



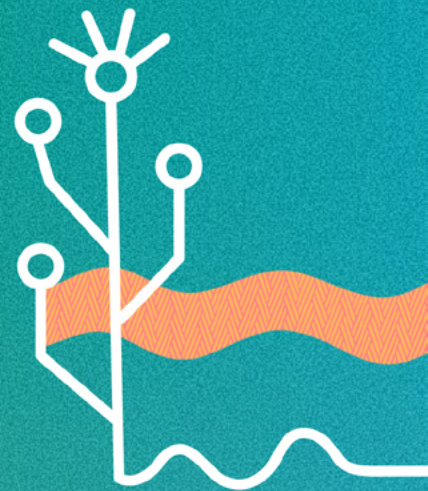

Climate Justice & the Knowledge Commons:



Opportunities for the digital rights space

June 2022

*Open Environmental Data Project
and Open Climate*



This issue brief, “Climate Justice & the Knowledge Commons: Opportunities for the digital rights space” written by Evelin Heidel, Shannon Dosemangen, Katie Hoerberling, is part of a larger body of work around the intersection of digital rights with environmental and climate justice, supported by the Ford Foundation, Ariadne and Mozilla Foundation. **This research project aims at better equipping digital rights funders to craft grantmaking strategies that maximise impact on these issues.**

This brief was published alongside several publications, including a research report mapping the landscape at this intersection by The Engine Room, and issue briefs by Association for Progressive Communications (APC), BSR, and the Open Environmental Data Project and Open Climate.

All publications can be found at

<https://engn.it/climatejusticedigitalrights>



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Abstract:

Open source has long intersected with climate justice, both materially (e.g., software, hardware, licenses, etc.) and philosophically (e.g. practices of collaboration, transparency, governance). This issue brief is written for digital rights funders and builds on the work explored in the authors' 2021 article, [Open Climate Now](#), to understand how the open, digital rights, and climate movements can break down existing barriers – real or perceived – with a goal of building better modes of collaboration in shared and movement-specific priorities.

To understand the positionality of this brief, we recommend readers review the author note at the end of this document.

Issue Summary:

- + The open and digital rights movements provide a framework and tools for using transparency and access to expand participation in climate action. To best leverage these, their principles should be integrated into international regulatory frameworks and decision-making bodies.
- + Misinformation spread online about climate change has slowed efforts to advance meaningful action and policy. Corporate solutions to this problem have been largely ineffective.
- + The digital knowledge commons will be a critical space for facilitating communication about, and collaboration around, climate action. Resources are needed, however, to ensure these spaces remain accessible and inclusive, and that they don't perpetuate existing social injustices.
- + Several barriers to accessing the digital knowledge commons and climate science spaces have resulted in lack of representation and access for the most at-risk groups. This is at odds with the values of the open, digital rights, and climate justice movements.
- + Intellectual property paradigms, especially in tech and scientific spaces, can prevent the open exchange of information that is critical for finding effective and just solutions to climate change.
- + Conversations in the open, digital rights, and climate justice movements, respectively, tend to happen in siloes with limited efforts towards cross-pollination or collaboration.



Recommendations:

01.

Support coalition building around the intersection of digital rights and climate justice topics, such as online misinformation on climate change.

02.

Invest in research to understand the challenges posed by online misinformation about climate change, particularly in languages other than English and regions outside the U.S. and Europe.

03.

Connect open knowledge production tools (e.g., critical digital infrastructure, open data projects, and open scientific hardware) with digital rights and climate justice.

04.

Support learning opportunities to create capacity for positive socio-environmental change among digital rights organizations so they can understand and identify climate-related threats and opportunities.

05.

Create a principles framework for digital rights funders to support incorporation of a climate lens into the work of digital rights organizations.



An open movement in service of climate justice

For a long time, openness has been overlooked as a prerequisite for how we collectively grapple with the climate crisis. To address climate change with a justice-centered approach, investment in open practices is necessary, especially for creating alternative futures, ones founded on practices that place people and planet at the center of interventions.

For digital rights groups, engaging with the climate crisis represents an opportunity to build bridges with one of the most important, thriving social movements of the era: the climate justice movement. Digital rights groups and climate activists working together in common spaces could allow these communities to collaboratively identify a set of values that are concrete and actionable for both movements.

