At the interstice of digital rights and environmental justice:

Four issue briefs to inform funding

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Association for Progressive Communications

These issue briefs written by Association for Progressive Communications (APC), are 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.**

These issue briefs by APC were published alongside several publications, including a research report mapping the landscape at this intersection by The Engine Room, and issue briefs by BSR and the Open Environmental Data and Open Climate.

All publications can be found at

https://engn.it/climatejusticedigitalrights

Overview

In mid-2021, the Association for Progressive Communications (APC) was asked by Ariadne Network, the Technology and Society Program at the Ford Foundation and the Mozilla Foundation to prepare a series of short issue briefs for funders on potential priority areas for funding activities or initiatives that would bring the work of digital rights organisations and environmental justice actors closer together. The context was the recognition that there was a need for the two groups to work more collaboratively given the global environmental and climate emergency.

APC proposed four briefs, which are outlined below, and can be read in full alongside this document. The briefs are different in focus and style, but nevertheless follow the same structure and approach in identifying key areas for intervention. Each brief states the key problem from the perspective of the APC network, suggests mechanisms or processes for engagement and actors we feel are worth engaging, and includes specific recommendations for donors.

Also included below is a summary of top-level recommendations common to all of the briefs, which highlight the need for building trust between digital rights organisations and environmental justice actors, an awareness of each other's priorities and ways of engagement, collaborative frameworks for action, including through research and capacity building, as well as identifying new ways of outreach and engagement. The briefs include APC's perspectives on how best to approach these needs and recommended processes, based on years of experience in working collaboratively on digital rights.

The briefs have been developed through a collaborative process that involved input and feedback from a small group of interested members, partners and allies

in APC's Technology, Environmental Justice and Sustainability Initiative.[01] APC circulated drafts of the briefs for input and convened two online meetings to discuss the briefs, with an aim to ensure that they represented the perspectives and concerns of the APC network working in the global South.

While there are many other important fields of activity that need funding and further exploration, and no doubt other actors and networks worth engaging not identified in the briefs, it was hoped that the briefs would at least be able to provide reference points for collaboration between digital rights organisations and environmental justice actors, and areas of immediate impact and intervention for donors. They should therefore be read as the beginning of a broader conversation, rather than ends in themselves.

01 https://www.apc.org/en/project/technology-environmental-justice-and-sustainability

Overview of the briefs

The briefs cover the following areas:

01 Mapping the gaps between digital rights and environmental justice actors in the global South

The brief draws on key findings from background research conducted by APC, as well as on two issues of Global Information Society Watch[02] published on the topic of environmental sustainability and technology from a social justice perspective. It identifies key gaps between the advocacy work and approaches of digital rights organisations and environmental justice actors, as well as potential low-hanging fruits for closer collaboration.

02 Environmental and digital rights: Exploring the potential for interplay and mutual reinforcement for better governance

The brief explores environmental governance principles and processes from the perspective of their potential contributions to the governance of the internet and digital technologies. It stresses the importance of Principle 10 of the Rio Declaration, on access to information, public participation in decision making and access to justice, and of the European Union's environmental policy principles and rights, which could be used to strengthen good internet governance.

02 Global Information Society Watch (GISWatch) is an annual report published by APC. It reflects the views of digital rights actors in the global South. See: https://giswatch.org

03 Extractivism, mining and technology in the global South: Towards a common agenda for action

The brief provides an overview of key concerns in the formal and informal mining of minerals used in the production of technology from a digital rights perspective. It stresses the importance of framing the extraction of these minerals, and the impact on environmental and community rights, within the broader context of the extractive business models employed by big tech companies.

04 Addressing the impact of disinformation on environmental movements through collaboration

The brief provides an overview of environmental and climate disinformation, and the role of the tech industry in supporting the disruption of environmental advocacy. It points to the need for collaborations between digital rights organisations and environmental justice actors to understand and address environmental disinformation in a nuanced way.

Key recommendations

The following are the top-level recommendations common to all briefs:

01. Creating common spaces for digital rights organisations and environmental justice actors to build trust, exchange strategies and create common agendas

All four briefs identify the need to create spaces, whether offline or online, where digital rights organisations and environmental justice actors from the global South can come together for meaningful exchanges. These are critical to build long-term trust and understanding of each other's perspectives, and to learn from each other's advocacy strategies and obstacles. From these convenings, common or coordinated advocacy agendas can be developed.

02. Developing shared advocacy tools and knowledge hubs: Collaborative research and information sharing

All four briefs identify the need for further research to develop specific knowledge areas. Research is needed at the global, regional, country and local level, where the nuances of issues in practice can be better understood. Mechanisms to increase information and knowledge sharing, including advocacy tools, between digital rights organisations and environmental justice actors, as well as aligned groups and institutions,[03] are necessary. Research interventions are seen as an opportunity for building knowledge collaboratively and strengthening advocacy alliances between digital rights and environmental justice actors.

03 For example, local environmental research projects and universities. The sharing of advocacy tools is linked to building the advocacy capacity of digital rights organisations and environmental justice actors in recommendation 3.

03. Capacity building

Several areas of capacity building were identified by the briefs. These included strengthening the capacity of digital rights organisations to respond to the needs of environmental justice actors, building the digital capacity of environmental justice actors, developing the capacity of digital rights organisations to litigate, and building capacity at the local and community level in different ways using community networks as a catalyst for interventions.

04. Outreach, engagement and advocacy across fields

Related to key recommendations 1 and 2, the briefs identified the need to break the "echo chamber" of engaging only in known policy spaces and processes by encouraging digital rights organisations and environmental justice actors to work across new thematic areas and in fresh ways. This included, for example, funding the participation of environmental justice actors at the Internet Governance Forum, or exploring synergies with projects or initiatives relevant to advocacy goals, but which might frame their work differently, advocate in new and interesting ways, or have different ways of engaging stakeholders. For the latter, the funding of litigation for digital rights actors working at the interstice of technology and the environment may be necessary.

Lastly, aligned with APC's approach to advocacy, it is recommended that these interventions be framed within feminist principles;[04] adopt intersectional approaches; respect the sovereignty, self-determination and rights of Indigenous peoples and traditional communities; contribute to the fight against environmental racism; and foster communities of digital safety and care.

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04 See, for instance, the Feminist Principles of the Internet: feministinternet.org

Acknowledgements

The following people and organisations contributed to the development of the four issue briefs:

Brief No. 1

Mapping the gaps between digital rights and environmental justice actors in the global South

Problem statement

Over the past decades a gulf has emerged between digital rights activists, focused primarily on digital freedoms and access, and the activities of environmental justice actors, particularly in the global South. While a number of digital rights organisations have addressed environmental issues in a sustained way at the local level, for the majority, projects have been ad hoc, limited or focused on specific topics or issues,[01] rather than environmental activism being a core strategic concern. Although there are attempts to mainstream environmental concerns in international internet governance bodies,[02] these can be ambivalent in their outcomes, or limited in their mandate. Perhaps because of this lack of a coherent and meaningful environmental agenda, many environmental justice actors have become estranged from the concerns of digital rights activists, and many of the natural intersections between the concerns of the two groups have become opaque or left unattended. Given the growing pressure from the environmental and climate emergency, there is a need for a greater collaboration and understanding between digital rights and environmental justice actors, as well as a deepening of a commitment to environmental justice among digital rights organisations.

[01] This is necessarily a practical generalisation and based mostly on APC's work with its members and networks in the global South and its engagement in global internet governance forums. No global scan of digital rights organisations and their environmental concerns has been done.

[02] For example, the UN Internet Governance Forum (IGF) has a track on the environment.

Problem description

Recent research[03] by APC supported the view that important gaps existed in the global South between the work of digital rights organisations, focused primarily on internet freedoms and rights, and the work of environment justice organisations. These gaps were evident in four key respects:

01 Awareness of each other's advocacy terrains

Many digital rights organisations, particularly those involved in advocacy for internet rights and freedoms at the national and global levels, appeared to have little practical awareness of the environmental justice agenda, its forums for engagement, the actors involved, and its policy advocacy frameworks. At the same time, key environmental justice actors appeared to have a low level of awareness of what digital rights entail, or a clear idea of how these may be relevant to their work, and have little experience engaging global internet governance spaces.[04]

02 Different relationships to power

There were important differences in the way digital rights and environmental justice actors engaged stakeholders at the regional and global levels. The research identified several groupings among environmental organisations which take different positions in relation to the private sector and

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03 This brief draws primarily on background research conducted for APC on potential collaborations and interventions in the field of environmental justice, APC's recent research into the circular economy of digital devices (**https://www.apc.org/en/pubs/guide-circular-economy-digital-devices**), and the publication of Global Information Society Watch 2010 on ICTs and environmental sustainability (**https://giswatch.org/en/2010**) and Global Information Society Watch 2020 entitled Technology, the environment and a sustainable world: Responses from the global South (**https://giswatch.org/2020-technology-environment-and-sustainable-world-responses-global-south**).

04 This includes, for example, one prominent environmental justice group starting to develop a gender and the internet intervention, but being unaware of APC's significant work in the field of gender rights, and its current efforts in developing a principle focusing on the environment as part of its Feminist Principles of the Internet.

governments as policy stakeholders and project partners.[05] While the relationship between environmental justice actors and governments was largely dependent on the governments concerned (and could at best perhaps be described as one of wariness rather than trust),[06] the relationship between environmental justice actors and the private sector (e.g. agribusiness, energy and other extractive sectors) was one of contestation. This contrasted to the kinds of collaborations seen in the digital rights space, including through, for example, governments actively supporting grassroots access initiatives such as community networks, and the technology sector, including Facebook and Google, funding digital rights actions.[07] This meant that the power relationships between the stakeholders and groups in each field were construed differently. For example, the UN refers to "major groups and stakeholders" in its deliberations on the environment and sustainable development, following the insistence of Indigenous groups that, compared to the well-resourced industries and governments, they are not equal stakeholders in negotiations. Conversely, internet governance forums and mechanisms emphasise the multistakeholder approach in policy and other deliberations, even if imperfectly achieved – an approach anathema to many environmental justice groups. Collective importance is also placed on the use of language in the environmental justice space and attention given to its ability to reflect and create relationships of power, with a similar language and use of terms adopted by environmental justice actors in their advocacy. The language of advocacy in the digital rights space is often more unsettled, suggesting an underlying political fragmentation of perspective and framing.

