



Where Environmental Citizen Science Meets the Law

SPECIAL COLLECTION:
LAW

ESSAY

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ABSTRACT

Editorial for the special collection Where Environmental Citizen Science Meets The Law.

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Citizen science often intersects with the legal realm. Communities in different places in the world are demanding environmental justice through civic monitoring (Haklay and Francis 2018) and are pushing for new regulatory standards (Ottinger 2010). Community-based monitoring has been explored in the literature from both the (global and relative) North and South as a creative and constructive response to citizens' aspiration for justice (Berti Suman 2022; Ahmed et al. 2019; Haklay and Francis 2018). Citizen science broadens the new horizon of environmental justice and flanks traditional environmental (and climate) protest movements (Berti Suman, Schade and Abe 2020). We can identify also a claim to epistemological justice in the systematizing of local knowledge and observations into data that can be used by appointed agencies, in opposition to anecdotal and sporadic evidence (Balazs and Morello-Frosch 2013). Citizen science communities are getting their evidence accepted in court (as the US Formosa case illustrated in Berti Suman and Schade 2021 demonstrates) and are advocating for legitimizing the practice under the Aarhus framework (Berti Suman et al. 2023, in this special issue; Berti Suman 2020). In spite of this, research on the connections between the law, case law, and citizen science is scarce.

This special collection on where environmental citizen science meets the law is therefore timely and important. Throughout, the collection explores different forms of citizen science that are already present or will be more prominent in the legal realm during the coming years. Articles in the collection feature existing conflicts acted out in court, instances in which citizen science is recognized as a means to push for changes in response to gaps in governance, and examples of public institutions getting prepared for, or resisting, citizen science as legitimate input for decision-making. Several of the studies contained in the collection point to the entanglement of the fields of citizen science and law, and the indistinct boundaries between these fields. Therefore, the collection contributes to enriching a promising debate with thorough scholarly analysis. Yet, we also acknowledge the lack of representation of certain geographies in our study, such as Asian or Australian views on citizen science and the law. We also lack the contribution of legal practitioners such as lawmakers, judges, and lawyers that have the experience of working for and/or with citizen scientists.

As authors, we wish to situate this editorial in our daily sociopolitical reality. Currently, local environmentally concerned communities as well as nongovernmental organizations (NGOs) acting in response to political difficulties perceived as captured by intellectual and resourceful elites. Governments, for their part, are often

accused by civil society of a lack of responsiveness, and of being unwilling or unable to tackle pressing environmental challenges. For some civil society groups, national legal systems and international conventions have become an alternative route for advancing decisions and regulations on pressing environmental challenges that they see as neglected by governments, public authorities, and industry. As citizens, we are also met with an increasing interest among national public authorities, governments, multilateral organizations, and NGOs in facilitating a meaningful public engagement in environmental monitoring.

The practice of collecting and using citizen observations to attain environmental goals, epistemic representation, and environmental justice through legal systems has emerged as an important focal point, encompassing politics, regulation, law, and public engagement in science. When political representation fails, concerned groups push for epistemic representation—and subsequent legal and governmental changes. Knowledge about the possibilities, limitations and complexities of using environmental citizen observations, or other actions, within such contexts is, however, scarce (Kasperowski and Hagen 2022). But it is increasingly important, as courts become platforms for politics of biodiversity protection, climate change, environmental pollution interventions, and cultural heritage preservation, among others. Courts have the power to push for changes in legal structures in response to conflicts and governmental inertia. We witness how grassroots actors are entering courts to connect to overarching trends, are overriding narrow-minded national governments, and are also attacking big corporations and other private actors. The contributions to this special collection address such issues of politics, regulation, law, representation, justice claims, and public engagement in science—and we hope will inspire further studies.

In her research paper, **Obstacles to the Use of Citizen Data in Environmental Litigation before East African Courts**, Sonja Kahl connects the colonial origins of environmental legislation with current environmental citizen science. The colonial legacy of the legal framework not only facilitates the exploitation of natural resources, but also gears towards excluding local populations from decision-making. Paired with non-existing or less developed standards for air, soil, and water quality, the legal systems in the three East African countries examined in this paper push concerned communities into procedural difficulties in court proceedings. The paper identifies several obstacles to the use of citizen data in court litigations in East Africa, including the risk of retaliation from states or private sectors. This is particularly

problematic since expert data on environmental issues is not always available, and citizen science would have the potential to fill the gaps of the official environmental knowledge base in the region.

