CURBING SEA-BASED POLLUTION

GUIDANCE DOCUMENT FOR NATIONAL DECISION-MAKERS TO IMPLEMENT THE SINGLE-USE PLASTICS & PORT RECEPTION FACILITIES DIRECTIVES

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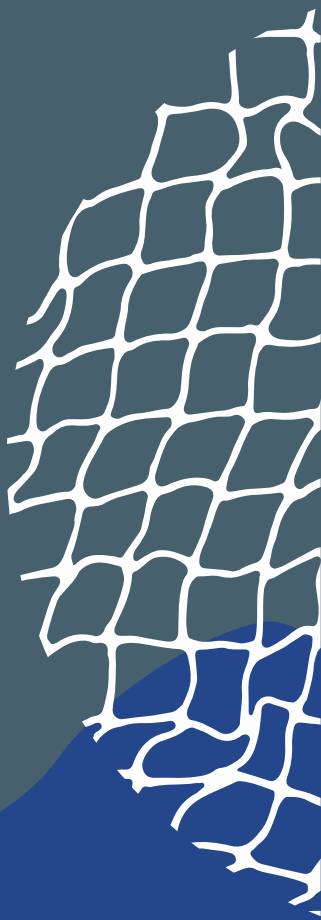

INTRODUCTION

In Europe, waste fishing gear such as nets and ropes are among the 10 most common marine litter items found on beaches, accounting for 27% of the total.[1] Abandoned, lost or otherwise discarded fishing gear (ALDFG) is of increasing concern, given its numerous environmental impacts. It is estimated that around 640,000 tonnes of fishing gear are lost or discarded in our oceans every year.[2] "Ghost fishing", where ALDFG continues to catch fish, has detrimental impacts on fish stocks, food security, endangered species and benthic environments.

Surveys, trade data and calculations suggest that the EU fishing fleet uses about 54,000 tonnes of fishing gear annually, with only 1.5% of waste fishing gear captured for treatment and recycling. Given that waste fishing gear comprises 27% of all beach litter in Europe, there is a clear need to address the environmental and socioeconomic challenges.[3]

According to the EU Fisheries Control Regulation (Council Regulation (EC) No 1224/2009), fishermen already bear a general obligation to make retrieval attempts for lost fishing gear and to report any losses. These obligations are poorly implemented, however, and additional measures were deemed necessary. Both the Single-Use Plastic (SUP) and revised Port Reception Facilities (PRF) Directives, adopted in 2019, set out a package of measures to harmonise and incentivise a range of approaches that address the full lifecycle of plastics in fishing gear to prevent loss and promote end-of-life collection, reuse and recycling.

A key consideration is the short lifecycle of fishing gear, with most not exceeding one year of use. The turnover of fishing nets is especially high, with 33% of nets being lost at sea every year, while the remaining 67% reach end-of-life within a year of use.[4] **The priority of the legislation is to prevent fishing gear ending up as waste in the marine environment and to capture this resource back into the circular economy.**

Fishing gear is largely composed of high-quality plastics, such as a nylon, polyethylene and polypropylene with potential for repair, reuse and recycling if captured at the right stage in its lifecycle. With the SUP and PRF Directives, the Commission encourages all stakeholders in the fishing gear operational chain to implement systems to responsibly manage, dispose of and recycle fishing gear, including at the design stage, to facilitate easier disassembly and treatment at end-of-life.

Scope

The SUP and PRF Directives share the objective of reducing marine pollution. The SUP Directive focuses on the plastic items most commonly found on beaches (including fishing gear), while the PRF Directive targets port reception facilities for sea-based waste through a range of measures, including market restrictions, economic measures and extended producer responsibility (EPR) schemes.

This guide focuses on the measures with the highest potential to curb sea-based pollution: fishing gear-related provisions of the SUP Directive, port waste management provisions, fishing for litter (FFL), and the green ship concept of the PRF Directive.

FISHING GEAR PROVISIONS IN THE SUP DIRECTIVE

Scope: fishing gear containing plastic, including gear related to aquaculture and rearing

Definition of fishing gear: any item or piece of equipment that is used in fishing and aquaculture to target and capture or rear marine biological resources, or that floats on the surface of the sea and is deployed with the objective of attracting and capturing or rearing such marine biological resources.

Definition of waste fishing gear: any fishing gear covered by the definition of waste in Directive 2008/98/EC, including all separate components, substances or materials that were part of, or attached to, such fishing gear when it was discarded, including when it was abandoned or lost.

Definition of producer:

- Any natural or legal person established in a Member State that professionally manufactures, fills, sells or imports (irrespective of the selling technique used, including distance contracts)[5] and places on the market of that Member State single-use plastic products or filled single-use plastic products or fishing gear containing plastic;[6] or
- Any natural or legal person established in another Member State or in a third country that professionally sells directly to private households or to users other than private households in a Member State, by distance contracts, single-use plastic products or filled single-use plastic products and fishing gear containing plastic.

Provision 1 - Extended Producer Responsibility (Article 8)

The SUP Directive aims to introduce an **Extended Producer Responsibility (EPR) scheme** (definition below) for gear containing plastic **by December 2024**.

