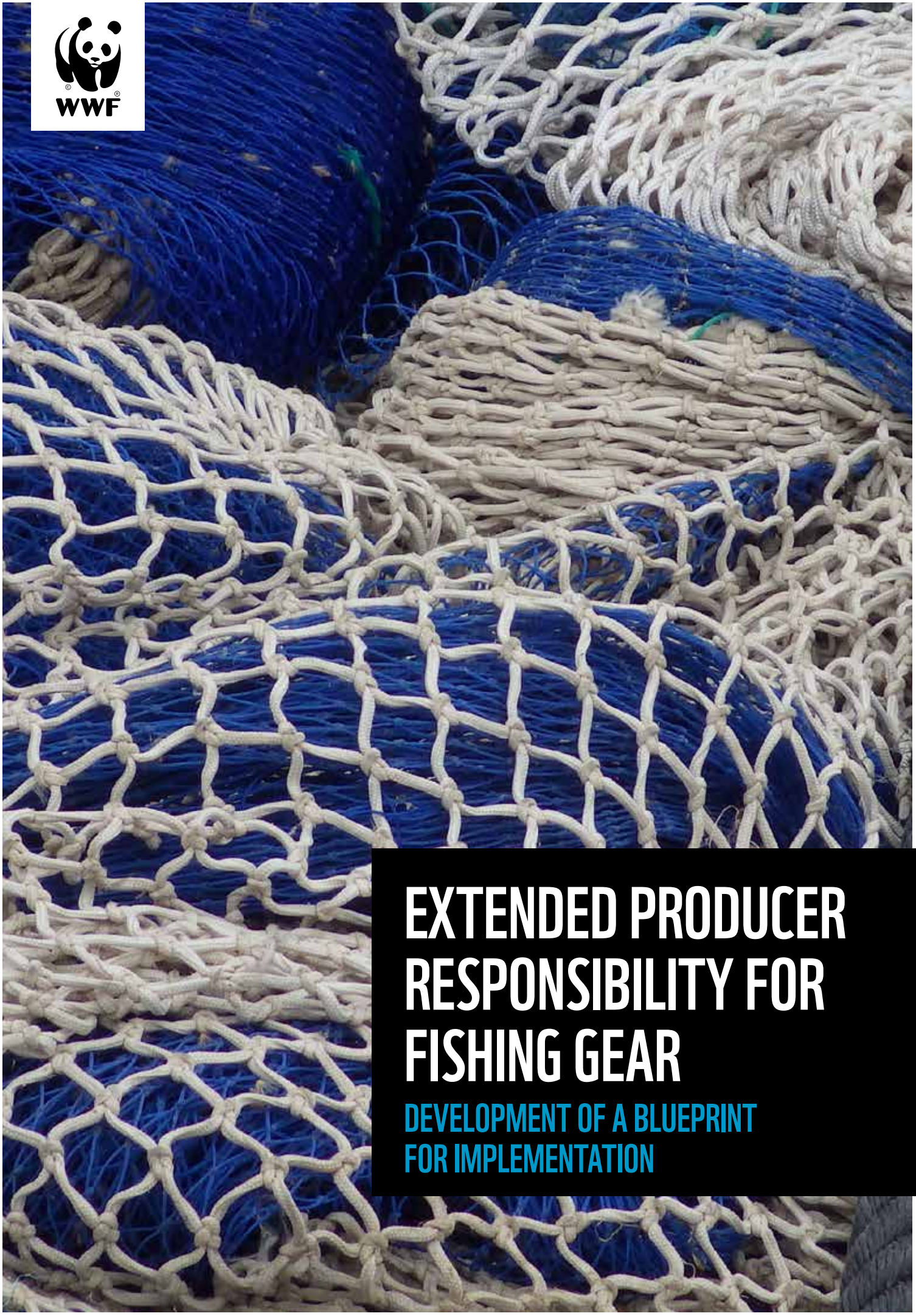

EXTENDED PRODUCER RESPONSIBILITY FOR FISHING GEAR

DEVELOPMENT OF A BLUEPRINT FOR IMPLEMENTATION

ACKNOWLEDGEMENTS

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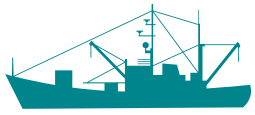
INTRODUCTION

As negotiations over a binding global Treaty to end plastic pollution continue, fishing gear is in the spotlight. It's thought to make up around 7 per cent of all the plastic in the ocean,[1] and visual surveys suggest that 70 per cent by weight of floating microplastic debris is fishing-related.[2] Recent studies estimate that nearly 2 per cent of all fishing gear is abandoned, lost or discarded each year, with some types – particularly bottom trawls and longlines – lost at higher rates.[3] Quite simply, we won't fix the problem of plastic pollution without a strategy for targeting this particular source of waste.

