Articulating Digital and Environmental Justices

A North-South Conversation

September 2022

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Introduction

Far from being immaterial, digital technologies have an important and growing impact on the environment. It takes natural resources to produce them, energy to run them, and disposing of the inevitable e-waste is a growing problem. Even after accounting for the efficiency gains that can be derived from these technologies, it is clear that what holds true for economic growth in general, is also true for increasing digitalization: you can't have infinite growth on a finite planet.

The question then, from a progressive point of view, is how to have a digitalization process that is both sustainable and equitable. This is all the more urgent as the current trend is in the exact opposite direction: today, we are facing a digitalization process that is both environmentally unsustainable and socially deeply unequal. The situation is exacerbated by the fact that the regions and populations that benefit the least from digital technologies are also the ones that bear the heaviest environmental costs for their production and use.

Yet, as of today, conversations about digital justice and environmental justice are not happening together in the way that is needed. Digital justice is often discussed without taking into account the natural limits that constrain the very process of digitalization. On the other hand, environmental justice is often discussed without considering the growing challenges imposed by digitalization.

In an effort to try and fill this gap, the Just Net Coalition (JNC), in collaboration with the Association for Progressive Communications (APC) and the Tricontinental Center (CETRI), organized a two-day event on the 25th and 29th of October 2021 that brought together activists, experts, and officials from the environmental, social, and digital justice movements, with special attention to North/South representativeness.

The event was titled "**Articulating Digital and Environmental Justice: A North-South Conversation**", and was divided into four thematic sessions:

- **1st Session:** Environmental record of digital technologies
- **2nd Session:** What could a just and sustainable digitalization look like? Part 1: Hopes and shortcomings of green solutions
- **3rd Session:** What could a just and sustainable digitalization look like? Part 2: Limits and global (re)distribution for a desirable digitalization
- **4th Session:** Political implications for the digital, social, and environmental justice agendas

Each session was introduced and framed by presentations from experts, before opening the floor to a discussion with participants. The objective was not only to share knowledge and experiences on these issues, but also to start building bridges between organizations, movements, and regions, as well as to

try and identify potential avenues for common advocacy and political mobilizations in the months and years to come.

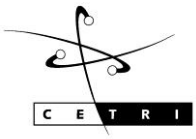
The result was an exciting event that has been almost fully transcribed in this report, so that it can be used and shared as widely as possible. The framing presentations for each session have only been edited to “clean” the text (correct mistakes, avoid repetitions, etc.), and the ensuing discussions have been reassembled under different “themes” to make it easier to follow the arguments made. Otherwise, the goal has been to stick, as much as possible, to the original exchanges to retain the “lively” and more accessible format of oral presentations and discussions.

About the Organizers

The **Just Net Coalition (JNC)** is a global network of civil society actors committed to an open, free, fair, and equitable internet. Founded in February 2014, the Coalition engages on the topics of the internet and its governance, with the aim of promoting democracy, human rights, and social justice. A working group was created within the JNC, under the impetus of CETRI, in order to reflect more specifically on the articulation of digital, environmental, and social justice issues. One of the first activities of this working group was the planning and organization of this two-day event focused on articulating digital and environmental justice through a North-South conversation. For more information, visit www.justnetcoalition.org

The **Tricontinental Center (CETRI)** is an NGO founded in 1976 and is based in Louvain-la-Neuve, Belgium. It is a research, publication, and training center on development, North-South relations, and globalization issues in Africa, Asia, and Latin America. In this regard, CETRI has long worked on issues related to the ecological transition and, more recently, on the challenges posed by the development and dissemination of digital technologies. Since 2019, CETRI has joined the Just Net Coalition within which it coordinates the working group in charge of this event and, more broadly, the work of reflection and mobilization around the links between ecology and digital. For more information, visit www.cetri.be

The **Association for Progressive Communications (APC)** is an international network of civil society organizations founded in 1990, dedicated to empowering and supporting people working for peace, human rights, development, and environmental protection through the strategic use of information and communication technologies (ICTs). One of APC's annual publications is the *Global Information Society Watch* (GISWatch), which brings together thematic, regional and country reports on a major information society issue. The theme of the 2020 report was "Technology, the environment, and a sustainable world: Responses from the global South". Released shortly before the formation of the Digital and Environment Working Group in the JNC, this report served as a key reference for the organization of the content of the event, as well as the selection of most of the experts invited to frame the discussions. It is also with the APC that CETRI took on most of the organizational work related to the event's set-up. For more information, visit www.apc.org



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Session 1: Environmental record of digital technologies

How do digital technologies impact our planet through each stage of their life cycle? How are different regions impacted, and what are each of these regions' contributions to these impacts? What are the costs and benefits for every region on the planet when it comes to the environmental impacts of digital technologies?

Framing Presentations:

Arun Madhavan (SPACE Kerala, India) based on the paper, "ICT and the environment: Building a dialectical understanding", *GISWatch 2020* (written with Sreekrishna Sanka):

In terms of the environmental impacts of ICT, most of the discussion is centered around resource-related issues like extraction of the resources, consumption of energy, as well as the waste generation that has been happening as part of the ICT revolution. Whether it is in machine learning or whether it is mass production of ICT equipment which are not really durable or repairable, these new technologies lead to more wastage and more consumption, and thereby, a higher ecological footprint. This needs to be addressed, perhaps by promoting durability instead of planned obsolescence, while keeping in mind the relation between durability and affordability. These are very important issues, with varying situations from continent to continent, which means that the responses also need to be different from continent to continent.

Another aspect that is often discussed is the issue of access to ICT and the internet. However, the popular discourse on this topic has tended to adopt a simplistic approach by deeming access as something inherently good that can only be beneficial for our society. This conclusion is largely premised on the assumption that everybody should be connected. While that may be the case, a critical analysis of the same is warranted. There is a need to look at whether access to ICT is actually affecting communities positively vis-à-vis the total cost of this connectivity from an ecological and social point of view.

