Multi-AC Advice on the implementation of the Single Use Plastics Directive and operational aspects of the Fishing for Litter Scheme

1 Background

In January 2018, the EU adopted a Plastics Strategy in a Circular Economy in order to help European businesses and consumers to use resources in a more sustainable way. Two Directives adopted in 2019 contain measures that address the fishing sector.

The Single Use Plastics (SUP) Directive[1] entered into force on 02 July 2019 and foresees measures on extended producer responsibility schemes (EPR), the establishment of national minimum annual collection targets in each Member State and the monitoring and reporting of fishing gear. Fishing gear that is returned to shore must be properly dealt with from a Circular Economy point of view.

The Directive on Port Reception Facilities (PRF)[2] was adopted on 17 April 2019 and deals with all types of waste from ships as well as with waste collected in nets during fishing operations and includes measures and incentives to ensure the waste is returned to land to adequate port reception facilities. The SUP Directive and the PRF Directive are looking for specific but differing reporting, though they both have a common goal, which makes it imperative that both Directives be read together.

The EU is actively pursuing a circular economy strategy including tackling the issue of single use plastics and marine litter via its existing and proposed legal framework as well as through European Maritime Fisheries Fund (EMFF) funding for blue economy projects[3].

Over the past two years of the North Western Waters Advisory Council (NWWAC), the serious, complex and ever worsening contamination of our marine environment has been an issue identified by the membership and they acknowledged that this required immediate attention.

Members of the NWWAC have raised issues regarding the damaging effects the breakdown of plastics into micro- and nano-particles are having on the sensitive marine ecosystem. The seafood sector depends on these ecosystems for providing great tasting, sustainable, healthy seafood and, importantly, as a secure food source for the citizens of Europe. Industry members of the NWWAC were called upon to recruit their vessels to put in place a “fishing for marine litter” (FFL) scheme to help remove these harmful contaminants. Numerous non-governmental organisations throughout Europe and worldwide are also involved in removing marine litter from the oceans and shorelines.

[1] Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment https://eur-lex.europa.eu/eli/dir/2019/904/oj

[2] Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32019L0883

[3] https://ec.europa.eu/easme/en/EMFF-projects

To address the pressing issues surrounding marine plastics the NWWAC setup its Focus Group Marine Plastics[4] in July 2019 with the objectives to organise two workshops to explore operational aspects linked to the implementation of the SUP Directive as well as the Fishing for Litter scheme in greater detail, as well as to develop specific recommendations to the European Commission on the identified issues.

A first workshop "Plastics and the Seafood Supply Chain" was held in Brussels on 7th November 2019 jointly organised between the NWWAC and the Market AC (MAC). It brought together members of several Advisory Councils, experts and scientists to explore the impact of plastics on fisheries. A detailed report was produced and published in the NWWAC's three working languages (link).

The second workshop "Re-Imagining Gear in a Circular Economy" was held in Brussels in 28 January 2020 jointly organised by four Advisory Councils, the NWWAC, Pelagic Advisory Council (PelAC), North Sea Advisory Council (NSAC) and Baltic Sea Advisory Council (BSAC), bringing together invited experts, as well as stakeholders from the ACs, and representatives from the Commission to investigate and discuss the specifics of fishing gear in a circular economy. A detailed report was produced and published in the NWWAC's three working languages (link).

It must be stated clearly that fishing gear is not a single-use, consumed product. Rather, it is a highly developed necessary piece of equipment to hunt and gather fish from our oceans. It also is the best placed instrument to catch and collect plastic and other types of debris that find their way into our marine environment.

In addition, the unknown amounts of fishing line, long-lines, nets, traps and related plastic equipment placed on the market for the recreational sector must be taken into account (measured by weight), as well as financial and logistical support for the development, implementation and harmonisation of recycling schemes such as the Anglers National Line Recycling Scheme[5].

2 Recommendations from the NWWAC/MAC workshop "Plastics and the Seafood Supply Chain"

It has been acknowledged and must be emphasised again that at the forefront of all this work is the seafood industry itself despite being only a minor contributor to the problem on a global scale.

