

October 05, 2026

Comments on the Codex Alimentarius Discussion Paper on the Development of Guidelines on the Safe Use of Recycled Plastics in Food Packaging

Dear colleagues,

The [Food Packaging Forum](http://foodpackagingforum.org) (FPF) welcomes the opportunity to comment¹ on the Codex Alimentarius [discussion paper](#) on the development of guidelines on the safe use of recycled plastics in food packaging (CX/CF 26/19/14).

FPF is a non-profit, independent, science-based research and communications organization working at the science-policy interface, with expertise in hazardous chemicals in food contact materials (FCMs).

General comments

FPF recognizes the importance of addressing food safety concerns associated with recycled food contact materials and supports efforts to promote safe circularity and develop safe and sustainable food packaging systems.

We appreciate the efforts in preparing the discussion paper, and are aligned in our objective to ensure chemical safety of food packaging. However, we believe several fundamental scientific questions require further clarification and discussion before new work on proposed guidelines can begin.

Importantly, the current discussion paper does not yet provide sufficient rationale for global guidance on the safe use of recycled plastics in food packaging because the justification for focusing solely on plastics is missing. Further, key concepts related to chemical safety assessment, the definition of food safety, and implementation capacity remain insufficiently developed.

¹ FPF comments are submitted through the European Consumer Organisation (BEUC), an accredited observer organization in Codex Alimentarius. However, these comments do not represent the position of BEUC. The views expressed here are FPF's alone.

Our main overarching comments are provided below. Specific comments on the discussion paper, including paragraph-specific comments, are available in the Supporting Information section at the end of this letter.

1. Plastic food packaging is not inert and chemically complex, chemical migration into food is common, and recycling plastics exacerbates chemical complexity

The discussion paper focuses on contaminants being introduced during plastics recycling and expresses concern that such contaminants may migrate into food from recycled plastic food packaging. This concern is aligned with scientific evidence.

Scientific evidence, however, also demonstrates that chemical safety issues and migration are not unique to recycled plastics. Indeed, chemical migration is a normal and foreseeable property of food contact materials in general, and is especially concerning for non-inert materials like plastic (both primary and recycled), paper and board, coatings on metal, etc.

According to resources such as [PlastChem](#) or FPF's [FCCmigex](#) and [FCCprio](#) databases, scientific evidence shows that hundreds of hazardous chemicals have been found to migrate from plastics into food or food simulants, with more than 1500 scientific studies over the last 40 years demonstrating migration from food contact materials in general. In addition, there are many chemicals used and found in plastic FCMs for which hazard information remains incomplete/not in the public domain, or whose chemical identities remain unknown and therefore, hazard properties cannot be assessed and chemical risk cannot be determined using conventional approaches to chemical risk assessment. This applies to both intentionally added substances and non-intentionally added substances (NIAS).

Recycled plastics may present additional complexity because their composition and contamination history can be less predictable, chemical information may be lost along the value chain, contaminants may be introduced during use and collection, and additional degradation or reaction products may be formed during recycling. Several scientific studies confirm these findings ([Cheng et al. 2010](#), [Samsonek & Puype 2013](#), [Whitt et al. 2013](#)).

2. Insufficient rationale for developing guidance specifically for recycled plastics and excluding packaging made from other recycled materials

The discussion paper focuses exclusively on recycled plastics despite the original proposal referring more broadly to recycled materials (CAC/46 CRD36), and despite the discussion paper itself acknowledging that (recycled) paper may also present chemical contamination concerns.

The justification for this focus appears to be that plastics are the most commonly used material in food packaging, that “numerous consumer brands have made public commitments to increase the recycled content of their packaging”, and that this “has led to a significant increase in demand for recycled materials.”

However, FPF’s [Brand and Retailer Initiatives Database](#) (BRID), which tracks companies’ voluntary commitments related to food packaging sustainability, shows that in recent years almost 200 recycling-related commitments on plastic food packaging made by companies have been subsequently cancelled or scaled back. Certain jurisdictions (e.g. recently New Jersey, USA) have also recently delayed legislation mandating post-consumer recycled content in food contact applications due to limited availability of food-safe recycled materials. This is in line with the findings of a recent [OECD report](#) on the matter.