7%

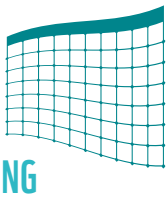


FISHING GEAR IS THOUGHT TO MAKE UP AROUND 7% OF ALL THE PLASTIC IN THE OCEAN

70%

BY WEIGHT OF FLOATING MICROPLASTIC DEBRIS IS FISHING-RELATED

2%



OF ALL FISHING GEAR IS ABANDONED, LOST OR DISCARDED EACH YEAR

During the discussions over the Treaty, extended producer responsibility (EPR) schemes for fishing gear has emerged as one aspect of a suite of measures to include in it. In addition, European Union Directive 2019/904 has already mandated the establishment of EPR for fishing gear at a regional level for Member States by the end of 2024.

As for other product categories, **EPR is an emerging environmental policy approach that expands producers' obligations beyond the product's active use phase** to encompass its entire life cycle. Essentially operating on the 'polluter pays' principle, EPR shifts waste management obligations and costs to producers, facilitating a move towards a circular economy by financing sustainable waste management, including a collection and treatment infrastructure.

WWF believes that the Treaty must include a binding obligation for each party to establish their own EPR systems; or any other system that serves the same purpose, such as take-back systems for fishing gear.

With this in mind, WWF have been working with consultancy cyclos to develop a blueprint for how EPR for fishing gear could be implemented across the EU and beyond. The document aims at supporting regional and national authorities and stakeholders in understanding how to develop effective and inclusive systems of EPR for fishing gear, and includes recommendations for a more harmonised regional approach to better address the issue of ghost gear and cross-border fishing gear waste disposal. This document is a summary of a more detailed report that can be shared upon request.

1. WWF. 2023. *Breaking down high-risk plastic products.*
2. Eriksen, M., Lebreton, L.C., Carson, H.S., Thiel, M., Moore, C.J., Borerro, J.C., Galgani, F., Ryan, P.G. and Reisser, J. 2014, Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. *PLoS One* 9(12): e111913. doi: 10.1371/journal.pone.0111913.
3. Richardson, K., Hardesty, B.D., Vince, J. and Wilcox, C. 2022. Global estimates of fishing gear lost to the ocean each year, *Science Advances* 8, 41. https://doi.org/10.1126/sciadv.abq0135

UNDERSTANDING THE CHALLENGES OF MANAGING FISHING GEAR

Abandoned, lost or discarded fishing gear (ALDFG) is the most deadly form of marine plastic debris, affecting the majority of species in the ocean through entanglement and ingestion.[4] This affects ecosystem productivity and causes economic losses to fisheries. The issue is particularly serious as these materials, slow to degrade, continue to harm the environment long after their use.

Abandoned, lost or discarded fishing gear (ALDFG) is the most deadly form of marine plastic debris, affecting the majority of species in the ocean through entanglement and ingestion. This affects ecosystem productivity and causes economic losses to fisheries. The issue is particularly serious as these materials, slow to degrade, continue to harm the environment long after their use.

The industry largely depends on synthetic polymers such as polyamide (PA), polyester (PES), polyethylene (PE), and polypropylene (PP), with natural fibres being employed only in rare instances. Material choices and consumer awareness during the manufacturing phase can significantly impact sustainability. There is an increasing emphasis on the importance of design for recycling (DfR) principles and the utilization of more recyclable materials. Legislation is expected to play a crucial role in embedding these sustainable practices, marking a commitment to environmental responsibility and a circular economy within the fishing gear industry.

End-of-life fishing gear managed in harbours can become litter if collection points and subsequent waste management are inadequate. Effectively managing fishing gear at the end of its life prevents 'ghost fishing' from harming marine life, and ensuring proper disposal and recycling of durable materials reduces ocean pollution. This also supports compliance with environmental regulations and promotes sustainability in the fishing industry.