Apart from this, there are several other topics that have not been engaged with enough thus far. One of them is linked to viewing ICT as a medium of communication. We generally see ICT, and particularly the internet, as something which is dramatically and positively transforming our communities. But if we look at ICT as a medium of communication, how is that medium affecting our society? How is it transforming our social ecology? This can be linked to a recent incident that happened in India. In central India, two persons were reportedly killed by a mob in a village. It was reported that the mob thought that these persons were part of a criminal gang that was kidnapping children, and the mob thought that these two persons were coming in to steal their children.

Several months after this incident, a journalist went back to this village and looked at how this incident had transformed the village. He found out that the village was getting deserted. People were leaving because the media reports of this incident had created a very bad perception of the village and it was increasingly difficult to even get an arranged marital relationship for a person from that village with someone from the outside.

This raises the question of how ICT as a medium of communication is potentially creating conflict within a society, depending on the level it has reached in terms of its ability to handle this new kind of communication, which is very fast, and oftentimes very short. This may not seem to be directly related to the environment, but it relates to the social ecology. These kinds of changes can affect the future course of our society, whether it is about the environment or the challenges democracy is facing. So, we can move ahead with our uncritical view of the internet as a communication medium and start connecting everybody, but will that lead us to a better world, whether environmentally or otherwise?

Another issue that has not received enough attention is related to the informational aspect of ICT. A lot of discussions on ICT are around the communication aspect. But the informational aspect, and the ability to process information and its positive outcomes – including in the environmental context – is also very important. This can also be linked to concrete experiences in India, where the consequences of climate change, for example, are being felt more and more severely. In 2018, for example, there was massive flooding in Kerala, in the south of India. It was a really massive event with almost 90% of the region being affected. More recently, there were again massive rains, with lots of flooding and landslide incidents, and lots of lives were lost.

Now in parallel to this, you have open data ecosystems and technologies around climate and weather monitoring, disaster preparedness, and a lot of other data and resources that are available, but unfortunately, in our region, we lack the capacity to take advantage of this. This is a clear example of a situation where ICT is offering a lot to address our problems, but unfortunately, we don't have the capacity to take advantage of it. This is one area where there is a lot to build in terms of technological exchange from the North to the South.

If you look at the history of the vaccine industry in India, you will see that today India is able to produce and supply vaccines across the world because of serious investments that were made by the Indian government and because of technology transfers from the erstwhile Soviet Union and neighboring countries, without which India wouldn't have been able to develop the vaccine industry that it has today.

So, along with addressing resource-related issues, which is a battle that has to happen largely in the North (because the firms who build these technologies and consume these resources are predominantly in the North)...from the Southern context, we need to try to better harness these technological capabilities which can help our region address a lot of climate threats, for example.

Paz Peña (Gato.Earth, Chile), based on the paper, "White Gold, Digital Destruction: Research and Awareness on the Human Rights Implications of the Extraction of Lithium Perpetrated by the Tech Industry in Latin American Ecosystems", *GISWatch 2020* (written with Danae Tapia):

There is a desert in the North of Chile, called *el desierto de Atacama* where you can find *the salar de Atacama*. This is a place with unbelievable biodiversity and a millennial culture that forms an important part of the cultural diversity of the continent. This is where you can find one of the largest reserves of lithium in the world.

Lithium is a fundamental element, both for the transition to clean energy and for digitalization, because it is used in batteries as an element that allows for storage of energy. Therefore, what happens with the extraction of lithium from the *salar de Atacama* is interesting in two ways. First, it shows how digitalization and the transition to clean energy are deeply dependent on the use of minerals. Secondly, it sheds a new light on the uneven relations between the Global South and the Global North.

A process called 'hydraulic mining' is used to extract lithium in the *salar de Atacama*, and this process requires huge quantities of water and also the use of various chemicals. We have to understand what this means in the context of a desert, where water is already extremely scarce. This has led to indigenous populations being forced to move out and migrate to the cities. It has also endangered a lot of native species in the area, and the result is a problem that has had repercussions not only at the regional level but also at the national level.

At the same time, Chile is currently in the political process of writing a new constitution. This development is partly due to territories such as the Northern region protesting against the extractivist economic model that dominates the country, as this has led to numerous zones being left as, what is called, "zones of sacrifice". This means, zones where the level of pollution, the level of contamination, and scarcity of water are so massive that nobody can consider living there anymore, except for the workers of the extractivist companies. It is precisely this model of development that is being debated in the constituent process. Do we want our country to keep being dependent on extractivism, with the extraction of copper (another very important element for digitalization and energy transition) being historically important, and nowadays, also with the extraction of lithium?

This question also raises another one: Why should the Chilean people have to be sacrificed in order for the Global North to have its electric cars? Why should the Chileans have to pay the consequences for the energy transition in the Global North? Why do we have to keep thinking that the energy transition will need to rely on electric cars, and not, for example, on a compromise from the Global North to improve and make better use of public transportation? There is a saying that if you take the brightest minds and put them in small groups to think about the best way to organize an ecological mode of transportation,

they will all arrive at the same conclusion, i.e., public transportation. None of them will come up with electric cars, because this is an absurd solution.

And yet, while Chile is having this national discussion on its new constitution, we have just learned that the German Organization for International Cooperation has launched an alliance with Volkswagen and other companies interested in Chile's lithium – including Fairphone, which is trying to brand itself as part of the circular economy – to organize consultations and local dialogue in the Northern region around the extraction of lithium. Of course, Germany and those companies are very interested in Chile's lithium, but they also know that the extraction of lithium has very bad implications for the environment. So, they launched this alliance to try and have a dialogue and find best practices, etc.