EPR scheme: as defined in Directive 2008/98/EC (Waste Framework Directive), "a set of measures taken by Member States to ensure that producers of products bear financial responsibility or financial and organisational responsibility for the management of the waste stage of a product's lifecycle."

EPR is an application of the **polluter pays principle**. Here, the polluter is not necessarily the person whose activities give rise to pollution (fishing, aquaculture) but, rather, the economic agent that plays a decisive role in the pollution, such as the producer.

EPR is an environmental policy approach in which the producer's responsibility for reducing environmental impact and managing the product is extended across the whole lifecycle of the product, from selection of materials and design through to its end-of-life, particularly for take-back, recycling and disposal.

According to Article 8(9) of the SUP Directive, "Member States shall ensure that the producers of fishing gear containing plastic cover **the costs of the separate collection of waste fishing gear that has been delivered to adequate port reception facilities (…) the costs of its subsequent transport and treatment" and "the cost of the awareness-raising measures referred to in Article 10 regarding fishing gear containing plastic**."

The objective is to make sure that the cost of managing discarded plastic fishing gear - once it has arrived on shore - **is borne by the producers/importers of plastic fishing gear parts and not by ports**.

It should be noted that fishermen (small artisanal makers of fishing gear containing plastic) are not covered by the EPR scheme.[7]

Implementation of Article 8

Due to the particularly negative environmental impacts of waste fishing gear on the environment, it is critical for Member States:

- Establish EPR schemes as soon as possible and, in any case, well ahead of the Directive deadline of December 2024 (which allows for unnecessary delays);
- Ensure EPR schemes are fully binding and include modulation of fees to take into account materials'

- durability, reparability, reusability, recyclability and the presence of hazardous substances, thereby taking a lifecycle approach.

Key characteristics of successful EPR schemes

1. EPR schemes must be fully binding to be effective

The SUP Directive establishes that EPR schemes can be put in place through voluntary agreements with the producers/sector. This creates a risk, however, that the minimum requirements mentioned above (Article 8a Waste Framework Directive) may not be fully applied or might be relaxed.

EPR is an essential tool to tackle plastic pollution at source and its implementation should not be handled through voluntary agreements, which have previously yielded disappointing results in reducing plastic waste.

Rather than self-monitoring, Member States must incorporate third-party auditing into compliance schemes and ensure full transparency of their operations and reporting, verified annually by independent auditors. Those tasked with oversight must be sufficiently resourced to carry out this job comprehensively.

According to Article 8(1) of the Waste Framework Directive*, "Member States may decide that producers of products that undertake financial or financial and organisational responsibilities for the management of the waste stage of a product's life cycle* ***of their own accord*** *should apply* ***some or all of the general minimum requirements laid down in Article 8a****."* In other words, the national legislation can establish whether some or all of the minimum EPR requirements will apply, where EPR schemes are established through agreements between the producers/sectors.

2. EPR schemes yield environmental benefits from eco-modulation of fees

The recent revision of the Waste Framework Directive sets out the possibility of introducing fee modulation based on product environmental performance ("eco-modulation"). This system should be harmonised across the EU single market in order to make modulation criteria more effective. The European Commission is currently working on the development of guidance on eco-modulation fees for EPR schemes, as stated in Article 8(5) of the Waste Framework Directive.

Modulation of fees is **essential to incentivise better gear design and better use of materials**, as well as the reduction and elimination of hazardous substances in plastics. Modulating EPR fees offers a unique opportunity to promote "total lifecycle environmental improvements" of fishing gear, by incentivising upstream design changes and improving the recovery of end-of-life costs. Unlike "flat" fees, differentiating contributions paid by producers crucially incentivises the use of more sustainable and circular materials.

Setting producer fees at a level where they recover the full cost of the end-of-life management of fishing gear will lead to better internalisation of those costs by producers and will incentivise eco-design of fishing gear. Where possible, EPR scheme fees should be linked to actual treatment and recycling costs (i.e. variable or weight-based rather than fixed or unit-based fees).

Given the fragmented processes for the production and distribution of fishing gear, **a traceability system to track gear and its core components throughout its lifecycle** will support the implementation of efficient EPR schemes. To ensure such traceability we recommend that:

- Gear components should have built-in traceability (where practicable), based on an industry-wide code of practice.
- Gear traceability systems should be linked to standard record-keeping practices of commercial transactions.
- Fishing gear batch numbers should enable traceability throughout the full lifecycle of the gear (e.g. to landfill or recycling).
- Gear manufacturers should collaborate with management authorities to assist in tracing the origin and ownership of recovered fishing gear, for example through GPS tracking.

Enhanced design to reduce the economic impact of lost gear (i.e. ghost fishing) will benefit the sustainability of the fisheries sector and, by extension, the sustainability of the fishing gear market. Enhanced design to support recyclability will constitute a revenue base and thereby reduce EPR costs borne by gear manufacturers. Enhanced traceability will allow EPR schemes to allocate costs more accurately, thus rewarding those manufacturers that have invested in the design of more eco-friendly fishing gear.

