

# GLOBAL INFORMATION SOCIETY WATCH 2020

*Technology, the environment and  
a sustainable world: Responses from  
the global South*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)  
AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

## Global Information Society Watch 2020

Technology, the environment and a sustainable world: Responses from the global South

### Operational team

Valeria Betancourt (APC)

Alan Finlay (APC)

Maja Romano (APC)

### Project coordination team

Valeria Betancourt (APC)

Cathy Chen (APC)

Flavia Fascendini (APC)

Alan Finlay (APC)

Leila Nachawati (APC)

Lori Nordstrom (APC)

Maja Romano (APC)

### GISWatch 2020 advisory committee

Shawna Finnegan (APC)

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Jennifer Radloff (APC)

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Arun M. (SPACE Kerala)

Florencia Roveri (Nodo TAU)

Y. Z. Yaú (CITAD)

Joan Carling (Indigenous Peoples Rights International)

### Project coordinator

Maja Romano (APC)

### Editor

Alan Finlay (APC)

### Assistant editor and proofreading

Lori Nordstrom (APC)

### Publication production support

Cathy Chen (APC)

### Graphic design

Monocromo

### Cover illustration

Matías Bervejillo



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# Introduction: Returning to the river

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Alan Finlay

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The terrain of environmental sustainability involves contestation – for resources, for rights, for territory, for survival and for profit. This contestation is ideological, and embroils, among others, notions of public good, the value of memory and cultural practice, ownership and land rights, and decisions around what among our biodiversity is important, and what can be discarded.

Language and what discourse analysts call “socio-cultural meaning structures” orientate us in this contestation and have over the years provided much material for scholars to try to understand how environmental policy and practice are structured and evolve. How environmental discourses are constructed shapes the “shared imagination of feasible and unfeasible policies, the demarcation of appropriate and inappropriate practices, or the shaping of social identities and relations through language, non-linguistic communication and practice.”<sup>1</sup> In a practical sense, language makes visible what is governable, or can be governed.

In recent background research into environmental activism conducted by the Association for Progressive Communications (APC), it was clear that the use of language was important in how different environmental groups self-identified and delimited their activities. It was also evident how these language frames had implications for how the groups positioned themselves in relation to natural resources, people and human rights, and had become an overt site of political and policy struggle.

One of the most obvious examples is the important refusal of Indigenous peoples’ organisations to be considered “stakeholders”, in the language of multistakeholderism. Instead they insist on being referred to as “rights holders”. They argue that they

do not have the same power as governments or the agribusiness, fossil fuel and extractive industries, and that to refer to them as “stakeholders” would make this power imbalance opaque.

In line with this demand, the UN refers to “major groups and other stakeholders” in its deliberations, a separation of language that is reflected in the actual separation of business groups and Indigenous peoples’ groups in pre-events at UN forums (unlike, for example, at the UN’s Internet Governance Forum, where there is a desire for a shared platform for deliberation among business, government and civil society, even if it might not always meet this multistakeholder ideal).

Indigenous communities also insist on being referred to as “peoples” rather than “people”, suggesting the diversity and distinctness of different Indigenous cultures and lifeworlds. Similarly, in one report in this GISWatch edition, the author pointed out that in their region they refer to Indigenous “knowledges”.

In contrast, many conservationists, who are often dependent on the collaboration of governments and business for their expensive and expansive conservation projects, are more comfortable with the term “multistakeholder engagement”. While organisations like the World Wildlife Fund have human rights policies and agendas that are important to their work, conservationists might also talk about the “human-animal” conflict and “fence building” when constructing reserves, terms and concepts anathema to environmental justice actors, who centre communities and people as a part of – both sustained by and sustaining – the environment.<sup>2</sup>

Even the term “environment” has produced its own linguistic battleground, to the extent that the multiplicity of definitions in popular usage led

