



**Food Packaging Forum Foundation**

Staffelstrasse 10

8045 Zürich

Switzerland

foodpackagingforum.org

Food Packaging Forum, Staffelstr. 10, 8045 Zürich

Dr. Corinna Hawkes

Agrifood Systems and Food Safety Division (ESF)

Food and Agriculture Organization of the United Nations

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### **Key concerns regarding FAO report on recycled plastic food contact materials**

Dear Dr. Hawkes,

The Food Packaging Forum Foundation (FPF) appreciates the Food and Agriculture Organization of the United Nations (FAO) for its recognition of the food safety implications of recycled plastics and alternative food contact materials (FCMs) in its recent report authored by Feeley et al. (2026). The report provides a timely contribution to ongoing global discussions on addressing plastic pollution.

FPF is a non-profit and science-based research and communications organization working at the science-policy interface, with over 14 years of independent scientific expertise in hazardous chemicals in FCMs, including recycled plastics. After carefully reviewing the recently published FAO report, we would like to raise several concerns and observations for the FAO to consider.

First, regarding the overall framing. The report places strong emphasis on the functional benefits of FCMs, particularly their role in reducing food waste. While this is a valid consideration, the current narrative under-represents the scientific debate, as well as the breadth of scientific evidence on adverse human health and environmental impacts. Indeed, plastic FCMs enable the overconsumption of (ultra-)processed foods.

Second, regarding the accuracy and use of scientific evidence. We identified a number of issues that affect the accuracy and clarity of the report, including instances of incomplete or incorrect interpretation of cited scientific studies, as well as statements that are insufficiently supported by the referenced literature. Ensuring precise and transparent use of scientific references is essential, particularly given the report's role in informing international policy and market development.

For example, the report cites a recent meta-analysis by Zimmermann et al. (2025) as indicating that "more than 96 percent of FCMs release both microplastics and nanoplastics during normal, intended use." However, this statement does not accurately reflect the cited study's findings. The analysis reported that in more than 96 percent of evaluated food samples in contact with plastic packaging or other plastic food contact

articles, micro- or nanoplastics had been detected. While the study also indicates that plastic food contact articles can release such particles under intended or foreseeable conditions of use, it does not support the generalized claim that “more than 96 percent of FCMs release both microplastics and nanoplastics.” This example illustrates how imprecise formulation can lead to a misrepresentation of the underlying scientific evidence.

Third, regarding the presentation of proposed safety approaches. The report presents the threshold of toxicological concern (TTC) as a potential approach to ensuring the safety of chemicals in FCMs in the absence of substance-specific toxicity data. However, the TTC approach was originally developed as a screening and prioritization tool and was not intended to serve as a comprehensive safety assessment framework that would replace risk assessment.

Moreover, for many chemicals in recycled plastics, the identity of the substance itself is unknown. This makes the TTC approach impractical, as a chemical’s structure must be known for applying prioritization using TTC. Presenting TTC as a viable solution for ensuring the safety of recycled plastics is therefore misleading.

Fourth, regarding the representation of regulatory approaches. The report would have benefited from a more complete and globally representative discussion of existing regulatory approaches. Some jurisdictions do not currently allow the use of post-consumer recycled plastics in food contact applications due to recognized safety concerns, as is the case in China, which has not allowed the use of recycled PET for food contact applications. This omission results in an incomplete picture of how recycled plastics are currently managed and evaluated by governments around the world.

Fifth, regarding practical implementation and industry developments. Analysis of our Brand and Retailer Initiatives Database (BRID), which tracks company commitments on food packaging sustainability, shows that major food and beverage companies have recently revised or scaled back commitments including recycled plastics content targets, commitments to alternative materials, and plastic reduction goals. For example, companies such as Coca-Cola, PepsiCo, and Unilever have reduced and/or delayed voluntary targets related to recycled content. These developments suggest that the practical implementation of recycled plastics and alternative materials in food packaging may face technical, economic, or systemic challenges that are not sufficiently reflected in the report.

Finally, regarding the approach to risk assessment. The report primarily adopts a risk-based perspective, with comparatively limited discussion of precautionary or hazard-based approaches. Given the substantial lack of transparency and uncertainties surrounding the actual chemical composition of plastic FCMs (and even more so of recycled materials), including non-intentionally added substances, a more explicit consideration of the precautionary principle would have been appropriate.

This is particularly important in the context of prenatal and early-life exposure, where developing biological systems are more vulnerable to chemical exposures. Exposure during critical windows of development may lead to long-term and potentially irreversible health effects, including those associated with low levels of endocrine-disrupting chemicals (EDCs) that are present in FCMs.

In this context, reliance on classical toxicological assumptions may not be appropriate. In particular, the report's reference to conventional dose–response assumptions (e.g. “as long as the intake is sufficiently low”) does not adequately reflect current scientific understanding. For example, non-monotonic dose–response relationships have been demonstrated for EDCs, and for chemicals that are carcinogenic, mutagenic and toxic to reproduction, safe thresholds may not even exist.

Further, it has been empirically demonstrated that combined exposure to multiple chemicals can result in harmful effects even when each individual substance is present below its respective regulatory limit. This important aspect of mixture toxicity is not sufficiently addressed in the report.

We hope these comments are helpful and suggest that these issues are addressed in the report to avoid FAO being inadvertently associated with spreading mis- or disinformation. We remain available to provide further support and would welcome continued engagement with the FAO on this topic of food contact materials and chemical risk assessment.

Sincerely,



Narain Ashta  
*Communications and  
Engagement Officer*



Jane Muncke  
*Managing Director and  
Chief Scientific Officer*



Martin Scheringer  
*President of the FPF  
Foundation Board*