However, this immediately raises the question: What right does this German agency have to come and install itself in the north of Chile as a facilitator for dialogue around the extraction of lithium, when they are directly interested in maintaining this extractive model of development? Why are they having this dialogue now, when in parallel Chile is precisely in the process of writing a new constitution that will try to frame a new model of development in a democratic and participatory way? It is very interesting to see that with the extraction of lithium you end up once again with relations between the Global North and the Global South being embarked upon in a very colonial framework.

In this context, while it is obvious that we need to move towards cleaner energies and digitalization as a way to have more services instead of producing more products, we also need to think of this in line with a new model of development. Questions like the circular economy are extremely important, but when thinking about these issues we have to keep in mind a fundamental critique of extractive capitalism. Waste generation, for example, is a fundamental part of extractive capitalism. It is not an undesirable consequence, it is an inherent part of this unbelievably inefficient way of production that has to comply with the capitalist mandate of accumulation. If we think, for example, about the food market, and how year after year tons of food are thrown away, it makes us wonder how such an inefficient system can sustain itself. It is the same with electronic waste. Unsustainable waste generation is a fundamental part of capitalism in the technological world. So, if we try and think about a circular economy, we have to start from a radical critique of capitalism and the way it will inevitably generate massive waste, or else we will just be making a new argument for green capitalism.

Complementary Comments:

Patience Luyeye (DRC), based on the case-study, "Case study - The fate of women artisanal miners in Katanga in the Democratic Republic of Congo":

The situation in the DRC, for example in the mines in the Katanga region in the east of the country, is very similar to what has been described about the north of Chile. But what is also particularly striking is the human cost of those activities. Most people in those areas are suffering from terrible illnesses.

A lot of children are hired in the DRC mines, which is a problem almost like a kind of gangrene affecting these communities. Children are leaving schools – sometimes because their parents can't afford to educate them – and they end up working in the mines, which is extremely beneficial to the owners of the mines because these children are a cheap labor force.

Women are also particularly affected, suffering from all sorts of violence. A lot of pregnant women lose their children or give birth to children with malformations.

All of these are very grave and important problems and the companies that actually manufacture and sell the devices (smartphones, computers, etc., that use the mined resources) are just as responsible as the owners of the mines and should be made equally accountable.

Hemantha Withanage (FoE International-Center for Environmental Justice, Sri Lanka):

Obviously, there are many issues involved at the extractive end of the ICT industry related to environmental and human rights. But there are also a lot of issues related to the mishandling of electronic waste, especially in Asia, and in the developing world more generally. In Sri Lanka for example, a lot of the electronics used are cheap electronics coming from China or other countries that don't last very long, so the e-waste generated is very high. You also have second-hand items coming in from Europe and other developed countries that add to the problem.

However, developing countries like Sri Lanka don't have the facilities and the means to collect and recycle the waste produced and so, these items just go to the dumps, where most of the workers handling them, despite having probably never used smartphones or computers, get affected due to the contamination.

Right now, because of Covid, a lot of students in Sri Lanka have to attend school via the remote learning route, but 60% of them don't have access to a smartphone or a computer. So sometimes, they have to work in the mining areas or do other types of labor to be able to buy a phone. Therefore, there is also an equity angle to this discussion and we must try and give electronic access to everyone while making sure that the handling of the waste is not only supported by the most vulnerable.

Discussion:

Theme 1: Is there a more environmentally friendly way to extract lithium and other minerals used in ICTs? Would it be useful to have better impact assessment and environmental monitoring mechanisms? What about the prospects of recycling (e.g., "town mining")?

Paz Peña:

There are different ways to extract lithium, depending on the region where it is found. In the case of the *salar de Atacama*, hydraulic mining is basically the cheapest way to do it, and therefore this method is used to maximize profits of the companies that are working there. An important question to ask therefore is, whether a more sustainable model of extraction exists? It is actually impossible today to have a green mine. It doesn't exist, except as a form of false advertising in the context of growing pressure towards sustainability. Any mine has enormous ecological, social, and cultural consequences. Therefore, instead of trying to find a way to do it more efficiently or more sustainably, the thought process should be: "Okay, we are going to mine and someone will have to pay for this mine, and zones will have to be sacrificed, therefore, let's have a real dialogue to figure out if we are going to keep up with this logic of extractivism to allow the Global North to have its green cars, for example, or, are we going to have a dialogue between the Global North and the Global South, recognizing that we do need to move to green energies but also that there should be a reconsideration of the whole way the economy works in terms of endless extraction and consumption, especially in the Global North. There needs to be a limit. We cannot ask the Global South to come and save the Global North, without the North making any form of sacrifice."

Another aspect of this debate that is also present in Chile, relates to the question of saying: "Okay, then the solution is to nationalize the lithium industry so as to make it an extraction by and for the State." Today, lithium is being extracted by an American company and a Chilean company that was created at the time of the Pinochet dictatorship. So, one solution being discussed would be to nationalize this industry. However, the truth is, this doesn't guarantee that we will be done with extractivism. We will still have extractivism, but a nationalized one.

Now, on the topic of impact assessment mechanisms, of course, there should be better assessment and monitoring. But we must always keep in mind who is actually doing the assessment. If we take the Responsible Lithium Partnership, for example, the assessment will be made by Volkswagen. But human rights don't function on equal terms, as the liberal ideal would have you believe. Volkswagen will not sit with the local population of north Chile, and the relationship will not be even. This situation doesn't exist. The economic power that Volkswagen has in the zone, especially in consideration of the argument

that it is bringing jobs to the area, means that it is not a balanced situation at all. So, we have to look carefully at this because, today, most of the "solutions" put forward are linked to these types of mechanisms that are good in principle, but that finally end up being used as greenwashing. The problem is actually much more complex and much more multidimensional, so we have to look at it not so much as a problem that needs definitive and absolute solutions, because we won't find them. Answers will need to be diverse, depending on the territories involved.