Fishers and fish farmers are taking a proactive role in contributing to the cleaning up of our seas. Seafood processors are looking into waste reduction and changes in packaging materials.

The seafood industry along its entire supply chain is not only fully aware of the issues relating to plastic pollution in the marine environment but is part of the solution.

Plastic is the most widely used material on the planet[6]. Nearly 80% of plastics entering the oceans comes from land-based sources.

[4] http://www.nwwac.org/about-nwwrac/membership.1608.html
[5] Anglers National Line Recycling Scheme (link)
[6] Source: European Commission: Our Oceans, Seas and Coasts (link)

Plastics are widely used in the seafood sector which is also a source for plastics to enter the marine environment either intentionally or unintentionally.

Microplastics have been shown to be present in organisms and products across the entire food chain[7]. Microplastics from food products and beverages likely only constitute a minor exposure pathway for plastic particles and associated chemicals[8] to humans with consumption of seafood representing a miniscule part.

The EU is actively pursuing a circular economy strategy including tackling the issue of single use plastics and marine litter via its existing and proposed legal framework as well as through EMFF funding for blue economy projects.

Prevention and removal of marine litter are vital with awareness raising and education being key to solving the pollution problem.

Packaging solutions must be assessed for their true circularity to avoid replacing one problem with another.

More research is needed on the human health risks of microplastics, nano plastics and their compounds as there is currently not enough scientific evidence[9]. Communication and collaboration are key to solving marine litter problem.

3 Recommendations from the 4 AC Workshop "Re-imagining Gear in a Circular Economy"

Looking ahead, it is vital to have a good and clear understanding of what is expected from the fishing sector regarding the requirements of both the SUP and the PRF Directives. When it comes to any EPR scheme there is a need to identify who is going to be targeted and what such a scheme might look like. It may be possible to incorporate knowledge from other sectors that have implemented EPR schemes, for example packaging or electronics, and to observe their processes[10].

There is a need to share knowledge and experience in a non-competitive way across the net making and net assembling sector, which is currently working on developing recommendations on the proposed standardisation.

[7] SAPEA, Science Advice for Policy by European Academies. (2019). A Scientific Perspective on Microplastics in Nature and Society (link)

[8] Science of the Total Environment 626 (2018) 720-726: A critical perspective on early communications concerning human health aspects of microplastics. S. Rist, B. C. Almroth, N. B. Hartmann, T. M. Karlsson (link)

[9] (VKM Report 2019:16: Microplastics; occurrence, levels and implications for environment and human health related to food. Opinion of the Steering Committee of the Norwegian Scientific Committee for Food and Environment (link)).

[10] OSPAR Scoping study to identify key waste items from the fishing industry and aquaculture. Marine Litter Regional Action Plan Action 35. 2019 (link)

While the fishing sector realises the importance of the issue and its contribution to both the impact and the solution, it must be borne in mind that the impact from the fishing industry regarding plastics in the oceans is much smaller than for example the impact from the car tyre industry or soft drinks manufacturers.[1112]

From an economical point of view, it would be useful to understand the scale of the issue as well as to outline how complex the topic is and how much effort each step would require in order to enable making a product that is recyclable. Greater transparency is required, as this is currently not available. Different players see different parts of the issue, but no global data has been collected.

This would be assisted by mapping the entire supply chain and identifying how and from where material arrives on the market, how it is monitored and how it is disposed of. For a true circular economy approach, everyone involved needs to come together for an international discussion, including for example rope and netting manufacturers from third countries.

It would be beneficial for fishers to be involved in identifying new materials and designing new gear. While this is a long-term approach, short-term goals can be achieved through awareness-raising, which can be started immediately.

Fishers' knowledge should feed into establishing what type of research is needed to move things forward. One simple goal might be a move to fewer polymer combinations being used for gears, which may make them more easily recycled at end-of-life.

