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Publishing impactful interdisciplinary waste-related research on global challenges: circular economy, climate change and plastics pollution

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Introduction

The waste and resources sector is evolving, adjusting to new powerful drivers, not least those of circular economy (Velis, 2018, Ragossnig and Schneider, 2019) and plastics pollution (Velis, 2014, Agamuthu, 2018). These areas of attention rapidly find their position next to the climate change as the newly established global key considerations for the sector. The research conducted reflects these trends in the society and feeds back to the industry and regulators the necessary evidence base for effective interventions, along with innovation on technological and management solutions. At the same time, the publishing practices and nature of academic journals is transformed by major changes, such as the call for (full) open access, increased public availability of data and transparency in the review process. A proliferation of research also from the Global South, where most of the pressing sector's challenges occur on the ground, opens new opportunities. All these taking place in a research environment where internationalisation and interdisciplinary approaches are championed along with the requirement with fast impact on the society. How these unprecedented challenges and opportunities impact on historic journals such as our *Waste Management & Research* (WM&R)?

Championing interdisciplinary research

Research intensive universities and institutes are discovering the need to approach big societal challenges from many angles, concurrently using the analytical tools of as many disciplines as possible: the call for interdisciplinary research is not new, but is now implemented at scale, with a proliferation of across university initiatives intended to break the disciplinary silos: engineers are encouraged to work with sociologists, material scientists along with economists – and so on. The same need is impressed by the terms set by the research funding bodies.

Far from marking the demise of academic disciplines and the relevant administrative units within the universities, this trend arguably allows for much more cross-fertilisation of ideas desperately needed to address existing or emerging global challenges, such as those of climate change, plastics pollution and circular economy. Indeed, all these three research agendas are at the very heart of the wastes and resources sector: the interdisciplinary research produced will require effective communication for more than one disciplines and given the practical relevance to more lay, yet critical audiences of decision makers and public influencers.

Global South in need of quality research

The most pressing challenges on waste and resources management are arguably located within the Global South. Rapid urbanisation, boost in the number of emerging megacities in the forthcoming decades, each featuring vast unplanned settlements, emergence of middle classes adopting the 'Western' level of consumption, result in a genuine on-going solid waste crisis, with prospects of pending escalation. At the same time, the research working environment is internationalising almost everywhere, with key example the new universities established by the Middle East states to support their transition to knowledge economies, a wealth of cultural backgrounds and values inevitably seeps into research outputs.

The local expertise meets the global benchmarking efforts such as those of the Wasteaware Benchmark Cities Indicators, or the UN efforts to measure progress on the waste-related SDGs, such as the 11.6. A new level of awareness and research on the state and progress pathways emerges across the Global South. The publishing realities are, however, not ideal: chronic deficiencies in the research methods, resources, language barriers and technical writing skills have been and are still massively disadvantaging authors from the least financially developed part of our World.

Global North still sets the standards for what is prestigious academic publishing, reflecting possibly its continued leadership regarding research resources, publishing industry and general academic scholarship. Global South are still often perceived in that respect as 'periphery countries', with their academics considered – embarrassingly – to be 'consuming' the scientific production of the Global North or being isolated from the cutting edge developments in each discipline. However, increased North-South co-authorship is evident, but it is not clear to what effect. Therefore, quality research on and dissemination from the Global South is desperately needed. Journals could capitalise on this opportunity, offering enhanced support to authors so that they could meet the quality benchmark. WM&R will take specific action to further enable effective communication of Global South produced research.

Strong and fast societal impact of research

Academics are under increased pressure to prove that the publically funded research they conduct is translated into value for the society in the medium term. Whilst this does not mean forgetting about the much needed blue skies research, it gives increased motives to work with the industry, NGOs, governmental institutions, and other stakeholders to co-create their research ideas, ensuring that their output is relevant and can enjoy fast uptake. So, academia is increasingly asked to meet practice. Engineering and applied sciences, such as environmental engineering and public health, which have historically been the disciplines most relevant to waste and resources management, have already been by and large operating in that space. In the wider emerging research area of circular economy, with the strong business and sociology connotations, this linkage holds even more.

This is where links of academic journals with learned societies/ associations are becoming again of relevance: Traditionally, it was such societies which published journals, before the advance professional publisher organisations. WM&R co-published by the International Solid Waste Association (ISWA) maintains strong historic and live access to the circular economy professionals who translate the knowledge and innovation into practice, solving the problems on the ground. And this hints to the new opportunities emerging for such journals in facilitating fast effective and widely applied uptake of academic knowledge and innovation. Conversely, journals such as WM&R can facilitate the co-creation of academically driven research with the wider civic society by assuming the additional role of connecting stakeholders via their on-line platforms and associated social media. WM&R with its unique and diverse readership aspires to play a strong facilitation role in research co-creation and impact acceleration.

A vision for open and enabling publishing

The research publishing sector is rapidly evolving, responding to technological innovation and new societal requirements. The requirement of open access is gaining global traction amidst ferocious debate and struggle. Reposting data (open data, data sharing) follows, in a much welcomed development. Notably, good journals are bombarded with manuscript submissions, and are struggling to handle the review process in timely, consistent and transparent fashion, not least having difficulty to secure suitable reviewers. Along these lines, open and/or transparent review has emerged, in which the manuscripts submitted are subjected to only initial check: sometimes not judging usefulness to the discipline sector, but just checking for example the existence of a sound methodology, and then being released for on-line critique. There are multiple variations of this model, but the names of reviewers and authors may be known to each other and all and the public and the reviews published themselves. Other journals or platforms may allow post-publication review questions. This development also reflects efforts to recognise the role of reviewers (service to profession), speed up publication, and most importantly remove some of the pestering subjectivity of the existing traditional peer review modes and benefit from the collective wisdom of the scientific community. Such options, take us far away from the 'paper' content format, rapidly ending the days of 'static' content, in favour of so-called 'dynamic' content, where version management becomes critical.

WM&R, drawing upon over 37 years of continuous contribution to the sector, aspires to remain at the forefront of these exciting opportunities. We are currently exploring ways to deliver additional value to our community of authors, reviewers and readers by selectively endorsing the very best practices on the agenda of open and enabling publishing practices. And, by publishing exciting interdisciplinary impactful research, reflecting the emerging drivers for the waste and resources

sector, such as circular economy and plastics pollution, while addressing the pressing Global South crisis. Stay tuned!



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