03 A general absence of cross-over advocacy concerns as core strategic agendas

Only some digital rights organisations took environmental activism as a core strategic concern.[08] In particular, the research found that more than half of

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05 These groups are: Indigenous groups; environmental justice actors (which can be considered the same group); conservationists; environmental justice lawyers; progressive local-level environmental research centres, which tend to have an academic slant; and environmental activist youth formations. These groups should be considered relatively fluid. There is significant overlap between some groups and their concerns, including, for example, conservation organisations taking an environmental justice perspective.

06 For example, governments are often seen to collaborate with environmental initiatives that will bring them more publicity and are less politically fraught. So, for example, collaborations with powerful conservation organisations like the World Wildlife Fund are preferred.

07 It is important to emphasise that digital rights organisations should not be thought of as a homogenous group, but as having more-or-less aligned concerns within a human rights framework, but often with different political and advocacy approaches. Therefore, different organisations might have different perspectives on collaborations with the private sector or governments.

08 Among the APC network, both BlueLink (Bulgaria) and Colnodo (Colombia) stood out. The research also suggested that there are newer organisations which focus on digital rights but take an intersectional approach to issues, including environmen-

APC's members did not have a working interest in environmental sustainability (although the number of organisations interested is growing), suggesting that there was some scope to raise awareness generally among digital rights organisations on the relevance of their work to environmental justice. There was also significant scope to deepen the advocacy awareness of the environmental impact of technology and its use among digital rights organisations, including its contribution to the climate and environmental emergency.[09] At the same time, while environmental justice actors were actively campaigning against the false promises of techno-solutionism and corporate "greenwashing", and there had been some historical attention to issues such as e-waste, there was an apparent lack of sustained and cross-cutting advocacy concern over the negative impact of digital technology on the environment, and the growing evidence of harms.[10]

04 Gaps in capacity building: Evidence of low-hanging fruits

There were clear low-hanging fruits where the digital capacity needs of environmental justice actors could easily be met by digital rights actors, but were not being met. However, the level of awareness of these needs, the prioritisation of environmental justice among digital rights organisations, and access to environmental justice organisations meant that capacity-building interventions were infrequent.[11] Conversely, there are areas in which environmental justice actors actively engage that are relevant to digital rights organisations, but where the latter have little knowledge and advocacy capacity. These include advocating against extractive industries and their negative impact on local communities and the environment, and advocacy on energy issues (which are increasingly important in the context of a sustainable internet). At the same time, many

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tal issues, and appear to work more fluidly across several terrains. A good example of this kind of organisation is Feminist Leadership and Mobilization on the Edge (FLAME), based in Taiwan. FLAME is a feminist organisation that reported three key concerns: information, open data and small-scale agriculture in the ricelands of Taiwan; online gender-based violence; and the accessibility of technology for the elderly in Taiwan. The prevalence of these sorts of organisations needs further study.

09 For example, in its use of fossil fuel energy and natural resources such as water, greenwashing and disinformation, and the weaknesses of carbon offset systems.

10 Including with respect to areas where one would anticipate a practical working concern, such as greenhouse gas emissions and management of e-waste. If these are concerns, they appear to be more boundary concerns, rather than core concerns for environmental justice actors.

11 There may be several other reasons for this evident gap. Basic digital training needs among environmental justice actors included skills such as building websites, the effective use of social media, the use of open-source technologies, and digital security (in one notable instance, a major environmental justice organisation involved in environmental litigation lacked a basic digital security strategy). APC is currently attempting to build a network of digital rights and environment rights organisations to help identify and attend to cross-cutting needs and concerns. ICRC.net exists, but it appears to only be online.

local communities and environmental organisations have through training interventions developed digital capacities that could be useful for digital rights organisations, such as the practical use of drone and mapping technologies.

These gaps nevertheless occur within the context of an evident broadening of environmental concerns among digital rights actors. APC research[12] suggests that just over a decade ago, many digital rights organisations were researching the problem of e-waste for the first time, and had little evident interest in climate-related issues. For many, the exploration of the problem of e-waste is now more granular and advanced, and has included hands-on interventions.[13] The research suggested[14] that in Latin America in particular there is now a greater focus on the role of the extractive industries among digital rights actors, and on the impact of mining minerals for technological production on Indigenous groups and the environment. There is also growing concern with respect to the corporate accountability of tech manufacturers in terms of the sourcing of their materials for the production of technology. In Latin America, Africa, the Middle East and North Africa (MENA) and Southeast Asia, there is a concern with accessing credible environmental data and information, although the needs in this respect are expressed differently. For example, in Latin America and in countries in MENA, this might relate to a government deliberately censoring environmental data, or there being a significant disconnect between government institutions, which makes their provision of data ineffective. Fragmented data sets are a concern in Sudan, while in Saudi Arabia a general censoring of open debate on environmental issues means that information and media reporting lack nuance. In both Africa and Asia there is a concern with improving and upgrading sensor technology to improve the reliability and reach of data capturing, with a particular focus on air pollution in Asia. Other concerns include disinformation and misinformation in the context of environmental rights, digital attacks against human and environmental rights defenders, a lack of technological capacity to respond to climate change (in Africa), and smart cities (Asia). Conversations have also more recently broadened to include the role of community networks in environmental sustainability, and the circular economy of digital technology, which approaches

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12 See Global Information Society Watch (GISWatch) 2010 (**https://giswatch.org/ en/2010**).

13 And may for example involve researching policy and advocacy options for including marginalised communities in the e-waste value chain or setting up a recycling workshop.

14 These examples of concern are drawn from the topics of focus of the country reports for GISWatch 2020 (which were proposed by the contributing authors). The list is clearly reductive and simplified in order to create a working narrative as a starting point. Digital rights organisations may take any number of other environmental issues as important to their work, and these concerns might change in the short or longer term for numerous reasons, not the least being the availability of funding.

many of the issues mentioned above in a holistic way. A Feminist Principle of the Internet[15] focusing on environmental justice is also being developed as a way to approach both digital and environmental rights from a feminist perspective. However, work remains to be done in mainstreaming these concerns in digital rights advocacy across organisations in the global South, particularly at the regional and global levels.

15 https://feministinternet.org/en/about

Potential mechanisms or areas of focus for intervention

The research suggested that there are three key areas where the relationship between digital rights and environmental justice actors in the global South could be strengthened:

01 Identifying cross-cutting advocacy agendas

The research suggested that there are a number of areas of policy advocacy that digital rights organisations are engaged in that are directly relevant to environmental organisations. The most prominent one is advocacy around affordable and meaningful internet access. However, allied issues such as access to information, freedom of expression and gender rights, as well as the work of digital rights organisations in areas such as economic, social and cultural rights, are also relevant and could be easily applied in policy advocacy alliances in the environmental justice and sustainability fields. It also showed that there are important areas where digital rights organisations could raise awareness among environmental organisations given their applicability in the field of environmental sustainability and activism, such as the Feminist Principles of the Internet and community networks. This brief also proposes that fresh advocacy agendas be co-created by digital rights and environmental justice organisations.

02 Strengthening the digital capacity of environmental justice organisations

Only some digital rights organisations appear to be offering capacity building for environmental organisations. Yet the research suggested there are key knowledge areas and capacity-building needs among environmental organisations in which digital rights organisations already have competencies, which could be easily offered to these organisations. These "low-hanging fruits" include the use of open-source technologies, digital security, using the internet – including social media – for the effective dissemination of information, building websites and setting up blogs.

03 Building the capacity of digital rights organisations

The research suggested that while digital rights organisations have the knowledge and capacity in areas such as e-waste and open data that are of interest to environmental organisations, there are several other areas where they could consider building capacity to respond more meaningfully to the needs of environmental organisations. These included the practical application and potential policy implications of the use of drones and satellite mapping data, technical solutions for crowdsourcing in the context of disasters, and the regulatory frameworks and standards needed for low-cost digital sensors for the monitoring of air pollution. The application of artificial intelligence (AI) in the context of environmental sustainability is also becoming increasingly important, and this is a field where digital rights organisations could consider developing their practical and advocacy expertise.

The research also suggested that there is a need for peer-to-peer knowledge sharing among digital rights organisations. Some organisations have advanced capacities that are of use to environmental justice organisations and need to be shared in order to build the overall capacities of digital rights organisations. These include expertise in open data and mapping.

Potential stakeholders and partners

There are three key groups that are important in this context:

+ Digital rights organisations in the global South

+ Organisations and networks active in environmental justice, e.g. Friends of the Earth International, Greenpeace, ETC Group and ESCR-Net

+ Indigenous rights groups, e.g. Via Campesina, International Work Group for Indigenous Affairs (IWGIA) and the Indigenous Environmental Network.

Recommendations for donors

↗ Support networking and peer-to-peer knowledge sharing between digital rights and environmental justice actors. Digital rights groups need to build avenues of trust with environmental justice groups. Common concerns and agendas need to be understood and overlapping concerns articulated. There is a need to unpack the complexity of the issues at the interstice of digital rights and environmental justice, and to better articulate what it means for digital rights organisations to have solidarity with environmental justice groups. Mechanisms such as the Feminist Principles of the Internet could be used as an entry point to articulating shared concerns. While APC has started to network digital rights organisations around an environmental justice agenda, much more work needs to be done. New avenues for convening digital rights and environmental rights groups need to be created. Initiatives like the Just Net Coalition need to be supported (ref. key recommendations 1 and 2).