Open access to knowledge commons (publications, data, software, hardware) is an under-examined paradigm for connecting the climate justice and digital rights movements. The Internet and digital technologies gave rise to the “digital knowledge commons”. This powerful idea shaped many early interactions on the Internet, but has since been obscured by the rise of Big Tech. We refer to **knowledge commons** as information and other intellectual goods held collectively by a group or groups of people and largely managed by community norms, be it over the Internet or elsewhere.

The knowledge commons is powerful because we understand the open tactics and principles underlying it as inroads to helping build trust between digital rights groups and climate activists in community-led environments. These commons can also enable more robust and diverse participation in science, policy, and organizing. For these reasons, we return to knowledge commons as a theme throughout this brief.



Drawing from our experiences and collaborations working at the intersection of the climate and open movements, we believe there are five major areas where digital rights groups can collaborate with climate justice activists through the knowledge commons:

- + Addressing misinformation around climate change on social media platforms, especially in languages other than English, and in countries other than the U.S. and Europe.
- + Understanding how intellectual property might act as a barrier for knowledge about the climate crisis or for the deployment of climate solutions.
- + Building a linguistically, geographically, and socially diverse knowledge commons with open tools that can address important knowledge gaps on climate change information, including climate crisis responses.
- + Exploring new *future narratives* to build a common path towards a better Internet: more just, inclusive, and equitable.
- + Using a climate lens to analyze digital rights issues, such as privacy, surveillance or artificial intelligence, and understanding how climate change might impact digital rights.

In the five sections below we examine these topics and the interplay between digital rights, open/knowledge commons, and climate justice.



Addressing misinformation on climate change

Since its origins, the climate justice movement has dealt with misinformation. Oil and gas companies implemented print and digital media tactics to hide, obscure, or change the conversation around climate change (Supran & Oreskes [2021](#)), which have hindered important climate policies and policymaking over the years (Pierre & Neuman [2021](#)). Digital rights groups and climate activists each have a unique understanding of the lessons to be learned from over four decades of misinformation perpetuated by corporations – a dialogue between these two groups could yield insights for addressing current online misinformation scenarios.

In particular, climate activists are turning their attention to misinformation on social media. Problematically, the onus for combating misinformation on climate change remains largely on individuals who are expected to verify and respond to claims themselves (Treen et al. [2020](#); Treen et al. [2020b](#)). This is partially why environmental activist groups have called for governments and tech companies (especially Facebook) to act on online misinformation on climate change (Friends of the Earth [2021](#); WWF [2021](#)). Several such groups presented an open letter at COP26 regarding tackling misinformation online, but few digital rights groups signed ([#TogetherWeCan 2021](#)), signifying a growing need for collaboration.

The conversation about online misinformation is still predominantly framed in an Anglo-European context, which obscures where and in which languages people have the greatest problems regarding misinformation and access to basic scientific research (Saudelli [2021](#); The Arab Weekly [2021](#)). Underrepresented languages in the online climate conversation correspond to the same regions that already suffer the most severe impacts of climate change. These regions have less, if any, access to basic scientific climate research (largely written in English), scientific literacy, and public media to help with interpreting or communicating research. This information gap affects large swaths of the public, as well as policymakers (Ryan et al. [2019](#)), so climate activists turn to social media to bridge the knowledge



gaps on climate change in their own languages and contexts: their audiences need accessible, clear, and accurate information about the climate crisis, how it will affect their lives, and how society can adapt. However, for climate change, in particular, languages other than English and countries outside Western Europe and the U.S. are being targeted by misinformation campaigns that use subtle tactics to sow doubt around scientific evidence about the existence and impacts of climate change (Coan et al. [2021](#); Stinson [2021](#); Silva [2021](#)). With misinformation on climate change rampant in their countries or languages, these climate activists are working in an uneven playing field.

Tactics that incorporate openness offer avenues to re-distribute power and re-define knowledge equitably. Openness can be a mechanism for elevating accessibility and more diverse perspectives and values, such as local knowledge on the impacts of climate change. In turn, these can transform the climate solution space into one that is locally relevant and culturally appropriate, supporting communication for local mitigation or adaptation strategies. Openness can simultaneously help us engage in a global dialogue about climate change to maintain a global knowledge commons while ensuring local perspectives are considered and protected.