Hemantha Withanage:

Regarding the possibilities of recycling, which people are also calling "town mining", most of the countries just don't have the facilities. We also need more research to figure out to what extent recycling can actually provide adequate minerals. South Korea, for example, used to send its used materials to China, but China realized that the pollution was so high in this recycling industry that they stopped doing it. This is probably one of the reasons that not much recycling is happening currently. One solution would be to impose some sort of legal backing, so that companies in Europe, for example, have an external producing responsibility to take back used products for recycling. At the moment it is very expensive, so companies are just looking for developing countries like China to handle the used products.

Arun Madhavan:

How are we even going to address these problems without confronting consumerism and capitalism? Today, there is a continuous generation of demand and as long as we can displace the problem, are we going to stop? There is an increased awareness in the North, and it could definitely lead to important changes including in the South. However, in the South today, we simply do not see the same opposition that used to happen in the 1980s, for example, when the people fought against the destruction of the forests. One reason for this is that the demand and the perception of need have changed. Even in Kerala, after the massive flooding, the left-progressive government is moving ahead with plans that are detrimental to the environment, and the public outcry is rather muted, because the perception of need and the demand is quite different from what it used to be. So, we need a cultural and political change, and that requires a different worldview to be projected, and it also requires a different kind of leadership, which I fear is currently missing, at least in Kerala.

Theme 2: How do we address the disruptions caused by digitalization and their implications in terms of environmental damage and also in terms of social ecology?

Sofia Monsalve (FIAN):

In this state of multiple crises that we are experiencing and that are linked to the ecological collapse, it is very important to try and build a new relationship with nature, and to understand that we are a part of that nature. This is a very profound change of paradigm. It requires that we look at the dimension of the planet's health, but also at our own health. We should really include this health dimension, including mental health, when discussing the impacts of the ICT. This is directly linked to the "social ecology" question that was raised previously.

Coming from the field of food systems, I think that it is very important for us to see how people and communities can build back a new relationship with their territories and with the biodiversity of their territories, precisely because this is very important for their health. Healthy food is food that can be found in local territories, that can be produced in these territories, and that is produced in an agroecological way. This entails a direct relationship with nature. Therefore, in this respect, ICT and digitalization can appear to be alienating people and communities from this direct relationship to nature. For example, to know if a food is healthy, people may use an app that traces all the origin of the products in the supermarket, but this is not what is needed to improve the health and nutrition of communities. What we need is a reconstruction with the territories and with nature as a community.

Arun Madhavan:

I agree with the feeling of alienation and how communities have changed. I was involved in the free software movement from the late 90s, and I saw how the notion of community has changed with disastrous implications. At the same time, I would not say that we should go back in time and disconnect ourselves from digital technologies and digital spaces. I think we need to strike a balance. However, I do not believe that the vast majority of the population, particularly in developing regions, has reached a stage where they can have this right balance. The rapid adoption of this technology, and the kind of disruption it is causing to their ways of making sense of this world, are very challenging. Just to give an example, most people still believe that cameras do not lie, despite the fact that we now know just how easily we can get the cameras to lie and fabricate things. So, what is the truth? How can a common man make sense of reality? This is a really challenging situation. How much digital do we need to bring in and how quickly must this happen? I don't know. But we need to reflect on this.

Theme 3: Why is it that the dire environmental impacts of ICT are not creating more opposition, especially if we compare with earlier movements against extractivism in the 1980s and 1990s for example?

Arun Madhavan:

The current crisis is not just environmental. It is happening on multiple fronts. We won't succeed in addressing the climate challenge without addressing these other complementary challenges. However, the very nature of capitalism is bound to create these crises. So how can we challenge this dominant paradigm of capitalism? Years back, we had a powerful vehicle, which was labor. Labor as a class was a powerful vehicle through which we could resist many of capitalism's ill effects. And the labor and environmental movements used to feed into each other. But today, we have lost the strong labor movement, and we have lost the strong environmental movement that used to complement it, even in an often conflicting way. Aspirations have changed now. Labor is no longer the powerful force it used to be. The capitalists and the right-wing forces have appropriated this labor class, which should be a part of the progressive and environmental movements. If we don't realize this and we don't revive this collaboration with labor, we will never win.

Mai Taqueban (FoE-LRC, Philippines):

It is not so much that the environmental movement is weak as it is that the appreciation for new technologies is problematic. Because they are so common, they become part of everyday practice. Technologies, today, are not the same as a massive open pit mine that gets converted to steel and then becomes a factory. Here, we're talking about almost an extension of ourselves, a medium by which we communicate with others. So perhaps, we have stopped seeing these things for what they actually are: precious metals and so on. Instead, we have abstracted them as means of communication. Despite the severe environmental consequences of extracting minerals required to make these technologies functional, like lithium batteries, nickel, and so on, we just can't turn our phones off. It's like we are in the matrix and these are things we are hooked onto. The medium itself creates, enables, and sustains that consumption. In that sense, our appreciation for critique needs to be better confronted. Earlier, we talked about how aspirations have changed. Today, in the indigenous communities we work with, ICTs have also become a tool to identify oneself as being part of modernity. These technologies are not just things in themselves, they actually hold meanings for identities and social capital, which make them more challenging.

Hemantha Withanage:

Perhaps another problem is that the climate issue has taken up a lot of space in the environmental discussions and struggles, and the result is that we don't have adequate time for ground-level struggles against mining and extractivism (except, perhaps for oil)?

Richard Hill:

What is happening with ICT and the environment, we have actually seen happen in other areas: there are impacts on human rights, economic inequality, etc. In most other areas, civil society is pretty aware of what corporations are doing. They are maximizing profits and to do that they might sacrifice the environment, workers' rights, human rights, etc. But somehow there is this presumption that this is not happening in the ICT industry… until we have the latest revelations on Facebook, for example. There has been this presumption that somehow Google's motto "do no evil" is actually true, and that big ICT companies are only doing good. For example, they are helping the environment because they are making things more efficient, and electric cars are great, but nobody talks about lithium batteries, and so on. Further, there isn't that much consideration of the direct negative effects of ICTs on the environment (e-waste, electricity consumption, etc.). So, there is a kind of pro-technology, pro-ICT, pro-internet mindset that we need to combat. And we need to look clearly at the disadvantages as well as the advantages of ICT and the internet, and evaluate the net impact, not just the favorable impact.

