

Ad Hoc Open Ended Expert Group on Marine Litter and Microplastics
Position paper submitted by FAO's Fisheries and Aquaculture Department
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Background

1. The Food and Agriculture Organization of the United Nations (FAO) considers the issue of marine litter and microplastics from the perspectives of i) reducing marine litter that originates from the fishing industry, in particular abandoned, lost or otherwise discarded fishing gear (ALDFG); ii) assessing the ecological impact of microplastics on fisheries resources; iii) assessing the implications of microplastics for aquaculture products, and; iv) assessing food safety risks from marine litter, in particular microplastics, on human health.
2. FAO collaborates with many organisations, including relevant UN Agencies and Programmes, NGOs and academic institutions in addressing and building knowledge on marine litter and microplastics, including; UNEP and the Global Partnership on Marine Litter (GPML), the International Maritime Organization (IMO), the International Council for the Exploration of the Seas (ICES), the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) and the Global Ghost Gear Initiative (GGGI).
3. FAO welcomes the convening of the Ad Hoc Open Ended Expert Group on Marine Litter and Microplastics.

Recent work of FAO on Marine Litter and Microplastics

ALDFG

4. FAO Members have recognized ALDFG as a significant component of marine litter and have raised concern about its impacts on habitats, fish stocks and marine wildlife, particularly through ghost fishing, and as a navigational hazard and a risk to safety at sea.
5. FAO's work to address ALDFG supports FAO's Code of Conduct for Responsible Fisheries and its related instruments. FAO also recognises action to address ALDFG as a crucial step to support the 2030 Agenda for Sustainable Development, reflecting the targets of SDG14, in particular SDG14.1, as well as other SDG targets related to fighting hunger and poverty.
6. In 2014, at the Thirty-first Session of FAO's Committee on Fisheries (COFI) concern was expressed about ghost fishing by ALDFG and there was a call for greater attention to be paid to the issue, noting that cost effective technologies and practices are now available. FAO convened an Expert Consultation on the Marking of Fishing Gear in April 2016 which produced draft guidelines on the marking of fishing gear and a report containing associated recommendations. The Thirty-second Session of COFI in July 2016 endorsed the work of the Expert Consultation, including the recommendation that the draft guidelines on the marking of fishing gear should be further developed via a Technical Consultation, noting that gear marking can be a critical tool for reducing ALDFG and to support efforts to identify and prevent Illegal, Unreported and Unregulated (IUU) fishing. FAO Members also encouraged FAO to conduct pilot projects on the marking of fishing

gear and the retrieval of lost fishing gear, particularly in developing countries to facilitate the implementation of the guidelines.

7. FAO convened a Technical Consultation on the Marking of Fishing Gear in February 2018 which negotiated and adopted text for international Voluntary Guidelines on the Marking of Fishing Gear. The Technical Consultation also welcomed the outcomes of two FAO pilot projects which took place in 2017. The first was a global feasibility study focusing on the marking of fish aggregating devices (FADs) and the second was a field project in Indonesia focused on the practical application of gear marking in small scale coastal gillnet fisheries.
8. The Technical Consultation also recommended that COFI consider the development of a global strategy to address ALDFG and that States should consider the development and implementation of national action plans to address ALDFG. The Voluntary Guidelines on the Marking of Fishing Gear will be considered for adoption by the Thirty-third Session of COFI, taking place 9-13 July 2018. A concept document for the development of a global ‘umbrella’ programme to support the implementation of the Guidelines will also be submitted for consideration by COFI.

Microplastics

9. Based on the work of the GESAMP Working Group 40 on microplastics, FAO organized, with the support from UNEP and the Government of Norway, both a study and an expert workshop on microplastics in fisheries and aquaculture. This study and the workshop resulted in the publication of a 2017 Technical Paper¹ that reviewed the status of knowledge on microplastics in fisheries and aquaculture, and implications for aquatic organisms and food safety². FAO contributed to discussions at the 44th Session of GESAMP (Geneva, September 2017) and welcomed the continuation of GESAMP Working Group 40, including its current focus on methodologies for the sampling of macro and microplastics.
10. FAO welcomes, and is contributing technical advice to, the organization of a special session at the 2018 Joint World Aquaculture Society (WAS) – European Aquaculture Society (EAS) Conference (25-29 August 2018, Montpellier, France) that will discuss the interactions between aquaculture and plastics. In addition, FAO looks forward to the findings and conclusions of this year’s IMO London Convention/Protocol Science Day Symposium on Plastics and microplastics in the marine environment, including impacts on aquaculture activities.

Challenges in addressing marine litter and microplastics from the fisheries and aquaculture perspective

ALDFG

¹ Lusher, A.L.; Hollman, P.C.H.; Mendoza-Hill, J.J. 2017. Microplastics in fisheries and aquaculture: status of knowledge on their occurrence and implications for aquatic organisms and food safety. FAO Fisheries and Aquaculture Technical Paper. No. 615. Rome, Italy. <http://www.fao.org/3/a-i7677e.pdf>

² FAO, 2017. The impact of microplastics on food safety: the case of fishery and aquaculture products <http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/1046435/>; also published in FAO Aquaculture Newsletter (57): p. 43-45. <http://www.fao.org/3/a-i7851e.pdf>