↗ Support collaborative projects and co-created advocacy agendas between digital rights and environmental justice actors. Beyond knowledge sharing and building a community of trust, there is a need for digital rights groups to work more closely with environmental justice actors and Indigenous rights groups and movements. This is important strategically for digital rights groups to root their environmental activism locally (ref. key recommendation 1).

↗ Build the capacity of digital rights organisations to more meaningfully respond to the needs of environmental justice organisations, including through peer-to-peer knowledge sharing (ref. key recommendation 3).

↗ Support the engagement of digital rights organisations and environmental justice actors in advocacy spaces that are new to them, such as environmental justice actors attending Internet Governance Forums or digital rights organisations pursuing cross-thematic advocacy models framed broadly by digital rights.[16] With respect to the latter, the prevalence of digital rights organisations working outside of the normative advocacy spaces for digital rights actors should be mapped and better understood (ref. key recommendations 2, 3 and 4).

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16 For example, as mentioned earlier, FLAME is a feminist organisation that reported three key concerns: information, open data and small-scale agriculture in the ricelands of Taiwan; online gender-based violence; and the accessibility of technology for the elderly in Taiwan.

↗ Build the capacity of digital rights organisations to litigate. Successes in changing communications legislation[17] show that litigation is an important advocacy tool for digital rights actors, but one that is seldom used compared to other fields such as media rights or environmental justice activism. This potential for advocacy needs to be more fully explored by digital rights organisations working at the interstice between digital rights and environmental justice (ref. key recommendation 3).

↗ Support further research into the circular economy and its application in the global South. Particular emphasis needs to be placed on the practical application of the circular economy in the context of resource- and infrastructure-starved countries in the global South, as well as on the political and economic framing of the concept of the circular economy, and its relevance to environmental and social justice causes in the global South (ref. key recommendation 2).

↗ Support open data, community-driven data and data justice initiatives. This includes civic sensor and mapping initiatives, and well as advocacy for open environmental data and open government. This is particularly important in the context of the climate crisis, where the local communities need to arm themselves with meaningful and localised data, and not be dependent on states and businesses to provide or interpret that data. Collaborations on environmental data held by civil society (environmental groups, digital rights organisations, rural development organisations, etc.), academia and other research initiatives (e.g. environmental research and education institutes and centres) need to be encouraged. A culture of data justice needs to be instilled at the local level. This speaks directly to the systemic extraction of data by the private sector and other actors that is part of the developing global data economy. Specific interventions might include supporting local mapping interventions, advocacy around regulations that allow low-cost sensors to be used (e.g. for monitoring air pollution in a country like India),[18] and advocating for better access to satellite data, data on the capacity of natural resources and their use, and on food sovereignty (ref. key recommendations 1 and 2).

↗ Support community networks, including as a mechanism to bring digital rights actors, environmental justice actors and local communities closer together through creating common governance structures. These sorts of bottom-up initiatives help to strengthen local communities in numerous ways, including in creating avenues for expressing community demands and rights. They can also serve as useful ways to contribute to local data narratives in the context of the climate and environmental crisis (ref. key recommendations 1 and 3).

17 For example, the Regulation of Interception of Communications and Provision of Communication-Related Information Act (RICA) law in South Africa was recently declared unconstitutional following a High Court challenge by an investigative journalist.

18 This is explored in more detail in one of the country reports from India published in GISWatch 2020: https://giswatch.org/node/6233

Brief No. 2

Environmental and digital rights:

Exploring the potential for interplay and mutual reinforcement for better governance

Problem statement

Internet governance is at a crossroads. At the national level, an increasing number of regulations have been proposed, many of which adopt rights-restricting frameworks and technical solutions that may end up causing the fragmentation of the original globally connected, open and interoperable "net of networks" architecture of the internet. At the global level, decentralised efforts have addressed the deployment of different digital technologies with little coordination, causing at the same time gaps and overlaps in the governance of digital issues. The main process dedicated specifically to internet governance – the UN Internet Governance Forum (IGF)[01] – has lacked leverage and perceived impact in framing the global agenda on internet governance, despite the potential it has to address the gaps and overlaps in the internet governance ecosystem.

Much debate has been taking place concerning the future of internet governance, looking at both the underlying principles and the institutional frameworks that could underpin a better, more robust and effective system. Calls for such a system have been heard as a response to the growing control, privatisation and weaponisation of online spaces.

How can the status quo in internet governance be inspired by progress in the governance of environmental issues? What is common to both domains? How can environmental principles, including the so-called "access rights" outlined in Principle 10 of the Rio Declaration on Environment and Development[02] (with its emphasis on access to information, public participation in decision making, and justice), serve as templates for an internet governance that promotes transparency, participation and accountability?

01 https://en.wikipedia.org/wiki/Internet_Governance_Forum

02 https://en.wikipedia.org/wiki/Rio_Declaration_on_Environment_and_Development

Problem description

The intersections between the environment and digital technologies

Environmental movements, as well as environmental laws and policies, have a longer history than those found in the digital field. Given some of the commonalities and intersections between them, there are a number of ways in which digital governance could draw inspiration from lessons learned in the environmental field. There are also some ways in which the digital rights movement could take advantage of the norms and principles already established as part of the environmental agenda.

Given the limited scope of this brief, we mainly focus on identifying common ground for collaborative work on global governance issues. This is done within the context of recognising deficiencies in the current status quo of internet governance, alongside the many shortfalls in environmental governance, in particular with respect to its failure to properly address the climate emergency, the need for a more bottom-up approach to global environmental governance mechanisms and the development of institutional frameworks, and the significant challenges in the implementation of agreed standards.

To explore the potential for interplay between environmental and digital governance, we need to consider their commonalities from several perspectives:

+ Both the environment and the internet are global in scope, and should be managed and protected as a global commons.

+ They require the exercising of shared responsibilities of multiple stakeholders in management and protection.

+ They are cross-cutting policy areas that are integrated in and impact on other policy areas.

+ They are linked to exercising key rights that are part of the framework of human rights.

The intersections between digital technology and the environment are many, including:

+ The production of hardware requires the extraction of minerals in increasing quantities, impacting both the environment and the well-being and rights of traditional communities living around extraction sites.

+ The enormous number of devices produced with short lifespans and the lack of proper public policies concerning circularity and other alternative solutions to this model of consumption means that e-waste has become a major environmental problem.

+ Despite the idea promoted that digital solutions are paperless and therefore "greener", digital solutions require huge data centres and the operation of increasing numbers of devices that require considerable amounts of energy, most of which are fossil fuel generated.

+ Digital technologies have been used to track and surveil environmental defenders, putting their work and their lives at risk.

+ Data extraction models deployed by the so called "big tech" companies take their legacy from colonial development models of resource extraction and depletion; they lead to rights violations and cultural assimilation and limit access to knowledge and expression, among other concerns.

Setting aside "techno-solutionism" as a meaningful approach, it is important to understand that there is a dual relationship between digital technologies and the environment – it is both positive and negative, albeit that this relationship is sometimes deeply unbalanced in the favour of the negative in the context of environmental care.

Technology has also been deployed in positive ways to advance the protection of the environment, for example, with the deployment of connectivity schemes that connect communities affected by environmental damage and degradation so that they can better communicate their challenges and solutions. Technology has also allowed citizen-science solutions, with the deployment of open source technology to allow the monitoring of pollution and contamination. Environmental data, when openly available, can also facilitate accountability and prevention, and artificial intelligence (AI) could assist in finding strategies to meet climate change challenges.

Digital rights organisations nevertheless need to do far more to respond to the impact of digital technologies on economic, social and cultural rights and the right to a healthy environment, and to act in solidarity with environmental defenders.

Rights and justice in an intersectional context

A preliminary assessment suggests three ways in which digital rights organisations could draw off the experiences of environmental justice actors:

+ For different approaches to internet governance. For example, community participatory models found in the environmental field could be applied to the digital governance of shared resources.

+ Through direct application of environmental laws. This has already been done in relation to e-waste (see below), but other areas could be explored, such as leveraging the Aarhus Convention to strengthen access to information and participation.

+ Through ways of organising and strategising. For example, digital rights organisations could learn from how environmental justice actors engage the private sector and extractive industries, use litigation as a key tool for achieving environmental justice, and implement innovative and creative ways to engage the general public.

Both digital rights organisations and environmental justice actors could also seek common interpretations of key intersectional questions related to governance, addressing some of the commonalities referred to above. For example:

+ What does it mean exactly, in terms of governance, to consider the environment and the internet as a commons? How should this assumption translate to institutional frameworks, roles and responsibilities?

+ If these are global issues, is there an effective truly global governance architecture in place to address them? What are the pitfalls and challenges of the existing structures and approaches?

+ If digital and environmental concerns are cross-cutting areas, how do we ensure their proper integration across public policy in a manner that ensures they do not lose strength and focus?

+ How do the digital and environmental agendas relate to the human rights agenda? Are existing rights already sufficient? How should existing rights be interpreted to better respond to all these intersecting concerns? What are the consequent obligations of states in this regard? How (where, by whom) can these rights be enforced?

Case examples: Access rights and environmental principles

Environmental policy provides a strong point of reference and source of learning in modern world governance. Its history stretches over 50 years of implementation resulting in a robust and comprehensive body of policy and law at regional and international levels. The evolution of the environmental agenda has been intertwined with calls by the environmental movement for more transparency, participation and accountability. From the late 1980s and early 1990s,[03] sustainable development[04] became a leading concept in environmental policy. With this concept, environmental policy making became a shared domain of governance where not only governments but also the private sector and non-governmental actors assumed greater responsibility for the environment. It emphasised the critical role individuals and their communities play in the effective implementation of policies.