When it's not disposed of properly fishing gear may end up in the ocean, where its plastics and metals can leach harmful chemicals into the marine environment and physically pollute habitats. However, it's important to distinguish between end-of-life fishing gear waste and ALDFG, in order to develop targeted management strategies for each and to ensure regulatory compliance. This differentiation allows for the efficient allocation of resources and tailored approaches to tackle specific sources of waste.

Despite current regulations and reporting requirements, inadequate controls and enforcement, coupled with a lack of financial incentives, often undermine efforts to prevent waste at sea and to address the issue of lost fishing gear. The establishment of extended producer responsibility (EPR) policies for fishing gear – improving its handling and incentivizing its correct collection and disposal –would be a significant step towards reducing its impact on the ocean.

EPR systems, although already widely utilized for electronic devices and packaging, require tailored approaches for managing fishing gear waste streams. ALDFG, passively fished waste, and waste from foreign vessels need to be incorporated. Collection, recovery, end-of-life disposal, monitoring and compliance mechanisms form the core of EPR, with optional components including eco-design, public awareness, and clean-up initiatives.

4. Kühn, S., Rebolledo, E.L.B. and van Franeker, J.A. 2015. Deleterious effects of litter on marine life, Marine Anthropogenic Litter pp 75–116.

UNDERSTANDING THE BASICS OF EPR

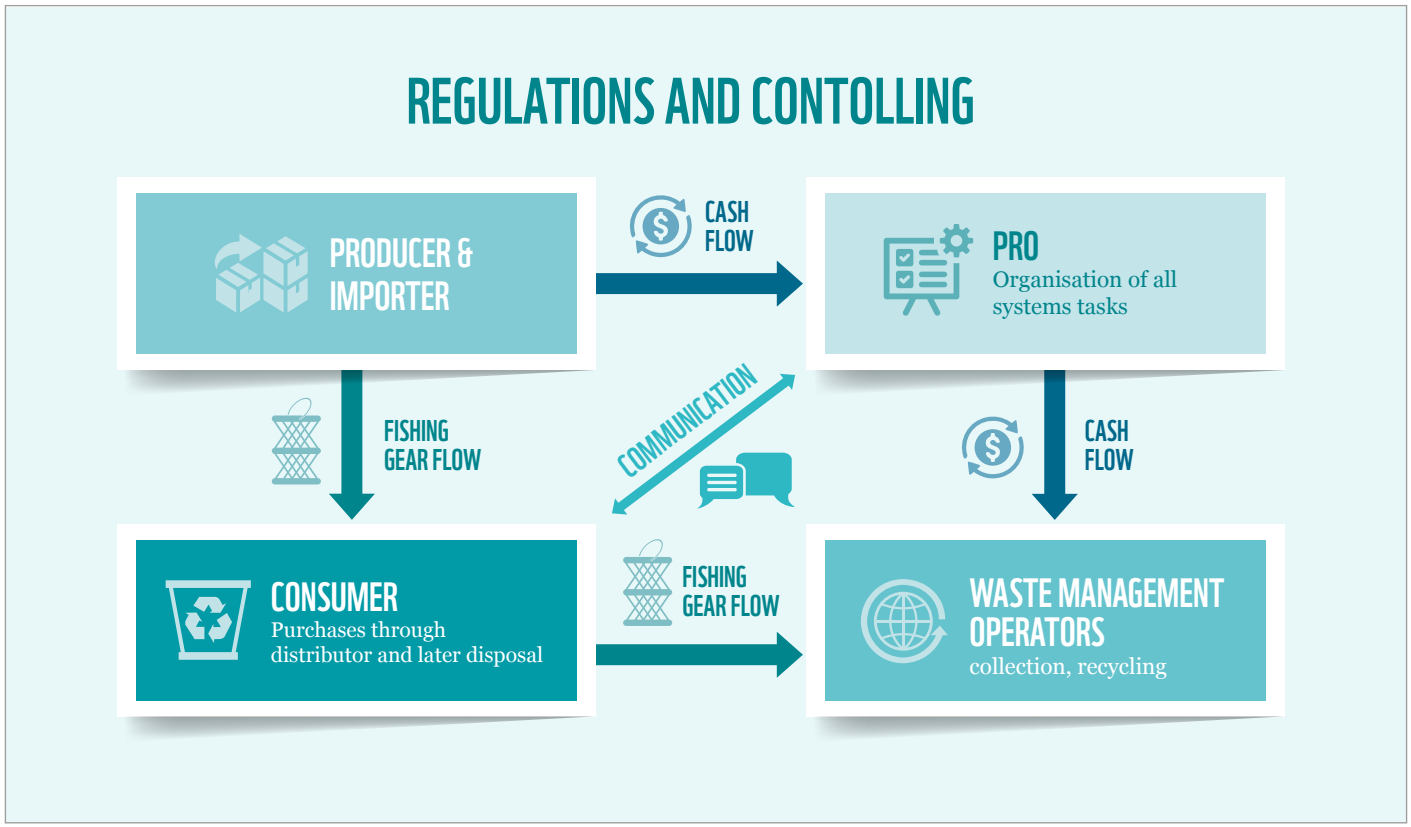
EPR is an emerging environmental policy approach that expands producers' obligations beyond their product's active use phase to encompass its entire life cycle. This incorporates responsibilities for collection, sorting and recycling once the product becomes waste. Essentially operating on the 'polluter pays' principle, EPR shifts waste management obligations and costs to producers. It thereby serves as a mechanism to finance and organize waste collection and treatment infrastructure.

