FAO work on Plastics Management and Pollution

1. Agricultural plastics in terrestrial soils

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The use of plastic products in today's agriculture is becoming increasingly commonplace. Agricultural plastics (AGP) bring many benefits, increasing efficiency and reducing food loss. However, they pose a serious risk of harm to human and ecosystem health when they are left polluting our soils.

In December 2021, the team released the report *Assessment of agricultural plastics and their sustainability: A call for action*. This is the first comprehensive report on AGP ever published, and received wide media coverage and interest from general public and stakeholders. The team is active in the following work areas:

- International policies dialogues: the FAO report recommended a two-pronged approach: engage with the International treaty process, and simultaneously develop voluntary instruments. In this sense, the 28th Session of the Committee on Agriculture (COAG 28) will meet in July to discuss the opportunity to mandate FAO with the development of a Voluntary Code of Conduct on AGP management, deliberating on agenda item 3.4 "Guidance on use of agricultural plastics".
- Country support: in collaboration with the FAO Plant Production and Protection Division, the team is executing the GEF FARM Project, with the aim of improving agrochemicals and AGP reduction and management in Uruguay and Kenya.

In addition, the Development Law Service (LEGN) supports OCB in the identification and development of legal issues and options to control and manage agricultural plastics. In this respect, LEGN has supported the development of background draft documents for COAG identifying the regulatory challenges and opportunities in developing a non-binding regulatory instrument tackling agricultural plastics. LEGN is also contributing to the development of an "Assessment of the gaps and opportunities within existing governance frameworks relevant to agricultural plastics" undertaken by the University of Wollongong. Finally, LEGN supports the implementation of a regional project on pesticide legislation in Central Asia that includes a component of waste management, aimed at identifying common solutions to tackle the handling of pesticide containers, and will support the implementation of a GEF project preparation grant in Kenya and Uruguay that will explore concrete regulatory solutions to tackle agricultural plastics. In the context of this last project, LEGN will prepare a Legal Paper on legal options for countries to regulate agricultural plastics.

2. Marine plastic litter in fisheries

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FAO has a long track record of working on marine litter through the Ecosystem Approach to Fisheries - Nansen Programme, an initiative funded by Norad and operated by FAO in collaboration with the Institute of Marine Research Bergen, where research on mapping the distribution and impacts of marine litter and microplastics forms a key component. An example is the ongoing study on the social, economic and ecological impact of marine litter on the beach-seine fisheries of four countries in West Africa (Benin, Côte d'Ivoire, Ghana and

Togo). The results of the study will be used to support improvements in both fisheries management and waste management, working with local and regional partners.

Another example of collaboration in this area is the GloLitter Partnerships project implemented by the International Maritime Organization (IMO) and FAO (NFIFO and LEGN) and funded by Norway, Australia and Saudi Arabia . The project focuses on addressing marine plastic litter from the maritime transport and fishing sectors through supporting the implementation of relevant international instruments like MARPOL Annex V, the London Convention/London Protocol and the Voluntary Guidelines for the Marking of Fishing Gear (VGMFG). Furthermore, FAO and IMO co-host the GESAMP Working Group 43 on Sea-based Sources of Marine Litter with the support of UNEP.

The report of GESAMP Working Group 43 provides an overview of the current state of knowledge in terms of the sources, relative contribution and data gaps when it comes to sea-based sources of marine litter. Based on the recommendations from the WG, FAO has developed a series of standardized questionnaires and a methodology to implement a global survey on abandoned, lost or otherwise discard fishing gear (ALDFG). Data is being collected through surveys of fishers and/or representatives and stored in a database for further analysis and synthesis estimates of gear loss as well as for mapping spatial and temporal distribution of gear loss. The survey data also includes causes of gear loss, good practices to avoid gear loss, end-of-life fishing gear and marine plastic waste management and fishers' views on ALDFG.

3. Plastics and food safety

Responsible teams: Food Systems and Food Safety Division (ESF), with the Fisheries and Aquaculture Division (NFI). Focal points: Vittorio Fattori and Keya Mukherjee, vittorio.fattori@fao.org , keya.mukherjee@fao.org ; and Esther GarridoGamarro, esther.garridogamarro@fao.org

Since food supply chains often involve moving food products across long distances, plastic packaging of food act as barriers for contamination thereby prolonging the shelf-life, preserving the quality and maintaining the safety of food products, as well as providing a placeholder for displaying nutritional information to consumers. However, plastic food packaging is engineered for function and in most cases tend to be used only once, with generally no appropriate end-of-life management processes in place contributing to the issue of plastic pollution.

- ESF released a well-received report that explored various emerging issues in food safety including some of the food safety implications associated with applying circular economy approaches to plastic food packaging.
- Microplastics and nanoplastics can be transferred along the entire food web and eventually reach our plates. A report that provides a deep dive on the impacts of microplastics and nanoplastics, originating from our diets, on the human gut microbiome, and therefore on health and well-being, is being finalized.
- ESF, in collaboration with private partners, is developing a report that explores some of the food safety concerns arising from substances migrating from food contact materials in plastic food packaging.
- Under the lead of the Fisheries and Aquaculture Division (NFI), FAO developed a report compiling information on the occurrence of microplastics in all commodities, microplastic contamination along food value chains, plastic migration from food contact materials and packaging, including also a review of the existing literature on the toxicity of the most common plastic monomers, polymers, and additives. The report was consolidated during an expert meeting held in January 2022 and will

be published in 2023. This process set up the basis for future risk assessment exercises and provided information that can be used for the formulation of risk management options.

4. Soil pollution

Responsible team: Land and Water Division (NSL), Global Soil Partnership (GSP)

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There are multiple sources of soil pollution that threaten soil health and the provision of ecosystem services including the provision of safe food. Soils are one of the largest planetary reservoirs of plastics (micro and nanoplastics). The burial of waste, leachates from poorly managed landfills, the use of wastewater for irrigation or directly discharged into the environment, or the application of sewage sludge as soil amendments are potential sources of micro and nanoplastics. Due to the high resistance to degradation and improper disposal, plastics can reach water bodies and soils and persist in the environment for decades. In addition to the potential damage of micro and nanoplastics to soil functioning and health, these microplastics may be associated with pathogens and other organisms or enriched in pesticides and trace elements, besides all the chemicals that make up the polymers and additives in the plastic, increasing ecotoxicity.

The Global Soil Partnership and UNEP published in June 2021 the Global Assessment of Soil Pollution report that address plastic pollution among other contaminants and the risk those pose to human and environmental health. This report was prepared in response to the request of the UNEA3 resolution 3/6: Managing soil pollution for sustainable development.

The Global Soil Partnership has recently established the International Network on Soil Pollution (INSOP) to work towards stopping soil pollution and achieving the global goal of Zero Pollution. INSOP will work to improve knowledge on the full cycle of soil pollution, from assessment to remediation. It will also strengthen technical capacities and legislative frameworks for the prevention of soil pollution and promote the exchange of experiences and technologies for the sustainable management and remediation of polluted soils.