Environmental governance is built on a set of environmental principles, rights and obligations that provide a framework for the development of environmental policies for the protection and management of global and local commons. Many of these principles, rights and obligations have useful application in the field of internet governance and could provide a benchmark for digital rights advocacy. Two examples illustrate this notion: the Aarhus Convention, and the environmental policy principles of the European Union (EU).

The UN Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, commonly known as the Aarhus Convention,[05] is a regional[06] legally binding instrument on environmental democracy that puts Principle 10 of the Rio Declaration on Environment and Development in practice. The Aarhus Convention inspired the adoption of a sister regional agreement in Latin America and the Caribbean, the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin

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03 https://www.britannica.com/topic/environmental-law/Sustainable-development#ref224618

04 As defined in the Brundtland report "Our Common Future" and reconfirmed in the principles of the Rio Declaration on Environment and Development adopted at the United Nations Conference on Environment and Development held in Rio de Janeiro, 3-14 June 1992.

05 https://unece.org/environment-policy/public-participation/aarhus-convention/introduction

06 Though mostly regional in scope, with the UN Economic Commission for Europe covering 56 member states in Europe, North America and Asia (https://unece.org/member-states-and-member-states-representatives), the Aarhus Convention is open to accession by non-ECE countries, subject to approval of the Meeting of the Parties, making it a global legal instrument.

America and the Caribbean, better known as the Escazú Agreement.[07] The Aarhus Convention and its Kyiv Protocol on Pollutant Release and Transfer Registers[08] have empowered people with rights to access information, to participate in decision making in environmental matters and to seek justice.[09] The Convention links environmental rights and human rights,[10] emphasises that sustainable development can be achieved only through the involvement of all stakeholders, links government accountability and environmental protection, and focuses on interactions between the public and public authorities in a democratic context.

The European Union's environmental policy principles[11] are also relevant to internet governance since they reflect the need to prevent, reduce or offset the impacts of human activities, including those of industry, on the shared global or local commons – climate, biodiversity, air, soil, water. These principles offer valuable insight for the governance of the internet as a global commons and for ensuring that the negative environmental impacts of digital technologies are measured, understood, avoided or mitigated.

According to the integration principle, environmental protection requirements must be integrated into the definition and implementation of EU policies and activities, in particular with a view to promoting sustainable development. The precautionary principle states that where there is uncertainty about the risk of environmental harm, protective measures have to be taken before any harm has occurred. The prevention principle requires that preventive measures be taken to anticipate and avoid environmental damage before it happens. The polluter pays principle holds that the party responsible for the environmental damage (pollution) should bear the costs of the damage caused and any remedy required. Environmental damage should also as a priority be rectified at source.

We could suggest several ways in which the Aarhus Convention's "access rights" and the EU's environmental policy principles could be applied to internet governance.

For example, what are the rights of social media users? Could they push for more access to information about how their personal data is used by social media companies like Facebook and WhatsApp? Or would it be possible, using the

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07 https://www.cepal.org/en/escazuagreement

08 https://unece.org/env/pp/protocol-on-prtrs-introduction

09 There are 47 parties to the Convention and 38 parties to the Protocol.

10 The Human Rights Council recognised with its resolution No. 48/13, for the first time, that having a clean, healthy and sustainable environment is a human right. The Council called on states around the world to work together, and with other partners, to implement this newly recognised right. See: https://undocs.org/A/HRC/RES/48/13

11 https://www.europarl.europa.eu/factsheets/en/sheet/71/environment-policy-general-principles-and-basic-framework

Aarhus Convention, to demand more information on algorithms governance and other decision-making processes that impact on the exercise of rights online? Could they participate in the process of regulating the use of this data, and what rules for access to justice for redress could be developed? Is it possible to argue these demands within the framework of the massive natural resource-dependency of data centres, the environmental cost of using and manipulating data, and the projections of greenhouse gas emissions from our use of technology?[12]

While there have been widespread and historical calls for citizen oversight of the collection of personal data, there are few examples where this appears to have materialised. Given this, what can be learned from the successes and failures in the field of environmental rights in participative governance of common resources? Similarly, as the global data economy strengthens, and issues of data justice become predominant, alongside calls for a strengthening of data collection and ownership at the local level, what can be learned from mechanisms of participation at the community level found in progressive models of environmental and resource preservation that can be applied to community data ownership and control?

Some of the EU principles on environmental policy are already applied in the field of technological production and use. For example, in the area of e-waste management, the polluter pays principle has driven calls for models funding the proper processing of e-waste, such as a consumer tax on the purchase of digital goods, or extended producer responsibility models. There are also calls for the precautionary principle to be applied to the application of new technological projects or policies – especially in the field of AI and smart technologies – where the hidden implications may not be evident. These principles could also be considered when taxing tech giants due to the environmental harm caused by their products and services.

There are, of course, a number of ways in which the field of environmental rights and digital rights are dissimilar. For example, although easily considered a global commons, the internet is also a means of transacting privately – e.g. it is used for financial or legal transactions and personal communications – and is the repository of information that should necessarily be secure, such as personal data and state-held information relevant to national security. This means that issues such as cybersecurity have a particular bearing on the internet as a shared resource, and create necessary limitations on thinking of it as a shared resource,

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12 It is anticipated that by 2030, information and communications technologies (ICTs) could use as much as 51% of global electricity, and contribute up to 23% of the globally released greenhouse gas (GHG) emissions. Andrae, A., & Edler, T. (2015). On Global Electricity Usage of Communication Technology: Trends to 2030. *Challenges, 6*(1), 117–157. https://doi.org/10.3390/challe6010117

in a way that may not find similarities in shared natural resources. This means the application of learnings from environmental rights should be adapted to the nature of internet governance with its own rules, policies, standards and practices.[13]

As suggested, the frameworks, strategies and tactics for engaging with private companies and government actors among digital rights communities (e.g. the language of multistakeholder dialogue and partnerships) is also typically very different to those of environmental justice movements (protests, rallies, direct action through the courts, strikes).

These differences could be partly attributed to the solid policy and legal framework that environmental justice actors have to refer to. They have been empowered with real legal instruments (rights and corresponding obligations of the state and local authorities) to influence policies and advocate, including in court, on issues to do with environmental impact. Digital rights organisations, it could be argued, currently lack a common agenda and common advocacy rules that would allow them to be united and impose pressure on the big tech companies and governments. In this regard, the experiences of the environmental movement, NGOs and academia could be shared and compared with the experiences of the civil society organisations and researchers working on internet governance.

Nevertheless, environmental rights and digital rights movements have some shared language and values, including around understanding of the value of the commons and the protection of shared resources. Digital rights defenders can learn from the work of environmental justice movements, and mechanisms of environmental governance, including their negative experiences with surveillance and censorship of environmental defenders, personal attacks, and the spreading of disinformation online.

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13 Law makers in democracies around the world are struggling to determine how to regulate the social media space. See: Maher, S. (2021, 2 August). Transparency Is Key to Curbing the Power of Big Tech. *Centre for International Governance Innovation*. https://www.cigionline.org/articles/transparency-is-key-to-curbing-the-power-of-big-tech

Potential mechanisms or areas of focus for intervention

There are several potential areas of intervention in the context of this brief:

+ Introducing mechanisms for sharing experiences between environmental networks, NGOs and internet governance civil society actors.

+ Policy and legal research (including case studies) to explore and enable the transfer and adaptation of lessons learned from the environmental policy field (principles and rights) into internet governance.

+ Exploring and comparing different models of multistakeholder engagement and responsibility, looking at both internet governance models and any models arising from the environmental field, such as the participation of the public in the negotiation of the Escazú Agreement and the major groups organised around the Sustainable Development Goals.

+ Developing a common advocacy agenda for civil society and academia to promote the protection of users' rights and integrate the principles of transparency, participation and accountability through dedicated internet governance rules for companies and governments.

+ Empowering digital rights organisations to develop advocacy strategies to push for the protection of users' rights drawing on success stories in the field of environmental activism.

+ Knowledge sharing and peer-to-peer capacity building, including through the development of repositories of research, literature reviews and case studies that explore the intersections between internet sustainability and environmental sustainability in a practical and nuanced way.

+ Pilot projects exploring the intersection of environmental and digital rights.

Potential policy spaces for engagement

Key policy spaces for engagement are the following:

- Internet Governance Forum (IGF), in particular the Policy Network on Environment (PNE)

- UN Environment Programme (UNEP), UN Development Programme (UNDP), UNESCO

- UN Economic Commission for Europe (UNECE) and Aarhus Convention Secretariat, and UN Economic Commission for Latin America and the Caribbean (ECLAC) and Escazú Agreement Secretariat

- International Telecommunication Union (ITU)

- Global Digital Compact (UN cooperation process)

- Office of the United Nations High Commissioner for Human Rights (OHCHR) and UN Special Procedures.

Potential stakeholders and partners

Key potential stakeholders and partners include but are not limited to:

- Greenpeace, Friends of the Earth International, European Environmental Bureau, World Resources Institute, World Wildlife Fund

- The Access Initiative (TAI)

- Coordinadora de las Organizaciones Indígenas de la Cuenca Amazónica (COICA)

- Office of the UN Envoy on Technology.

Recommendations for donors

↗ Provide spaces for interaction and engagement between digital and environmental groups and networks such as conferences, workshops, training sessions and joint actions (ref. key recommendation 1).