The development of eco-modulation systems musts consider factors beyond recyclability:

- Prioritise waste prevention through best practice fishing gear management (e.g. gear marking, gear traceability, safe recovery and lost gear reporting), repair and reuse.
- Provide transparency on the chemical composition of fishing gear components.
- Availability of appropriate facilities for repair, reuse and collection.
- Recycled content beyond a threshold value outperforming the market average (based on a verifiable certification scheme).
- Third-party verification of compliance with the essential requirements.
- Prevention of by-catch and corresponding requirements in the Technical Measures Directive

Finally, revenues generated from EPR systems should be invested in:

- Covering the costs of collection, treatment and clean up (including littering, see section on covered costs below);
- A “Fund for Change” to support a transition to circularity - prioritising prevention and reuse.

3. Costs covered

Within EPR schemes for single-use plastic products, the SUP Directive establishes that “the costs shall be established in a proportionate way and be limited to activities undertaken by public authorities or on their behalf” and that “Member States may determine financial contributions to clean up litter by setting appropriate multiannual fixed amounts”.

For fishing gear, specific clean-up costs should also be included, as one component of a holistic producer responsibility approach that favours redesign, transparency and producer accountability. Although clean-up activities such as passive FFL[8] are not a real solution to the plastic pollution crisis, Member States can make producers accountable for these specific clean-up activities, thus encouraging manufacturers to design fishing gear so as to prevent its loss at sea.

In fishing gear EPR schemes, producers/importers should cover the following costs:

- Separate collection of waste fishing gear containing plastic that has been delivered to adequate port reception facilities[9] and its subsequent **transport and treatment**.
- **Awareness-raising measures**
- **Specific clean-up activities** (thus incentivising manufacturers to invest in material design).

An EPR scheme should not be used to shift responsibility and costs for waste management down the line but is, rather, an essential element of a broader set of instruments and actions that leads to transformative change in the design, use, disposal and recycling lifecycle of fishing gear.

All stakeholders (including gear manufacturers, the fishing industry, and waste and recycling operators) must play their part in the process, and the most environmentally friendly companies will benefit from the system. Finally, if a Europe-wide EPR scheme for fishing gear is to successfully reduce ALDFG and increase the volume of recovered and recycled gear, EPR schemes must be embedded within a complementary policy environment, as well as informed by best practice knowledge and experience.

Currently, the external costs of plastic pollution (including economic, social and environmental costs) are absorbed by local authorities, private actors from the tourism and fisheries industries that are strongly affected by marine litter, and civil society organisations. For reference, UK municipalities spend approximately €18 million each year on removing beach litter. Similarly, removing beach litter costs municipalities in the Netherlands and Belgium approximately €10.4 million per year.

Requiring producers to pay the full costs of the end-of-life of their products is not only fair but a crucial incentive to redesign their products with circularity and easy tracking in mind. It also prompts them to develop more sustainable business models, such as gear-leasing and buy-back schemes. **The contribution should reflect the actual cost, which should be revised every year, both to adjust the costs and to measure progress on the reduction of litter.**

EU minimum requirements for EPR schemes

Articles 8 and 8a of the Waste Framework Directive set the minimum compliance requirements for Member States when establishing EPR schemes at national level, and for all producers and actors involved in implementing EPR schemes for products.

Logistics and framework:
- Transparency: clear roles/responsibilities of all actors involved.
- Targets: set waste management, qualitative or quantitative targets.
- Reporting system must be in place.
- Equal treatment of producers, regardless of their size, etc.
- Information on waste prevention and reuse measures must be provided to “waste holders”.
- Adequate monitoring and enforcement.
- Inclusion: regular dialogue between relevant stakeholders.

Producer/producers’ organisation obligations:
- Products/materials covered under EPR schemes are clear and defined.
- Producers’ geographical areas covered under EPR schemes are clear and defined.
- Appropriate waste collection systems are duly provided by the producer within its geographical area covered under EPR schemes.
- Necessary financial and logistical means are duly provided by the producer.
- Adequate control mechanisms are put in place by the producer to audit the financial management of the EPR scheme and the quality of data collected.
- Information on EPR schemes, including achievement of targets, ownership and membership of the EPR schemes (in case of collective schemes), financial contributions and waste management operation procedure is made publicly available by producers.

Financial contribution of EPR schemes should:
- cover the costs of separate collection and subsequent transport and treatment of waste;
- cover the costs of sharing and exchanging information;
- cover the costs of data-gathering;
- be modulated according to durability, reparability, reusability and recyclability of products and the presence of hazardous substances of products/waste.

Provision 2 - National targets for separate collection (Article 8(8))

Efforts to accurately quantify the volume of gear currently entering the EU market - both via import and domestic production - and current rates of collection and recycling must be accelerated to limit industry weakening the Directive’s ambition during implementation.

According to the SUP Directive, coastal Member States must set up **national minimum annual collection**

rates for waste fishing gear containing plastic for recycling.

We recommend the following methodology to set a robust system:

- List of waste management facilities present in fishing harbours;
- Collection of information from harbour and waste management companies on the disposal of fishing gear;
- Establish a baseline;
- Set targets for waste collection of fishing nets and ropes with relevant stakeholders;
- Frequent monitoring to assess progress.
- Regular review of targets and adjustments as necessary.

EU-wide targets for separate collection are not set by the SUP Directive.