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1 Leibold, S., Feindt, P. H., Winkel, G., & Keller, R. (2019). Discourse analysis of environmental policy revisited: traditions, trends, perspectives. *Journal of Environmental Policy & Planning*, 21(5), 445-463. <https://doi.org/10.1080/1523908X.2019.1660462>

2 It is important to note that the different groupings and their approaches can be fluid. There have been many systemic changes in conservation over the years, and, for example, “landscaping” is now promoted as a more inclusive, horizontal decision-making method of engagement. At the same time, conservationists are also members of Friends of the Earth International, which has an environmental justice agenda.

academic David Schlosberg to argue in 1999 that “there is no such thing as environmentalism.”<sup>3</sup>

The focus of this year’s edition of GISWatch, “Technology, the environment and a sustainable world: Responses from the global South”, is, in this sense, somewhat unstable when it comes to considering what it exactly means.

This is partly deliberate. GISWatch is, for APC, essentially a research process, rather than an end-in-itself. Country reports suggest possible policy actions and priorities, offer examples of the use of technology in different contexts, and explore the potential implications of these for enabling human rights. But, beyond insisting on a human rights and social justice framework for analysis, we typically offer few restrictions on the approach the authors take to the topic under discussion. By doing this we allow for multiple perspectives, approaches and politics to become visible. Authors who may be new to the issue under discussion are also able to talk through the issue in a way that is relevant to their work.

GISWatch provides a common forum where these different perspectives can be contrasted and compared, and new perspectives understood. In this way it often provides the “raw material” for advocacy and engagement, for learning and analysis, and for catalysing new directions for advocacy among many of those who write the reports.

This year was no different. While we offered a starting definition of “sustainability”, in line with the 1987 Brundtland Report, we invited authors to critique or disagree with this definition if they wanted to. We also did not define what we meant by the “environment” and allowed authors to decide on the most meaningful topic for discussion. Even our use of the term “global South” is relatively fluid. It refers to issues of social justice and the marginalisation of people and communities in countries typically identified as in the global South, but includes developed countries in the “global North” where similar and relevant issues might emerge – whether relevant by example (such as the Right to Repair movement, discussed in a thematic report by Ugo Vallauri), or through allied experiences, such as the marginalisation of Indigenous peoples in Canada, or the social exclusions faced by Black people in New York, or working class people in London.

While “technology” has a more-or-less shared understanding among digital rights activists, its usage was also left open – geoenvironment, for example, is also an important if controversial technological frontier in the field of environmental sustainability.

What we did want to do, however, was to problematise the normative relationship that exists between environmental sustainability and technology: the idea that technology, and the use of technology, is necessarily and automatically a panacea to the various environmental crises facing the planet. Instead we wanted to start to outline how technology could most productively be a part of the complex and nuanced power relations that exist when we talk about environmental sustainability and human rights in a holistic way, identifying both its potentials and its limitations.

The result is a diverse set of authors for this year’s country reports that include digital rights activists, Indigenous peoples’ activists, techies, academics, environmental researchers, conservationists, journalists and feminists. The topics covered are equally diverse and range, for example, from a discussion on solar-powered lamps in the Democratic Republic of Congo and the use of ozone-washing machines in jeans manufacturing to reduce water consumption in Tunisia, to marine conservation and entrepreneurship in the Seychelles and anti-poaching efforts in Uganda. An overview of the efficacy of digital justice platforms for environmental lawyers in Bulgaria is offered, alongside an introduction to open data “green” agriculture projects in Taiwan, and the benefits and challenges of a virtual sustainable development poster competition in Lebanon.

The use of technology by Indigenous communities is the focus of several reports, including in Mexico and several other countries in Latin America, in Indonesia and India, and in the context of the exploited oil fields of the Niger Delta.