↗ Support efforts aimed at further mapping of the intersections between digital technologies and the environment in terms of policy spaces and rights protection, with concrete proposals for advocacy targets (ref. key recommendation 2).

↗ Provide funding for the participation of environmental groups in digital spaces and processes, including policy ones (and vice versa), so that there is direct cross-pollination and cross-thematic advocacy (ref. key recommendation 4).

↗ Support research on the potential application of environmental policy principles and rights in internet governance and fund practical implementation models at international and national level (ref. key recommendation 2).

↗ Fund research on participatory governance models for the global environmental and digital contexts, promoting comparisons and cross-pollination (ref. key recommendation 1).

↗ Based on this research, support the production of toolkits and other advocacy material to support the work of civil society in reaching across the "thematic gap" (ref. key recommendation 2).

↗ Launch specific calls to promote collaborative projects between environmental and digital groups (ref. key recommendations 1, 2 and 4).

Brief No. 3

Extractivism, mining and technology in the global South:

Towards a common agenda for action

Problem statement

Minerals used in the manufacture of technology continue to be sourced from areas and regions where environmental destruction and human rights abuses and conflicts occur, and where reprisals against environmental and land defenders by state and private actors are common. Despite disclosure requirements on conflict minerals adopted by the United States, stronger Organisation for Economic Co-operation and Development (OECD) guidelines and European Union (EU) regulations which prohibit the use of minerals from conflict areas, reporting on the sources of minerals by big tech manufacturers is incomplete and often vague. At the same time, regulations such as those banning informal mining,[01] or policy directives for public participation, are often not properly enforced and implemented. Corruption in the mining sector is a concern across the continents in the global South, affecting the licensing of mining operations and transparent reporting on the impact of these operations on the environment and local communities. The murder of environmental and land defenders is also frequently reported.

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[01] Informal mining can be defined as small- to medium-scale mining that that is illegal in that it does not comply with government regulations, including the requirement of mining permits and meeting labour and environmental standards.

Problem description

"Extractivism" in the context of this brief[02] refers to the formal and informal mining of minerals used in the production of technology in the global South. Typically these natural resources are not processed or are only processed in a limited way before being exported for refinement and further use. The resources extracted for the use in the manufacture of technology are many,[03] but specific concern has been raised over the use of so-called "conflict minerals" (i.e. tantalum, tin, tungsten and gold), which are sometimes informally extracted and sold illicitly to perpetuate armed conflict, and more recently the mining of lithium, which is used in batteries.[04]

Some of the most affected areas are regions in central Africa (e.g. Katanga in the Democratic Republic of the Congo – DRC) and in Latin America (e.g. Chiapas in Mexico and in different regions in Brazil), and in the so-called "Lithium Triangle" in the salt flats of Argentina, Bolivia and Chile. Conflict mining operations are also reported in Myanmar, Bolivia and Rwanda.[05]

Two key framing perspectives are important. Firstly, while many digital rights actors are only now starting to articulate their need to engage extractive mining within the context of advocating for the sustainable use of technologies, environmental

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02 This brief draws heavily on two key resources: A guide to the circular economy of digital devices, developed by APC (https://www.apc.org/en/pubs/guide-circular-economy-digital-devices), and Global Information Society Watch (GISWatch) 2020 (https://giswatch.org/2020-technology-environment-and-sustainable-world-responses-global-south), with its focus on technology, the environment and sustainable development. In particular, the GISWatch 2020 reports authored by Camila Nobrega and Joana Varon (https://giswatch.org/node/6254), Paz Peña (https://giswatch.org/node/6245) and Paz Peña and Danae Tapia (https://giswatch.org/node/6247) are drawn on extensively.

03 For example, a mobile phone is composed of about 70 chemical elements. These include scarce minerals, numerous alloys and plastics.

04 For electric cars, laptops and smartphones, among other technologies. There are around 107 projects that mine lithium worldwide. Over 45% of them are in South America, specifically in the so-called Lithium Triangle formed by Argentina, Bolivia and Chile. These projects are concentrated in four companies that cover around 91% of world production.

05 Capelouto, J. D. (2017, 6 April). Tech firms must go beyond Congo's 'conflict minerals' to clean supply chain: study. *Reuters*. https://www.reuters.com/article/us-congo-minerals-supply-idUSKBN1781M1

justice actors have a long and often antagonistic history of advocacy in the field. Opposition has centred around the environmental and social impact of extractive mining, farming, forestry and fishing, alongside resistance to so-called government "mega-projects", such as the building of hydroelectric dams.[06]

Secondly, from a digital justice perspective, it is important to frame the activities of extractive mining more broadly as being part of a general profit-driven extractivist approach systemic to the digital technology sector. For example, this relates to the manipulation and "mining" of data by big tech companies including Facebook, Amazon, Netflix and Google (FANG),[07] the consumerist-driven model of production and consumption, and the disregard for labour rights in production factories (i.e. there is an extractivist approach to labour sometimes referred to as "digital labour").[08] Of equal concern is the high consumption of other natural resources such as water by the tech sector.[09]

There is little serious attention given to the consequences and sustainability of this model by the sector, and its impact on the environment and human rights at the local level. This framing is critical, because to consider the impact of extractive mining alone does not sufficiently recognise that the problem of extractivism in the digital technology sector is systemic, and affects nearly all of the nodes in the current technological value chain of production, consumption and disposal. In this respect, there is very little difference between how the digital technology sector is structured and the extractive operations of commercial mining in the global South that began 500 years ago and extended throughout the colonial era.

06 Opposition has centred around the territorial rights and cultures of Indigenous and local groups, the benefits of operations for local communities, and the degradation of the natural environment, among other issues. The intensity of the contestation between industry and environmental justice actors is visible at the global level where Indigenous rights groups refuse to be identified as equal stakeholders alongside the extractive industries and agrobusiness in UN processes, and by the regularly reported murder of environmental justice actors on the ground who stand in opposition to mining, deforestation, and energy projects. For more information, see: Acosta, A. (2013). *Extractivism and neoextractivism: Two sides of the same curse*. https://www.tni.org/files/download/beyonddevelopment_extractivism.pdf

07 While unrestrained extractivism in the context of natural resources leads to their unsustainable depletion, and implies the lack of participation and oversight of affected communities, "extractivism" as applied to data implies the mass extraction and interpreting of personal data and behaviours as a resource used for profit making by others without the informed permission or participation and oversight of the data subjects.

08 In a discussion focusing on Africa, Iyer et al. refer to several nodes of extractivism in the digital sector: digital labour, illicit financial flows, data extraction, natural resource mining, infrastructure monopolies, digital lending, funding structures, beta testing, and platform governance. See: Iyer, N., Achieng, G., Borokini, F., & Ludger, U. (2021). *Automated Imperialism, Expansionist Dreams: Exploring Digital Extractivism in Africa*. Pollicy. https://archive.pollicy.org/digitalextractivism

09 For example, water is used in data centres, and Google's use of water is considered trade secret (https://boondoggle.substack.com/p/water-is-life-and-also-a-trade-secret). Its use by the tech sector has the potential to exacerbate water scarcity in the context of climate change.

Attempts at establishing sourcing rules for some countries at the epicentre of technological production have nevertheless been made. US publicly listed companies have been required to publicly report if their supply chains contain tin, tungsten, tantalum and gold[10] that originated in the DRC or adjoining countries since 2010. OECD guidelines use a broader definition, which states that "high-risk areas may include areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence. Such areas are often characterised by widespread human rights abuses and violations of national or international law."[11] The EU has taken a stronger stand and issued regulations that have been in force since 2021 requiring EU companies to ensure that they import minerals and metals from "responsible and conflict-free sources" only.[12]

While activism against the extractive mining of minerals used in technologies, as well as against related issues such as the technological surveillance of land defenders and Indigenous peoples, has existed for a long time in the affected territorial communities, this issue has largely been ignored by the mainstream digital rights agenda, perhaps due to uncertainty on how to properly address it.

Digital rights activists from the global South have, however, recently focused more closely on the issue of extractive mining and its implications on environmental and human rights. Some have also taken an expansive definition of "conflict" to point to the many regions where it can be said that socio-environmental conflict occurs and in which mining nevertheless takes place, arguing that this is effectively in contravention of the OECD and EU guidelines and regulations.

Particular mention is made of the impact of extractivism and informal mining in the DRC, in Mexico and Brazil, and in the Lithium Triangle in Chile, Argentina and Bolivia, although mining in zones controlled by armed groups in countries such as Rwanda, Bolivia and Myanmar, where sometimes child labour is used, are also said to be implicated.[13] These are only case examples, however, and the concern of the negative impact of the extractive industries on the environment and local communities applies whenever there are identifiable harms that occur, typically with little or no redress, or without the participation of local communities when extractive projects are planned and licensed.

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10 U.S. Securities and Exchange Commission. (2012). Section 1502: Conflict minerals. https://www.sec.gov/spotlight/dodd-frank-section.shtml#1502

11 OECD. (2016). *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*. Third edition. https://dx.doi.org/10.1787/9789264252479-en

12 Ibid.

13 Capelouto, J. D. (2017, 6 April). Op. cit.

Human and environmental rights abuses include:

+ DRC: Most of the population of Katanga is dependent on the artisanal mining of copper and cobalt. Children work in the mines after leaving school, some engaging in sex work in exchange for access to sites or to negotiate for a few minerals. Women working at the mines or accompanying their partners are exposed to rape or marital sexual violence. Women are often marginalised and pushed into sex work. Artisanal miners are exposed to toxins which are harmful to their health, resulting in tuberculosis and birth defects.