EPR schemes can be either mandatory or voluntary; however, only mandatory schemes have been shown to drive fundamental improvements in waste management systems. Producers can fulfil their EPR obligations through individual compliance schemes, or collective compliance schemes facilitated by a producer responsibility organization (PRO). In the latter case producers pay EPR fees to the PRO, which uses them to finance the operationalization of the system, including all waste management tasks as well as administration, communication and education – this often proves more effective due to resource pooling and streamlined operations (see Figure A).

Establishing a PRO in an EPR scheme involves deciding how to set it up – whether it should be for-profit or non-profit, or a single or multi-PRO system. While a non-profit, single PRO system is often recommended based on experience with other waste streams, the final decision should reflect a country's context and existing regulations. Factors like infrastructure, legal frameworks and decisions from stakeholder discussions must be considered to determine the most suitable approach.

The effective functioning of an EPR system requires rigorous monitoring, supervision and enforcement to ensure that stakeholders fulfil their roles and adhere to system guidelines. In collective EPR schemes, monitoring takes place on two levels: the PRO oversees participation and payments from its obligated companies, as well as the operational performance of waste management operators. In parallel, regulatory authorities (such as environmental agencies) provide additional supervision and help to ensure compliance.

Figure A: Basic set-up of a collective EPR system ©cyclos



APPLYING EPR TO FISHING GEAR: ALLOCATING ROLES & RESPONSIBILITIES

The effectiveness of an EPR scheme hinges on its suitability for the local circumstances and the targeted products. Fishing gear has unique characteristics throughout its life cycle, and given related issues including ALDFG, passively fished waste and waste from foreign vessels, effectively managing it demands tailored EPR features. Unlike with EPR systems for product streams such as packaging, it can be difficult to directly associate responsibility to brands or producers during the use of fishing gear. Its prolonged lifespan, varied usage patterns and global nature require customized approaches for successful EPR implementation. While the fundamental principles of EPR schemes remain the same across various product categories, their implementation must be adjusted to suit the unique characteristics and established waste management systems of each product stream.

Defining the 'producer' is fundamental to any EPR system. For fishing gear, the producer is defined as a natural person or legal entity who:

- **A** professionally imports fishing gear into the geographical area in which the EPR regulation is ultimately intended to apply (distributor and retailer), or
- **B** manufactures fishing gear in the area (manufacturer), or
- **C** sells fishing gear from an area outside of the scope of application of regulations to an end-user within it.

Such a specific definition is crucial to ensure that each product is made the responsibility of one individual producer under EPR. In addition, this definition excludes the fishers (end-users), as well as artisanal makers of fishing gear.

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Table A below summarizes the responsibilities of other pivotal EPR stakeholders. By explicitly defining stakeholders' responsibilities, the EPR scheme can operate more efficiently, with better coordination among participants, leading to improved recycling rates and reduced environmental impact.