Ineffective corporate responses to misinformation on climate change

Corporate solutions to misinformation on climate change follow a pattern well-known by digital rights groups: prioritizing self-regulation and corporate policies above all. For example, Facebook has created a “Climate Information Center” on its own platform, but it receives fewer visits than posts containing climate misinformation, is only available in a few languages, and does not stop misinformation from spreading on the platform (Calma [2021](#); Kahn [2021](#); Lapowsky [2021](#); Bateman [2021](#)).

Google has taken a similar approach, pledging to demonetize misinformation on climate change, particularly on YouTube (Agustin [2021](#)). But what constitutes climate change denial for YouTube? Recognition of climate change and outright denial exist at two ends of a large spectrum (Treen et al. [2020](#)). The lack of oversight boards, government regulation, accountability mechanisms, and linguistic and geographic regions outside the U.S. and Europe make the promise of demonetizing content a halfway solution.

To address misinformation on climate change, multiple approaches should be adopted, from community participation to public policy advocacy to coalition building, and there is ample room here for ideation and collaboration between digital rights groups and climate activists. It is worth pointing out that more research is needed in this area, particularly in languages other than English and in regions outside the U.S. and Europe, where we have less clarity on the extent of the problem.



Intellectual property as a barrier to climate knowledge

Intellectual property is a broad subject, comprising patents, copyright, plant varieties, and industrial designs, among others. Many solutions to the climate and environmental crisis currently face barriers related to intellectual property (IP) and access to the outputs of scientific research (i.e., articles, data, code, and other materials). Furthermore, current academic paradigms mean that the scientific knowledge produced in elite institutions in the Global North is more widely recognized and valued than that which is produced in the Global South. Such an imbalance in the ability to share and use critical information only slows climate action.

There is an ongoing debate around the importance of IP in technology transfer of Environmentally Sound Technologies (EST). Some of these debates have been summarized in Ghaleigh [2011](#), Abdel-Latif [2014](#) and Zhou [2019](#). However, the debates don't end with patents or in the transfer of EST. There are several sectors where IP is acting as a barrier to the solutions needed for the climate and environmental crises. Here we offer a non-exhaustive list:

- + Large agriculture tech firms often patent genetically modified seeds, as well as precision agriculture methods and technologies, forcing smallholder farm communities to rely on their IP. This has made it difficult for many to adopt sustainable practices and has deepened disparities in food production between Global South and North countries.
- + Cultural heritage institutions face copyright challenges that prevent them from preserving important cultural artifacts from the impacts of climate change (IFLA [2020](#)).



- ✚ Online education will become more common as climate-related threats increase, but copyright can prevent the online sharing of educational materials. The challenges faced with COVID-19 offer a blueprint of possible scenarios (Education International [2020](#); Program on Information Justice and Intellectual Property [2021](#); Hackett [2020](#)).
- ✚ Restrictions imposed by scientific journals or research institutions have led to an unequal exchange of knowledge among scientists and have hindered the ability of the climate movement to disseminate information about climate change.

In some regions, copyright was the first topic that many digital rights groups started working on (e.g., organizations such as [Derechos Digitales](#), [CIS](#), or even [EDRi](#) had strong copyright components). As the agenda and priorities changed, funders' support for copyright issues disappeared. However, this is an organizational capacity that many digital rights groups still have. A new generation of climate activists connected with the digital rights movement might find the case compelling: the current intellectual property paradigm will seriously limit the climate justice solutions that can be deployed, particularly in the Global South. An easy first step would be to facilitate dialogue that could spark more connections between the agendas of the open, digital rights, and climate justice movements.



Regaining agency of knowledge on climate problems and solutions using open source methods and tools

Climate justice requires a paradigmatic shift in the tools of knowledge production, sharing, and access. Concealing knowledge creates harmful divisions between so-called experts and non-experts – and between producers and consumers of knowledge – limiting our ability to create holistic approaches to climate action. Monopolizing knowledge is short-sighted and impedes collaborative and sustainable action (from work in the atmospheric sciences, to engineering and design, to the incorporation of local community knowledge and lived experiences in policy). Even the most respected climate science organizations like the [IPCC](#) are not immune to major contradictions, pitfalls, and limitations on knowledge, such as geographical and gender gaps (Schonhardt [2021](#); Tandon [2021](#)). Openness can help transform hegemonic power structures by examining information production, sharing, and dissemination and recentring traditionally underserved voices and communities.

