



UNIVERSITY OF LEEDS

This is a repository copy of *We cannot address global water challenges without social sciences*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/193972/>

Version: Accepted Version

---

**Article:**

Martin-Ortega, J [orcid.org/0000-0003-0002-6772](https://orcid.org/0000-0003-0002-6772) (2023) We cannot address global water challenges without social sciences. *Nature Water*, 1 (1). pp. 2-3. ISSN 2731-6084

<https://doi.org/10.1038/s44221-022-00013-0>

---

This is an author produced version of an article published in *Nature Water*. Uploaded in accordance with the publisher's self-archiving policy.

**Reuse**

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.



[eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk)  
<https://eprints.whiterose.ac.uk/>

## **We cannot address global water challenges without social sciences**

Academics, funders and publishers need to support interdisciplinary research processes in which social sciences are placed on an equal footing with the natural sciences and engineering, argues Julia Martin-Ortega<sup>1</sup>.

When I started my academic career, nearly twenty years ago, it was already widely accepted that social sciences had a key role to play in environmental research, and particularly in water research. Several global initiatives of the 1990s had recognised that water management required taking into account the complex and inextricable ways in which individuals and society relate to this natural resource. The 1992 United Nations Conference on Sustainable Development in Rio De Janeiro endorsed the notion of Integrated Water Resources Management, promoting normative governance principles such as equitable distribution, maximisation of social welfare and public participation, in clear recognition that water management is fundamentally about people. Also in 1992, The Dublin Statement on Water and Sustainable Development acknowledged the central role of women in water provision, and recognised water as an economic good. Around that time, increasing attention was being paid in water policy discourses to indigenous knowledge in Australia and Africa, as well as to the politics of rights to water use in Latin America. The Millennium Development Goals established access to safe drinking water and basic sanitation as one of its targets, further leading to the UN's resolution recognizing it as a human right<sup>2</sup>. In 2000, the European Union adopted the Water Framework Directive<sup>3</sup>, which made its highly ambitious ecological targets conditional to economic efficiency and raised the profile of public participation in water management.

These initiatives spurred multidisciplinary research activity involving social scientists working alongside natural scientists and engineers. New integrative approaches and concepts emerged, such as catchment-based approaches, adaptive management, ecosystem services, socio-ecological systems, the hydro-social cycle, and later, nature-based solutions. Large interdisciplinary water research projects began to attract increasing funding. Social sciences' contributions started appearing in traditional environmental science journals, and journals with an interdisciplinary focus grew considerably.

I personally became a clear 'product' of the times. With a background in environmental sciences and economics, I specialised on how inter and transdisciplinary processes can further the understanding of human-nature relationships and how policy can best make use of this understanding for sustainable land and water management. This involved, for example, working with soil scientists to assess the impacts of peatland degradation on human well-being, or integrating phosphorus flow analysis with stakeholder knowledge to inform food systems' transformation.

Despite all of these encouraging premises, social sciences are still often not placed on equal footing with the rest of the scientific process. In many interdisciplinary research projects social science research is conceived as something that happens *after* the natural science and engineering work is done, or it is not given the same weight in the process. Often social sciences work is limited to produce costings, or assimilated to running knowledge exchange workshops, generating policy outputs or stakeholder evaluation surveys. Also, social scientists still face persistent questioning of the validity of their methods, or even the very existence of a method, especially in qualitative research.

This is not helped by the fact that terms used in the social sciences often also have common usages, which gets confused with there not been technical meanings or meanings ascribed to specific conceptualisations (one can hardly imagine a hydrologist been challenged over the idea of an *eurheic aquatic state* by a social scientist, while the meaning of the concept *values* seems susceptible of dispute by anyone simply because we all hold them). This also relates to the recognition of individuals' contributions and co-authorship (again, it seems that it is easier to end up being co-author in a paper about values if you are a natural scientist than on a paper on eurheic aquatic states if you are the social scientist in the team).

---

<sup>1</sup> Julia is very grateful to Kirsty Blackstock, Klaus Glenk, Christopher Schulz, Joshua Cohen and Peter Gilbert for their valuable comments. She declares no competing interests.

<sup>2</sup> A/RES/64/292.

<sup>3</sup> 2000/60/CE.

Social sciences are going to become ever more important in addressing global water challenges. A recent study by researchers at water@leeds<sup>4</sup> scoped the top 100 water research questions for the coming decade, including those associated with achieving the Sustainable Development Goals. Social sciences are critical across *all* of those questions, from identifying pathways to improve water and sanitation safety, to how water ecosystem processes are affected by human-induced pressures. Academics taking on such questions need to be supported by funders and publishers in a way that the remaining vestiges by which social sciences are subsidiary to other aspects of water research are finally abandoned. Funders and academics should ensure that projects include coherent ways to frame cross-disciplinary discussions, allowing for the space, time and resources for different ontologies and epistemologies to interact, avoiding ‘talking past’ each other and developing, from the design phase, a shared vision of what research is and could be. This does not concern just the boundaries across natural and social sciences; social sciences is a broad church with their own tensions (e.g. a qualitative sociologist might find it easier to communicate with a systems ecologist than a neoclassical economist). Neither are natural scientists to blame for current limitations.

True interdisciplinary projects need to have balanced shares of the budget and personnel across the disciplines they involve. The tendency to assimilate knowledge exchange and dissemination tasks to the social sciences aspects of projects needs to stop; in fact, all natural and social scientists should upskill on activities like producing policy briefs, stakeholder engagement or outreach more generally. Journals with interdisciplinary aspirations need to ensure the work they publish places social sciences at the same level with the natural sciences. Editors need to be inquisitive about the interdisciplinary processes that produced the results presented to them (e.g. how were the strands of knowledge integrated?, is that reflected in the authorship list?). Publishers need to ensure explicitly relevant expertise from their editors and reviewers and use evaluation criteria that accommodate a plurality of epistemologies and methodologies. They could scope-out authors from traditionally social sciences journals and invite them for publication, or even commission work with well-defined interdisciplinary criteria. They could include ‘interdisciplinarity process declarations’ as part of the submission and promote appropriate interdisciplinary classification systems and indexes. We can discuss how it is done, but what is certain is that the only way to address global water challenges for the present and next generations is to genuinely place social sciences at the *core* of the research process.

---

<sup>4</sup> Mdee et al. (2022). The top 100 global water questions: Results of a scoping exercise. *One Earth* 5, 563–573. <https://doi.org/10.1016/j.oneear.2022.04.009>.