tartu placed five collection bins at harbours around the Pärnu bay area located in Pärnu municipality (Figure 4), one of the most popular recreational and commercial fishing regions in Estonia. The fishing gear waste containers were labelled with stickers containing information about the Re:Fish project, including the project duration, container locations, and scheduled emptying times (Figure 5). The EOL fishing gear collection campaigns were initiated in April 2024 and continued until the end of November 2025. During this period, the containers were serviced on a monthly basis (a total of 20 times).

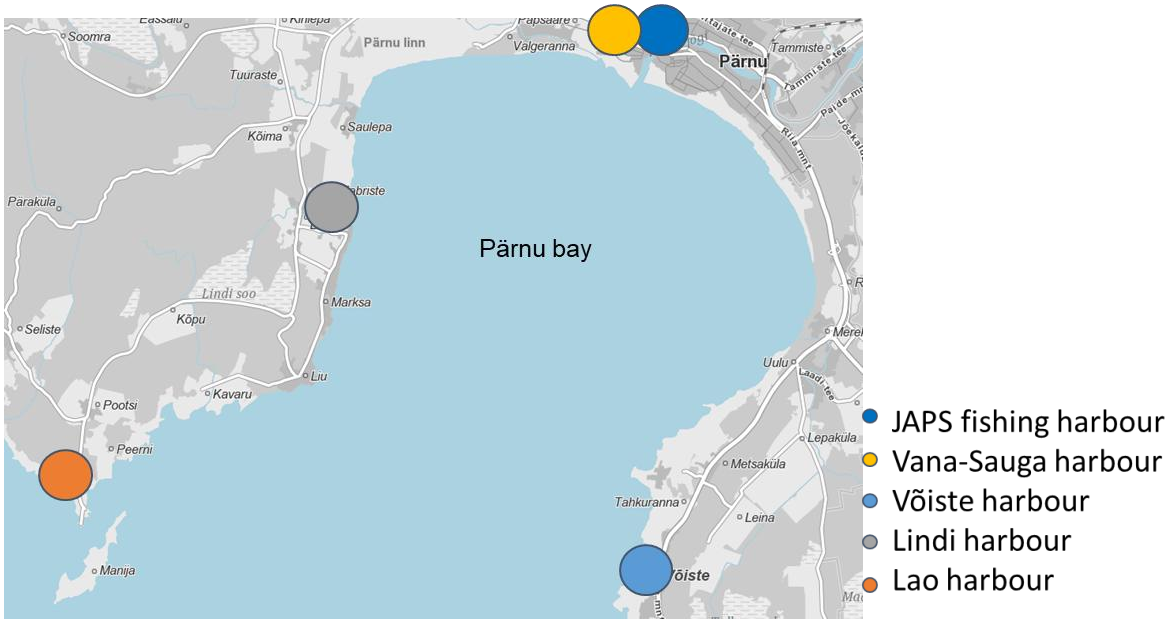


Figure 4. Locations of end-of-life fishing gear collection bins placed around the Pärnu bay coastal area.



Figure 5. End-of-life fishing gear collection bin in Vana-Sauga harbour.

During the 2024 collection campaign, the University of Tartu was able to collect 0.489 t of end-of-life fishing gear in the Pärnu Bay area (Figure 6), and the collected amount

was almost doubled in 2025 when it reached 0.798 t (Figure 6). A total of 1.287 t of EOL fishing gear was collected during the project period, and this amount suggests that there is a need for a systematic collection effort by producers and retailers.