For example, in the Amazon rainforest, which stretches across several countries including Brazil, Bolivia, Peru and Ecuador, Indigenous communities use drones to monitor ancestral territories for invaders, including illegal loggers. In Brazil, high frequency radio – a technology already familiar to Indigenous communities – is used to share encrypted digital data. This allows communities in the country’s extractive reserves to monitor and protect their territories with some measure of safety when communicating, in a context where they “are left alone to deal with the consequences of a political and environmental crisis.” (In Asia, the regional author argues that digital security training is undervalued in the environmental space, including by donors, even though “[d]igital threats targeting NGOs or individuals working on the environment in the global South are likely to be more severe.”)

In India, the potential of a community network is used to create an online repository of traditional Indigenous cultural practices and knowledge

3 Schlosberg, D. (1999). *Environmental Justice and the New Pluralism*. Oxford University Press.

on biodiversity and farming – it includes categories on “rice”, “millets”, “Jawar”, “native trees”, “livestock”, “use of biodiversity in festivals” and “folk music”. The information is collected using an “offline-based” mobile app by young people in the community, and is also used to market Indigenous products online – a project which not only creates the potential of different livelihoods for the community through their community knowledge and practices, but, through the interaction of digital technologies and traditional knowledge, enables what the authors describe as a “new and eternally evolving knowledge form”. While an app developed for the project allows customers to see what they would look like in traditional Bohada festival paper maché masks that are sold online, the authors provocatively suggest that virtual or augmented reality could allow a deeper interaction with community practices by outsiders.

In Indonesia, the author describes how a community network has been set up in the Indigenous rice community in the village of Ciptagelar. Village projects have included a knowledge repository, the participatory mapping of data on Indigenous lands and farming cultures and traditions in the region, and the mapping of forests using satellite data and field surveys.

While locally led projects are critical to meaningful sustainability, the author also shows how “top-down” projects – at least in so far as they leverage already-existing “ecosystems” of technology use – can be successful, by describing a disaster response initiative using Twitter as a crowdsourcing reporting tool, which began as a response to perennial flooding in the capital Jakarta. Practical challenges to the project nevertheless remain, including being able to process the data quickly enough to shape government action in a time of crisis.

Drones are also used in Benin’s protected parks, to detect illegal logging, monitor forests and estimate forest carbon. They find similar application in agriculture in that country:

With drones, it takes less than half an hour to use the startup app called Agrileap to map a field, allowing you to monitor production from the study of the soil to harvesting and yield forecasts.

In Uganda, open-source technology is used to collect data from the daily ranger patrols in the country’s Queen Elizabeth National Park, including sightings of animals, the location of snares, and arrests made for illegal activities. This allows a better understanding of poaching trends in the park – and the system has been so successful it has

been implemented in countries in Central and South America, in Bhutan in the Eastern Himalayas, and in Thailand, Gabon and Madagascar.

In another innovative project in national parks in Uganda, game theory and artificial intelligence are helping rangers to optimise and randomise their patrols with significant success. As the author writes, “Humans find it hard to generate credible schedules that are also unpredictable. We are instinctively drawn to pre-existing patterns.” These experimental technological interventions that support conservation efforts are critical. The illegal trade in wildlife is one of the four most lucrative global criminal trades after drugs, arms dealing and human trafficking – not only placing endangered species under duress (or close to extinction) but forcing rangers to often engage in military-level clashes with armed poachers.

Access to data is explored in several reports – such as in the positive role of open data platforms and civic tech communities in sustaining alternative farming practices in Taiwan, including in restoring chemically contaminated rivers in a tea-farming region of the country’s Feicui Dam, and creating new markets for eco-friendly agritourism.

Yet a number of reports show how in Asia, accessing reliable datasets on air pollution to inform government policy proves difficult. Reliable technology for monitoring air pollution is costly, and is often only set up in urban areas. The data that exists can be contradictory and fragmented, offering an unstable base for analysis and action. In India, a country where the “air pollution monitoring system is a complex maze” with “confusing and inaccurate” data, low-cost sensors offer a viable way to expand the monitoring capacity in the country. However, standards and regulations have yet to be developed to authorise their use.