Session 2: What could a just and sustainable digitalization look like? Hopes and shortcomings of "green solutions"

What are sustainable futures for the development of digital technologies, and what can we make of mainstream "green solutions"? What role can technical solutions like recycling or eco-design play in sustainable futures, and what are their limits?

Framing Presentations:

Leandro Navarro (Pangea/eReuse, Spain), based on the article, "What is the circular economy of ICTs?", *GISWatch 2020*:

The circular economy is interesting because it is something that depends on us. It is important to remember that we are only users of this planet. We don't get to design how it works. But we can build, use, interchange, dematerialize and build back ICT devices to try and reach for sustainability. In this respect, the circular economy can be seen as part of the solutions, knowing that there are no simple or unique solutions.

To get a better sense of our place on the planet, we can start by remembering how little we, humans, weigh compared to other animals and, even more, to plants. If you take the total weight supported by the planet, plants dominate by far. Further, within the animal kingdom, you have a lot of insects, fish, etc. Humans only form an extremely small proportion of the living things on Earth. When measured in terms of carbon, the human weight is around 10kg, because the rest is water. So, if you recycle a human, you end up with only 10kg of dust.

Now, if we look at how many electronic devices we are buying and throwing away each year, we see that we have a huge problem of electronic waste. Each year, we are generating around 57,000 tons of electronic waste, not only from ICT but also from other devices that are connected to electricity. If you take computers, for example, they are much less numerous than mobile phones, but they weigh a lot more. So, we are facing this problem of waste generated by all the devices being produced and sold each year. And the question is: how can we try and reduce this waste?

One solution is to look at how long we are making these devices last. If we look at the statistics, for different reasons, mobile phones last for a very limited amount of time, and when we stop using a computer, we sometimes recycle it, which sounds like a good thing, but it is actually preferable to keep using it as long as it has utility, because the environmental impact of producing those devices is massive, much bigger than the 10 kg of carbon that we weigh as humans. Behind the 200 gm to 5-7 kg of a computer, you actually have a lot more that does not meet the eye and that would justify making it last much longer.

Keeping this in mind, we can look at all the potentially active devices at a given moment, whether they are in their first, second, or third year of use. We would see that almost half of those devices are mobile phones, despite the fact that we make them last for such little time. So, we have this huge quantity of waste that is being generated, and if we keep throwing away those devices that could still be used, we are in a form of linear economy that is not viable. On the contrary, if we manage to improve the proportion of the existing devices that we actually use, then we automatically reduce the quantity of waste.

The idea of the circular economy is, ideally, to make sure that there are no wastes generated altogether. Obviously, this is just an ideal, we will never fully get there. However, it can still be a goal for sustainable development, not only in the field of ICT, but also in life in general. This is an idea to try and have as little waste as possible, and therefore to maintain the products in their maximal value while reducing low-value waste (or actually, we could even say that such waste has a negative value because it is hurting us) as much as possible.

To keep in line with the objective of maintaining the rise of global temperatures below 1.5°C, we have to cut the emissions of greenhouse gases more or less by half by 2030. We are still only halfway through, but at the same time, we see that the ICT industry is going in the exact opposite direction. We might argue that one thing is the sustainability of the ICT, and another is the role of ICT in sustainability. We often hear that the ICT industry is going to grow and that it is going to be extremely helpful in making societies more sustainable, but that remains to be seen.

So, we can see the circular economy as a circuit in which we, as humans, get to decide on everything that happens in the circuit, from design and production, to consumption, use, collection, and recycling. Of course, there are different types of actors. Today, citizens are generally expected to buy, consume, use, and dispose, while others do the processing, design, etc. But we are all humans after all. So, another way of seeing the circular economy is as a circuit where devices are being designed, made, sold, used, collected, and prepared for local utilization, either by a professional, or by ourselves as users. We can prepare these devices and give them to other people inside our organization, our home, or our city, who would need them, and therefore, we can improve the useful life of the device as much as possible. When these devices can’t be used anymore, we try to find a sustainable way to collect them and to dematerialize them, which means to take out everything (material, pieces) that could be used in new devices, instead of generating waste to be incinerated or buried.

This could be a part of the solution, keeping in mind that there are no simple solutions and that we can only aim to improve the process. However, the good news is that there are examples of how to do something like this in multiple domains: from what is called “ecological design”, to the monitoring of the

environmental and working conditions in factories, to the certification of design and fabrication processes to ensure that we are not simply greenwashing.

At least in Europe, public entities can play a fundamental role when they are buying these devices because of the volume that they are buying, which gives them a lot of power over the manufacturer to ensure that they are respecting decent environmental and social conditions in their factories. This ends up benefiting everyone because those same factories work for production for every client.

Other initiatives try to encourage citizens to empower themselves to repair, and lengthen the useful life of the equipment. There are also numerous examples of social enterprises that are preparing devices for others to use as second-hand equipment. There are also initiatives that look to allow people to simply use a device rather than to own it. Most of us have no need of owning devices, we just need to use them. So, we can find a model in which we pay for using, rather than for buying, and when we don't want to use the device anymore, the service provider can rent it to someone else. Such an approach makes the service provider interested in buying devices that last a long time because this would be more economically viable.

Yet another possibility is to work on public procurement. For example, the city of Barcelona buys a lot of computers every year and also ceases to use a lot of them every year, but still, there are many unmet needs of the community. So, we can take advantage of this by collecting the used computers, preparing them and giving them to people in need, which also creates a lot of social value.