11. Assessment of the magnitude of ALDFG at a global level has been challenging as data relating to gear loss and abandonment is not well documented in many fisheries and studies which attempt to quantify existing ALDFG have been limited, although this area of science is now progressing.
12. The knowledge base relating to the causes of ALDFG has also been increasing in recent years, however further work is required to better understand specific drivers which cause fishing vessels to abandon, lose or discard their gear within specific fisheries so that solutions can be specifically tailored.
13. Measures to address ALDFG can be preventative, mitigating or curative, however as curative measures may only remove ALDFG after it has been in the marine environment for some time, preventative measures are considered to be more effective in reducing ALDFG and its impact. Preventative measures include the development of best practices for design and operation of fishing gear and for handling and management of end-of-life fishing gear, however effective implementation of such measures may be limited in countries or localities which lack overall effective fisheries management systems.
14. A link may exist between prevalence of ALDFG and IUU fishing as those engaging in IUU fishing may be more prone to discard their fishing gears at sea. Addressing ALDFG in regions with significant IUU activities may therefore face additional specific challenges.
15. Circular economy approaches to addressing plastic waste management are frequently cited as effective solutions to achieve overall reduction of plastic and better management of plastic to prevent it causing harm in the marine environment. Such measures may be applicable to the management of fishing gear since end-of-life fishing gear represents a potentially valuable resource. If managed appropriately the end-of-life gear could enter a cyclical system that may include reuse, repair, recycling or remanufacture and result in potential economic and social benefits to coastal communities. However, such solutions are still in the very early stages of implementation within the fishing and design industries, and infrastructure to support these systems only exists in a limited number of locations at present.

Microplastics

16. There are considerable data gaps which limit understanding of the ecological impacts of microplastics on fisheries resources and aquaculture and on food safety. There is a lack of information on the potential effects on feeding, spawning, survival rates of wild fish species and consequences on fish populations. The implications of microplastics for aquaculture operations and aquaculture products are also still relatively unknown although there is evidence indicating a higher concentration of microplastics in aquaculture products, potentially due to the plastic material used in farming facilities.
17. Although microplastics have been detected in a wide range of marine and freshwater organisms, including commercial species which are consumed by humans, the exact impact of this contamination is unknown. There are uncertainties about the translocation of microplastics across the body tissues of the most commonly consumed fish products, however studies on non-commercial species suggest microplastics have the potential to negatively affect organism's fitness and hence may have an impact on population levels. Microplastics are known to be contaminants

and pathogen vectors, which poses a risk for wild and farmed species, however these risks are currently difficult to quantify.

18. Use of plastic within the fisheries and aquaculture sector itself may increase the exposure of seafood products to microplastic contamination but there is currently limited knowledge within the fishing and aquaculture industry of these risks.
19. Particularly large knowledge gaps currently exist around smaller sized microplastics and nanoplastics. It is crucial to note that eventual risks linked to nanoplastics are likely to be higher than for microplastics.
20. From the seafood safety perspective, there are many knowledge gaps such as toxicological data of commonly ingested plastics; the potential impact on the toxicity of microplastics after heat treatment for cooking and processing fishery and aquaculture products; and the specific pathways for translocation, distribution and absorption of nanoplastic particles within the tissues and organs of the human body. These knowledge gaps do not allow the development of food safety standards or further food safety risk assessment exercises.
21. The level of awareness amongst consumers of seafood products about the links between marine litter and seafood in general and risks vs the benefits of seafood consumption is considered to be low at present. However increasing awareness of the marine litter problem in general combined with lack of precise knowledge about the potential risks to human health from consumption of seafood could have negative impacts on the fisheries and aquaculture industry and associated fish value chains, so education and awareness raising actions are likely to be of increasing importance.

FAO's future work to address ALDFG and assess impacts of microplastics

22. The proposed international Voluntary Guidelines on the Marking of Fishing Gear, which will be considered by COFI33 in July 2018, provide a new instrument to assist States in meeting existing obligations under international law, including the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks, Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL Annex V), and the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA). The Voluntary Guidelines on the Marking of Fishing Gear also complement and support other voluntary instruments such as the FAO Code of Conduct for Responsible Fisheries and the International Guidelines on Bycatch Management and Reduction of Discards. Implementation of these instruments will greatly enhance efforts in preventing and reducing ALDFG.
23. The Voluntary Guidelines on the Marking of Fishing gear provide guidance on the development and application of systems for the marking of fishing gear, as well as other related measures to address ALDFG, such as the reporting and retrieval of lost gear, commercial traceability of fishing gear marking, disposal of fishing gear including the provision of adequate port reception facilities. The Guidelines also highlighted special considerations for certain types of fishing gear, special requirements of developing States and small scale fisheries, research and development, risk assessment, awareness raising, capacity development and communication.

- 24.** FAO will develop supporting technical documents which provide further information on the types of gear marking technologies available and their application.
- 25.** FAO intends to support the implementation of the proposed Voluntary Guidelines on the Marking of Fishing Gear through a global ‘umbrella’ programme, providing a partnership framework for projects and assistance in the development of national and regional action plans to address ALDFG.
- 26.** FAO considers that measures to prevent and reduce ALDFG, including gear marking, should be considered in the context of broader fisheries management measures which support sustainable fisheries and healthy oceans.
- 27.** FAO will continue to work to fill the existing data gaps around the potential impacts of microplastics on fishery resources, aquaculture products and human health. In particular FAO will look to build upon the information compiled in the 2017 technical paper and use this data to develop appropriate risk profiling tools to assess food safety impacts of microplastic pollution.