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**Intergovernmental negotiating committee to develop
an international legally binding instrument on plastic
pollution, including in the marine environment
Third session**

Nairobi, 13–19 November 2023

Information submitted by the Food and Agriculture Organization of the United Nations (FAO)

Note by the Secretariat

1. The Food and Agriculture Organization of the United Nations (FAO) has submitted information that provides a technical background that could be of relevance to the intergovernmental negotiating committee.
2. The information is presented in the annex to the present note as received and has not been edited by the secretariat.

Annex. Information submitted by the Food and Agriculture Organization of the United Nations (FAO)

1. Background

The use of plastic products in today's agriculture is becoming increasingly widespread. Plastics are the material of choice for numerous agricultural applications thanks to the versatility and variety of plastic polymers available, their ease of production, and cost-effectiveness. These products provide a range of benefits that help farmers, foresters, and fishers to increase productivity while reducing water demand, use of agrochemicals, and food loss and waste. Nevertheless, despite the numerous benefits, agricultural plastics also present a significant risk of environmental pollution and potential harm to both human health and ecosystems when they become damaged, degraded or discarded in the environment.

In 2019, agricultural value chains are estimated to have used 12.5 million tonnes of plastic products¹. Crops and livestock accounted for 10 million tonnes per year, followed by fisheries and aquaculture with 2.1 million tonnes, and forestry with 0.2 million tonnes. The agricultural plastic industry forecasts the global demand for greenhouse, mulching and silage films to increase by 50 percent by 2030. Data indicates that only a small percentage of plastics used in agriculture are collected and recycled, mainly in developed economies. Elsewhere, there is evidence to suggest that a significant portion of plastics is either incinerated, buried, or deposited in landfills.

Solutions to plastics pollution in agrifood value chains require simultaneous mobilization of policies, technologies, sustainable practices, and multiple stakeholder efforts using principles of circular economy as a part of a transformation of agrifood systems across all three dimensions of sustainability. Alternatives and interventions to improve the circularity and sound management of agricultural plastics should be based on the 6R model (Refuse, Redesign, Reduce, Reuse, Recycle, and Recover).

Despite the overwhelming evidence of the urgent need to address agricultural plastics, there are knowledge gaps. Some areas for further research include the global flows and fates of agricultural plastics; life cycle assessments of fossil-based and bio-based agricultural plastics; impacts of plastics, micro and nanoplastics on agroecosystems, food safety and human health; and the behaviour and rate of degradation of biodegradable products under different conditions.

In December 2022, [FAO Council](#) endorsed the decisions of the 28th Session of the Committee on Agriculture (COAG28) and:

- k) encouraged FAO to undertake further scientific and evidence-based assessments related to the distribution, benefits, trade-offs and risks of plastics for agricultural use and their alternatives, to address knowledge gaps on plastics in agriculture, and requested the development of policy instruments, taking into account Members' past and ongoing efforts as well as developing countries' needs and challenges;
- l) underscored the need for improved intersectoral collaboration and governance to address plastic use throughout agrifood systems, and recommended FAO to continue to address knowledge gaps, including through inclusive participation of Members and consultations with relevant stakeholders, and subject to the evidence-based assessment referred to in subparagraph k) to develop, within FAO's mandate, a Voluntary Code of Conduct on the sustainable use of plastics in agriculture;
- m) encouraged FAO to support deliberations of the intergovernmental negotiating committee (INC) on plastic pollution to develop an international legally binding instrument on plastic pollution established by the United Nations Environment Assembly Resolution End plastic pollution: Towards an international legally binding instrument (UNEP/EA.5/Res.14) with guidance on the issues of plastics used in agriculture.

Following the Council decision, FAO is developing a Voluntary Code of Conduct on the sustainable use of plastics in agriculture.

In addition, FAO participates as an Observer to the meetings of the Intergovernmental Negotiating Committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, to ensure that the crucial topics of agriculture, food safety, and food security are included in the discussions surrounding the new legally

¹ FAO. 2021. *Assessment of agricultural plastics and their sustainability – A call for action*. Rome.