Table A: EPR stakeholders and their responsibilities

STAKEHOLDER	TASKS AND RESPONSIBILITIES
AGENCY/AUTHORITY	**The responsible agency or authority oversees EPR schemes, registers producers and PROs, issues certificates, and supervises compliance.** It collaborates with municipalities to determine each PRO's share of costs, establishes reporting guidelines, and requests digital information from producers to ensure adherence to EPR regulations. Each country can decide on its own responsible agency or authority; however, this role is usually fulfilled by an environmental protection body.
PRODUCERS	**Producers are at the centre of the EPR system, as their responsibilities are extended to the end-of-life stage of the products put on the market.** They need to assure adequate management – collection and recycling/recovery/disposal – of the waste from their products. They are held accountable for operationalization, monitoring, and reporting of all waste management tasks.
PRODUCER RESPONSIBILITY ORGANIZATION (PRO)	PROs are the backbone of collective schemes. **A PRO assumes the obligations on behalf of its members (i.e. the producers), enabling them to collectively manage waste from their products and packaging through paid contributions.** This includes organizational and operational activities, including setting up collection and take-back schemes, as well as monitoring and reporting duties.
PORT (RECEPTION FACILITY)	**Port authorities play a crucial role as facilitators for the collection of waste and end-of-life fishing gear, coordinating its collection and transport, and providing necessary facilities.** However, the responsible authorities for setting up collection points may vary among EU countries. Collaboration between waste managers, port authorities and fishers is essential to define roles in pre-processing and to secure funding for manual labour, dismantling costs and training staff, which represent significant challenges for ports.
MUNICIPALITY	**Municipalities collaborate with PROs to collect waste from designated sites or port reception devices.** Collection services are provided free of charge, with collection locations determined by municipal PRO agreements, aligned with overall waste management practices. Municipalities report waste transport and collection data to the agency or authority annually, including costs for transportation, separate collection, and reporting activities, as required by regulations.
WASTE SERVICE PROVIDERS	**Responsible for collecting, sorting, and recovering/recycling waste** under the EPR scheme based on contractual agreements – either with producers directly (in individual compliance schemes), or the PRO (in collective compliance schemes), and municipalities. Waste service providers need to be licensed to work with PROs.
FISHERS	**Dispose of end-of-life fishing gear according to legislation and report lost gear.** Additionally, they should correctly dispose of other waste caught as debris in their nets.

APPLYING EPR TO FISHING GEAR: MANAGING FINANCIAL FLOWS

The EPR payments from the producers must be large enough to finance adequate waste management, including collection, sorting and recycling, as well as associated costs for transportation. Every producer should contribute a fee based on the amount of fishing gear they introduce to the market, either as an individual scheme or through a collective scheme, depending on the set-up defined in the regulation. Costs related to collection, sorting, recycling and disposal – as well as the informational and administrative activities of a PRO, authority or third-party auditors – are then funded through the EPR scheme.

The producers in a collective scheme pay the fees to the PRO to carry out their obligations under the EPR scheme. Financial integrity and transparency are essential for effective management of this waste stream, so it's recommended to set up a PRO on a non-profit basis to ensure that the money is exclusively used for operating the EPR system. In a non-profit set-up, the main funding a PRO receives is the EPR fees paid by its producer members. In addition, any revenues from recycling or any reserves from previous years can be reinvested into the EPR system.