Implementation

We recommend that coastal Member States establish a minimum collection target for waste fishing gear of 50% by 2025, increasing to 90% by 2030.

Although not included in the Directive, in practice, reuse and recycling targets could also be set at national level. Member States' monitoring of the volumes of waste fishing gear actually reused and recycled annually would constitute an excellent first step towards an EU-wide target.

In addition to this collection target, governments should promote reuse and recycling of waste fishing gear by monitoring the corresponding volumes and considering a separate 20% reuse and recycling target by 2025.

Iceland is almost at the level of 90% collection of fishing nets, and has a 70% recycling rate, an important share of which is reused.

Finally, the target for reuse and recycling should increase considerably when standards for the circular design of fishing gear are introduced, as these are intended to simplify reuse and recycling. Similarly, the implementation of strong EPR schemes with eco-modulation of fees for fishing gear will also lead to redesigned fishing gear, with associated increases in reuse and recycling volumes in order to achieve these targets.

Provision 3 - Monitoring (Article 8(8)) and reporting requirements (Article 13) at the national level

Member States are required to monitor the volume of fishing gear containing plastic placed on their national market, as well as the volume of waste fishing gear collected nationally.

As of 2022, Member States shall also report to the Commission, **each year**, the amount of fishing gear placed on the market and waste fishing gear separately collected.

Only harmonised and consistent monitoring across Europe will make it possible to follow the trends of collection, reuse and recycling of waste fishing gear, adopt further or alternative measures, and facilitate EU-wide objective-setting in the medium term.

Implementation

Monitoring the share of waste fishing gear collected will be greatly eased by improved availability of gear tracking and marking.

These tracking figures should specify the quantities of fishing gear entering the EU market from overseas for use in European waters and align with concurrent efforts to ensure that fishing gear entering the market from beyond European jurisdiction meets the requirements of EU legislation.

Provision 4 - Standardisation process (Article 8.(9))

The European Commission will conduct a study on the recyclability and reusability of fishing gear by the end of 2020. The Commission will draft an official request in 2020 to the EU standardisation organization (CEN) to **develop harmonised standards for the circular design of fishing gear** to

encourage preparation for reuse and facilitate recyclability at end-of-life. Once that request is done, the standardisation process itself is then expected to take a minimum of three years, involving stakeholders and Member State experts.

ALDFG and waste (end-of-life) fishing gear are expected to be differentiated, as ALDFG presents various reuse and recycling challenges as a result of contamination and degradation if left at sea for prolonged periods of time. This standard should – to the extent possible - build on available best practices worldwide and encompass critical factors to incentivise the responsible disposal of fishing gear, for example by creating a tangible value for fishing gear that can be recovered through appropriate end-of-life treatment and facilitating ease of disassembly and disposal.

The standard should also address the need to mark or tag fishing gear to ensure its reporting and tracking for retrieval purposes, promoting responsible ownership and transparency.

The standard should contribute to increased efforts to standardise the material used in nets (e.g. single polymer nets) and design in order to facilitate reuse, design modification, disassembly and recycling.

Other considerations include research and development of genuinely biodegradable, non-plastic components of fishing gear to reduce the severity and longevity of ghost fishing if lost. The focus should be on natural fibres which have historically been used to limit the impact of lost gear, rather than on biodegradable plastic alternatives. Examples of such measures include clasps or escape panels on pots and traps which rot if submerged for prolonged periods, ensuring the trap is no longer able to capture marine life once control of the gear is lost. These efforts should fall within a global strategy that prioritises prevention of gear loss, responsible disposal and eliminates incentives for abandonment or barriers to responsible behavior.

Provision 5 - Awareness-raising measures (Article 10, by July 2021)

Member States are required to take the appropriate measures to inform fishing gear users of the following, in order to incentivise responsible use and disposal of fishing gear:

- availability of **reusable alternatives, reuse systems,** and waste management options for those products;
- impact of inappropriate waste disposal of those products on the environment**, in particular on the marine environment**;
- **best practices** in sound waste management, carried out in accordance with Article 13 of Directive 2008/98/EC.

The costs of these awareness-raising measures will be covered by the producers of fishing gear containing plastic under an EPR scheme (Article 8 (9) of the SUP Directive).

Implementation

Fishermen, ports and fishing gear manufacturers are key stakeholders in the successful implementation of a scheme designed to combat ALDFG and implement EPR. Awareness-raising efforts need to be complementary and developed through consultation, implemented at fishing community level, with a “bottom-up” approach. The sector should be required to undertake the following:

- Clear, mandated and universally used guidelines for the marking and identification of fishing gear and its main components;
- A standard industry code of practice (based on established expertise) for the **reporting, location and safe recovery of lost gear**;
- Facilities and community-led training targeting both fishermen and port reception facilities staff in the responsible cleaning and disposal of end-of-life
- fishing gear, including the handling of passively fished gear;
- Prioritise the use of fishing gear designed to stop fishing after control is definitely lost (e.g. through the use of biodegradable[10] materials for fasteners and gear that is easily disassembled into recyclable components);
- Create significant incentives for both recovery and subsequent reporting of ALDFG, its transport to shore and responsible disposal;
- Training and awareness on the impact of lost gear and the responsible management of waste fishing gear.

