

FAO CONTRIBUTION TO PART I OF THE REPORT OF THE SECRETARY-GENERAL ON
OCEANS AND THE LAW OF THE SEA

SUBMITTED PURSUANT TO GENERAL ASSEMBLY DRAFT RESOLUTION A/70/L.22

RELATED TO THE TOPIC OF FOCUS OF THE

SEVENTEENTH MEETING OF THE UNITED NATIONS OPEN-ENDED INFORMAL
CONSULTATIVE PROCESS ON OCEANS AND THE LAW OF THE SEA (ICP 17) ON:

“Marine debris, plastics and microplastics”

i) Challenges posed by marine debris: the issue of Abandoned, lost or otherwise discarded fishing gear (ALDFG)

Abandoned, lost or otherwise discarded fishing gear (ALDFG) is a significant component of marine litter and causes substantial and wide range of ecosystem and economic problems because of their inherent catching/entangling characteristics and the overlap of distributions of some endangered, threatened and protected species with commercial fish species.

There is no robust global estimate for the amount of ALDFG. Based on an extrapolation of the crude approximation of 6.4 million tonnes of marine litter added to the oceans each year and that less than 10 percent of this is comprised of fishing gear (Macfadyen et al. 2009), implies about 640,000 tonnes of ALDFG each year.

This issue has received increasing international attention in the past decades. Lost and discarded fishing gear poses a significant impact on ecosystems and wildlife, which translates into loss of potential catches and additional costs for fishermen. Lost gears have a capacity for indiscriminately catching, entangling and killing of both target and non-target species (ghost fishing), and can cause collateral damage to habitats. With the expansion of fishing operations globally and use of highly durable fishing gear materials, the impacts of ALDFG have become significant and are likely to grow further unless effective mitigation measures are implemented. The economic impacts of ALDFG are complex and have not been estimated systematically but include incremental costs associated with fishing operations, compliance, accidents at sea, search and rescue and recovery. Likewise, the impacts on biodiversity have not been addressed systematically.

There is a link between ALDFG and Illegal, Unreported and Unregulated (IUU) fishing. The prevalence of IUU fishing in a particular area can greatly increase the amount of fishing gear that is abandoned at sea. Persons engaged in IUU fishing are more prone to discard fishing gear to evade capture or to be denied entry to port. Gear conflict, particularly between active and static gear, is a common cause of ALDFG. MARPOL Annex V requires the reporting of accidental loss or discharge of fishing gears that pose a significant threat to the environment to the flag State, and where appropriate, the coastal State in whose jurisdiction the loss of the fishing gear occurred, as specified in regulation 10.6 of MARPOL Annex V.

To address the problems of ALDFG, a global data portal could be useful for compiling information reported by Flag state and coastal States as well as from other sources as well as to assist with standardizing / harmonizing data collection to assist in developing robust spatial and temporal data to determine hotspots, trends and overall abundance of ALDFG in oceans.

The portal could also provide information about which gear types are most frequently lost or discarded, and what impacts they are having on biodiversity. A global platform addressing the aforementioned issues is under consideration and where FAO is a partner. Responsible management of fishing gear is a critical part of a sustainable and responsible fishing.

ii) FAO actions to prevent and significantly reduce ALDFG and its impacts

The Fishing Operations and Technology Team (FIAO) of the FAO's Fisheries and Aquaculture Department, deals with the issue of marine debris, plastics and microplastics from a fishing operations perspective. This issue is closely related to the issue of ALDFG, for which FAO and its Members have expressed concern. In this regard, it has been noted that the elaboration of a standard for the marking of fishing gear would be of benefit to coastal States in addressing problems associated with ALDFG.

There is a growing number of legally binding international instruments that provide explicit requirements for the marking of fishing gear. The United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks¹, adopted in August 1995, includes, as part of the duties of Flag States, the requirement for the marking of fishing vessels and fishing gear for identification in accordance with uniform and internationally recognizable vessel and gear marking systems.