More focus should be put on the social dimension to study what impact the new legislation may have on human behaviour and current practices. Additional incentives and funding should be made available.

Annex V of the International Convention for the Prevention of Pollution from Ships ('MARPOL Convention')[13] requires contracting Parties to ensure the provision of adequate waste reception facilities in ports which is reflected in the PRF Directive. This provision must apply to all ports, regardless of their administrative structure, and not leave smaller ports, harbours and piers overlooked or not considered for waste reception facilities[14].

[11] GESAMP (2010, IMO/FAO/UNESCO-IOC/UNIDO/WMO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection); Bowmer, T. and Kershaw, P.J., 2010 (Eds.), Proceedings of the GESAMP International Workshop on plastic particles as a vector in transporting persistent, bio-accumulating and toxic substances in the oceans. GESAMP Rep. Stud. No. 82, 68pp. (link)

[12] Boucher, J. and Friot D. (2017). Primary Microplastics in the Oceans: A Global Evaluation of Sources. Gland, Switzerland: IUCN. 43pp. (link)

[13] International Convention for the Prevention of Pollution from Ships (MARPOL) (link)

[14] See also DG MARE report on Workshop on circular design of fishing gear, Brussels 19-20 February 2020 (link)

4 NWWAC, BSAC, BlSAC, LDAC, MAC, MEDAC, CCRUP, CCS[15] advice on key requirements of Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment

Art.	Directive text	Advisory Councils' advice
8.7	Each Member State shall ensure that a producer established on its territory, which sells single-use plastic products listed in Part E of the Annex and fishing gear containing plastic in another Member State in which it is not established, appoints an authorised representative in that other Member State. The authorised representative shall be the person responsible for fulfilling the obligations of that producer pursuant to this Directive on the territory of that other Member State.	1. Identify which producer has overall responsibility and who is best placed to carry out these requirements.
8.8	Member States shall ensure that extended producer responsibility schemes are established for fishing gear containing plastic placed on the market of the Member State, in accordance with Articles 8 and 8a of Directive 2008/98/EC. Member States that have marine waters as defined in point 1 of Article 3 of Directive 2008/56/EC shall set a national minimum annual collection rate of waste fishing gear containing plastic for recycling. Member States shall monitor fishing gear containing plastic placed on the market of the Member State as well as waste fishing gear containing plastic collected and shall report to the Commission in accordance with Article 13(1) of this Directive with a view to the establishment of binding quantitative Union collection targets.	1. Full analysis of supply chain economics.[16] 2. Directive (EU) 2019/904 states "Whereas (25) While all marine litter containing plastic poses a risk to the environment and to human health and should be tackled, proportionality considerations should also be taken into account. Therefore, the fishermen themselves and artisanal makers of fishing gear containing plastic should not be considered as producers and should not be held responsible for fulfilling the obligations of the producer related to the extended producer responsibility." Thus, net/rope factories are those who should be responsible for assuring the quality of the gear and taking part in the EPR schemes.

[15] Baltic Sea Advisory Council (BSAC), Black Sea AC (BlSAC), Long Distance AC (LDAC), Market AC (MAC), Mediterranean AC (MEDAC), Outermost Regions AC (CCRUP), South Western Waters AC (CCS)

[16] See also DG MARE report on Workshop on circular design of fishing gear, Brussels 19-20 February 2020 (link)