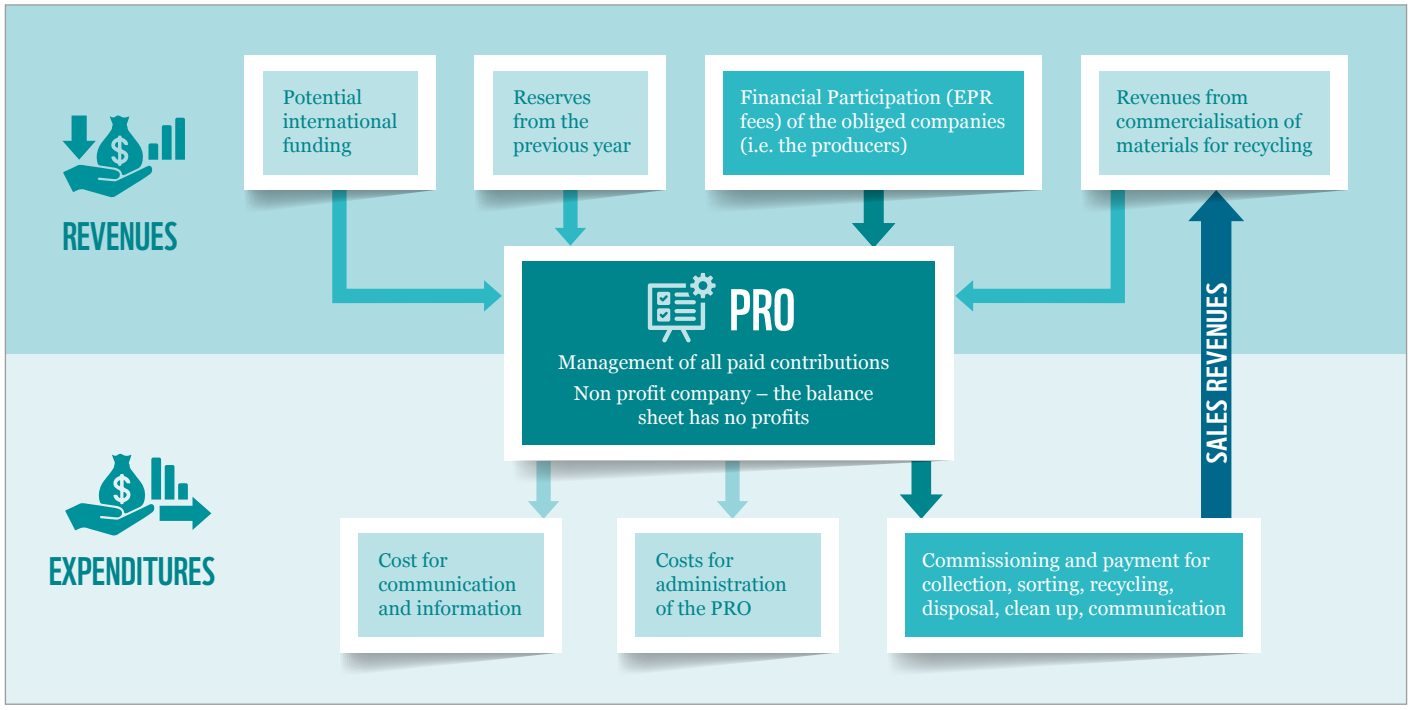
On the expenditure side, the PRO has to pay for all waste management activities including collection, sorting, recycling, energy recovery, or other appropriate forms of disposal. Additionally, it bears the costs of administration, monitoring, and any other communication, education and related tasks (Figure B).

To provide further (financial) incentives for more eco-friendly design in the fishing gear put on the market, e.g. by avoiding certain materials and/or switching to more recyclable forms, the EPR fees can be adjusted to encourage certain design choices while discouraging others, for instance to reward options that enhance recyclability or avoid problematic materials. This concept is referred to as 'modulated fees' or as 'eco-modulation': fees can be adjusted based on various factors such as product recyclability, environmental impact, market conditions and reserves etc.

Three approaches can be taken with the financial flows to municipalities and waste management operators:

1. The PRO establishes an additional system for collection and transportation, in which case the costs should encompass the set-up of collection points at port(s), segregation of fishing gear, transportation, reporting etc. This can also be carried out by contracting waste service providers.
2. The PRO pays to cover the municipality's expenses for collection and other waste management tasks which typically fall under municipal jurisdiction. In this scenario, the responsibility for collection remains with the municipality, and the PRO reimburses it accordingly.
3. A hybrid approach of option 1 and option 2.

Figure B: Revenues and expenditures of a not-for-profit PRO ©cyclos



APPLYING EPR TO FISHING GEAR: MONITORING AND ENFORCEMENT

Monitoring and enforcement are the linchpin for the successful implementation of an EPR system. Strong standards for monitoring and enforcement are imperative, necessitating precision in policy crafting, strategic implementation plans, sufficient capacity, and clear consequences in case of violations. These latter penalties need to be both sensible and conspicuous, to convey a strong message of compliance. **The regulatory body possesses the authority to impose penalties on producers and PROs if they fail to fulfil essential obligations outlined in the EPR regulations.**

Effective policy enforcement relies heavily on robust monitoring. At the top level, monitoring and enforcement constitute vital functions overseen by a governmental authority/agency to ensure that all obligated producers fulfil their duties. However, within the EPR system, monitoring is also undertaken by other stakeholders at various levels, with the specifics heavily influenced by the chosen EPR system set-up and possibly by interactions with existing monitoring mechanisms. A PRO should monitor all the services designated to service providers, particularly those pertaining to collection and recycling.