FPF therefore suggests providing clarification regarding why recycled plastics have been selected as the sole focus of the proposed guidance and whether the rationale could also apply to other non-inert food contact materials such as paper, for which similar chemical contamination concerns exist.

3. Chemical safety of plastics, including both primary and recycled plastics, currently cannot be demonstrated

The discussion paper suggests that the safety of recycled plastics can be established through source controls, challenge testing, migration limits, and compliance with regulatory requirements. However, recent regulatory assessments in [Europe](#) and [USA](#) suggest that these approaches have important limitations, and that under existing frameworks, the safety of (primary) plastic FCMs cannot sufficiently be guaranteed.

Moreover, the [OECD recently concluded](#) that chemical information may be lost during recycling processes and along value chains; new contaminants, reaction products, and degradation products may emerge during use and recycling; and no single analytical approach currently can identify all substances present in recycled plastics. However, this is a requirement for assessing safety using conventional risk assessment.

Likewise, [recent guidance](#) from the German Federal Institute for Risk Assessment (BfR) acknowledges that complete identification of non-intentionally added substances (NIAS) in FCMs may remain unattainable despite extensive analytical efforts.

Considering that even highly resourced jurisdictions face insurmountable challenges in the assessment and regulation of food contact chemicals, it remains unclear how the proposed high-level guidance can ensure food safety in countries with more limited access to analytical infrastructure, toxicological expertise, testing methods, and enforcement resources.

4. Missing definition of food safety

Despite ensuring safety being a central objective of the proposed guidance, the discussion paper does not currently define food safety. It is therefore unclear whether health effects such as endocrine disruption, reproductive and developmental toxicity, metabolic effects, neurotoxicity, immunotoxicity, mixture toxicity, or potential health impacts associated with micro- and nanoplastics, are within the scope of the safety considerations being proposed. Without a clear definition, statements regarding the safe use of recycled plastics remain difficult to interpret.

Conclusion

FPF welcomes continued discussion of food safety aspects of recycled food contact materials and supports the goal of ensuring safer and more sustainable food packaging. However, FPF considers that further scientific discussion is needed before guidance on the safe use of recycled plastics/materials can be developed. In particular, greater clarity may be necessary regarding the scope of food safety, the limitations of current safety assessment and implementation approaches, and the implications of increasing chemical complexity in recycled plastics. FPF looks forward to sharing its scientific expertise with the Codex Alimentarius Commission in future discussions on this topic.

Yours sincerely,



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Supporting Information, including specific comments

Discussion paper, main text, paragraphs 3–4: scope of the proposed work

FPF suggests providing clarification on why recycled plastics were identified as the materials of choice for the proposed guidance. It notes that the original proposal concerned the use of recycled materials in food packaging rather than recycled plastics specifically. Considering that the discussion paper itself acknowledges potential concerns of chemical contamination associated with (recycled) paper (see paragraph 4 of Appendix I), it may be appropriate to explain more clearly why the proposed guidance has been restricted to plastics.

Focusing exclusively on recycled plastics presupposes that future food systems will necessarily remain dependent on current levels of plastic packaging, and may inadvertently be viewed as Codex endorsing the continued expansion of plastics in food packaging provided that recycling processes meet the proposed conditions. A guidance dedicated solely to recycled plastics therefore could run the risk that it contributes to technological or material lock-in.

The discussion may therefore consider expanding the scope of the guidance to all non-inert materials, including plastics, paper, board and others. It may further consider adding necessary context regarding the broader waste hierarchy and clarify that recycling is not a substitute for avoiding unnecessary packaging, increasing reuse of inert materials, and considering alternative approaches to improving access to food.

Paragraph 8(i): sufficiency of the evidence

The data and information presented are not yet sufficient to support new work on guidelines for the safe use of recycled plastics in food packaging.