		3. Abandoned, lost or otherwise discarded fishing gear (*ALDFG*)[17] retrieved from sea should be also included here. 4. Costs for the delivery and treatment of this waste shall be covered by the national fund established under Article 8 of the PRF Directive. Fishing vessels should incur no direct costs for delivery of passively fished waste, and fishers participating in voluntary schemes such as Fishing for Litter should be rewarded through effective fee modulation. 5. The fee shall include a fixed contribution toward a national fund, established and maintained in accordance with Article 8.2a of the PRF Directive to support projects for the collection of passively fished waste from fishing vessels (fishing-for-litter schemes) and waste found on coastlines in the vicinity of ports and along shipping routes (beach clean-ups). 6. Ships calling on a port in a Member State shall contribute to this fund a fixed contribution, differentiated with respect to the category and size of the ship and the type of traffic the ship is engaged in, for each port of call. 7. The Commission shall be empowered, by means of implementing acts adopted in accordance with the examination procedure referred to in Article 20(2) of the PRF Directive, to establish the modalities for collection, management and distribution of the fund.
8.9	With regard to the extended producer responsibility schemes established pursuant to paragraph 8 of this Article, Member States shall ensure that the producers of fishing gear containing plastic cover the costs of the separate collection of waste fishing gear containing plastic that has been	1. In accordance with the Directive on Port Reception Facilities, Member States must provide port facilities for the classification/separation and weighing of material landed from marine litter and end-of-life fishing gear. Member States must ensure that the landing of passively fished waste will be exempt from the

[17] (see FAO Fisheries and Aquaculture Technical Paper No. 523 (link)

	delivered to adequate port reception facilities in accordance with Directive (EU) 2019/883 or to other equivalent collection systems that fall outside the scope of that Directive and the costs of its subsequent transport and treatment. The producers shall also cover the costs of the awareness raising measures referred to in Article 10 regarding fishing gear containing plastic. The requirements laid down in this paragraph supplement the requirements applicable to waste from fishing vessels in Union law on port reception facilities. Without prejudice to technical measures laid down in Council Regulation (EC) No 850/981, the Commission shall request the European standardisation organisations to develop harmonised standards relating to the circular design of fishing gear to encourage preparing for re-use and facilitate recyclability at end of life.	requirement of prior notification (i.e. weighing on board) in accordance with Directive EU 2002/59 (Art. 15). 2. Explore the suitability of extended producer responsibility scheme and modulated fees in the complex industry where the majority of fishing gear is repaired regularly over decades before it reaches the end of its life. 3. Financial incentives to explore eco-design, design for disassembly, reduction of number of polymers used in fishing nets, for example via pilot projects supported by public sector R&D funding.[18] 4. Investigate ways of identifying or labelling different materials such as polymers, so as to ease identification for recycling
10	Member States shall take measures to inform consumers and to incentivise responsible consumer behaviour, in order to reduce litter from products covered by this Directive, and shall take measures to inform consumers of the single-use plastic products listed in Part G of the Annex and users of fishing gear containing plastic about the following: (a) the availability of re-usable alternatives, re-use systems and waste management options for those single-use plastic products and for fishing gear containing plastic as well as best practices in sound waste management carried out in accordance with Article 13 of Directive 2008/98/EC;	1. Carry out further consultation with gear manufacturers to investigate the possibility of developing measures to extend the life of fishing gear by using more durable material[19] but also easier to recycle at its end of life. It is worth underlining that due to the harsh conditions at sea in the fishing process, the nets and ropes are already very durable and are long-lasting. 2. Taking into account the waste hierarchy and following the EU Waste Framework Directive, the aim is to design a gear that uses the least resources and has most longevity while maintaining the same fishing properties and efficiency for professionals, but also to create a design most suitable for recycling, ensuring easy stripping of the material.

[18] See also DG MARE report on Workshop on circular design of fishing gear, Brussels 19-20 February 2020 (link)
[19] See also DG MARE report on Workshop on circular design of fishing gear, Brussels 19-20 February 2020 (link)