The authority's responsibility encompasses employing various monitoring mechanisms, including annual audits of individual and collective EPR compliance schemes, **to ensure alignment with objectives and waste management targets** such as recycling quotas. Monitoring focuses on two aspects: what is placed on the market (input side) and what is managed as waste by the system (output side). Both sides utilize specific instruments for monitoring, such as mass-flow verifications for waste management, and may benefit from third-party auditing. Additionally, maintaining a fully operational register of all registered and licensed schemes and obligated members is crucial for transparency and accountability. Control audits further verify compliance and effectiveness in meeting waste management objectives.

The register is a key instrument for ensuring and monitoring compliance in an EPR system. It serves as a central repository for essential information about producers and their representatives, the amount of fishing gear introduced into the market, and the fees paid. This facilitates effective oversight by the responsible authority, clearly identifying obligated companies and reducing the risk of free riding. It also plays an important role in registering and authorizing the entities tasked with managing the system (such as PROs), which is especially useful when companies are able to select from different available options (such as individual vs. collective compliance schemes).

The register set-up depends on the EPR system. In the case of a single PRO, the organization might also manage the register for producers. When there are multiple PROs, a neutral separate authority or third party (depending on the national context and legislation) should be assigned. This is important to process sensitive data confidentially, ensuring trust and compliance among producers.

Registration is mandatory for every fishing gear producer. Further, they must declare changes of information or an eventual cessation of sales. The producers need to provide the following details for registration: company name, address and contact information, VAT or other unique business number, contact person, and representative/agent (if any).

As well as the registration data, the register also notes reporting data. This includes whether the producer has selected an individual or collective scheme, which PRO it is registered with (if it has chosen a collective scheme), plus the total and material-specific quantities of fishing gear it has introduced into the market (in order to calculate the related fees). Based on the set-up of the register, both registration and reporting data can be submitted to a single register (e.g. run by an authority or third party) or to separate registers (e.g. registration with PRO, and reporting to the authority or third-party-run register).

MANAGING ALDFG AND OPTIONS FOR A REGIONAL APPROACH

As previously mentioned, managing ALDFG is a specific challenge for the set-up of an EPR system for fishing gear. Understanding the distinction between end-of-life fishing gear and ALDFG is important to clearly define the scope. End-of-life fishing gear is a waste stream for which its obligated producers under EPR have already paid the fees when introducing it to the market. This waste is, therefore, properly handled by EPR systems, which generally target and mandate end-of-life fishing gear. In contrast, ALDFG presents a unique challenge. ALDFG comprises historic waste, notably including 'ghost gear', which has not been addressed by any current or prospective EPR system or by the producers themselves, and which has evaded formal waste management channels. ALDFG can originate from various sources, including sea-based and land-based activities, involving both small-scale fishers and large industrial vessels. Moreover, ALDFG can travel vast distances on ocean currents, making its management (and the financing thereof) particularly complex, and posing a challenge for EPR schemes: such waste is typically out of the producers' control due to its distance from home harbours.

Since ALDFG is a prevalent issue, it is recommended that an EPR system designed to manage end-of-life fishing gear should also include ALDFG to a certain extent. This can include setting aside a percentage of EPR fees for its management. However, it is important to note that such fees depend heavily on each country's situation and may need adjustment over time. In addition to handling ALDFG, the EPR system should also have a buffer amount (a certain percentage of the EPR fees) for the proper disposal of passively fished waste (e.g. bottles), as well as waste from foreign vessels which are not subject to the EPR scheme for fishing gear. PROs should either cover the cost or reimburse fishers and/or ports for properly sorting and disposing of waste caught as debris in fishing nets. Contractual agreements with port reception facilities can streamline waste handling tasks, ensuring effective waste management practices. To ensure adequate finance for managing ALDFG and other passively fished waste, such a requirement should be clearly mandated in the legal framework. Moreover, given the transborder nature of fishing gear usage and waste dispersion, exploring options for a regional approach is strongly recommended.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As mentioned in the previous sections, EPR is implemented at the national level. This applies to both the legal basis as well as to the implementation of the system, due to the fact that enforcement (including sanctions) can only be carried out at national level (as determined by the overall (EU) legal framework). However, national implementation can only be achieved if the waste of the products that are subject to EPR remains to a large extent within the defined (national) area upon collection. As discussed above, however, fishing gear is often used in regions without clear borders and ALDFG can traverse vast water bodies with ease.