Promising models abound in this arena, including well-known digital communities such as Wikipedia or Open Street Maps, and more recent efforts such as the Open Climate community. As laid out in “*Open Climate Now*”, (Dosemagen et al. [2021](#)), *open communities...*” open communities can work to achieve equity and representation through the spaces they create: “[solutions like Wikipedia and Open Street Maps] can collaborate with the 230 million Bangla speakers most of whom live in one of the most at-risk spaces in the world for sea-level rise; or the aging 30% of the population of the Philippines working in agricultural areas sensitive to sea-level rise, extreme weather and cyclones, and speak only Bikol, Tagalog, Cebuano or 100+ other languages.” Cultural heritage institutions and scientific research projects (e.g., the [Stories of Extraction](#) by [Climate Museum UK](#) or networks of citizen science projects such as [Cientópolis](#)) are also enhancing their efforts to decentralize knowledge from traditional spaces. While this work is not without contradictions, there is an important focus on the ability of underrepresented groups to reclaim agency in creating and contributing knowledge through self-representation.



The knowledge commons can be a productive space to focus on mechanisms for policy change and shifts in regulatory frameworks that allow for more resilient infrastructure. For example, several governing bodies and collaborative agreements have demonstrated that they are receptive to input from participatory science, such as citizen and community science (e.g., NACEPT [2016](#); European Commission [2021](#); Escazú Agreement [2018](#)).

However, several issues (e.g., lack of funding, perverse incentives, incomplete or unrealistic standards, inaccessible tools, outdated rules and regulations, etc.) can limit the ability to use this data in meaningful ways (Open Environmental Data Project [2020](#)). Supporting communities doing this work – as discussed in the issue brief, *Environmental Justice, Climate Justice and the Space of Digital Rights* – might also help accelerate needed policy change. This is particularly true when looking at the data and scientific requirements that financing agencies, such as the Global Climate Fund, require from countries to approve basic concept notes in their funding processes (Scardamaglia [2019](#); UNFCCC [2019](#); GCF [2021](#)). Understanding the opportunities and challenges for data and science to drive climate change policies at the country and sub-national level is important.

On the other side of the environmental data spectrum, open knowledge projects could help bring greater transparency and usability of data generated by government agencies (e.g., [Beyond Compliance Network](#), [Climate Action Tracker](#), [Open Air Quality](#), [Our World in Data](#), among others). Open knowledge projects could also help in cases where there are political tensions and environmental conflicts. For example, there are several projects that take air quality measurements, push for regulatory frameworks over hazardous substances, or conduct community surveys about the use of toxic agrochemicals near populated areas. These projects are not explicitly “open,” but their tactics draw from principles that are likewise key to openness: trust, transparency, and community-driven knowledge, to name a few.

This work needs to be systematized and integrated into regulatory frameworks and international recommendations because it is local, contextualized knowledge that serves the needed local mitigation and adaptation solutions. Spaces where open knowledge projects could have a significant impact include the rollout of the recent Memorandum of Indigenous Traditional Ecological Knowledge (ITEK) and Federal Decision Making by the U.S. White House (White House [2021](#)) or the Escazú Agreement in Latin America (Escazú Agreement [2018](#)). Some of the provisions of the White House ITEK Memorandum and the Escazú Agreement can and should be served through digital technologies since they provide an easy way to generate and deliver access to information. This is true of several other obligations framed in the current policy ecosystem on environmental and climate issues.



However, more work is needed to develop the ecosystem and infrastructure necessary for supporting a climate knowledge commons with grassroots initiatives. Beyond receiving more support for maintaining key infrastructure, this work must also prioritize building an understanding of how these tactics might impact other rights, such as privacy. Conversely, open responses must be rooted in the overall knowledge needs of the climate justice movement. The outcomes of assessing such needs might be more uncertain, so there should be room for controlled experimentation and failure.



Narratives of Internet and infrastructure in a climate-stressed world

As a global project, the Internet was meant to connect people across the world to exchange ideas and information. Inspired by a larger ecosystem of inquiry and imagination, the utopian, futuristic, sometimes humanitarian narratives that emerged about the Internet provided society with a solid framework for what it was meant to be. Re-enacting some of these spaces of inquiry around future narratives could lead to productive conversation and agreement around the priorities and practices of digital rights and climate activists (see [Branch](#), [Superflux](#), and [Quicksand Design Studio](#) for work that is already happening in this regard). They could also provide a framework for imagining human-centered futures where technology is an aid – not an enemy or a threat. These utopias could act as a counter-response to some of the current narratives around the future – particularly those being put forward by tech billionaires.