+ Mexico: In the state of Chiapas, in southern Mexico, nearly 20% of the territory is mined for titanium, copper, silver and gold. National and state governments have ignored the environmental impact and health problems experienced by local residents. In the municipality of Acacoyagua, where titanium is mined, a doctor in the town of Los Cacaos is concerned about radiation and the number of liver cancer patients in the town's small population of 1,000 residents.[14]

+ Brazil: Minerals are provided to tech companies from smelters in Brazil that are situated in areas of socio-environmental conflict.[15] Many of these are located in Rondônia, one of the most deforested states in the Amazon region. The Pitinga mine, in the municipality of Presidente Figueredo, has been described as "emblematic for Brazil's historical injustice against [the] indigenous population and the systematic downplaying of environmental pollution and the risks associated with tailing dams."[16] The mine is a source of tantalum.

+ Chile, Argentina, Bolivia: Indigenous communities in Atacama in Chile face water scarcity, changes to the unique microbial life of the Atacama desert, and the disappearance of the Algarrobo trees and flamingos, among other negative impacts on the fauna and flora. This is due to the mining of lithium in the so-called "Lithium Triangle". Lithium mining uses extreme amounts of the surrounding natural water supply. The drought that the area is facing, in which lithium mining operations have played a significant role, has also produced an economic crisis for the Indigenous inhabitants who end up being displaced. The sustained harassment of the local communities is also reported. Legal frameworks in the region establishing that aquifers should not be legally treated as groundwater have permitted decades of low-cost

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14 Although not directly related to mining, in the Ocotlán El Salto Industrial Corridor in Mexico, chemical, agro-industrial and technological corporations such as Celanes, Hutsman, IBM, HP and Sanmina contaminate the Santiago River basin with chemical waste. See: https://www.oas.org/en/iachr/decisions/pdf/2020/7-20MC708-19-ME.pdf

15 At least 13 smelter companies in Brazil have been found to be Alphabet providers for all four kinds of minerals listed in the report.

16 Environmental Justice Atlas. (2019, 8 October). Pitinga cassiterite mine, Amazonas, Brazil. https://ejatlas.org/conflict/pitinga-mine-amazonas-brazil

extraction.[17] What are described as exceptional agreements are also struck by governments with foreign-owned mining companies, and agreements are made with impoverished local communities in order to mine in their territories that result in "false benefits" for those communities.

Many of these abuses occur because of corruption, which is rampant in the extractive industries across the world, as well as through the poor implementation by governments of human rights obligations and national policy, legislation and regulations when they exist.[18] At the same time, there is a lack of transparency and accountability in the mining sector, including with respect to the privatisation of data on mining reserves and quantities.[19] The procurers of the raw materials for the production of technology are also unwilling to report properly on the provenance of the materials, or unable to do so due to weak supply chain auditing. There is consequently a complementary lack of real accountability in the tech manufacturing sector.[20]

The result of this is that despite rules and regulations, both human and environmental rights abuses go largely unchecked in the global South in the provision of raw materials necessary for the consumption of our everyday technology.

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17 Morales Balcazar, R. (2020, 29 June). Lithium and socio-environmental conflicts in times of crisis: An opportunity to (re)think the transition. *Observatorio Plurinacional de Salares Andinos*. https://observatoriosalares.wordpress.com/2020/06/29/lithium-and-socio-environmental-conflicts-in-times-of-crisis-an-opportunity-to-rethink-the-transition

18 The mining and use of minerals for technological production can also usefully be understood in the context of the geopolitical and trade struggle between the global North (especially the US) and China. This may imply that new forums and spaces where civil society needs to advocate effectively for changes may emerge.

19 Similarly, as mentioned, Google considers its use of water proprietary information.

20 There are recent industry initiatives that aim to improve their environmental and social impact. For example, the "Responsible Lithium Partnership", which aims for what it calls "responsible natural resource management", including in the use of lithium, in the Salar de Atacama in Chile was recently launched. It is funded by Volkswagen, BASF, Daimler AG and Fairphone (https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-group-basf-daimler-ag-and-fairphone-start-partnership-for-sustainable-lithium-mining-in-chile-7245). However, this initiative has been criticised by some.

Potential mechanisms or areas of focus for intervention

Several nodes, mechanisms and focus areas for civil society action emerge from this, including but not limited to:

+ The circular economy of digital devices is a key advocacy mechanism and policy priority. However, a critical understanding of the circular economy and its implications for the global South needs to be nurtured.

+ Forums and mechanisms for advocacy that environmental justice actors already use when engaging the extractive industries.

+ National, regional and global policy, regulatory and legal instruments as mechanisms for engagement, accountability, and improvement in mining practices and protection of the rights of Indigenous and local communities.

+ The International Telecommunication Union (ITU) and other relevant forums such as the Internet Governance Forum (both have environmental tracks and focuses).

+ The Aarhus Convention in terms of the right to access information, as well as the enforcement of rapid response mechanisms to protect environmental defenders according to the model agreed to by those party to the Convention.[21]

+ Third-party monitoring and evaluation organisations that perform supply chain traceability auditing across the electronics supply chain. These include Electronics Watch, Global Electronics Council, TCO Certified, and the GoodElectronics Network,[22] which has more than 100 member organisations globally.

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21 SDG Knowledge Hub. (2021, 25 October). Aarhus Convention Creates Mechanism to Better Protect Environmental Defenders. *International Institute for Sustainable Development*. https://sdg.iisd.org/news/aarhus-convention-creates-mechanism-to-better-protect-environmental-defenders

22 https://goodelectronics.org/about-us

+ Various relevant statements by civil society actors. For example, more than 230 civil society organisations[23] from around the world published a statement in September 2020 that called on the European Commission to re-evaluate its plans to obtain raw materials. The statement noted irregularities, lack of transparency mechanisms, and a disregard for growing resistance by local communities. It called for the Commission to implement policies that reduce consumption, promote recycling, and contribute "a fair share of support to the nations of the global South to redress the continued extraction of wealth from the global South for Europe, which has taken place for centuries."

+ The formation of associations of women in informal mining to negotiate and protect their rights and those of children.

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23 Salva la Selva. (2020, 28 September). Dicen a la Comisión Europea que no podemos superar la crisis climática minando el planeta. https://www.salvalaselva.org/comunicados-prensa/9870/dicen-a-la-comision-europea-que-no-podemos-superar-la-crisis-climatica-minando-el-planeta

Potential stakeholders and partners

The following are potential advocacy partners for digital rights organisations working in the global South:

- Indigenous and local communities.

- Environmental justice groups involved in monitoring mining activities and activism against exploitative extractive projects.

- Academic and research organisations working in the field of environmental rights and mining.

- Third-party monitoring and evaluation organisations that perform supply chain traceability auditing across the electronics supply chain, specifically Electronics Watch.[24]

- The Fair Cobalt Alliance (FCA), which was set up to support the management of artisanal and small-scale mining, contribute to ending child labour, and increase household incomes by investing in off-site community programmes and vocational training.[25]

- Fairphone, which aims to develop mobile phones free of conflict minerals and through fair labour practices.[26]

- The Extractive Industries Transparency Initiative (EITI).[27]

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24 https://electronicswatch.org/en

25 https://www.theimpactfacility.com/commodities/cobalt/fair-cobalt-alliance

26 https://www.fairphone.com/en

27 https://eiti.org

Recommendations for donors

↗ Support convenings – events, meetings or other ways of "coming together" – between digital rights and environmental justice actors and organisations (ref. key recommendation 1). These need to be used for collaborative knowledge sharing, for deepening an understanding of each other's agendas and goals, and for a definition of common advocacy terrains, including policy framing for advocacy. In this context is it particularly important that digital rights actors learn from the experiences of environmental justice organisations in confronting the extractive industries. It is also important that an understanding of the technology industry as extractive along its many nodes of production and consumption is elaborated on and better understood by all actors.

↗ **Key issues to be discussed at these convenings include:**

+ The most effective mechanisms and approaches in engaging tech companies.

+ Collective civil society mechanisms to hold industry to account need to be developed, or supported and adapted where they already exist.[28]

+ How to effectively advocate at a global level for more comprehensive legislation and more demanding auditing of the sources of minerals by technology companies.

+ Issues of language and definition such as unpacking the use of the term "extractivism", including how the technology sector is extractive along its several nodes of production and consumption, or developing a more holistic understanding of socio-environmental conflict.

↗ Support participatory research involving digital rights and environmental rights actors on the issue of extractivism and mining in the technology sector (ref. key recommendation 2). Among other research topics and research-based actions:

+ Comprehensively map the global impact of the tech industry on the environment through a global research project that considers both mining and its impacts on human rights and the environment, and factories where technological components are produced. This research project would form the backbone for future policy and other advocacy at the national, regional and global levels.

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28 It is important to emphasise that the anti-extractivism movement cannot be thought of without the fundamental theoretical contributions of the anti-colonialism, decolonialism and feminist movements.

+ Review potential compensation and liability mechanisms from the perspective of most-affected communities to advocate for stronger policing and implementation of policy at the national and regional levels where the rights of local communities are negatively affected.

+ Research on urban mining, its stakeholders, social and economic impact, and the extent to which it allows for sustainable reserves to be built to counteract the negative impact of extractive mining.

↗ Support stronger networking and knowledge sharing between environmental and digital justice organisations and movements working in the global South and in the global North, many of which are already attempting to address the issue of the source of materials used in the production of technology as well as the problem of labour exploitation in the tech industry (e.g. Fairphone and Electronics Watch) (ref. key recommendations 1 and 4).