In particular, the rationale for plastic-specific guidance is insufficiently developed. “Food safety”, despite being a central objective of the guidance, is not explicitly defined. The proposed assessment framework seems to be largely oriented toward genotoxicity and carcinogenicity, and does not address endocrine, reproductive, developmental, metabolic, neurological, or immune-related effects associated with plastics. The document does not adequately address uncertainty arising from non-intentionally identified substances (NIAS) and unidentified migrants. Despite references to fair trade, the practical capacity required to implement and enforce the proposed guidance across Codex members with different financial and technical capacities has not been discussed.

Codex may therefore consider following the option in paragraph 9 and request a revised discussion paper for CCCF20 that addresses the identified gaps.

Appendix I

General comment: Considering that the goal of proposed guidance is to ensure food safety, providing an explicit definition of “food safety” (or a link to the respective definition used by Codex) and the relevant health outcomes of interest would be useful.

For example, is the scope of safety mainly to prevent genotoxicity-induced cancer and acute toxicity, or does it also encompass non-genotoxic carcinogenicity, endocrine disruption, reproductive and developmental toxicity, metabolic effects, neurotoxicity, immunotoxicity, mixture effects, and potential health effects associated with micro- and nanoplastics?

Without such a definition, statements that recycled plastics can be used “safely” are difficult to interpret or evaluate.

Paragraph 1:

The paragraph disproportionately attributes the prevention of contamination and spoilage to plastic packaging. These are general functions of packaging and are not unique to plastics. The wording may be modified to acknowledge that multiple packaging materials and systems can protect food, support storage and transport, and reduce contamination.

The statement that plastic packaging facilitates “fair trade” also requires further explanation. Packaging-dependent global supply chains may distribute benefits and burdens unevenly. Packaged goods commonly move from countries with greater production and regulatory capacity to countries that may have more limited waste management, testing, and enforcement infrastructure. The latter may then bear disproportionate responsibility for managing the resulting packaging waste. Further, plastic production is associated with injustice and harm, as evidence from fenceline communities shows.

Consequently, the paper should assess fair trade not only in terms of market access but also in terms of all life stages of plastics and its impacts on communities, including extraction of feedstock and plastic production, access to chemical information, regulatory capacity, waste management burdens, and the allocation of health and environmental costs.

The discussion paper may also reconsider framing the current prevalence of plastic packaging as an inevitable outcome. According to the peer-reviewed literature, the predominance of plastic packaging is influenced by globalized distribution models, low weight, existing infrastructure, and the market price of primary plastic; the latter may be artificially low due to fossil-fuel and petrochemical subsidies.

References:

Farrell et al. 2024

<https://www.sciencedirect.com/science/article/pii/S2666086524000341?via%3Dihub>

Evans et al. 2020

<https://www.sciencedirect.com/science/article/pii/S0959378020307494?via%3Dihub>

Chakori et al. 2021

<https://www.sciencedirect.com/science/article/abs/pii/S092180092100121X>

Paragraph 2: Firstly, the phrase “potential for introducing chemical contaminants” understates the broader issue. Chemical migration is a normal and foreseeable phenomenon in food contact materials, including both primary and recycled plastics, as more than 40 years of empirical scientific evidence demonstrates.

Second, we would like to note that FPF previously raised [scientific concerns](#) regarding the FAO report on recycled plastic FCMs referenced here, in part due to its inappropriate recognition that the Threshold of Toxicological Concern (TTC) approach can be a substitute for risk assessment of unknown substances. The TTC may be useful for prioritization of testing needs, but it is not suitable for replacing actual risk assessment. Other strategies, such as chemical grouping (see FPF’s grouping tool, [FCCgroup](#)) may be useful for prioritization of testing needs in the absence of hazard data for all migrating chemicals.

Third, microplastics are described here as an environmental issue and not a food safety issue related to food packaging. However, emerging evidence shows that the normal and intended use of plastic food packaging leads to the generation of micro- and nanoplastics that contaminate foodstuffs ([EFSA 2025](#); [Zimmermann et al. 2025](#)). The health impacts of micro- and nanoplastics is a topic of active research, and therefore it is premature to dismiss any health impacts.

Paragraph 3: The statement that numerous brands have made commitments to increase recycled content is missing important context. According to FPF’s [Brand and Retailer Initiatives Database](#) (BRID), an evidence map of companies’ voluntary food packaging sustainability initiatives, a substantial number (~200) of companies’ voluntary commitments on recycled plastic packaging have recently been delayed, revised, or withdrawn. Voluntary commitments may therefore be unreliable.