<https://doi.org/10.4060/cb7856en>

binding instrument on plastic pollution. FAO submissions towards the Third meeting of the INC (INC-3) are available online².

2. The work of FAO on plastics used in agriculture

2.1 Plastics used in terrestrial agriculture

In December 2021, FAO released the report *Assessment of agricultural plastics and their sustainability: A call for action*³. This is the first global assessment on plastics used in agriculture ever published. FAO is also executing the GEF FARM Project, with the aim of improving agrochemicals and agriplastics waste reduction and management in Uruguay and Kenya.

2.2 Prevention and reduction of abandoned, lost or otherwise discarded fishing gear (ALDFG)

Fishery and aquaculture gear made of plastic polymers are hazardous or problematic when they get lost, abandoned, or discarded at sea. Abandoned, lost, or otherwise discarded fishing gear (ALDFG), including Fish Aggregation Devices, may not only be significant source of marine plastic but may well have greater impacts on marine biota and habitats than do other forms of marine litter (GESAMP, 2021)⁴ as it can continue fishing marine wildlife, including both non-commercial and commercial species, consequently impacting food security and livelihoods, marine biodiversity and presenting a hazard to navigation and safety at sea. This calls for a tailored governance system for this source of marine plastic pollution. With a view to provide expert stewardship, the FAO since 2022 has released two Technical Guidelines, namely “Manual for marking fishing gear”⁵ (2023) and “A framework for conducting a risk assessment for a system on the marking of fishing gear”⁶ (2023); in addition to the FAO Fisheries and Aquaculture Circular “Operationalization of FAO Voluntary Guidelines for the Marking of Fishing Gear in the Indian Ocean Tuna Commission (IOTC) area of competence”⁷. It is also worth mentioning the ongoing work by the General Fisheries Commission for the Mediterranean (GFCM) towards the publication of a catalogue of fishing gears and the mandatory marking of fishing gear based on the standards in the FAO Voluntary Guidelines for the Marking of Fishing Gear.

Other work related to the prevention and reduction of ALDFG include the knowledge products produced by FAO in collaboration with the International Maritime Organization (IMO) as part of the ongoing GloLitter Partnerships project⁸:

- Legal aspects of abandoned, lost and otherwise discarded fishing gear (2022)⁹. Available in English, Spanish and French.
- Reporting and retrieval of lost fishing gear: recommendations for developing effective programs (2022)¹⁰. Available in English, Spanish and French.

² FAO. 2023. Submission to INC-3 –

template A: https://resolutions.unep.org/resolutions/uploads/fao_15082023_a.pdf;

template B: https://resolutions.unep.org/resolutions/uploads/fao_15082023_b.pdf

³ FAO. 2021. *Assessment of agricultural plastics and their sustainability – A call for action*. Rome.

<https://doi.org/10.4060/cb7856en>

⁴ GESAMP. 2021. *Sea-based sources of marine litter* (Gilardi, K., ed.) (IMO/FAO/UNESCO-IOC/UNIDO/WMO/IAEA/UN/UNEP/UNDP/ISA Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection). Rep. Stud. GESAMP No. 108, 109 p. <http://www.gesamp.org/site/assets/files/2213/rs108e.pdf>

⁵ Einarsson, H., He, P. & Lansley, J. 2023. *Voluntary Guidelines on the Marking of Fishing Gear – Manual for the marking of fishing gear*. Suppl. 2. Rome, FAO. <https://doi.org/10.4060/cc4251en>

⁶ He, P. & Lansley, J. 2023. *Voluntary Guidelines on the Marking of Fishing Gear – A framework for conducting a risk assessment for a system on the marking of fishing gear*. Suppl. 1. Rome, FAO. <https://doi.org/10.4060/cc4084en>

⁷ He, P. & Lansley, J. 2022. *Operationalization of FAO Voluntary Guidelines for the Marking of Fishing Gear in the Indian Ocean Tuna Commission (IOTC) area of competence*. FAO Fisheries and Aquaculture Circular No. 1261. Rome, FAO. <https://doi.org/10.4060/cc2889en>