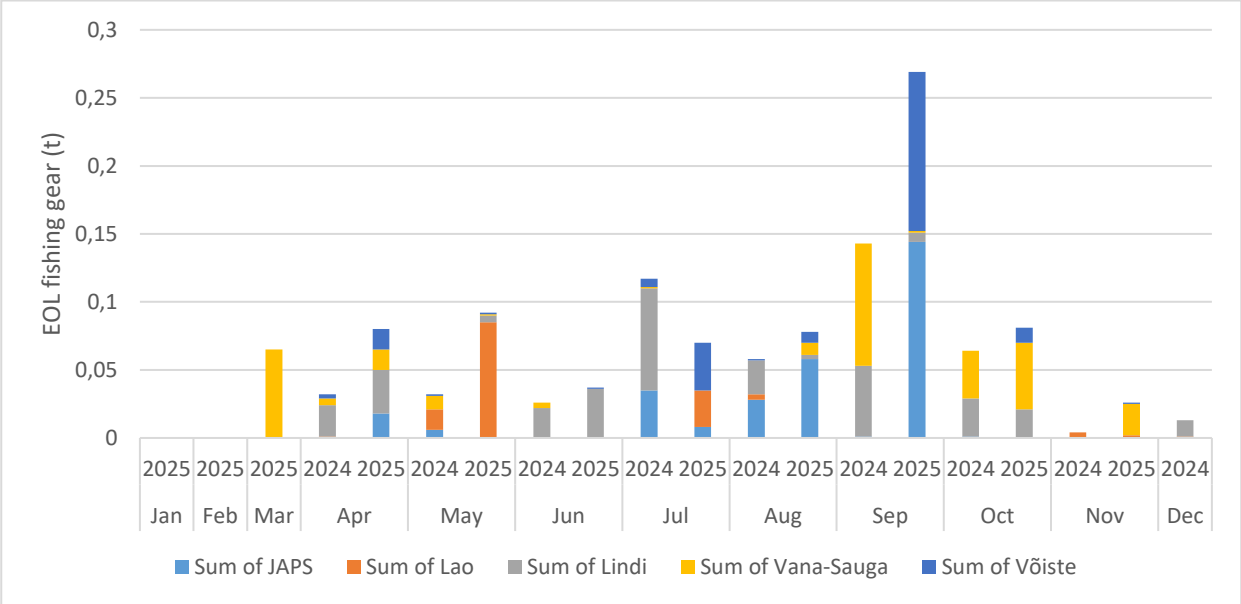


Figure 6. Amount of EOL fishing gear collected in Pärnu bay in 2024 and 2025.

EOL fishing gear containers found purposeful use in harbours; however, their effectiveness varied between locations and depended on the activities taking place in each harbour. When comparing the overlapping months of the 2024 and 2025 collection campaigns (April–November), which also coincide with the period of active harbour use, it becomes evident that container use was strongly influenced by harbour activity. In particular, the active usage period—during which vessels entered and left the harbour and fishing gear was repaired—had a significant impact on the amount and type of waste deposited in the containers (Figure 7).

During the 2024 EOL fishing gear campaign, the nearly monthly large quantities of fishing-related waste observed at Lindi harbour were linked to net repair activities carried out in the area. It is highly likely that net fragments and similar materials were also brought in from nearby locations, as not all fishing-related work associated with this harbour took place directly within the harbour area. Instead, repairs were also conducted in nearby fields, larger open areas, or at private homes. Overall, the observations indicate that people involved in fishing activities were well informed about the existence of the containers and used them for their intended purpose. At

the same time, an increase in non–fishing-related waste was observed in the containers in this area. This points to the fact that harbour-related activities were accompanied by basic food and beverage consumption, and this waste was disposed of in the same containers as fishing gear waste. This behaviour is more related to user convenience than to the absence of general waste containers. Incorrect waste disposal in containers is also common in urban environments and is generally linked to habitual behaviour and a lack of waste sorting practices.

In general, it can be concluded that fishing gear waste containers in harbours enabled the free disposal of large quantities of fishing-related waste but did not necessarily change individual behaviour with regard to waste sorting.

When comparing harbours based on location, Võiste harbour stands out as an example of more appropriate container use compared to other harbours. This may be related to its location away from urban areas, meaning that the harbour is primarily accessed by individuals directly associated with harbour activities. As a result, the likelihood of incorrect waste disposal by casual or incidental visitors was reduced.