	(b) the impact of littering and other inappropriate waste disposal of those single-use plastic products and of fishing gear containing plastic on the environment, in particular on the marine environment; and (c) the impact of inappropriate means of waste disposal of those single-use plastic products on the sewer network.	3. Following the SUP and PRF Directives, recycling of fishing gear as a multi-material product should encompass all parts and materials of the gear, including metals and/or other materials. Solutions must be investigated and established for all materials. 4. Carry out a life cycle analysis of current fishing gear and use it as a unit of measure in the development of new gear technologies. In order to move to more circularity, investments must be made in the development of single material nets based on existing and new materials. 5. Optimise logistics for treatment of end-of life fishing gear.
13.1	Member States shall, for each calendar year, report to the Commission the following: (d) data on fishing gear containing plastic placed on the market and on waste fishing gear collected in the Member State each year;	1. An integrated universally accepted recording/reporting platform should be created to properly document landings of marine litter and separately end of life fishing gear. This can be supported through the requirements of Directive 2019/883[20] which obliges the operator of port reception services (port and its management plan) to issue a deposit receipt to the captain. The operator is therefore logically able to supply the volume of "used fishing gear" deposited.
15.1	The Commission shall submit a report on the main findings of the evaluation carried out in accordance with paragraph 1 to the European Parliament, the Council and the European Economic and Social Committee. The report shall be accompanied by a legislative proposal, if appropriate. That proposal shall, if appropriate, set binding quantitative consumption reduction targets and set binding collection rates for waste fishing gear.	1. This report must consider the longevity of materials used in assembling different types of fishing nets as well as the fact that the determination of the end-of-life of all or parts of the gear is left up to fishers as they continually repurpose/reutilise their nets.

[20] Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC (link)

15.3	The report shall include: (b) a study of the feasibility of establishing binding collection rates for waste fishing gear and binding quantitative Union targets for the consumption reduction of, in particular, single-use plastic products listed in Part A of the Annex, taking into account consumption levels and already achieved reductions in Member States;	1. A report should be published to explain the timescale and changes in Regulations involved in how and why fishing gear is deemed to be no longer suitable to continue doing the job it was made for. This should be researched prior to any targets being set for the reverse to Art. 10. 2. Any targets set must consider that the determination of the end-of-life of all or parts of the gear is left up to fishers as they continually repurpose/reutilise their nets and avoid a situation where the fishing community might have to retire perfectly good fishing gear whose life could be extended through repair and replacement by many years.

5 Advisory Councils' advice on the harmonisation of Fishing for Litter schemes

1. All measures directed at the marine litter problem should be checked for cost-effectiveness. It is important to know how much money and how much effort and bureaucratic burden must be invested in order to solve the marine litter problem (which is not only a lost fishing gear problem).

2. Fishing for Litter schemes are simple and can be coordinated at local and regional level, as current examples show. The Commission should compile information and data on these in order to identify, share and promote best practice. This can encourage the uptake of FFL schemes in additional Member States, for example via a shared data base, the development of a step-by-step implementation guide or the organisation of a targeted EU workshop showcasing best-in-class practices.

3. Agreement must be reached in the harmonisation of the landing of FFL across European Member States into port facilities to streamline processes for all vessels regardless of their country of origin and taking into account the provisions of Art. 8 (2d) of the Port Reception Facilities Directive (EU) 2019/883[21] regardless of port of origin or size of vessel

4. Member States shall ensure that all ports providing port reception facilities for fishing vessels establish fishing-for-litter initiatives to encourage the collection and measurement of passively fished waste from normal fishing activities.

5. Such schemes should be set up in accordance with the guidelines laid out in OSPAR Recommendation 2016/1 on the reduction of marine litter through the implementation of fishing for litter initiatives.

6. Member States shall establish and maintain a managed national fund via the EMFF or other relevant funding streams to support the collection of passively fished waste from fishing vessels. The fund must be used to ensure the functioning of fishing-for-litter initiatives, including the provision of suitable on-board waste storage facilities, the monitoring of passively fished waste, education and promotion of voluntary participation in the initiative, costs of waste treatment and to cover the costs of personnel required for the functioning of such schemes and to accommodate the long lifecycle of fishing gear. This funding must be available to all ports and piers regardless of their management structure.

7. A fund shall be established at the Union level to support projects, programmes and schemes to collect passively fished waste from fishing vessels and waste found on coastlines in the vicinity of ports and along shipping routes.

8. Ships calling on a port in a Member State shall contribute to this fund a fixed contribution, differentiated with respect to the category and size of the ship and the type of traffic the ship is engaged in, for each port of call.