⁸ <https://www.fao.org/responsible-fishing/markings-of-fishing-gear/glolitter-partnerships-programme/en/>

⁹ Hodgson, S. 2022. *Legal aspects of abandoned, lost or otherwise discarded fishing gear*. Rome, FAO and IMO. <https://doi.org/10.4060/cb8071en>

¹⁰ Drinkwin, J. 2022. *Reporting and retrieval of lost fishing gear: recommendations for developing effective programmes*. Rome, FAO and IMO. <https://doi.org/10.4060/cb8067en>

- Report on good practices to prevent and reduce marine plastic litter from fishing activities (2022)¹¹, produced in collaboration with the Global Ghost Gear Initiative, GloLitter strategic partner.
- Fishing gear recycling technologies and practices (in final stages of publication). This knowledge product provides an overview of existing technical measures, policy and regulatory instruments to support fishing gear recycling and to apply circular economy principles to fishing gears.
- Guidance document around how to incorporate Voluntary Guidelines for the Marking of Fishing Gear, MARPOL Annex V and London Convention/London Protocol into national legal and regulatory frameworks (under development).

2.3 Plastics and food safety

Plastic food packaging extends the shelf-life, quality, and safety of products during long-distance transport and storage, and provides a place for displaying nutritional information to consumers. However, plastic food packaging is often meant for single-use and suffers from a lack of proper collection and end-of-life management, thereby becoming a source of plastic pollution.

Among other topics, the 2022 publication “Thinking about the future of food safety – A foresight report”¹² looks at the various food safety implications when considering the integration of plastic food packaging into a circular economy approach.

The 2022 publication “Microplastics in food commodities: A food safety review on human exposure through dietary sources”¹³ compiles existing information and knowledge gaps regarding the presence of microplastics and plastic-related substances in food products. It conducts an evaluation of dietary exposure to these materials and offers insights into their potential impacts on human health.

The 2023 report “The impact of microplastics on the gut microbiome and health - A food safety perspective”¹⁴, examines the impact of microplastics on the gut microbiome and associated health concerns with a food safety focus. It analyzes the microplastics' effects on the gut microbiome composition, diversity, and function; the health implications arising from microplastic-microbiome interactions; and the influence of the gut microbiome on microplastic biodegradation.

2.4. Soil pollution

Soil pollution, stemming from various sources, threatens soil health, ecosystem services, and safe food production. Plastics, notably micro and nanoplastics, are major contributors originating from waste burial, landfill leachates, wastewater irrigation, and sewage sludge. These persistent plastics can harm soil health, carry pathogens and chemicals, and increase ecotoxicity.

The Global Soil Partnership and UNEP's June 2021 Global Assessment of Soil Pollution report addressed plastic pollution and its risks to human and environmental health. In addition, to combat soil pollution and achieve the global Zero Pollution goal, the Global Soil Partnership established the International Network on Soil Pollution (INSOP) to enhance knowledge, strengthen technical capabilities, and promote sustainable management and remediation of polluted soils.

¹¹Giskes, I., Baziuk, J., Pragnell-Raasch, H. and Perez Roda, A. 2022. *Report on good practices to prevent and reduce marine plastic litter from fishing activities*. Rome and London, FAO and IMO. <https://doi.org/10.4060/cb8665en>

¹² FAO. 2022. *Thinking about the future of food safety – A foresight report*. Rome. <https://doi.org/10.4060/cb8667en>

¹³ Garrido Gamarro, E. & Costanzo, V. 2022. *Microplastics in food commodities – A food safety review on human exposure through dietary sources*. Food Safety and Quality Series No. 18. Rome, FAO. <https://doi.org/10.4060/cc2392en>

¹⁴ FAO. 2023. *The impact of microplastics on the gut microbiome and health – A food safety perspective*. Food Safety and Quality Series, No. 21. Rome. <https://doi.org/10.4060/cc5294en>