

Editorial

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We are delighted to welcome you to *Cambridge Prisms: Plastics*. This new journal provides a timely and critical forum for the discussion of interdisciplinary plastics-focused research. The status of plastics in society has changed radically since the material's first widespread use in the 1950s. Initially, plastics were seen as miracle materials, prized for their low weight, low cost and seemingly endless potential uses (Thompson et al., 2009). Yet, herein lies both current and future governance challenges. Plastic pollution, arising from hyperproduction, poor design and mismanagement, has become a global crisis (World Wide Fund for Nature, 2021). While some object to using the word “crisis” in this context, citing that it exaggerates the adverse effects of plastic pollution or obscures “more important” environmental challenges (Stafford and Jones, 2019), the evidence of the global impact of plastics and the urgent need for its improved governance is compelling (Shen et al., 2020; Carney Almroth et al., 2022). Plastic pollution is implicated in the triple planetary crisis of biodiversity and nature loss, pollution and climate change. For example, emerging research has identified adverse effects of plastics on human and environmental health, the impact on societies and economies, and how plastic pollution can exacerbate natural and human hazards and climate change (Beaumont et al., 2019; McGlade et al., 2021; Maradonna et al., 2022; Shen et al., 2023; Steenmans and Malcolm, 2023). The scale of the plastic pollution crisis is global, transboundary and interconnected. From its fossil fuel beginnings all the way to its disposal, injustices are incurred and nano- and micro-plastics, gases and chemicals are released (World Wide Fund for Nature, 2021).

Current actions to reduce plastic pollution, such as bans, taxes and reuse or refill schemes, are highly fragmented, and most are voluntary and country, product or material specific (Diana et al., 2022; Global Plastic Policy Centre, 2022). Communities worldwide are finding local solutions to stem the tide of plastic pollution, including localised clean-ups, plastic-free shops, reuse and refill schemes and the integration of plastics literacy into school curricula. However, these interventions typically have insufficient reach to be effective beyond national or even local jurisdictions (Kaza et al., 2018; Borrelle et al., 2020). Uncoordinated and siloed regional, national or local actions cannot scale up to address the global plastics crisis (Borrelle et al., 2020; Ferraro and Failler, 2020). Comprehensive, effective and coordinated global action is urgently needed.

Key to global action is the UN-led process to develop an international legally binding instrument, the global plastics treaty, which is well underway (March et al., 2022). Much of the discussion around the treaty is focused on shifting away from the prevailing wasteful linear plastics economy towards a circular economy that operates within planetary boundaries and safeguards human and ecological health and justice (Brandon et al., 2023). Due to the complexity of the problem, tackling plastic pollution requires delivering on other policy goals too, including those in the Kunming-Montreal Global Biodiversity Framework, the Convention on Biological Diversity, the Paris Climate Agreement, the Basel, Rotterdam and Stockholm Conventions, the International Convention for the Prevention of Pollution from Ships, United Nations Convention on the Law of the Sea and the sustainable development goals (SDGs). Early observations after two rounds of treaty negotiations suggest some delegations are prioritising upstream solutions to plastic pollution, which means ending plastic pollution at source rather than relying on downstream solutions that seek to manage waste and pollution when it is often too late (Global Plastics Policy Centre, 2023). However, the focus on upstream control measures is meeting strong opposition from fossil fuel extracting and petrochemical and plastic producing states (Yonkers, 2023).

The 175 UN Member states who supported the mandate for a global plastics treaty recognise there is more than enough independent scientific evidence to know we need to act urgently and effectively to prevent further plastic pollution (UNEP, 2022). Nevertheless, major research gaps exist in topics critical to the implementation of the global plastics treaty and to end the global plastics crisis (March et al., 2022). These include how to regulate and incentivise polluting industries to minimise, redesign, simplify and detoxify plastics production and plastics waste management. How to ensure vulnerable communities are not excluded and left behind when solutions to prevent plastic pollution are proposed. What kind of circular economy do we need to design to end plastic pollution? How can a transition from single-use plastic products to reusable products and for plastic-free, zero-waste delivery systems become a reality? What new technologies and breakthrough innovations can prevent plastic pollution without adverse impacts and

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further externalisation of costs? What national and international institutions are needed to implement the objectives of the treaty effectively? What are the private sector's and citizens' roles in implementing an effective global plastics treaty? What are the best methods for monitoring, tracking and reporting on plastic chemicals, polymers, plastic products and releases? How can we ensure our efforts to end plastic pollution are integrated into national treaty implementation plans, and what are the risks to humans, non-humans, ecosystems, climate and economies from proposed plastics substitutes and alternatives, and plastics removal and remediation technologies?

Cambridge Prisms: Plastics is a home for the debate about the role of plastics at a time when the world is making critical long-term decisions about transitioning to a safe and sustainable circular economy for the survival of people and the planet. Our interdisciplinary editorial team invites papers from the entire plastics research and practice community. We are keen to publish interdisciplinary papers in both outlook and method that convey the “so what?” of the research findings in light of the global plastics crisis. We are keen to hear from practitioners and policy-makers too. Your insights, breakthroughs, successes and concerns are critical for the plastics research community to understand and support. Finally, this journal will go beyond what journals usually do. We will proactively support the plastics research community through online events focused on networking, interdisciplinary research methods and writing for publication. We cordially invite you to join our global plastics research community.

Open peer review. To view the open peer review materials for this article, please visit <http://doi.org/10.1017/plc.2023.14>.

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