

2022-08-18

Plastics treaty research must inform action

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<https://pearl.plymouth.ac.uk/handle/10026.1/21255>

10.1038/d41586-022-02201-0

Nature

Springer Science and Business Media LLC

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PRE-ACCEPT EDITED Correspondence with author amendments:

Plastics treaty – research must inform actions

Governments at this year's UN Environmental Assembly agreed to negotiate an international legally binding treaty to end the plastic pollution crisis by 2024. We now need robust evidence to indicate the effectiveness and trade-offs between a multitude of specific actions intended to reduce, reuse, recycle and extend producer responsibility (UNEP,

2020, <https://wedocs.unep.org/bitstream/handle/20.500.11822/35934/UNEP%20AHEG%204%20INF%206%20English%204%20Nov%202020.pdf?sequence=6&isAllowed=y>).

For example, if we restrict plastic production (M. Bergmann *et al. Science* 376, 469-470; 2022 doi:10.1126/science.abq0082), we must assess the potential impacts of alternative materials.

Similarly, the effectiveness of re-designing products and processes for circularity, light weighting or degradability need evaluation. How do we engage consumers to embrace changes and unlock behavioural potential, and what policies are needed to facilitate? How do outcomes vary between societal groups, nations and different waste management infrastructures?

UNEA 5.2 is an immense achievement - to deliver its ambition urgently requires robust independent evidence from transdisciplinary research and stakeholder teams to indicate the most, and least, appropriate interventions. Scientific evidence is just as critical now as it was in raising awareness of the issue itself.

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