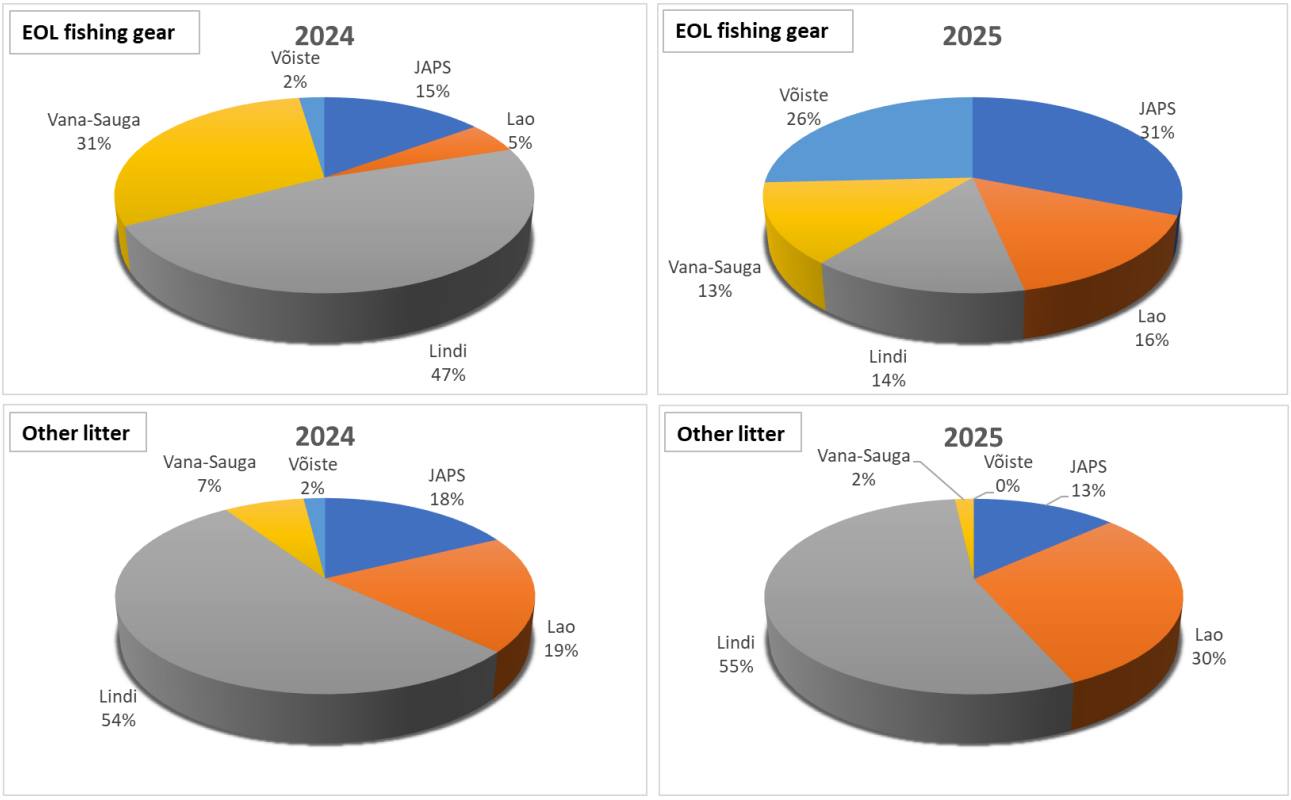


Figure 7. Composition of collected waste (%) in different harbours: EOL fishing gear and other litter in 2024 and 2025 collection campaigns (April–November).

Containers were used for unintended purposes less often than initially expected at the beginning of the project. However, improper use of the containers was mainly observed during the summer months, when harbours experience high traffic from recreational fishers and occasional visitors who often overlook the container labels. It was frequently observed that waste not intended for the containers was packaged in plastic bags, indicating that it originated from personal, private activities and was deliberately placed in the containers. This type of waste mainly consisted of plastic packaging from food and beverage consumption. A total of 0.458 t of such waste was recorded in the containers, representing 26% of all waste collected during the project period. The amounts were similar across the 2024 and 2025 campaigns, totalling 0.207 t (data from 9 months) and 0.251 t (data from 11 months), respectively (Figure 8).