Another challenge to be addressed in this context is industrial fisheries which might discard end-of-life gear at locations other than their home port: to avoid discard at sea, it is important that foreign vessels landing their catch in other countries can also leave their end-of-life fishing gear in the landing ports. However, this would mean that waste fishing gear is disposed of in countries other than the ones where it has been put on the market and paid for. In light of this challenge, mechanisms for data exchange between countries and ports should be established for reimbursement processes, especially in supranational contexts where waste may be disposed of across different jurisdictions. Clearing arrangements between countries or ports can facilitate this exchange of waste management responsibilities and ensure equitable financial contributions.

Considering these challenges, the option of a regional approach to complement national EPR systems should be discussed. In particular, a regional approach would help to address specific weaknesses of national EPR systems for fishing gear and help to improve:

1. Enforcement structures, as similar or even the same rules would apply within one water body.
1. Harmonized and simplified compliance regulations for producers.
1. Cooperation between countries to collectively fund ALDFG retrieval and/or disposal of fishing gear from foreign vessels.

For a regional approach to be set up, all water bodies, bordering countries and landing harbours that it would encompass must first be defined. Second, all coastal states along the defined water bodies must be identified: for shared or intermediate waters, it would be beneficial for these states to consider harmonizing their EPR rules to a common standard. After the first two steps are carried out, existing regulations in the coastal states relating to EPR must be identified, and their differences and similarities analysed. This then provides the basis for the creation of a memorandum of understanding (MoU) across the countries or other jurisdictions in question.


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Vulnerable stakeholders

EPR schemes need to be inclusive and enable the integration of all stakeholders, including small-scale fishers and informal waste workers. Any interventions should consult and include vulnerable groups to ensure fair, equitable and inclusive solutions which safeguard their livelihoods and fundamental human rights.

EPR capacity-building and technical assistance must also be provided to developing countries, and especially small island developing states that already face challenges in ensuring their port infrastructure and facilities comply with international regulations.

THE WAY FORWARD

Implementing an EPR system for fishing gear requires a comprehensive approach encompassing regulatory frameworks and practical execution.

Emphasized in this blueprint is the need for robust collection and recovery infrastructure providing effective recycling, waste-to-energy options, or disposal options tailored to the unique challenges of fishing gear waste, including logistical complexities in diverse locations. The success of EPR systems for fishing gear also hinges on collaboration and compliance among stakeholders including producers, governments and end-users. A strong legislative framework, coupled with ongoing education and incentives, is crucial. Producers should be accountable for both the product's active phase and its end-of-life management, and contribute financially to these activities.

TO ACCELERATE THE IMPLEMENTATION OF AN EPR SYSTEM FOR FISHING GEAR, THE FOLLOWING GUIDELINES ARE RECOMMENDED:

1. All types of fishing gear should be included under the EPR system whatever their material, unless explicitly excluded.
2. Dedicated funding must be secured for waste not covered by the EPR system's scope, such as historic ALDFG, to ensure financial accountability and proper resource allocation.
3. The producer should remain responsible for its product and for meeting the requirements set out in the regulatory framework, regardless of whether or not it has joined a PRO.
4. PROs should operate on a non-profit basis, and preferably under a single system.
5. The scheme should be self-financing, and the EPR fees should be sufficient to cover the costs related to all waste management activities (from collection and sorting to disposal and landfilling) and other administrative demands. EPR fees should only be used for EPR-related purposes, and should be adjusted to the financing demands.
6. Consumer education and awareness on this topic should be promoted, with these costs also covered by EPR fees.
7. Eco-modulation should be included in the legal framework from the beginning; however, it should only be implemented once the system is smoothly running.
8. Specific, measurable, achievable, relevant and time-bound (SMART) collection targets should be put in place. These should be increased gradually.
9. The authority which will monitor and report on all aspects of the system should be identified, and clear standards defined.
10. Take the first few years as learning years: determining the optimal amount of EPR fees can take several years of continuous evaluation, research and development.
11. Keep in mind that an EPR system is only one part of a wider waste management system.

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