In all of this, the digitalization of the value chain is important, because it allows us to see, to count, and to calculate. Therefore, it can be useful to monitor industry and society in their use of devices.

Finally, there are also numerous recycling initiatives around the world that are good examples to follow, because they combine not only the minimization of environmental impact but also the maximization of the social impact in the communities where they work.

Tâmara Terso (Intervozes, Brazil), based on the project "Territórios Livres, Tecnologias Livres":

We are going to present two experiences that have been underway at Intervozes for about two years… experiences of work with traditional peoples and rural communities in the perspective of sharing knowledge around the conceptions of technology and the promotion of rights: right to territory, promotion of human rights, and promotion of access to the world wide web…Not only access that guarantees some usability, but also access in the sense of actually building the digital networks, of building forms of access…and, to do this in a dialogue with the traditional ways of life that these peoples have been developing for millennia. Many of them, especially the Amerindian peoples, the indigenous peoples, and *quilombolas* peoples in Brazil, were here long before this process of colonization of

capitalism that has been building a dominant perspective ever since. However, this dominant perspective on digital technologies is very focused on the accumulation of profit, which is not part of the cosmovision of these communities.

The first experience is of the “free territories, free technologies” mapping. It has just finished its first phase. It started in 2020 with Intervozes and two other organizations, the Movement of Women Rural Workers of the Northeast (MMTR-NE) and the National Coordination of Articulation of Rural Black Quilombola Communities (CONAQ). The mapping sought to share conceptions and uses of technology in 33 territories of women, rural farmers, and indigenous *quilombola* peoples in the nine states of the Brazilian northeast, in order to understand a broader process that starts from the need for, and the inequalities of, access to the internet, which intensified in these territories at the time of the pandemic.

The first axis was mapping the conceptions of technology in these territories. The communities involved shared with us a broader idea of technologies, not just based on the need for digital technology, but also on the idea of technologies that have been built for a long time in these territories, technologies that we call ancestral technologies. They are technologies for land management. Technologies of care. Technologies of traditional medicine with herbs. Technologies of dialogue and of respect for the older and younger generations of each community.

All of this, based on a commitment to building together, in a shared way, the knowledge and coexistence in these territories, starting from the idea that we cannot disassociate nature from people, human beings from other living beings. These are all forms of living diversity that share knowledge to follow their ways of life which are threatened by this expansion of a predatory development. This notion of predatory development, whether sustainable or not, brings with it an idea of expansion. An idea of invasion, of an advance over territories, over ways of life, in the sense of dichotomizing, submitting, and subordinating certain peoples to certain technologies to the detriment of others.

So, we end up questioning this idea of development, of expansion, of advance, because when we share knowledge with these peoples, we understand that coexistence is not based on change, it is based on the sharing of experiences. Sharing experiences helps to build coexistence in the territory with climatic diversities and with the cyclical forms that living beings present in their most diverse incarnations and conceptions. This is an important aspect of the research: people’s conceptions of technology are amplified so that there is no overlap between digital technologies and these ancestral technologies, but rather a movement of sharing and coexistence between them.

The second axis of the mapping relates to the uses of these technologies. When we broaden our gaze to these territories, we realize that the way in which this expansionist process of development presents itself to these ways of life and to these communities is always with an idea of subjugation of territorial knowledge. To give an example: one of the main policies implemented in Brazil to try to mitigate the

damage caused by Covid-19, especially on low-income families, was a policy of resource distribution from the federal government. This policy was implemented through digital technologies, through platformization. However, this approach disregards the fact that a large part of the rural territories of traditional peoples and communities have enormous difficulty in accessing digital technologies. Therefore, a large part of these communities could not access this emergency aid during the pandemic.

In May 2022, the last installment was distributed. Social movements have been fighting for this aid to be extended, but in its very conception, it relies on this subjugation of the technologies of the territories to digital technologies. The very form of access to the right makes it impossible for these communities to actually access it, due to their lack of access to digital technologies. Now, other Brazilian public policies have been based on different technologies. However, the coexistence of these technologies is at risk with the platformization of public policies in Brazil. Take the CadÚnico technology. It was developed in 2013 by the federal government. It consists of a single registry that allows anybody to physically access a space where questions are asked not only to know if the person needs a resource or not, but also to understand the person's integral way of life: the economic and psychological situation, the violence that he or she suffers, the violence that comes from racism, machismo, etc.

This registry was disregarded in the distribution process of the emergency aid during the pandemic. It is very worrying because it is an example of how digital technologies are implemented in these communities. It is always a process of subjugation that touches on fundamental aspects of self-determination. At no time were these communities listened to about how they could have access to this right.

Now, we are going to start the second phase of the project which is the construction, together with these communities, of a mobilization campaign around these themes: the inequality of access to the internet, but also the visibility of the ancestral technologies that need to continue to coexist without undervaluing and without reducing the importance of fundamental aspects of these communities, which is to maintain their ways of life. These have been cyclical for millennia, starting from this simplicity that was also evoked by the circular economy. However, there is a central difference here. Too often the circular economy is presented as a green solution that is still part of this expansionist process of development, with a capitalist logic of profit generation that we need to question.

Pedro Ekman (Intervozes, Brazil):

The second experience took place in the city of São Paulo with the Guarani indigenous people. The city of São Paulo is the largest city in South America. It has a population of 10 million inhabitants. In its municipality, São Paulo has two demarcated indigenous lands. These two lands are destined for the

Guarani people. They don't depend on the State, and they have total autonomy to manage their territory. Around 2,000 indigenous people live in these two demarcated lands, in this city of 10 million people.

There were dozens of rivers cross the city of São Paulo, but all these rivers are now dead. The city managed to kill them all in its development process. The last living river in the city of São Paulo is protected inside an indigenous land. This shows us the importance that technologies of resistance produced by indigenous peoples have for the general context of humanity. The pandemic made it clear once again: we are living the end of the world. We are living a collapse of the development and production designs established until now. This is why we started to look for how these indigenous *quilombola* peoples have evolved. They have already resisted and survived many ends of the world, so they can help us think about our relationship with technology.