[21] "(d) in order to avoid that the costs of collection and treatment of passively fished waste are borne exclusively by port users, Member States shall cover, where appropriate, those costs from the revenues generated by alternative financing systems, including by waste management schemes and by Union, national or regional funding available;"

9. The Commission shall be empowered, by means of implementing acts adopted in accordance with the examination procedure referred to in Article 20(2) of the PRF Directive, to establish the modalities for collection, management and distribution of the fund.

10. Identify, promote and share best practice for fishing vessels of the different methods of fishing operations currently underway in the various Member States with industry. These should feed into the criteria for the definition of "green ships" as mentioned in Annex 4 of the PRF Directive.

11. Carry out an evaluation of the social and economic contribution from FFL fishermen to Europe by their participation in cleaning our oceans of marine plastic litter and linked to the economic impact plastic pollution in the marine environment has on the seafood sector[22].

12. Carry out an independent evaluation of the voluntary social contribution of NWW fishing fleet's participation in FFL to mitigate any financial burden they may face in the purchase of the dual purpose fishing gear they operate.

13. Communication and coordination at local, national and sea-basin level to ensure an integrated approach between Member States which enables fishing vessels to land Fishing for Litter material in any port, also counting on support by EU decentralized agencies.

14. An annual report should be produced on the quantity (possibly recyclability i.e. a breakdown of constituent material, including volume, materials, type of objects) of marine litter being landed in the ports through the FFL scheme as a tangible measure of decreasing amounts of litter reaching the marine environment.

15. An annual map of the quantities of plastic waste collected in the FFL program associated with river basins would make it possible to have information on the origin of the plastics captured, and therefore to be able to act at the origin, reinforcing the campaigns selective collection. This should be linked to existing mapping efforts, for example EMODnet[23] and Project CleanAtlantic[24] or expanding and granting public access to parts of the EMSA integrated maritime services platform (IMS).

16. Numerous projects are under way in various Member States in relation to monitoring, mapping, prevention and removal of marine litter. While some of these are funded and supported by the European Commission, others may be carried out by private entities. It is imperative that these studies and initiatives are identified and brought together on a single platform to enable knowledge transfer across all EU Member States and to avoid duplication of work and costs. This study should be coordinated at Commission level.

17. Work is underway in various Member States regarding the development of electronic applications to assist fishermen with recording data related to passively fished waste[25]. The Advisory Councils recommend that available solutions be shared at a minimum on a sea-basin level so that harmonization can be achieved regarding the registration of passively fished marine waste.

[22] CleanAtlantic – Tackling Marine Litter in the Atlantic Area: DELIVERABLE 4.3.1 – Review of Economic Sectors Impacted by Marine Litter in the Atlantic Area: Literature Review 2019 (link)
[23] https://www.emodnet.eu/
[24] http://www.cleanatlantic.eu/
[25] For example, the Fishing for Litter App by the Rederscentrale in Belgium

18. In order to improve the management of fishing gear and fishing waste, it is crucial that all MS have good facilities for fishing waste reception and disposal. In addition, all MS should have functional funding schemes under the EMFF, dedicated to fishing for litter projects. Also, a better involvement of fishermen in future design of fishing gear and extensive raising awareness projects on the long-term impact of plastics are needed. Moreover, scientific studies on litter distribution, type of litter and abundance in the water column and sea-bottom (as requested by MSFD, Descriptor 10) will contribute to better assess the level of the impact.

19. Member States must ensure that data on the quantities of passively fished waste collected is collated and stored in a national or regional database for the purposes of monitoring and evaluation.

20. Member States shall inform the Commission on the establishment of their national funds by 31 December 2022 and shall submit annual reports every two years thereafter on the activities funded under Article 8(d) of the Port Receptions Facilities Directive.