The problem of fragmented, inconsistent and unreliable datasets is also encountered in Sudan, resulting in a “fragility in predicting, planning for and responding to natural environmental problems.” A key problem that country also faces is economic sanctions, which limit technology transfer and its ability to respond to the imperatives set in international agreements, such as those on climate change.

In Nigeria, the lack of reliable data on oil production, spillages and gas flares in the Niger Delta – a region where the “level of under-development, injustices and environmental neglect are unfathomable” – facilitates corruption in the sector and hampers the work of environmental justice actors in the country. In Bolsonaro’s Brazil, research and climate data is censored in line with the right-wing

government's pro-agribusiness agenda. In India, air pollution data is also politicised, in a country ranked as one of the top polluters in the world. As the author writes, government air quality data cannot be trusted and is frequently "fudged". Meanwhile, the country's environment minister recently denied any link between air pollution and the poor health of citizens.

A different kind of censorship is felt in Saudi Arabia, where environmentally aware Saudis have turned to social media to create communities of interest, even while what they can say about the limitations of government policy remains restricted and censored (leaving, the author points out, a lack of a nuanced understanding of environmental sustainability in the country, including in the reporting by the media). Instead, social media groups in that country focus on individual agency, on "actions individuals can take to live a more sustainable and climate-friendly life", rather than criticism or discussion of government policy.

Fewer reports deal with the preservation of marine resources (see the Seychelles) or water scarcity (see Tunisia). Yet these are critical socio-environmental challenges. In Tunisia, access to water has become an increasingly visible component of socio-economic demands in the last decade. Throughout June 2020 alone, around 150 protests took place around the country to demand access to water and 50 protests for other environmental issues. Technology solutions include the introduction of ozone-washing machines and e-flow nano-bubbles technology machines, which have reduced the consumption of water by 98% at a jeans manufacturer – as the author states, usually 10,000 litres of water are needed to make a single pair of jeans. In the agricultural sector, technology startups are using internet of things (IoT) technology for the real-time monitoring of soil, water and environmental data to help manage and optimise water consumption.

At the same time, as the number of beaches there that are blacklisted grows annually after negative water sample tests, it is anticipated that in 10 years' time all the beaches in the country will be polluted by plastic. Environmental activists have turned to social media to confront the country's multiple environmental crises – including for awareness raising, citizen mobilisation against the phosphate industry, which is responsible for water shortages in parts of the country, and a call for a "digital strike" against the government's inaction on climate change. Activists have also called for climate change education to be integrated into school curricula (adapting the curricula is also a key concern for the island report from Saint Lucia).

Reports are critical of the smart city agenda – the centrepiece of many policy documents. Smart city policies often lack effective mechanisms and the political will to foster inclusion. In countries such as Malaysia, the author finds it unclear whether smart cities can "achieve their intended outcomes without leaving anyone behind." Instead of an inclusive economy, society and politics built on – as the authors of the Australia country report put it – "information sharing, civic engagement and community development," the potential of smart cities is "co-opted and used by state-corporate power to destabilise, divide, confuse, depersonalise and atomise."

Besides perpetuating and creating new forms of economic and social exclusion and alienation, smart cities have another shadow: the mounting and largely ineffectively dealt with problem of e-waste. As Arun Madhavan and Sreekrishna Sankar point out in their thematic report, the problem of e-waste has been in the public eye for over 10 years, at least since the first media reports of dumping in countries such as Nigeria emerged. Yet as country report authors show, policy responses that have emerged since then are often ineffective.

In Nigeria – a country with a vibrant second-hand market for technology, and insinuations of corruption being rife at the country's shipping docks when hazardous waste is illegally slipped past the borders – most unusable electronics are still discarded in landfills. Despite a growing appreciation of the importance of recycling and the entrepreneurial opportunities presented by e-waste, general public awareness of why e-waste should be properly disposed is low, and government enforcement of disposal regulations poor.

India's e-waste management rules, meanwhile, fail to recognise the critical role in recycling played by the informal sector, which handles most of the e-waste discarded in that country. In Bangladesh, there is a lack of proper data on e-waste to create effective management plans, or for effective civil society advocacy.