↗ Support initiatives that promote the circular economy of digital devices, taking a critical and nuanced view of the application of the circular economy to conditions in the global South. This also needs to take into consideration alternative political perspectives of the circular economy as promoted by businesses, organisations and governments in developed countries. Explore synergies between digital rights organisations in the global South and initiatives across the tech industry that have been developed to hold the industry and governments to account, and those that are advocating for governments to adopt policies on the circular economy (ref. key recommendations 1 and 4).[29]

↗ Support the development of community networks in local and Indigenous communities affected by extractive mining. APC's work in this area has shown that disadvantaged and marginalised communities are significantly strengthened through community networks, which allow for collaborative organising, information sharing, localised mapping and data gathering, strengthening of socioeconomic resilience, strengthening of collective community voice, and support for forms of collective advocacy and resistance (ref. key recommendation 3).[30]

↗ Support data sharing among civil society organisations on mining activities relevant to digital technology across the civil society sector, including academic and grassroots research (ref. key recommendation 2).

29 Examples of these policies have emerged in both India and the EU.

30 Key recommendations on how to support community networks are contained in a report by Rhizomatica and APC in GISWatch 2020 (https://giswatch.org/node/6238). It is important to find ways of using appropriate technology to support existing community governance structures in communities affected by mining in general.

↗ Advocate for open access to information and in terms of the Aarhus Convention to push for transparency and accountability in both the mining and tech sectors. For example, in some countries[31] there has been a privatisation of previously public data in the mining sector, while Google considers its use of water proprietary information. We need to have access to data on the extent of mineral reserves remaining for the production of technology, the sources of these reserves, and policies and approaches taken with respect to the involvement of local and Indigenous communities impacted by the extraction of these reserves. In this context, there is a need to understand the kinds of data held by civil society, academia and other research-based organisations on this topic, and to consolidate and share this data among progressive actors. Advocacy in this area could be located within the broader framework of data justice (ref. key recommendations 1 and 2).

↗ Build the capacity of digital rights organisations to litigate. Unlike environmental justice actors, litigation is seldom used by digital rights actors to change legislation or to limit the actions of companies or governments. This potential for advocacy needs to be more fully explored by digital rights organisations working at the interstice between digital rights and environmental justice, especially in the context of mineral extraction (ref. key recommendation 3).

↗ Explore ways of supporting women and children in informal mining in the DRC and surrounding countries, through linking with advocacy groups and initiatives, and identifying potential needs that fall within the advocacy and work areas of digital rights organisations. This may, for instance, involve digital support and training to women's associations focused on the rights of women and children in these mines (ref. key recommendations 1 and 3).

31 Such as Bulgaria and other former Eastern Bloc countries.

Brief No. 4

Addressing the impact of disinformation on environmental movements through collaboration

Problem statement

While information and communications technologies (ICTs) can enable environmental defenders, Indigenous peoples and other marginalised groups to bypass the information barriers that traditional media, the state and private actors may impose, the capabilities that ICTs provide have been misused by malign actors to spread false or misleading information about the climate crisis and environmental degradation and have also been abused to coordinate organised online attacks and disinformation campaigns against environmental defenders and affected communities.

The role that disinformation[01] plays in hindering efforts to address the climate crisis and threatening the online and offline safety of environmental activists requires urgent examination and action by both digital rights and environmental rights advocates. The environmental information disorder is a "crisis discipline"[02] made more difficult by the complexities of communicating the nuances of climate change, because it is cognitively more challenging to link individual actions with future consequences that do not "directly" impact oneself. In contrast, misinformation and disinformation feed on the implicit biases and emotional impulses that individuals immediately react to, which leads to further circulation of unverified content.[03] The "infodemic",[04] the proliferation of radical extremist ideology and the incitement of violence enabled by social media have raised

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01 In this issue brief, disinformation and misinformation are defined by the conceptual framework of information disorders published by the Council of Europe. Disinformation refers to "Information that is false and deliberately created to harm a person, social group, organization or country." Misinformation refers to "Information that is false, but not created with the intention of causing harm." Wardle, C., & Derakhshan, H. (2017). *Information disorder: Toward an interdisciplinary framework for research and policy making. Council of Europe*. https://edoc.coe.int/en/media/7495-information-disorder-toward-an-interdisciplinary-framework-for-research-and-policy-making.html

02 Ghaffary, S. (2021, 21 June). Why some biologists and ecologists think social media is a risk to humanity. *Vox*. https://www.vox.com/recode/2021/6/26/22550981/carl-bergstrom-joe-bak-coleman-biologists-ecologists-social-media-risk-humanity-research-academics

03 Roberts, D. (2020, 27 January). YouTube has a climate misinformation problem it can't solve. *Vox*. https://www.vox.com/energy-and-environment/2020/1/26/21068473/youtube-climate-change-misinformation-epistemic-crisis

04 https://en.wikipedia.org/wiki/Infodemic

significant concerns about the extent to which algorithms, artificial intelligence (AI) and data mining drive the viral dissemination of disinformation and misinformation.

Meanwhile, the actions taken so far by states and big tech have been widely criticised for being ineffective, if not deliberately opposed to making meaningful efforts in combatting disinformation. Some governments have passed overly restrictive and vague misinformation laws and regulations that have further fuelled fear, distrust and self-censorship. Measures imposed by social media platforms, on the other hand, have been largely inadequate and opaque, with inconsistent application, a lack of transparency, ineffective mechanisms, and lack of data access.

Problem description

Disinformation, in and of itself, is not a new phenomenon. As the UN Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Irene Khan, notes: "What is new is that digital technology has enabled pathways for false or manipulated information to be created, disseminated and amplified by various actors for political, ideological or commercial motives at a scale, speed and reach never known before."[05] Khan continues that although disinformation only makes up a small proportion of the total amount of content shared online,[06] the algorithms, AI and business models used in the industry are designed to promote polarising and sensational content that keeps users addicted to their platforms, which amplifies false and misleading information.[07]

This is clear in environmental and climate disinformation. A study conducted by InfluenceMap found that in the United States, 25,147 Facebook ads with misleading "greenwashing" messages from just 25 oil and gas organisations were seen over 431 million times.[08] Beyond big corporations and their hired public relations firms, background business and government allies that want to push forth deals that impact the environment, along with the general public and activists that want to vouch for their own beliefs, whether intentionally or unwittingly, also spread false information about the environment.

05 Khan, I. (2021). Disinformation and freedom of expression: Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Irene Khan. United Nations Human Rights Council, A/HRC/47/25. https://undocs.org/A/HRC/47/25

06 Regarding environmental disinformation, the Center for Countering Digital Hate revealed that a mere 10 "super polluter" publishers account for 69% of environmental disinformation on Facebook. Paul, K. (2021, 2 November). 'Super polluters': The top 10 publishers denying the climate crisis on Facebook. *The Guardian*. https://www.theguardian.com/technology/2021/nov/02/super-polluters-the-top-10-publishers-denying-the-climate-crisis-on-facebook

07 Khan, I. (2021). Op. cit.

08 InfluenceMap. (2021). Climate change and digital advertising: The oil and gas industry's digital advertising strategy. https://influencemap.org/EN/report/Climate-Change-and-Digital-Advertising-a40c8116160668aa2d865da2f5abe91b#1

The Union of Concerned Scientists examined the disinformation playbook used by US corporations across various sectors to manipulate and distort scientific findings and discovered five common tactics: funding counterfeit science published without peer review or disclosure of conflicts of interest; intimidating and harassing scientists who conducted research that threatened the company; using trade associations and front groups to insidiously spread doubt about scientific research; cleaning their image by buying alliances with professional societies and academic institutions while continuously spreading disinformation; and manipulating or colluding with policy makers to promote policies that threaten public and environmental safety.[09] These tactics are meant to erode the public's trust in scientific research, fuelling conspiracy theories that are further amplified and radicalised within the echo chambers enabled by social media algorithms.[10]

Disinformation is particularly prominent in the global South, where access to the internet may be limited to a single social media platform and a handful of "free" websites (such as the case in some nations where Facebook's Free Basics is the internet).[11] Without adequate access to diverse sources of information on the internet, people with limited internet are unable to effectively fact-check and verify that the information seen is reliable and accurate. Furthermore, countries in the global South are subjected to data colonialism[12] and surveillance capitalism[13] on top of the natural resources extraction and land grabbing they face in the offline world.

Most internet technologies come at a systemic cost that is not readily apparent. Instead of paying a financial fee, the user's private data (search history, social media posts, browser cookies, social media activity, geolocation data, and more) are extracted by companies and sold to third parties. This data is combined with the amplification enabled by ad and content algorithms and personalised

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09 Union of Concerned Scientists. (2017, 10 October). The disinformation playbook: How business interests deceive, misinform, and buy influence at the expense of public health and safety. https://www.ucsusa.org/resources/disinformation-playbook

10 Khoo, M., & Ryan, M. (2020, 27 August). Climate, clicks, capitalism, and conspiracists. *Friends of the Earth*. https://foe-us.medium.com/climate-clicks-capitalism-and-crazies-a336640b47d; Frost, R. (2020, 11 February). Is social media fuelling the spread of climate change misinformation? EuroNews. https://www.euronews.com/green/2020/09/23/is-social-media-fuelling-the-spread-of-climate-change-fake-news

11 Advox. (2017). *Free Basics in real life: Six case studies on Facebook's internet "On Ramp" initiative from Africa, Asia and Latin America.* Global Voices. https://advox.globalvoices.org/wp-content/uploads/2017/08/FreeBasicsinRealLife_FINALJuly27.pdf

12 Ibid.; Waldron, T. (2021, 6 October). Facebook's 'digital colonialism' made Monday's outage a crisis for the world. *HuffPost*. https://www.huffpost.com/entry/whatsapp-facebook-outage-brazil-africa_n_615c7bc0e4b0548301014544

13 Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power. PublicAffairs*. https://www.publicaffairsbooks.com/titles/shoshana-zuboff-the-age-of-surveillance-capitalism/9781610395694

recommendations enabled by predictive analytics to micro-target users with curated messages and ads designed to sway their opinions and influence their behaviour.[14]

Research has also consistently shown that online disinformation campaigns and coordinated online attacks often occur in parallel with offline physical violence.[15] Citizen Lab reports that smear tactics and the labelling of environmentalists as communists and terrorists in Southeast Asia has justified threats to their own and their family's safety, physical attacks and harassment, and murder.[16] Latin American environmental activists face hostile conditions with more high-profile killings of environmental activists than anywhere else in the world, while facing increasing government securitisation and ridicule by government officials.[17] Identity-based disinformation has disproportionately affected individuals who belong to marginal communities, such as sexual and gender minority groups, ethnic minority populations, Indigenous peoples, and migrant communities, among others.[18] This places environmental defenders with intersectional identities particularly at risk.

