

Editorial

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Corresponding author:

Stephen Fletcher;
Email: steve.fletcher@port.ac.uk

Act boldly or fail: Academic perspectives at a pivotal moment in global plastics treaty negotiations

Stephen Fletcher 

Revolution Plastics Institute, University of Portsmouth, Portsmouth, UK

Abstract

As governments prepare for the resumed session of the Intergovernmental Negotiating Committee on Plastic Pollution (INC-5.2), the urgency of agreeing on a legally binding global plastics treaty is more pressing than ever. This editorial introduces a collection of letters calling for systemic, science-based, and justice-oriented approaches to plastic governance delivered through an ambitious and effective global plastics treaty. The letters span environmental, health, and social disciplines, and highlight the shortcomings of fragmented policy and assert the need for coordinated and binding action. The letters advocate for reducing plastic production, implementing restrictions on toxic chemicals, incorporating the structural inclusion of affected communities, and ensuring robust scientific oversight. Taken together, the collection of letters reflects the scientific and ethical imperatives to act decisively in shaping a transformative and enforceable plastics treaty.

Impact statement

This editorial contributes to the global discourse on plastic pollution governance by amplifying the collective voice of academic experts ahead of the INC-5.2 meeting. It highlights the scientific and ethical basis for binding treaty provisions across the plastic lifecycle, including reductions in plastic production, control of hazardous chemicals, and inclusive implementation, as outlined in the letters. By framing these perspectives within the broader negotiating context, the collection of letters provides negotiators, policymakers, and researchers with a concise synthesis of evidence-based recommendations to ensure the plastics treaty realises its transformative potential.

As the world prepares for the second part of the fifth session of the Intergovernmental Negotiating Committee to develop an international legally binding instrument on plastic pollution, including in the marine environment (INC-5.2), the urgency for a robust and enforceable global plastics treaty has never been greater. Plastic pollution represents a profound environmental, human health and justice crisis, with roots in petrochemical expansion, toxic production pathways, and inequitable impacts, which demands a commensurate systemic response. This collection of letters presents a chorus of engaged academic voices from diverse disciplines and regions. The authors do not speak from the sidelines but as informed witnesses to the global plastics crisis. Their letters contribute to the growing consensus that only bold, science-driven, and justice-oriented action can effectively address the plastics crisis. The central challenge, however, is whether the political will to translate compelling evidence into effective international action is sufficient to overcome those determined to block an ambitious treaty.

A central theme across the letters is the need for a treaty with legally binding commitments across the entire lifecycle of plastics. The authors assert that the upstream drivers of plastic pollution are critical to address, including reducing reliance on fossil feedstocks, lowering unsustainable production levels, and halting the proliferation of toxic additives. The repeated failure of voluntary and fragmented approaches, they argue, has demonstrated that current strategies are inadequate to meet the scale of the challenge. Several contributors emphasise the inadequacy of a treaty focused narrowly on waste management or consumer behaviour. Instead, they argue for reductions in primary plastic polymer production, the phase-out of hazardous chemicals in plastics, and design standards that promote reuse and durability. Such upstream interventions, the authors argue, are essential to drive fundamental changes in the plastics economy. Without such progressive provisions, the treaty risks locking in low ambition and undermining its scientific, social, and ethical legitimacy.

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The letters also highlight the mounting evidence that plastic pollution is a public health crisis. Microplastics and nanoplastics, we are reminded, have been detected throughout the human body, and toxic chemicals in plastics, including known endocrine disruptors and carcinogens, leach out from plastics during their entire life cycle. These exposures disproportionately affect vulnerable populations, including Indigenous Peoples, waste workers, fence line communities, women, and children who are least protected by regulation and often excluded from decision-making forums. The authors call for cumulative risk assessment, exposure monitoring, and transparent chemical regulation. They remind negotiators that the costs of inaction are not abstract, but can be measured in terms of cancers, reproductive harms, and respiratory conditions.

To be effective, multiple contributors argue that the plastics treaty must ensure the structural inclusion of affected communities, including meaningful involvement in agenda-setting, co-governance, and implementation processes. They assert that a just transition framework should be embedded within the treaty, providing social protections, capacity building, and sustainable livelihood alternatives for those whose work and well-being are directly affected by the shift toward new plastics governance models.

The politicisation of science in treaty negotiations is another central concern raised in the letters. Authors describe how corporate lobbying, greenwashing narratives, and reliance on unproven solutions threaten to dilute the treaty's ambition. To counteract this, the authors call for the institutionalisation of scientific independence, including the creation of an interdisciplinary advisory body with strong conflict-of-interest safeguards. Such a body, they argue, would provide independent input into treaty implementation, assess emerging risks, and monitor state compliance with the treaty. Contributors also emphasise the need for standardised data systems, shared indicators, and an

open-access global knowledge infrastructure to guide robust implementation and evaluation.

Many letters caution that prolonged negotiations and consensus-driven politics may erode the treaty's ambition. To guard against this, several authors propose the formation of coalitions of ambitious countries, differentiated obligations within the treaty, and optional high-ambition protocols. They warn against allowing unambitious or obstructive states to determine the overall pace or scope of progress. Ultimately, the treaty must not be purely aspirational, they argue; it must be operational and enforceable. This includes provisions for a dedicated financing mechanism to support implementation in low- and middle-income countries, as well as robust compliance procedures, mandatory reporting, and periodic reviews informed by scientific evidence.

A core message from the letters is that the plastics crisis is too urgent, and the scientific evidence too conclusive, to permit further compromise at INC-5.2. If successful, the negotiations could be remembered as a critical turning point in global plastics governance. However, if negotiations fail, the consequences will be a further worsening of the plastics crisis and a setback for global environmental and public health efforts. This collection of letters is offered as both a timely resource for negotiators and a clear call to action. It demonstrates that meaningful progress is within reach if the global community chooses to act boldly.

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