While many of the problems we face with e-waste have not changed over the last decade or more, what does seem to be more prominent is the politicisation of a culture of reuse, which is now approached from strong, people-centred ideological perspectives, driven by ideas of a "circular economy", shared ownership, collectivism, and even radical hacker ethics. In Argentina, Nodo TAU calls for a paradigm shift in our understanding of consumption and disposal, a change in culture where the reuse of technology is aligned with "values such as shared technical knowledge, open codes,

collective action, collaborative mapping and the democratisation of information.”

Meanwhile, Gato.Earth shows how the technology industry is implicated in the catastrophic impact on the environment and the rights and cultures of communities through the mining of lithium – used in rechargeable batteries for mobile phones, laptops and electric vehicles – in the salt flats of Argentina, Bolivia and Chile. What the authors call the “ecocide” in the lithium triangle in the region also holds unavoidable advocacy imperatives for digital rights activists concerned with environmental sustainability and the rights of marginalised communities.

A number of reports point to the importance of language and frameworks of meaning in the application of technology for environmental sustainability – and these offer some clues on how digital rights activists can sensitively navigate the interrelation between cultures and rights, technology, and the need to sustain our shared natural resources.

In their thematic report on community networks, the “Connecting the Unconnected” project team discuss how important communication is in the re-vitalisation of the Nahuatl and Tutunaku languages:

A living, Indigenous language such as Nahuatl constitutes a thought-feeling system where nature and the environment are at the centre and the human being is only one part of the ecosystem.

In this context, the authors write:

Language is vital for the care and defence of the territory, so in that sense a network that creates community through communication finds, through dialogue, knowledge, experiences, stories, needs and dreams that anchor it to the territory.

A similar perspective on “communication” – with its obvious implications of the use of technology in communities – is expressed in other reports. In the Amazon rainforest, for example, *Intervozes - Coletivo Brasil de Comunicação Social* writes that there is a need to connect people from different communities through multiple – new and traditional – forms of communication:

This includes radio, meetings and assemblies, exchanges of traditional knowledge, and even dating strategies through radio transmitters, added by internet connections. These are multiple layers of communication that complement each other.

“The river,” the authors write, is “a means of communication in itself.”

These conceptions locate “communications technologies” more meaningfully at the local or grassroots level, embedded in and supportive of cultural practices and vulnerable communities, rather than alien to these.

Yet this is as true on the forest floor of the Amazon as it is in the highly urbanised and interconnected smart city, where technology can “destabilise, divide, confuse, depersonalise and atomise,” or where, as the *Connecting the Connected* team point out:

The ownership of [...] devices is both a symptom and a perpetuator of for-profit strategies based on the manufacturing of needs, and their temporary satisfaction, through excessive consumption of electronics rooted in planned obsolescence and a throw-away culture, reinforcing values of individualism, a false sense of human connection, and that one’s worth is based on what one owns.

At the same time, *Global Voices* argues in their report on Indonesia that traditional knowledge systems are both practical and dynamic. Meanings and practices are not fixed in space or time but evolve; they have “strict parameters for community interaction” but are “fluid in nature, enabling a constant renegotiation with the environment in which these communities are located.”

The meaningful and voluntary interaction with technology by communities can be “dynamic” and result in new forms of knowledge and being. Smart cities can “depersonalise” and “confuse” or promote “civic engagement and community development.”

Whether in the most developed cities or remote regions, it therefore remains critical for digital rights activists to have a nuanced and contextual understanding of how technology can also be “extractive”; how it can destroy livelihoods, cultures and knowledge – alongside the environment – as much as it can produce new and exciting frameworks of democratised communication and meaning, and fresh possibilities for a sustainable future.

# *Technology, the environment and a sustainable world: Responses from the global South*

The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

GLOBAL INFORMATION SOCIETY WATCH

2020 Report

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