While the creation of “space to explore” might sound abstract, the future of technologies, including digital technologies, is currently being imagined by big-tech companies that have their own plans to escape the climate crisis (O’Connell [2018](#)). Creating alternative ways to imagine this future is crucial to understanding the larger picture that inspires and guides activist action, with “open” being one of the core principles that will allow us to paint that picture more vividly. An inspiring narrative is particularly important for the climate space where research shows that the most commonly used climate change communication tactics tend to focus on doom and gloom and have yet to create lasting engagement (Stoknes 2014; Yale Climate Communication Program [2021](#)). Conversations focused on future narratives for the Internet between digital rights and climate activists might spark inspiring and unexpected connections.



Using a “climate lens” to understand digital rights issues

The climate crisis affects every aspect of society from health, to housing, to our information infrastructure: its impacts will be long-lasting and far-reaching. Stakeholders who typically wouldn't have seen a role for themselves in addressing the crisis are now incorporating it into their work practices and future planning. While the introduction of different actors into this space has surfaced new tensions, the inherently cross-cutting impacts of the climate crisis cannot be solved by any one sector on its own.

For the digital rights space, this means that the conversation should expand beyond individuals who already have a personal interest in the subject. Not everyone needs to become a climate expert, but those working in digital rights should be aware of the impacts the climate crisis will have on different geographies, economies, and factions of society. This is where we believe a *climate lens* is immensely useful: there is a great opportunity for the digital rights movement to further contextualize and bring attention to its mission by building capacity and a common framework for approaching the challenges raised by climate change.

Using the climate crisis as an analytical lens can help shed light on old and ongoing problems for digital rights activists. Digital rights issues such as surveillance, ransomware attacks, migration, biometric authentication, and corporate sustainability can all be examined by asking questions related to climate change: How do these contribute to the climate crisis? How are their associated problems or challenges exacerbated by it? And how do they impact climate change adaptation and mitigation?

The knowledge commons are an important element of framing these questions. Open can offer more transparency and accountability around some of the problems analyzed through a climate lens, and be incorporated as part of the solution. To date, few alternative models have been funded or tested on a large enough



scale to effectively challenge some of the predominant paradigms around the intersection between the climate crisis and digital rights. Open can be used as a framework for changing ways of governance over the knowledge commons and has potential to support the re-distribution of power.

Building digital rights groups' capacity to interact with the climate crisis means investing in organizational assets that will bring impactful returns. Climate change variables will affect every business and government decision for the foreseeable future. The sooner digital rights activists understand how the climate crisis connects to their work, the greater opportunities they will have for achieving their mission.



Recommendations for digital rights funders

01 • **Support coalition building around the intersection of digital rights and climate justice topics, such as online misinformation on climate change.** The open movement can support coalition-building by providing accessible spaces for the different movements to learn from each other, identify common values, build consensus on shared priorities, spark imagination about a better Internet, and pursue goals and actions collaboratively. Funders should support efforts to make these common spaces more accessible and responsive to communities who seek to leverage collaborations towards locally-driven climate justice and digital rights work. This work will have diverse approaches, from communities like Open Climate to groups like WhoseKnowledge? who are centering knowledge from underrepresented populations worldwide in these conversations.

02 • **Invest in research and understanding of the challenges of online misinformation on climate change, particularly in languages other than English and regions outside the U.S. and Europe.** The open movement and the knowledge commons can help identify large knowledge gaps (in information on climate change, knowledge about misinformation, and in understanding the climate crisis) and provide strategies for filling those gaps. The open movement can provide models for better knowledge management and governance that slow the spread of misinformation online. Finally, the open movement can support coalition building to demand more transparency and accountability from social media companies and other corporations who provide platforms where misinformation thrives.