Anna Berti Suman, Mara Balestrini, Muki Haklay, and Sven Schade explore the intersections of citizen science, law, and governance that are at stake when ordinary people engage in environmental monitoring. Their research paper, **When Concerned People Produce Environmental Information: A Need to Re-think Existing Legal Frameworks and Governance Models?**, investigates the possibilities of local communities to self-organize in collecting and analyzing environmental data and how such initiatives might challenge conventional distribution of responsibilities between appointed authorities, private actors, and citizens. Existing legal frameworks and governance models may need to be reformulated to make space for citizen-gathered data in decision-making. Scenarios are provided of how international frameworks like the Aarhus Convention could be expanded to include a civic “right to contribute environmental information” especially when public institutions struggle to fulfill their duties. The central issue is, who should be entitled to initiate this adaptation, and how? Should this be carried out only via appointed institutions or through participatory and consensus processes that include ordinary people? At which level should governance adaptations occur, to not only re-think but actually re-do existing legal frameworks and governance models?

The two remaining papers offer case studies from two ends of a continuum, local activism on the one hand, and on the other, how public authorities strive for a participatory, active, “data-driven” citizenship through changes in legal structures.

Turning to the context of the US, the case study by George Wyeth, **Integrating Citizen Science into the Work of US Environmental Agencies** is an exploration of the challenges faced by public authorities to include legal structures facilitating citizen science. Wyeth summarizes the findings of a survey carried out by the Environmental Law Institute in Washington DC during 2020 on how states, tribes, and local governments use citizen science data, facilitate citizen science, and use technologies to aid observations by the public. Despite many successful local initiatives on water and air quality, the challenge is institutional. A centralized leadership to collect and share existing expertise emerging out of many local initiatives of citizen science—a collection from which we can learn and build—does not exist. The lack of such leadership, it is argued, is a fundamental obstacle to collective action and enforcement and where efforts at further progress will need to focus.

The case study by Robert Evans, Nick Hacking, and Jamie Lewis, **Citizen Science As More Than Data: Community Activism Meets the UK Planning Process**, illustrates how concerned groups push for epistemic representation and changes in local political decision-making. Evans et al. describe the possibilities, limitations, and complexities of environmental citizen science when observations are not possible. But observations in citizen science are possible in “an extended citizen peer review” in the challenge brought against the formal risk assessment of the development of a biomass incinerator plant. Evans et al. provide insights to how citizens use legal and other means, illustrating that an understanding of citizen science in relation to law must be extended, beyond data collection. They argue for encompassing the heterogeneity of work that defines more ordinary forms of science. Just as scientists can be seen as “doing science” when they perform peer review, give advice, and contribute to regulatory decisions, citizens engaged in the similar activities should likewise be recognized as doing a form of science.

This special collection of papers provides the reader with several examples of issues where citizen science enters the legal realm, signaling that there is already a conflict, whereas other articles posit that when citizen science is recognized by the law this can mean an encounter, preventing conflicts at a later stage. Our vision for the future is that citizen science will increasingly confront and navigate the legal interface. We also envisage greater engagement of practitioners in the field, such as lawyers and judges, and most importantly lawmakers. Indeed, the law can widen participation, enables groups with limited financial means to partake in civic environmental monitoring initiatives, and ensures that such activity is not hindered by established institutions. However, the law can also be a possible obstacle for the citizen scientists having to comply with new regulations and enabling governments to be gate-keepers in defining which initiatives can be considered citizen science and thus granted protection. Citizen science makes values and collective desires highly visible as it claims epistemic representation and justice. It is “interested” science as it brings forward people’s demands for a different handling of environmental issues and the complexity of the wicked problems of our times. This has implications, which have not been duly considered so far in national and legal frameworks, especially across Europe (Kasperowski and Hagen 2022). This special collection hopefully will spur further interest in the issues of citizen science and law, not only concerning the themes discussed in the articles contained therein, such as environmental pollution, biodiversity, and climate change, but also still-unaddressed themes such as social inequalities and societal polarization.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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