Recycling Fishing Nets in Europe

A truly circular economy will prioritise repairing and reusing nets to extend their operational life as long as possible. When they are no longer suitable for fishing, they are sometimes re-purposed in other industries, such as in agriculture, 3D printing or artworks. However, there are two predominant approaches for large-scale treatment of waste fishing nets and ropes: chemical and mechanical recycling, with waste to energy having been explored in other regions as a last resort. Currently, disposal and end-of-life treatment of fishing gear is very low and the level of recycling of fishing gear in the EU is 1 to 5% (European Commission, SUP Impact assessment Study, 2018).

Fishing nets are made from a variety of materials, which impacts their suitability for recycling. For example, nets made from nylon 6 (PA6), such as monofilament gillnets, have high value as a waste resource and are appealing for recyclers to work with, whereas nets made from polyethylene (PE), polypropylene (PP) and other similar plastics have a lower value as a recycled material and incur prohibitive costs in shipping, as well as generating lower profit margins. Lost nets recovered as part of FFL, dive and beach clean-ups are often in a greater state of degradation and may be heavily fouled, which adds another layer of complexity in the recycling process. Recycling fouled nets is still possible, although they must be 85% clean in order to be considered viable.

There are a number of barriers to the effective collection and recycling of fishing gear in Europe. Overcoming the logistical and operational costs for the collection, treatment and recycling of fishing gear poses unique challenges in each location. Despite this, a number of successful pilots have been initiated and scaled in recent years, often funded by NGOs, demonstrating the viability of net collection and recycling as an approach for managing end-of-life fishing gear.

Within Europe there are only a few operators willing to handle end-of-life fishing gear due to the low financial return and high logistical challenges, including the potential for contamination of loads and damage to machinery. The two main operators handling fishing gear at scale do not handle all of the materials of which fishing gear is comprised and thus need further capacity-building to scale-up their efforts to handle major volumes of fishing gear. Such capacity-building would include appropriate training in coordinating portside logistics for handling these materials and raising awareness of processes for cleaning, disassembly and responsible disposal.

Despite these challenges, fishing gear has significant economic potential within a circular economy. This has already been recognised by a number of companies, who have streamlined processes for net collection and recycling, often operating in partnership with fishing cooperatives, ports and local authorities to bring economic return to the participating communities and transform this waste into a resource.

Chemical recycling, as used by Aquafil in their de-polymerisation process, transforms a nylon fishing net back into recycled plastic, enabling the company to sell yarn (akin to virgin nylon) that can then be used in clothing, carpet tile and swimwear, for example. However, this process is very energy intensive and comes at a high cost, while potentially generating chemical contamination.

Mechanical recycling, as practised by Plastix in Denmark, can be used for a range of fishing net materials, such as nylon, HDPE and PP, as long as they are separated. The separation by material type is essential, as mixing materials would compromise the quality of the final product. Mechanical recycling is a more common and widely available process, where the nets are mechanically shredded and melted back down to pellets. However, mechanically recycled fishing net necessarily retains the same colour as the original net and its lower quality limits its applicability to injection, extrusion and rotor moulding.

PROVISIONS OF THE PORT RECEPTION FACILITIES DIRECTIVE

The European Parliament and Council recently adopted Directive (EU) 2019/883 on Port Reception Facilities for the Delivery of Waste, referred to as the Port Reception Facilities (PRF) Directive.[11] A principal requirement in the PRF Directive is the mandatory restructuring of cost frameworks (also called cost recovery systems) at EU ports, in particular for litter that is mostly comprised of plastic (90%) and includes fishing gear. The restructuring of fees at EU ports is intended to promote the maximum delivery of fishing gear and other litter to EU ports and will require several new measures at those ports.[12] Member States are obliged to transpose the new requirements into national law by 28 June 2021.[13]

Provision 1 - 100% Indirect Fee

The 100% indirect fee allows the delivery of all litter, up to the maximum dedicated storage capacity of the ship.[14] It is common practice at many EU ports for fishing vessels and other ships to be charged based on volumes of litter delivered, creating incentives to discharge fishing gear and other waste at sea. This is no longer allowed under the PRF Directive, with the Directive going so far as to impose a corresponding obligation that requires ships to deliver all of their litter while in port, subject to limited exceptions.[15] The 100% indirect fee also covers passively fished waste, i.e. litter that includes fishing gear caught in the nets during normal fishing operations. This is designed to encourage the recovery of fishing gear and other litter at sea and to facilitate the establishment of fishing-for-litter (FFL) initiatives.