Meanwhile, actions taken by governments and large tech corporations are best characterised as being overly punitive and as being too little too late, respectively. Media watchdog Reporters Without Borders (RSF) reports that some governments have used the COVID-19 infodemic as a pretext to stifle dissent, passing overly restrictive and vague misinformation laws and regulations that have been inconsistently applied and have led to fear, distrust and self-censorship.[19] RSF further reports that some countries have taken advantage of these emergency

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14 For example, international non-governmental organisation Tactical Tech conducted a detailed analysis of the different data-driven persuasion techniques that the influence industry has utilised to help political campaigns sway voter opinion and behaviour in Uganda, Ghana, the United States and the Netherlands. https://tacticaltech.org/projects/data-politics

15 Front Line Defenders. (2021). *Global Analysis 2020*. https://www.frontlinedefenders.org/en/resource-publication/global-analysis-2020

16 Poetranto, I., Chan, S., & Anstis, S. (2021). On/offline: Multidimensional threats faced by environmental human rights defenders in Southeast Asia. In A. Finlay (Ed.), *Global Information Society Watch 2020: Technology, the environment and a sustainable world*. Association for Progressive Communications. https://giswatch.org/node/6228

17 Front Line Defenders. (2021). Op.cit.

18 For additional readings on gendered disinformation, see: Jankowicz, N., Hunchak, J., Pavliuc, A., Davies, C., Pierson, S., & Kaufmann, Z. (2021). *Malign creativity: How gender, sex, and lies are weaponized against women online*. Wilson Center. https://www.wilsoncenter.org/publication/malign-creativity-how-gender-sex-and-lies-are-weaponized-against-women-online; Judson, E. (2021, 9 July). Gendered disinformation: 6 reasons why liberal democracies need to respond to the threat. Heinrich-Böll-Stiftung. https://eu.boell.org/en/2021/07/09/gendered-disinformation-6-reasons-why-liberal-democracies-need-respond-threat

19 For an analysis of each region, see: Reporters Without Borders. (2021, 17 April). RSF index 2021: Regional analysis. https://rsf.org/en/news/rsf-index-2021-regional-analysis

procedures to criminalise any criticism of the government and impose their own truth through "corrections" of information they deem false.

Initiatives by social media platforms are often undermined by pre-existing loopholes that continue to allow "super-spreaders" to post environmental and climate disinformation. For example, Facebook continues to receive ad revenue from big corporations known for disseminating environmental disinformation.[20] Efforts made by Facebook's third-party fact-checking partners are undermined by its own policies that protect climate change denier content as opinion articles[21] and exempt politicians from fact-checking.[22] YouTube's predictive search and recommendation algorithms allow climate misinformation to proliferate on the platform despite the ban on climate change denial ads and monetised content.[23] Generally, objective assessment of the effectiveness of social media platforms' actions is also hampered by a lack of access to data, including a lack of transparency on ad and content algorithms, ad revenue, AI (such as predictive analytics), data mining, partnerships and agreements they hold with state and private actors, and inconsistent application of their terms of service across regions, languages and social groups. Meanwhile, reactive content moderation measures are applied without adequate redress mechanisms.[24]

20 InfluenceMap. (2021). Op. cit.

21 Penney, V. (2020, 14 July). How Facebook handles climate disinformation. T*he New York Times*. https://www.nytimes.com/2020/07/14/climate/climate-facebook-fact-checking.html

22 Mantas, H. (2021, 10 June). Facebook acknowledges politicians can harm, but won't let them be fact-checked. *Poynter*. https://www.poynter.org/fact-checking/2021/facebook-acknowledges-politicians-can-harm-but-wont-let-them-be-fact-checked

23 Avaaz. (2020). Why is YouTube broadcasting climate misinformation to millions? https://secure.avaaz.org/campaign/en/youtube_climate_misinformation

24 Khan, I. (2021). Op. cit.

Potential mechanisms or areas of focus for intervention

The following are potential areas for intervention:

+ More collaborative research is needed to understand how data extraction and content algorithms are abused for disinformation campaigns and online attacks against environmental defenders, and how this impacts those with intersectional identities within the larger theme of environmental disinformation. While there has been much research on disinformation in the global South, there is less evidence of research collaborations between digital rights organisations and environmental justice actors. Solutions should be sensitive to the needs of the community and affected groups. Research needs to be contextualised so that the solutions developed can respond to the different actors involved (such as state entities, private organisations, troll/bot farms) and the various strategies used against different groups.

+ More research is needed on how the ad-based revenue model is occupied by climate and environmental disinformation networks and the role that public relations play in "greenwashing" dominant state and private actors. It would be useful if this research focused on the country-level impact of this disinformation to try to prove causality between disinformation, policy and practice.

+ While there has been significant research on misinformation and disinformation in the global South, including through the proliferation of fact-checking organisations in the various regions,[25] more studies need to be conducted in the global South on the unique challenges faced by environmental activists, and on viable solutions and frameworks they may have already established that can serve as models for the global North.

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[25] Oliver, L. (2021, 30 September). The fight for facts in the Global South: How four projects are building a new model. *Reuters Institute.* https://reutersinstitute.politics.ox.ac.uk/news/fight-facts-global-south-how-four-projects-are-building-new-model; see also, for example, Cunliffe-Jones, P., et al. (2021). *Misinformation Policy in Sub-Saharan Africa: From Laws and Regulations to Media Literacy.* University of Westminster Press. https://doi.org/10.16997/book53, and the Africa-focused Disinformation Tracker: https://www.disinformationtracker.org.

+ Supporting advocacy for affordable and universal access to the whole internet (as opposed to false perceptions of web access promoted by programmes like Facebook's Free Basics).

+ Supporting advocacy for openness and transparency in algorithms and other forms of AI.

+ Developing community-based media and information literacy (MIL) skills through both online and offline training. While MIL skills are seen as an important way to develop a public that is critical of online content, and more aware of the mechanisms behind its publication, MIL skills remain important for populations that may not have or choose not to have constant access to the internet (such as remote communities, Indigenous communities and elderly populations), but are nevertheless impacted by false information transferred offline through word-of-mouth or traditional media.

+ Push for tech corporations to introduce meaningful mechanisms that can slow down the virality of social media, so that authentic users are not sharing content containing misinformation based on emotional impulse.

+ Push for state and intergovernmental entities to recognise that environmental disinformation and misinformation are equally urgent factors that need to be addressed to promote public support for progressive policies in addressing the climate crisis.

+ Advocate for independent oversight of tech corporations with true multistakeholder participation and transparency of suggestions that were rejected or accepted by corporations.

Potential stakeholders and partners

There are several groups and initiatives important in this context:

+ Environmental and digital rights organisations working at the intersection of environmental advocacy, digital rights and information disorders, such as Friends of the Earth International[26] and Avaaz.[27]

+ Digital rights groups advocating for openness and transparency in tech corporations or that provide resources and training on digital security, such as Amnesty International and Tactical Tech.

+ Fact-checking and MIL organisations and networks, such as the International Fact-Checking Network, the Africa Facts Network, Chequeado, BOOM India and MediaWise, among others.

+ Independent academic communities and research organisations studying information disorders.

+ MIL initiatives.

+ Indigenous peoples, women's rights groups, and other affected communities most impacted by disinformation and online violence.

+ Mental health support and resilience groups to assist survivors of online disinformation campaigns and to provide them with tools and resources to counter the impacts of disinformation.

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26 https://foe.org/projects/disinformation

27 https://secure.avaaz.org/campaign/en/disinfo_hub

Recommendations for funders

↗ Create and support resource and network hubs that provide space for environmental advocates, digital rights actors, researchers, fact-checking organisations and MIL organisations to share knowledge/resources and to collaborate. Importantly, successful frameworks and solutions in one region or discipline may serve as an effective starting point in another (ref. key recommendation 1).

↗ **Fund collaborative research in the following areas:**

+ Information disorders and the role they play in hindering progress on the climate crisis, especially in the global South (ref. key recommendation 2).

+ On how data extraction, AI such as predictive analytics, and content and ad algorithms are abused for disinformation campaigns and online attacks against environmental movements (ref. key recommendation 2).

+ On the specific tactics used in disinformation campaigns and online abuse faced by environmental activists and their communities, including the unique challenges and experiences of those with intersectional identities within the larger theme of environmental and climate disinformation (ref. key recommendation 2).

+ On how the ad-based revenue model is occupied by climate and environmental disinformation networks and the role that public relations play in "greenwashing" dominant state and private actors. Specific country-level research that can suggest cause and effect between this form of disinformation and country policy would be particularly useful (ref. key recommendation 2).

↗ Support local, community-driven solutions for connecting the unconnected, addressing disinformation, disseminating fact-checked information, and providing training on MIL (ref. key recommendation 3).

↗ Support initiatives that provide mental health support and other resources for survivors of online disinformation campaigns (ref. key recommendation 3).

↗ Support MIL initiatives, including for populations negatively impacted by the digital divide, such as remote communities, the elderly and Indigenous peoples (ref. key recommendation 3).