03 ● **Connect open knowledge production tools (e.g., critical digital infrastructure, open data projects, and open scientific hardware) with digital rights and climate justice.**

Expanding the ability to share and interpret data can serve to diversify the voices and perspectives that are part of the knowledge commons. We also require greater access to existing data and information that can help us make better informed and less biased decisions about addressing the climate crisis – especially in languages and knowledge environments that don't have strong climate-communication communities. Open tools that feed into knowledge commons, including those that provide alternatives to dominant IP paradigms, can support greater diversity in creating information. They can also center knowledge from underrepresented and climate-vulnerable communities. Critical digital infrastructure projects in support of addressing the climate crisis need consistent support that also provides a better, more just, and sustainable model for maintaining essential infrastructure.

04 ● **Support learning opportunities to create capacity for positive socio-environmental change among digital rights organizations so they can understand and identify climate-related threats and opportunities.**

Structured learning opportunities (i.e., fellowships, leadership cohorts, trainings) can support organizations in better understanding climate change. A deep understanding of the issues and approaches taken by climate justice communities will help digital rights advocates frame the conversation in useful ways that allow for enduring and substantial connections. These learning opportunities should demonstrate how open tools and approaches can be leveraged to inform and amplify climate justice work, and by sharing lessons and outputs in knowledge commons spaces to increase access. They can also connect with spaces for continued conversation, learning, and coalition-building, such as Open Climate calls.

05 ● **Create a principles framework for digital rights funders to support incorporation of a climate lens into the work of digital rights organizations.**

Organizations can establish a set of basic principles with a climate lens (e.g., using the [Europeana Climate Action Manifesto](#) as a model). Funders can catalyze change by prompting potential grantees with questions such as “How does the program/project address climate concerns?”. Organizations working in the open movement and the knowledge commons should adopt similar principles and can help draft those for funders. The open movement can support these efforts by sharing lessons from how their models have evolved while maintaining core values (e.g., the [Contributor Covenant](#)).



Conclusion: Leveraging the knowledge commons and open tools to support the reimagining and building of more just futures

The open, digital rights, and climate justice movements have made slow but significant progress in recent years toward their respective goals. Recent evidence, however, particularly on the severity and timeline of climate change and the impacts digital technologies are having on society, has prompted a renewed sense of urgency to do what we can to reduce impact and to adapt to new realities. There is an opportunity for these three movements to come together, not only to amplify and accelerate the work of each but to work more effectively toward our common goals of justice and sustainability.

The knowledge commons can provide particularly useful spaces for inquiry around historic and ongoing impacts of climate change and digital technology, as well as for building future narratives and identifying priorities and practices for climate and digital rights activists. We can reimagine the internet itself – a project of the unique combination of engineering, science, imagination, and global collaboration – to support such conversations. To paraphrase “The Age of Surveillance Capitalism” (Zuboff 2019), digital technologies are social constructs – not inevitable, non-human futures. As such, they are subject to social negotiations around the ways in which they are built.

We require new spaces in which to imagine the future, to guide and inspire our respective movements, as well as our collaborative work. Funders in the digital rights space can and should play their part in supporting such movement-building.



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Author Note

This issue brief does not reflect all of the challenges or benefits of the open movement (i.e., the lack of geographical, gender, and racial diversity of open knowledge contributors or the questionable endeavors in which open knowledge sometimes has been put to use). There has been significant analysis around these topics, as discussed in our *Open Climate Now* article. The open movement's early origins made it a homogenous movement that excluded (and in cases *still* excludes) women, LGBTQIA+, people of color, those from the Global South, and other underrepresented groups.

However, there are efforts underway to make the open movement more inclusive. Open activists have started to focus on the complexities and contradictions that have limited who has been able to be part of the open movement. There is still much progress to be made, but in a change from the early days of the open movement, new voices and leadership are surfacing. They are connecting the larger knowledge commons with social justice issues, from gender to climate change.



Acknowledgments

Thank you to the following people for lending your time and expertise at the intersection of these topics in reviewing this document: Michael Weinberg (Engelberg Center on Innovation Law & Policy, NYU Law), Emelia Williams (Open Environmental Data Project), Emilio Velis (Appropedia), Alex Stinson (Wikimedia Foundation), Ashley Schuett (The Wilson Center, George Washington University Graduate Student), Alison Parker (Woodrow Wilson International Center for Scholars), Luis Felipe R. Murillo (University of Notre Dame), Michelle Cheripka (Open Environmental Data Project), Marcela Basch (El Plan C - Comunes), Julieta Arancio (Postdoctoral researcher at Center for Science, Technology and Society, Drexel University), members of the [Digital Rights Funders Collective](#), and additional anonymous reviewers.



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