Implementation

In the coming years, EU ports must revise their cost recovery systems to ensure compliance with the 100% indirect fee obligation. The Commission originally proposed that the 100% indirect fee should cover all litter, regardless of the quantities delivered, but a compromise was reached during the legislative process that saw it limited to the maximum dedicated storage capacity of the ship.[16] For most plastic items, such a limitation should not pose a problem, as excesses are not foreseen. However, waste fishing gear can be voluminous and the maximum dedicated storage capacity (or that passively fished during normal fishing operations) may be insufficient. Ideally, there should be no restriction on the quantities of litter that can delivered at EU ports under the 100% indirect fee (i.e. an unrestricted 100% indirect fee), as exists in many EU ports already.[17] For example, as a result of political agreements under the HELCOM Convention, Member States with ports in the Baltic Sea have already implemented an unrestricted 100% indirect fee for litter (fishing gear included), to which experts attribute the decreased delivery of litter at those ports.[18]

Provision 2 - Fishing-for-Litter (FFL) Initiatives

In a typical FFL initiative, bags are provided to participating fishing vessels to collect passively fished waste caught in nets during normal fishing operations.[19] The passively fished waste does not form part of the operational and household waste of the vessel itself. It is later collected and moved to dedicated areas where it does not count as waste against the fishing vessel (under a direct fee or administrative fee system).[20] In order to avoid the costs of collection and treatment of passively fished waste being borne by port users, Member States are required to cover those costs from revenues generated by alternative financing systems, where appropriate.[21] This may include fees collected from EPR schemes, such as those for fishing gear or others established under the SUP Directive or other funding streams. This will require Member States and their ports to establish formal mechanisms for offsetting the costs of collection and treatment, which is a critical aspect of successful FFL initiatives. There are many costs associated with collection and treatment, from the time fishermen spend on-board physically separating passively fished waste from the fishing nets, to bags and stowage for their collection.[22] The passively fished waste must also be moved to dedicated areas once at port, before being treated at a waste management facility.[23] The costs that are to be considered and covered will be critical to the uptake and effectiveness of the FFL initiative. In addition to covering the costs of collection and treatment, data

on the quantities and types of passively fished waste must be monitored, with certain information reported to the Commission in standard methodologies and formats. This will assist in the identification of hot spots and problematic waste streams.[24]

Implementation

The obligation to cover the costs of collection and treatment and to ensure that monitoring data is collected and reported will require Member States to establish FFL initiatives at fishing ports. The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) endorses FFL initiatives, encouraging its 15 member countries to adopt them, and has produced guidelines on their establishment and smooth operation.[25] Member States should adopt FFL initiatives in accordance with the recommendations in the OSPAR guidelines and use those as minimum requirements at the fishing ports within their jurisdiction. KIMO, an international environmental organisation representing local municipalities, has spearheaded efforts to establish FFL initiatives at fishing ports in several EU Member States and provides assistance to interested stakeholders.[26] The opportunity to formalise and institutionalise effective FFL initiatives across EU fishing ports now exists and robust implementation should be promoted.

Provision 3 - Green-ship refund

The PRF Directive introduces the green-ship concept, requiring ports to reduce fees for “green ships” engaging in waste prevention and on-board waste management. In particular, fees must be reduced for those ships whose design, equipment and operation produce reduced quantities of waste or otherwise ensure waste is managed on-board in a sustainable and environmentally sound manner – criteria to be defined in the first instance by the Commission in an implementing act.[27] The Commission is now considering whether to outline specific criteria applicable to the type of ship (fishing vessels versus cargo ships, for example) or more general criteria applicable to all ships. The level of green-ship rebate also remains at the discretion of EU ports and meaningful reductions will be a critical aspect of encouraging green behaviour.

Implementation

Member States should promote ship-specific criteria at the EU level and - to the extent that the implementing act falls short - promote additional green-ship rebates for fishing vessels that implement certain practices. For example, Member States can—and should—require fishing vessels to undertake certain measures to be eligible for a green-ship rebate, including:

- Procurement of fishing gear and components designed to promote reuse and recycling at end of life.
- Periodic training on reasonable precautions to prevent accidental loss of fishing gear and procedures for retrieval.
- Equipment on-board to retrieve lost fishing gear.
- Marking and logging of fishing gear.

Member States could also require participation in FFL initiatives as another condition for eligibility.

Provision 4 - Waste Reception and handling plans

In addition to the new requirements on cost frameworks, Member States must revise their waste reception and handling plans at ports to ensure (among other things) the separate collection of litter from ships to facilitate reuse and recycling.[28] For fishing gear, as a subset of litter, the costs for this separate collection are to be borne by producers, per the mandatory EPR schemes under the SUP Directive.

Conclusion

Taken together, these new requirements provide a unique opportunity to promote a comprehensive package of measures to restructure cost frameworks, promote FFL initiatives, incentivise green-ship practices and improve waste management and handling plans at EU ports. Such steps should go some distance to overcome the shortcomings that have seen the proliferation of lost fishing gear in recent decades.

BEST PRACTICES

As awareness of the impact of lost gear has increased, so too has a range of civil society, industry and government-led initiatives to integrate best practices throughout the supply chain. These measures range from sourcing policies aimed at assessing the risk of frequently lost or highly damaging gear types at the retail end, to approaches to mitigating the risks of losing gear at port and fisher level, for example through spatial management measures, gear-marking, portside disposal facilities, soak limits and lost gear reporting tracking and recovery protocols. Although many initiatives are voluntary, such as the Food and Agricultural Organization's (FAO) Voluntary Guidelines for the Marking of Fishing Gear and participation in the Global Ghost Gear Initiative, there are strong market incentives to increase prevention and mitigation activities.