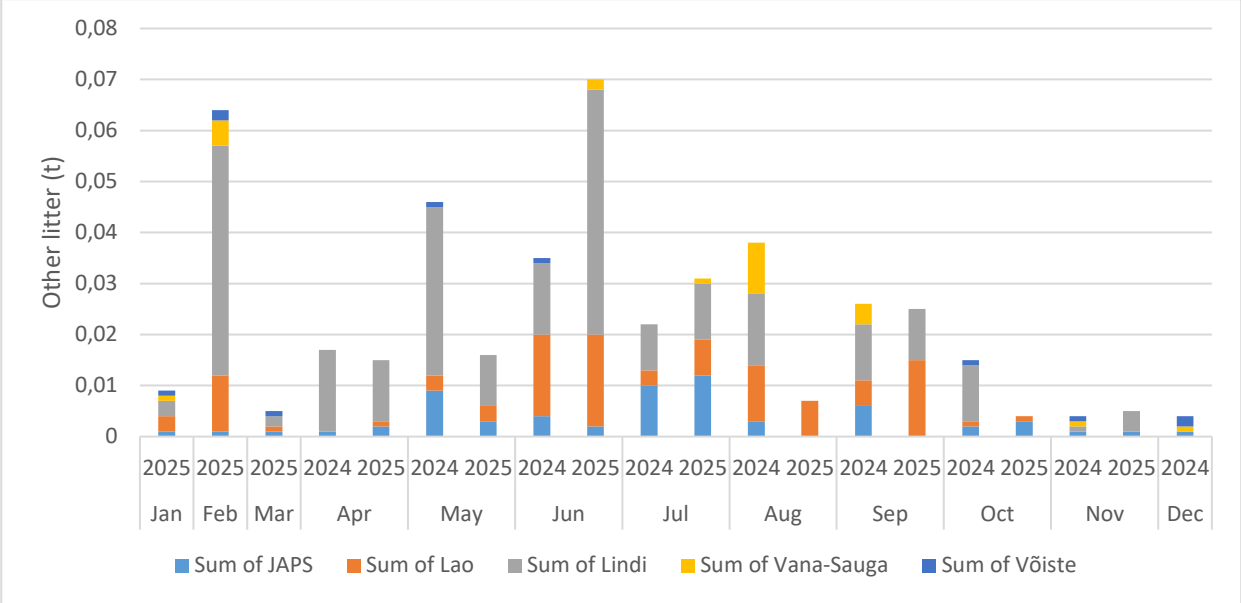


Figure 8. Amount of other litter collected in the collection bin during the collection campaign 2024 and 2025 in Pärnu bay.

The fishing-related waste items observed in the containers consisted mainly of gillnets or fragments thereof, parts of fish traps and residues from their repair, net floats, damaged net markers, and various types of ropes. Domestic waste consisted primarily of plastic bottles, aluminium cans, and various food- and beverage-related plastic packaging. Cardboard packaging, plastic canisters, plastic bags, and pieces or packaging made of expanded polystyrene were also widely present (see Figure 9 for examples).

The contents of the EOL gear containers were sorted at a waste management facility, where the waste is processed, and were disposed of in accordance with applicable regulations.



Figure 9. Photographs of the contents of the waste containers in Pärnu Bay.

4 Discussion and conclusion

When fishers have the opportunity to return their end-of-life fishing gear, they do so. This was shown in each of the three countries engaged in the Interreg CB project Re:Fish. While Sweden already had a system to return EOL fishing gear and the concept of returning fishing gear was not new anymore, the same was not the case in Finland and Estonia. In the Finnish collection by KAT, there was a clear difference in the collected amount of fishing gear between the two years. One reason might be that new systems usually take time to be adopted. However, with only two years to compare this cannot be said with certainty. KAT asked their members for feedback on the collection campaign, receiving only very little feedback not allowing concise conclusions. However, reasons for not returning fishing gear were not to know about the collections, the collection point being too far away, and not being in need to return anything as having good equipment. The awareness of the SUP directive containing fishing gear seemed low. At the end of 2024, the Finnish SUP Producer Group Ltd. had contracted the waste company Rinki to set up containers on Finnish mainland, both stationary and mobile and people have started to return their fishing gear. In Estonia, there was no clear trend in difference between the two years. Some collection stations received more EOL gear in 2024 and some more in 2025.

The collection by KAT was to the most extent carried out in remote Archipelago Sea locations with provision of other waste collection opportunities. In addition, the M/S Roope's crew was instructed only to accept fishing nets that were dry and clean. This

may have prevented the problem of receiving other than the intended waste. This was different to the collections in Estonia where around one fourth of the collected waste was litter other than the intended fishing gear. The collection of a fishing net containing still fish to KAT's collection station at the Ruoto shop confirmed earlier experiences revealed in the questionnaire and interview approach (Re:Fish, 2026). Placement of containers with certain surveillance appears to prevent collecting other than the intended waste. Both placing containers for fishing gear with provision of sufficient possibility to dispose of household waste or locations with clear fishing activity distant from other purposes seem to help receiving the waste the fishing gear collection bins had been intended for.

In Finland, the collected nets in the first collection campaign year were sent for recycling and up-cycling testing. This was necessary, because recycling streams for EOL fishing gear are not widely in place. Recycling is currently hampered by heterogeneous materials and limited recycling streams. Harmonisation of materials and improved sorting techniques are needed.

The project Re:fish operated in Sweden, Finland and Estonia and the handling of SUP/EOL fishing gear differed largely. While Sweden already had collection and recycling system in place, in Estonia producers and retailers have to carry the EOL directive individually due to the lack of an existing producer group. Cross-Border and Stakeholder Cooperation may reduce the burden for example on such countries which may lack producer groups. The Directive allows country-specific systems but does not encourage cross-border collaboration, which can result in isolated solutions. Best practices may be shared and reporting and collection models aligned where possible.

The collection of EOL fishing gear is an important step towards preventing gear ending up in waterways and posing an environmental danger. However, the collection to succeed needs action on multiple levels. Fishers need to be educated with the right attitude and receive sufficient information on where to dispose of the material and the public needs to be educated to dispose of their general waste correctly. Targeted awareness campaigns are effective ways in both cases. Producers

and Producer Groups can push the development of recyclable material and enhance recycling streams. With these efforts, waterways can be protected from EOL fishing gear.

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