In addition, the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) provides requirements for the marking of fishing gear. Annex V of MARPOL 73/78 prohibits the disposal at sea of fishing gear made of synthetic material, except the accidental loss of synthetic fishing nets provided all reasonable precautions have been taken to prevent loss. The guidelines for the application of Annex V calls for fisheries managers to utilize fishing gear identification systems which provide information such as vessel name, registration number and nationality, and encourages governments to consider the development of technology for more effective fishing gear identification. Both Annex V and the guidelines were recently revised.

The Thirty-first session of the FAO Committee on Fisheries (COFI 31) held in 2014, expressed concerns over the issue of ghost fishing caused by ALDFG and noted that greater attention should be paid by Members and regional fisheries bodies to mitigate ALDFG impacts, noting that cost effective technologies and practices were available. Many Members highlighted the need for further work on this issue.

Aside from COFI, the Expert Workshop² convened in December 2014 by the Convention on Biological Diversity (CBD) examined, *inter alia*, the role of ALDFG in marine debris. The workshop participants noted that gear marking plays an important role in identifying those fisheries that are most prone to gear loss. In considering the adoption of gear-marking

¹ Agreement for the Implementation of the United Nations Convention on the Law of the Sea of December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, opened for signature 4 December 1995 (entered into force 11 December 2001), article 18.3(d).

² Report of the Expert Workshop to prepare practical guidance on preventing and mitigating the significant adverse impacts of marine debris on marine and coastal biodiversity and habitats. Baltimore, United States of America, 2-4 December 2014. UNEP/CBD/MCB/EM/2014/3/2.

measures, the workshop participants noted, *inter alia*, the following action elements: (i) creating international standards for gear marking and ALDFG reporting management and (ii) engaging the gear manufacturing sector in this process. The participants further noted that marking technology (at a range of costs) is already available but there is high likelihood of resistance from some fishing communities due to the fear of punitive consequences for ecological damage.

Moreover, the Third Session of the Joint FAO/IMO Ad Hoc Working Group on Illegal, Unreported and Unregulated Fishing (IUU) and Related Matters, held on 16-18 November 2015, noted that marking of fishing gear can assist in the fight against IUU fishing by allowing authorities to identify and verify the use of fishing gear in waters under their jurisdiction. The Working Group recommended that FAO, in collaboration with the International Maritime Organization (IMO) and the United Nations Environment Programme (UNEP), including the provision of technical advice into the Global Partnership on Marine Litter (GPML), develop international guidelines on the marking of fishing gear, taking into account MARPOL Annex V and related guidelines, and other instruments, where appropriate.

In response to the concerns described above and recommendations from COFI, FAO is convening a Second Expert Consultation on the Marking of Fishing Gear that will be held in Rome in April 2016. This Expert Consultation will strive to clarify the purpose and necessity of a system for the marking of fishing gear to develop best practice (standard) technical guidelines to gear marking. Elaboration of a standard for the marking of fishing gear would help to address the wide range of problems associated with ALDFG.

iii) Challenges posed by microplastics

Microplastics originate from a wide range of often land-based sources of pollution (e.g. cosmetics and personal care products, textiles and clothing, dust from tyres, plastic producers, agriculture, tourism, food and drink packaging, shipping and offshore industry).

Microplastics are also produced by the weathering and fragmentation of larger plastic objects. Macroplastics and microplastics are being found in diverse marine and coastal ecosystems worldwide, with ubiquitous presence in the water column, upper ocean, ocean floor and probably higher concentrations found in coastal areas, in particular off urban centres and estuaries.