The same goes for legislation on plastic food packaging recycling, which has been rolled back recently as well. For example, the State of New Jersey, USA, recently extended the exemption for recycled content targets in most food packaging and containers until the

end of 2029, citing limited availability of food-safe post-consumer recycled material, insufficient technological scale, and possible impacts on food quality.

Moreover, recent market trends suggest that food companies may switch from plastic- to paper-based food packaging (see for example, the industry-led [Paperflex Consortium](#) convened by the EllenMacArther Foundation). If voluntary initiatives by companies are sufficient justification to warrant Codex guidance, the recent move towards paper-based food packaging may be worth considering in the revised discussion paper or future guidance. This is also in light of the current discussion paper's recognition in paragraph 4 of Appendix I that paper-based packaging also raise similar chemical safety concerns as plastics.

Paragraph 5:

The sentence stating that recycled plastics present “unique food safety concerns not associated with virgin plastic packaging materials” may suggest that there are no safety concerns with primary plastics.

Primary plastics, however, contain intentionally added substances and NIAS, including impurities, reaction products, and degradation products, some of which are known to be hazardous but not regulated, or insufficiently assessed, or unidentified. These issues are recognized in regulatory assessments in [the EU](#) and [USA](#).

Therefore, primary and recycled plastic food contact materials both present chemical safety concerns, including migration of intentionally added substances and NIAS.

We also suggest that the term “primary plastic” be used instead of “virgin plastic” throughout the document.

We refer to the 2026 OECD report for more information.

<https://doi.org/10.1787/7c862db6-en>

Paragraph 6:

Challenge testing evaluates the effectiveness of a recycling process in removing selected surrogate contaminants, but it cannot establish the absence of all hazardous migrants or biological effects in the finished article.

The guidance would therefore benefit from being clear about the limitations of such challenge testing and could include consideration of testing the overall migrate or extract from the final packaging article, as has been described in peer-reviewed literature ([Muncke et al. 2023](#)). Specifically, using a scientifically justified strategy for selection of a battery of bioassays, or effect-based methods, as laid out by [Stevens et](#)

[aL. \(2026\)](#). Effect-based methods can detect biological activity from complex mixtures, including activity associated with substances that have not been chemically identified.

Such testing would not be restricted to genotoxicity alone. Health-relevant endpoints include, where methods are sufficiently validated, endocrine disruption and other mechanisms associated with reproductive, developmental, metabolic, neurological, and immune effects, as well as non-genotoxic carcinogenicity.

Paragraph 7:

The paper should more critically assess the claim that Codex guidance would increase safety across jurisdictions.

Recent regulatory assessments in Europe and the USA describe continuing regulatory fragmentation, uneven safety requirements, insufficient treatment of NIAS, limitations in the assessment of combined exposure, and/or challenges in enforcement.

If highly resourced jurisdictions continue to report such gaps, the discussion paper may consider explaining how high-level Codex guidance would reasonably be expected to enable countries with more limited laboratory capacity, access to analytical standards, toxicological expertise, and enforcement resources to ensure chemical safety.

Paragraph 38:

The paragraph may consider acknowledging that threshold-based approaches contain important scientific assumptions and limitations. Thresholds focused principally on genotoxic carcinogenicity may not adequately address all relevant health endpoints, including non-genotoxic carcinogenicity, immunotoxicity, and other harmful effects.

For endocrine-disrupting chemicals, non-monotonic dose-response relationships, effects during sensitive developmental windows, and incomplete understanding of mechanisms may complicate the identification of a universally protective threshold. Accordingly, the latest scientific evidence suggests that threshold values should not be treated as evidence of safety in the absence of adequate information on chemical identity, hazard properties, exposure, mixtures, and susceptible populations.

Paragraph 47:

The term “[food] safety” has not been defined despite it being the central goal of the proposed guidance. The discussion paper may benefit from including such a definition and explicitly specifying which health outcomes are within the scope.