There are a range of national initiatives to scale-up and replicate successful models for the collection and recycling of fishing gear to drive responsible fishing gear management and reduce lost gear. These efforts demonstrate successful cross-sectoral collaboration and cost-effective approaches to portside collection and logistics, making them ripe for expansion and replication in other areas.

Best practice examples

Iceland is currently recycling over 70% of its fishing nets, establishing a minimum target as far back as 2008.

In Icelandic legislation, fishing gear is entitled to an advance disposal fee under the Icelandic Recycling Fund (IRF). In practice, waste fishing gear is managed by the Federation of Icelandic Fishing Vessel Owners (LIU) and this is a win-win situation, where LIU can operate the system at a lower cost than under the government's advanced disposal fee. Since 2005, there has been a voluntary agreement on the collection of synthetic-based fishing gear between the LIU and the IRF (based on Article 8 Processing Charge Act No. 162/2002). LIU (now Fisheries Iceland) operates and finances a collection system, under which fishing nets made of synthetic materials are exempt from recycling fees. The collected nets are mostly exported and recycled abroad. Currently, the estimated recovery of fishing nets is 80%, thanks to continuously increasing recycling targets.

Norway is involved in the Nofir project, bringing together a fishing net producer and a waste management company to collect discarded fishing gear across Europe for transport and treatment for recycling in factories in Lithuania and Turkey. Nofir is a private nationwide company that collects discarded fishing and fish farming equipment around Europe. Created in 2008, it has received support from the EU Eco Innovation Scheme since 2012. Between 2011 and 2016 the company collected and recycled 26,314 tons of end-of-life fishing gear.

Chile: Under the Chilean government's "Start-Up Chile" programme, Bureo launched "Net Positiva", Chile's first-ever fishing net collection and recycling programme. Net Positiva provides fishermen with environmentally sound disposal points, while Bureo receives highly recyclable and durable raw materials that they can use to create skateboards and sunglasses. The programme also provides fishermen with easy options for disposal of old nets and helps them to generate local funds through a materials buy-back programe.

Net-Works: The Net-Works project is a collaboration between global carpet tile manufacturer Interface Inc., the Zoological Society of London (ZSL), global synthetic fibre manufacturer Aquafil and local partners. Using an inclusive business model, Net-Works provides an alternate income source for

In Norway, from 2011-2016 Nofir collected

26,314

tons of end-of-life fishing gear.

participating communities, creating incentives to ensure that waste nets are no longer discarded in the ocean. It does this by enabling fishing communities to sell waste nets to Aquafil, which turns the discarded nylon 6 fishing nets into 100% recycled nylon yarn. Interface then uses that recycled nylon yarn in their Net-Effect™ carpet tiles. Net-Works works to develop socioeconomic infrastructure at each collection site as a platform for net collection, either by setting up new community banking systems or strengthening existing programmes, which provide financial services and valuable savings education for men and women in developing countries.

Healthy seas is a cooperation effort between Aquafil, Ghost Fishing and Starsock. In 2011, Aquafil developed and launched the ECONYL® Regeneration System, which regenerates the fishing nets recovered by the Healthy Seas initiative into ECONYL® nylon yarn. The yarn is used for the production of sustainable apparel, such as socks and carpet products. Ghost Fishing coordinates the recovery of abandoned fishing nets and runs regular activities to raise awareness among the public, fishing industry and local communities. The Healthy Seas initiative is active in the following regions: North Sea, Adriatic Sea and Mediterranean Sea. Since 2013, the Healthy Seas initiative has recovered 453 tons of fishing nets.

Netherlands: Green Deal Fisheries for a Clean Sea. The Green Deal approach in the Netherlands is an accessible way for companies, other stakeholder organisations, local and regional government and interest groups to work with central government on green growth and social issues. The aim is to remove barriers and help sustainable initiatives to get off the ground, and to accelerate this process where possible. The Green Deal approach forms part of the green growth policy and is a joint initiative by the Dutch Ministries of Economic Affairs and Climate Policy (EZK), Infrastructure and Water Management (I&W) and the Interior and Kingdom Relations (BZK). A Green Deal is a mutual agreement or covenant under private law between a coalition of companies, civil society organisations and local and regional government. One of the Green Deals focuses on the reduction of litter (i.e. onboard waste, fishing gear) from Dutch fisheries, better waste management facilities for disposal of household waste and used fishing gear, awareness-raising and environmental education within the fishing sector.

Netherlands: the DollyRopeFree project. “Dolly rope” is the name for the orange or blue plastic threads that are used to protect bottom-trawling nets against wear and tear. During fishing operations or maintenance work on the net, threads or bundles of dolly rope threads may end up in the sea, with the material commonly found along beaches in northern Europe and floating out at sea. This poses a threat to marine wildlife and a safety hazard to marine traffic. In the DollyRopeFree project, innovative solutions are developed to reduce the amount of dolly rope ending up in the sea. The project is a partnership between the Dutch fishing federation VISNED, the North Sea Foundation, the Dutch government, material specialists and scientists, coordinated by Wageningen Economic Research.