At least 500 years ago, in Brazil, the world in which these indigenous people lived began to collapse, until it came to an end with the colonization process. Yet, they are still standing here and showing us how to try to maintain a relationship with the planet. They do not separate humanity from the environment, while capitalist societies think of the planet as a resource to be exploited, in fact, capitalists are now even looking for a sustainable way to exploit the planet. The indigenous *quilombola* people work in a completely different matrix. They do not consider the planet a resource, they consider themselves as a part of nature. They are not defending nature, they are nature defending itself.

The Guarani have managed to install internet connections in the more than 21 villages that exist in these territories. This helped them with various processes of political organization, by making it easier to communicate. The Guarani are very dispersed throughout their territory. They have these two indigenous lands in São Paulo, but they are also present in Paraguay, in Argentina, and in Santa Catarina in the southern region of Brazil. They have also had relations with non-indigenous populations for a long time. With these internet connections, they realized all the benefits that this non-indigenous technology could bring from the point of view of organization, and from the point of view of communication. Internet connectivity facilitates a series of processes, and access to rights, that were previously difficult in the territory.

They also realized that with this non-indigenous technology, difficulties that didn't exist earlier, now started to appear. This is why, together with Intervozes, they are trying to create a collective process to relate to this technology. For example, we are researching ways to establish connection access control, so that they can collectively debate how to relate to the internet. Until now, the choice was between either no connection at all or the whole internet. However, they realized that it was important to get out of the "attention economy". Internet corporations are in a constant war for attention capture. Unlike television and radio, devices like cell phones and computers are omnipresent and uninterrupted. The

cell phone is with us all the time, everywhere we go, and the internet connection offers us content all the time, uninterruptedly.

This kind of dispute for attention produced by the very economy of the internet, has a very big impact on everybody's lives, whether indigenous or non-indigenous. It produces a series of social illnesses called a "crisis of presence", in which our bodies and our attention are hardly in the same place. We channel our attention to places and issues that are totally unrelated to our presence. This has an impact on everyone's lives, but it has an even greater impact on community life, because community life depends on collective work, and if each one is individually channeling his or her attention to different places, community life will crumble and fall apart in any territory that needs collective work in order for the territory to exist. The Guarani realized this very quickly and began to try and deal with it, by saying: "We need the internet, but the way it is coming will end up destroying us. So, we need to find a way to relate to the internet that allows us to have the good that it brings us, while at the minimum containing the bad that it also brings us."

One solution was to install internet Wi-Fi routers and devices that allow you to schedule times and types of websites and applications that people can access at certain times. For example, some villages have chosen that from six in the evening to eight in the morning, the only thing available are messaging applications like WhatsApp, Signal, or Telegram. Therefore, applications that are made to communicate with other people are available, while the rest of the internet is blocked so that the competition for attention does not take place. This way they can devote themselves to rest and to activities of community life that are sacred to them, including daily rituals that were becoming very difficult to do with the constant internet connectivity.

In conclusion, this work has been very important to show us that we have a lot to learn from these ancestral technologies. These technologies are not necessarily synonymous with digital and electronic devices, rather they are social technologies that could help us survive and resist the end of the world that we are currently facing.

Complementary Comment:

Leandro Navarro:

One common topic between our presentations is the fact that digital technology is generally an alien technology. It is produced in a corner of the world and we only get to use it as it is. Communities need more options than just using the technologies. Community networks are an excellent example of how communities can empower themselves. How they can decide how they want to use technology and organize their own way of creating an infrastructure as a common resource to satisfy their needs, and not the needs identified by a manufacturer thousands of kilometres away. I read an article recently,

explaining that feeding the world cannot be done by restaurants, it is about cooking yourself with local products, local recipes, and then it is about how people can feed themselves and not just consume the product. In our experience, the circular economy can also be local. We can find our local ways to refurbish devices and local ways of manufacturing them. About 20 years ago, it was still possible to assemble and sell locally-produced computers, however, this is not the case anymore. They come already manufactured (from China, mostly), and it's something we have to work on. Finding local ways of having circular economies that create social value is of utmost importance. Not everyone can afford to buy a new computer, but we can afford to buy a second-hand device, or even just pay for the service, or get it donated by someone who doesn't need it anymore. In any case, communities' self-determination is the way to go.

Discussion:

Theme 1: How is self-determination even possible in the digital sphere given its concentrating dynamics and effects?

Sofia Monsalve:

Coming from the field of food systems, for me, the notion of food sovereignty is a very important paradigm. How can this notion be linked to the notion of digital sovereignty? There seems to be parallels, but only in part. Food production is, basically, a decentralized task. Given that communities are in contact with nature and not dispossessed of their territories, they have this autonomy. They have the capacity to produce their own food. But with the use of digital technologies, at least as it is structured now, it is impossible to have the same control. We can create certain counter-hegemonic spaces and uses, but the political control on the networks, for example, and how they are structured, is extremely concentrated. So, it seems really difficult to have a project of digital sovereignty with the same characteristics as food sovereignty.

Leandro Navarro:

I agree that the food industry is different. In Europe, at least, if you want to buy a kiwi or an apple or a tomato, they come from a lot of different places. In computing, it's the opposite. Most of it comes from a few places. So, we can say that we are eating digital hamburgers because they are designed in the United States and manufactured in China. So yes, it's a different degree of centralization.

Parminder Jeet Singh:

We seem to be mainly talking about the connectivity paradigm. But the world is now shifting to a centrality of data and AI paradigms. These paradigms, especially AI, are even more centralizing and dependency creating as we increasingly outsource our intelligence to outside systems. So, when this

kind of complexity and acute dependency comes around, how do we manage it? When you go up to the level of centralization of AI, not just connectivity, which no doubt has its own problems, how do we scale and manage democracy along, so that we retain decision-making power? I believe that some of the answers are in the dialectic between the micro and the macro.