Microplastics have been detected in a wide range of marine organisms, including several commercial species of finfish, molluscs, crustaceans and echinoderms consumed by humans. The impacts of microplastic consumption on food fish are unknown, as there are still uncertainties on translocation of microplastics in the most commonly consumed tissues; however studies on non-commercial species suggest microplastics have the potential to negatively affect organism fitness and hence could well have an impact on population levels. Moreover, some substances contained in microplastic particles and/or adsorbed to the surface of microplastic particles are known to be potential contaminants and pathogen vectors, which poses a risk for wild and farmed commercial species.

In addition to the possible impact of microplastics on fish resources, there is the concern that microplastics may pose a risk to human health when consumed. This risk could be linked to the harm caused by the particles themselves, but it could also be associated with toxic

substances such as additives and persistent pollutants found in plastic. Microbial contamination of plastics is also suggested as a potential risk to human health in this context. Microplastics are ingested or filtered by commercial fish and shellfish species, and could therefore harm seafood consumers. At present there is no comprehensive risk assessment available which could confirm this concern and lead to risk management and risk communication if needed, due to the limited knowledge available on the impact of microplastics to human health. Although humans are clearly exposed to microplastics through the consumption of seafood, this might in many cases not be the main source of microplastics in our diets.

To some extent, even though less important than other sectors, the fisheries and aquaculture sector is also one source of microplastics through the use of plastic for various equipment and gears used by the industry. The fragmentation of this plastic in microscopic or nanoscopic fragments can contribute to the contamination of fish products. As a result, the microplastic exposure may be higher in aquaculture systems that use plastics.

iv) Actions and activities undertaken by FAO with regard to the provision of UNGA resolutions that relate to this subject

FAO is collaborating in the ongoing preparation of the second GESAMP report providing a global assessment on sources, fate and impacts of microplastics on the marine environment and resources, with specific contributions dealing with the fisheries and aquaculture sector; currently, the main focus of concern is to assess the potential impact of microplastics on consumers' health and perception. However, there might also be consequences on fish productivity as physiological processes are likely to be affected by microplastics (because of their occurrence and of the presence of additives and contaminants contained in or on the microplastic particles). The report under preparation will take stock of the scientific knowledge available, provide information on the most likely pathways in terms of sources, transport and distribution in both marine food chains and seafood value chains as well as provide a framework to assess the risks that may (or not) affect commercial fish stocks and consumers. Supported by the Norwegian Government and UNEP, FAO has initiated a study to focus specifically on key issues of marine microplastics pollution and fisheries and aquaculture, which will cover risk assessment methodologies of microplastics contamination of seafood and related risk management and communication approaches.

v) Suggestions for further action to prevent and significantly reduce marine microplastics

A number of recommendations were suggested by independent experts on the way to prevent and reduce marine plastics pollution as resulting from a wide range of sectors and sources. The identification of the intervention points at stopping debris at the source and it includes the improvement of recycling practices, redesigning materials to be more sustainable and environmental friendly, improving waste management technology and access to potable water, cutting down on bottled water, and reducing single use items.

As far as food production systems are concerned, appropriate actions would entail the development of guidelines or codes of practice for the use of plastic in food production sectors and the inclusion of considerations on microplastics in guidelines and international standards dealing with food safety together with setting microplastics limits in food.

Education and awareness raising are considered essential to trigger behavioral change as far as plastic use and marine litter are concerned, targeting different stakeholders (e.g. national governments, municipalities, private sector, local communities, individuals, and academia). The fisheries and aquaculture sector would be one among other sectors to be targeted by these campaigns. Importantly, guidance for communication of potential hazards of microplastics contamination to seafood consumers and the general public will need to be developed.

Overall, there are still a number of knowledge gaps that need to be filled in order to tackle the microplastics marine pollution appropriately. Several research questions remain open; one important action would be to facilitate research, increase knowledge on the sources, quantification, fate and impacts of microplastics, fibers and nanoplastics, as well as the related consequences for ecosystems and marine living resources including contamination levels of fish food and risks for food safety and food security. In addition to collecting scientific evidence, the social and economic impacts need to be assessed and appropriate policies developed based on risk analysis.