

Editorial

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The 2024 Edition of the UN Environment Programme (UNEP) Global Waste Management Outlook, *Beyond an Age of Waste, Turning Rubbish into a Resource* (UNEP, 2024) was recently published and there is no doubt about it: we are living in ‘*a wasteful world*’. The Global Waste Management Outlook is a ‘*call for action to catalyze a collective effort to support bold and transformative solutions directed to revert the adverse impacts of the current waste management system, towards a cleaner, healthier, and sustainable planet through circular and regenerative waste and resource management systems.*’

To create new solutions we first have to understand the crisis and there is no way to get away from the fact that waste management (or lack thereof, for example open burning) generates CO₂ and other greenhouse gases and airborne pollutants that contribute to climate change. Waste management however is not a one sizes fits all approach. What works in one region or country may not necessarily work in another. Santos *et al.* (2024) paper on modelling methane generation potential and decay for a tropical landfill perfectly illustrates this by highlighting that landfill modelling that works for a United States landfill may not work for a landfill in tropical climates. To get accurate results the specific characteristics of the landfill and it’s environment must be considered.

‘*Turning rubbish into a resource*’ (UNEP, 2024) is key to dealing with the waste crisis and three papers in this issue showcase that the types of waste and quantities generated differs greatly across the globe and different innovative solutions are required.

The paper by Nair *et al.* (2024) on co-digestion of mushroom compost with switchgrass demonstrates that the traditionally cyclical agricultural practice of growing mushrooms has become in modern times more linear. Waste produced from mushroom growing was in the past reused but is now generated in much larger quantities due to the demand for mushrooms and the waste is often incinerated, landfilled or openly dumped. Using this waste as feedback to produce biogas could divert mushroom compost from waste management processes that actively contribute to climate change.

Another waste type not often considered is waste from portable toilets used at events such as music festivals, agricultural

shows, weddings and constructions sites. As outlined by Rodriguez *et al.* (2024) conventionally this waste is transported to a waste water treatment plant (WWTP) for management. Moving away from the status quo may not be easy but research can help us to understand what is possible and that there may be a different way to treat this waste type closer to it’s point of generation. A treatment process that reduces the ‘*the carbon footprint and cost associated with disposal in a WWTP*’.

A waste more familiar to many of us is the humble plastic bag, once an ‘*innovation of convenience*’ now an ‘*environmental nuisance*’ (Prevented Ocean Plastic, 2020). It is easy to think that plastic bags could simply be recycled into new plastic bags but often recycling plastic in a place where waste management is not present is not possible. Incorporating plastic bags into a new material such as concrete could be an option to help with this problem. The evaluation of the mechanical properties of concrete with plastic bags added (Ghafoor *et al.*, 2024) shows what is and what isn’t possible.

This issue excellently showcases the wide variety of subjects and waste types covered by the *Proceedings of the Institution of Civil Engineers (ICE) – Waste and Resource Management* journal, and we are always looking to expand our pool of article referees. This helps the ICE to remain a leading source of knowledge and truly help our members be at the cutting edge of industry developments and to access and share our expertise (ICE, 2024). If you would like to volunteer as a referee, please contact: Alessandra Morelli (e-mail: amorelli@emerald.com).

The journal publishes its most recent articles Ahead of Print on its Virtual Library homepage allowing you to keep up to date with the latest papers.

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