6 Conclusions

While regional differences apply to the distribution of marine plastics, Jambeck et al. estimate that 5 – 13 Mt of plastics waste enters the ocean each year[26]. According to UNEP the quantities of abandoned, lost, discarded fishing gear each year are not well known. A very crude estimate based on Macfadyen et al. (2009)[27] gives a global figure of 640 000 tonnes per year.[28] More research needs to be carried out to come up with a universally accepted number. To prevent plastic litter entering the ocean, specific measures should be laid down in waste prevention programmes and waste management plans as identified in the amended Waste Framework Directive[29]. The seafood industry should be actively approached in order to find mitigating and preventative measures.

This is also addressed via the EU Circular Economy Action Plan which was adopted in 2015 setting long-term targets to increase to increase preparation for reuse and recycling of key waste streams such as origin from the packaging industry (link). The adoption in 2017 of the Commission's Strategy on Plastics in a Circular Economy and the entering into force of the Single Use Plastics Directive in 2019 introduced the reduction of certain single-use plastics as well as specific provisions on the reporting and collection of waste fishing gear. It must be stated that the vast majority of fishing gear is not used just once but may have a life span of more than a decade with continual repair, reuse and repurposing.

[26] Jambeck, J. et al. (2015), "Marine pollution. Plastic waste inputs from land into the ocean.", Science (New York, N.Y.), Vol. 347/6223, pp. 768-71 (link).
[27] Macfadyen, G., Huntington, T., and Cappel, R. (2009). Abandoned, lost or otherwise discarded fishing gear (FAO and UNEP). FAO Fisheries and Aquaculture Technical paper 523. UNEP Regional Seas Reports and Studies 185. 115pp (link)
[28] UNEP (2016) Marine plastic debris and microplastics – Global lessons and research to inspire action and guide policy change (link)
[29] Directive (EU) 2018/851 amending Directive 2008/98/EC on waste; in particular Art. 28. 3 (iii)(f) and Art. 28.5 (link).

Improving land-based waste collection and treatment systems, focusing on reduction and reusability, and awareness raising must also be addressed. Collection at source will always be more effective than a capture campaign in the marine environment. Fishing for Litter schemes also have some awareness benefits, but they mainly contribute to combating the problem when the above mechanisms have failed.

Training should also be provided to fishers on how to deal with waste correctly, so as to minimise accidental loss of waste from vessels. This could be linked to the implementation of the green ship concept (reducing waste creation on ships) and include for example procuring certain items in bulk, thus reducing packaging. In addition, it is essential that fishers continue to be involved in identifying new materials and designing new fishing gear.

It is important to avoid replacing plastics with non-conventional materials (e.g. bioplastics) which can create other problems but instead focus on reuse and reduction.

Research, raising awareness, communication, including dialogue at EU level between all stakeholders but especially colleagues from fisheries and Member States' Marine Directors, and education are the basis to increase knowledge about plastics and the relevance of the work that is being carried out. This effort should be carried out jointly by all the relevant stakeholders, namely the Commission, the fishing and seafood industry, the NGOs, as well as by bringing together scientists, researchers, policy makers and others.

Communication between and involvement of all relevant actors impacted by the requirements of the SUP and PRF Directives is vital to achieve a harmonised implementation within and across the various Member States.

To improve transparency of the implementation process, the North Western Waters AC, Baltic Sea AC, Black Sea AC, Long Distance AC, Market AC, Mediterranean AC, Outermost Regions AC and South Western Waters AC recommend that a detailed working document be drawn up by the European Commission identifying the overlaps between the requirements of the SUP and PRF Directives and the related Implementing Acts and detailing which Directorate General is overseeing the related work. This document must include timelines of consultations between the various entities and should be made available to the Advisory Councils so as to enable timely consultation of these recognised as organisations pursuing an aim of European Interest under the Common Fisheries Policy Regulation (EU) No 1380/2013.

Working documents or concept notes must also be drawn up between the competent authorities on a sea-basin level as well as at Member State level, clearly identifying all relevant authorities with responsibility in implementing the various requirements under the SUP and PRF Directives and detailing the process of communication and consultation between these actors.

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