MARELITT Baltic: For three years the partners of MARELITT Baltic have led a multi-stakeholder project to reduce the impact of derelict fishing gear in the Baltic Sea. The project covered many aspects of the problem (such as mapping, retrieval, recycling and prevention) and resulted in a handbook, “The Baltic Sea Blueprint”, which is a roadmap for sustainable approaches to dealing with derelict fishing gear. The MARELITT project created a range of expertise in several focus areas and developed extensive best practice guidance on methodologies for effective data collection and management approaches for the effective location and recycling of recovered gear. The project produced several freely available resources for policy makers and practitioners to support the replication of their successful findings.

AMBITION & IMPACT

LEGISLATIVE PROVISIONS (AND LEGAL BASIS)	MARINE LITTER REDUCTION		
	LOW AMBITION – LITTLE TO NO IMPACT	MEDIUM AMBITION – LIMITED IMPACT	HIGH AMBITION – MAXIMUM IMPACT
EPR (SUP Directive)	Limited to waste management and some awareness-raising	Includes strong prevention and awareness-raising; Modulated fees on the basis of design for reuse or recycling	Includes clean-up costs / funding for a retrieval scheme, on top of waste management and awareness-raising costs
National minimum collection targets for fishing gear (SUP Directive)	40% or higher but limited to fishing nets	50% No deposit-refund scheme (DRS) or specific infrastructure implemented	90% Incentives such as deposit-refund schemes (DRS) or specific infrastructure implemented
Harmonised standards for circular design of fishing gear (SUP Directive)	Limited to fishing nets	Fishing nets and gear with different criteria	Minimum fishing gear recycling target - 20% by 2025 - 50% by 2030 plus incentives to recycle
Monitoring and reporting schemes (SUP Directive)	Limited to rate of fishing gear collected and volume put on the market	Rate of separately collected fishing gear, plus reused and recycled gear	Additional targets for reuse and recycling
Awareness-raising (SUP Directive)	Guidelines made available to users on marine impact and waste management options	Guidelines made available, plus training for fishermen and port reception facilities' staff	Regular training for fishermen and port reception facilities' staff on impact of lost gear, inappropriate gear disposal and best practices
100% indirect fee system (PRF Directive)	100% indirect fee covers up to the maximum dedicated storage capacity at all EU ports	Unrestricted 100% indirect fee at some EU ports	Unrestricted 100% indirect fee at all EU ports
FFL initiatives (PRF Directive)	FFL initiatives established at some EU ports	FFL initiatives established at most EU ports	FFL initiatives established at all EU ports
Green-ship criteria and rebates (PRF Directive)	General green-ship criteria adopted by the Commission and applied at EU ports, no special provisions for fishing vessels	Specific green-ship criteria adopted by the Commission and/or applied at some EU ports, with special provisions for fishing vessels	Specific green-ship criteria adopted by the Commission and/or applied at most EU ports, with special provisions for fishing vessels

CONCLUSION AND RECOMMENDATIONS

Priority actions for governments

- Establish a robust and regulatory EPR scheme that includes fee modulation and covers cleaning costs, as soon as possible (much sooner than the 2024 deadline) and ensure that all relevant actors are involved.
- Support the setting up a common, EU-wide EPR scheme involving all producers, users and recyclers of the supply chain, at least for fishing nets and ropes.
- Start monitoring (as soon as possible) the volume of fishing gear put on the national market, the volume of waste fishing gear separately collected and the volume being reused and recycled.
- Set an ambitious national minimum annual collection rate target of 50% by 2025 and 90% by 2030 for waste fishing gear containing plastic.
- Consider the implementation of DRS and other dedicated systems, such as gear-leasing or buy-back, to further incentivise separate collection or return of fishing gear.
- Ensure effective and timely annual reporting to the European Commission on the separate collection of fishing gear.
- Put in place unrestricted 100% indirect fees at all ports.
- Establish FFL initiatives at all fishing ports.
- Encourage the Commission to propose ship-specific green-ship criteria in its upcoming implementing act and adopt ship-specific green-ship criteria at national ports.

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5 Within the meaning of Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011.
6 Except persons carrying out fishing activities as defined in Article 4(28) of Regulation (EU) No 1380/2013 of the European Parliament and of the Council.
7 DG Mare website, available at: https://ec.europa.eu/fisheries/new-proposal-will-tackle-marine-litter-and-%E2%80%9Cghost-fishing%E2%80%9D_en
8 Passive FFL activities only, active fishing for litter activities should not be encouraged as they result in additional impacts on the environment.
9 In accordance with Union law on port reception facilities or other equivalent collection systems that fall outside the scope of Union law on port reception facilities.
10 100% biodegradable in the marine environment.
11 Directive (EU) 2019/883.
12 Article 8 PRF Directive.
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#breakfreefromplastic

#breakfreefromplastic is a global movement envisioning a future free from plastic pollution made up of 1,400 organisations from across the world demanding massive reductions in single-use plastic and pushing for lasting solutions to the plastic pollution crisis.

RETHINK PLASTIC

Rethink Plastic, part of the Break Free From Plastic movement, is an alliance of leading European NGOs, representing thousands of active groups, supporters and citizens in every EU Member State.

ENVIRONMENTAL INVESTIGATION AGENCY

SEAS AT RISK

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TURNING THE TIDE ON PLASTIC POLLUTION