Appendix II

Paragraph 4(a): The term “food safety” has not been defined here despite it being the central goal of the proposed guidance. The discussion paper may benefit from including such a definition and explicitly specifying which health outcomes are within the scope. It is currently unclear whether health effects such as endocrine disruption, reproductive and developmental toxicity, metabolic effects, neurotoxicity, immunotoxicity, mixture toxicity, or potential health impacts associated with micro- and nanoplastics, are being considered.

The proposal may consider explaining how fair practices in trade will be ensured where countries have substantially different regulatory and technical capacities.

Countries with established regulatory systems for food contact materials (FCMs) may possess access to detailed dossiers, laboratory infrastructure, analytical standards, toxicological expertise, and enforcement mechanisms. However, even such countries, including those in the EU and the USA, reportedly face challenges of ensuring FCM safety despite having relatively large resources.

Jurisdictions with fewer resources would have even less capacity to ensure safety but may nevertheless be expected to accept imported packaged foods or packaging materials and manage the associated waste.

Issues related to the full life cycle of plastics, such as evidence of harm to frontline communities exposed to hazardous chemicals from feedstock extraction and plastic production may also be worth considering.

Paragraph 4(d): The 2026 [OECD report](#) titled “Chemical content validation of recycled plastics” should be expressly included here. It provides a more detailed analysis of chemical-content validation, analytical limitations, traceability, standards, and enforcement than the present discussion paper. <https://doi.org/10.1787/7c862db6-en>

We would like to note that FPF previously raised [scientific concerns](#) regarding the FAO report on recycled plastic FCMs referenced here, in part due to its inappropriate recognition that the Threshold of Toxicological Concern (TTC) approach can be a substitute for risk assessment of unknown substances. The TTC may be useful for prioritization of testing needs, but it is not suitable for replacing actual risk assessment. Other strategies, such as chemical grouping (see FPF’s grouping tool, [FCCgroup](#)) may be useful for prioritization of testing needs in the absence of hazard data for all migrating chemicals.

Appendix III

Paragraph 3: The following definitions may be beneficial to add: food safety; non-intentionally added substances; and chemical contaminant. Please consider replacing the term “virgin plastic” with “primary plastic”. Please define what constitutes sufficient evidence that a recycled material is “suitably pure.”

Paragraph 5.1(c): Beyond industrial chemicals, the exclusions may be expanded to include packaging or containers previously used for: pesticides and biocides; pharmaceuticals and veterinary medicines; fuels, petrol, oils, and solvents; paints and thinners; detergents and cleaning chemicals; and other hazardous mixtures.

Paragraph 5.2: The statement that recycled plastics should be “suitably pure” may benefit from an operational definition and measurable criteria.

Paragraph 5.3: The latest scientific evidence suggests that migrating chemicals should not be assessed exclusively as isolated substances. The section would instead benefit from including considerations of the following: mixture toxicity; cumulative exposure from multiple food-contact articles and other sources; effects other than genotoxicity, including endocrine disruption; unidentified migrants including NIAS; and sensitive life stages/vulnerable populations.

Since full chemical identification of all migrating substances is likely to remain incomplete, compliance with individual migration limits cannot by itself establish the safety of the overall migrate. In such cases, the toxicity of the overall migrate may be assessed using appropriate bioassays.

Paragraph 5.4: A “worst-case” test is necessarily constrained by existing knowledge. Unknown contaminants, emerging hazards, unexpected uses, environmental contamination of feedstock, and changes in collection streams may not be represented by selected surrogate chemicals. Challenge testing could perhaps be complemented by toxicity testing of the final article, which could include an effect-based testing of the overall migrate using suitable bioassays.

Paragraph 5.5: additional topics that could be added include: enforcement; compliance verification; laboratory and regulatory capacity building; access to reference standards; technology and knowledge transfer; independent market surveillance; public disclosure of safety information; provisions for NIAS and other unidentified migrating chemicals; mixture and cumulative exposure; effect-based testing e.g. using appropriate bioassays; protection of sensitive populations; procedures for reviewing guidance as scientific knowledge develops, including participation by independent scientists; and mechanisms allowing countries to restrict imports of materials that cannot be adequately assessed.