Tâmara Terson:

I still think there is a correlation between food sovereignty and digital sovereignty, but we need to broaden our understanding of the origins of the digital. Here, in Brazil, there is an effort made by researchers, especially black and indigenous researchers, to think of technology from an Afro-diasporic perspective. This is done, for example, by recalling that algorithms and binary codes have their origins in Africa – from the Bantu peoples. Achille Mbembe has also brought forward this idea that the construction of a network architecture has a much older meaning than what we normally have in mind when we talk about digital technologies. So, in this sense, I believe that we do live surrounded by this centralization of the digital. However, I also believe in the possibilities of building a digital sovereignty in territories when it comes to the sharing and meeting of digital and ancestral knowledges. For example, in an "amefricana" perspective, (which means from the encounter between the knowledge of the African diaspora and the knowledge of the Amerindian, with their similarities in terms of connection and coexistence with other beings) we could think about the construction of devices from these territories, with indigenous programmers, with technologies and possibilities of creation inspired from these processes of coexistence and the wisdom of territory.

Theme 2: What is the possibility for such a localized vision of self-determination being the inspiration for a more scaled-up or even a transnational or global conversation around technology?

Tâmara Terson:

I feel uncomfortable thinking about these alternatives in terms of the scale of the market, and of this expansionist process of development. All across the Global South we see specific experiences that can be developed in given territories. Each experience has its singularity. We need to think about them, not in search of a centralizing pole of solutions that we could spread to other territories, but more in terms of exchange of experiences that break borders and bring dialogues. Each experience is unique, but there is this "transfluence", this confluence that connects these different experiences together. This is what can be broadly shared. If we look for a global scale, we are thinking once more in terms of solutions that come from the development of capitalism and not about experiences that come from the territories.

Pedro Ekman:

This scalability issue is a trap. We risk getting stuck in this debate between the micro and the macro, on whether we are going to dedicate ourselves to a territorial solution or to a universalizing solution. The truth, however, is that we need to act a little bit on both fronts. It is not a matter of choosing between a universal solution or a particular solution. We have to combine both forms of action. It is increasingly difficult for solutions that try to be universal to become effective. At the same time, more and more corporations are less susceptible to national regulations, and more and more international regulations have less power to act in relation to these big corporations.

So, we have to be able to think in both ways. We have to be able to act in the production of more universal solutions. But we cannot neglect the production of a relationship that starts from concrete realities, from something that is actually happening on the ground and that is impacting millions and thousands of lives. Otherwise, we will be throwing away a whole process.

For example, Intervozes is working here in Brazil on the issues of surveillance and privacy. We are trying to find regulatory solutions that guarantee citizens' privacy. This work is increasingly difficult, however, because today, people want to be watched. So, if we manage to pass a law that prohibits, for example, the existence of surveillance cameras in the city, most probably the population will be angry at us. So, how do we produce the desire of 'not' being watched? This will not be done with a universal solution. It will have to be worked out by starting from the territory, from neighborhood relations between people that produce a world where such surveillance is not necessary.

If we want to postpone this end of the world, we will need universal solutions that apply to society in general, but we will also have to act in the layer of interpersonal relations, of neighborhood relations, of community relations, because it is there that you are going to produce a life where these things, and what we seek, are possible or not. Otherwise, you have these top-down applications, where a new law is passed, for example, but society will not follow the new law, because the relationships that actually create the desire for another different society have not been successfully produced.

Leandro Navarro:

We shouldn't worry too much about things that are out of our hands. Of course, we need to monitor what's going on. But there are already so many opportunities to act in our communities in terms of a circular economy, and it works (see the examples in the guide the APC has published). For example, Fairphone only started as an experiment to see how the supply chain for telephones worked, and now they have ended up designing four models. Maybe it won't change everything completely but it can definitely have an impact. So, of course we need to understand what's going on and develop local knowledge, but it is also important to start building concrete alternatives.

Theme 3: To what point is the circular economy compatible with market mechanisms (e.g., the satisfaction of demand or the profitability of recycling)?

Sofia Monsalve:

We talked earlier about the need to put an upper limit to demand in the digital economy. At the same time, the UN, for example, is pushing for connectivity to be universal, and for access to the internet to become a human right. If what this means is to enlarge the demand for devices that allow for a connection to the internet, this demand will become gigantic. Instead, we could determine, in a sovereign or freely determined way, what the right demand should be, and in this case, we would be having a whole other conversation. In any case, my point is that we cannot entirely depend on the market and on this idea of automatically matching supply and demand. We need new forms of economic planning. This is something we need to include in the perspective of a circular economy.

Leandro Navarro:

It is true that talking about a universal right to connectivity necessarily means a universal use of devices. However, if we think in the perspective of a circular economy, we can locally reuse devices that are not suitable for their first task, but that can still work for other tasks. This idea of substitution, of reusing devices that can still be used, contributes much more to universalizing computing. For example, the Catalan government annually produces 30,000 computers that are no longer used. So, we have that supply. Especially during the pandemic, this was very welcome, because China was not producing devices. So, the only way to keep supplying devices was to reuse those that were already available locally.

This refurbishment can be done locally. It is easy to separate parts, to recondition devices for usage without dismantling them. It is true that there are a lot of raw and precious materials in e-waste, for which we still need to find an economically efficient mechanism of extraction, because, often, the cost of extracting the materials is higher than the value of those materials, and so it doesn't work from an economic point of view. However, beyond economics and beyond markets, there must be a role for communities and for governments to regulate the sector and to make sure that there are some limits. For example, the extended producer responsibility is really important in that sense, to make sure that recycling is paid for by those who introduce the device to our planet.

Session 3: What could a just and sustainable digitalization look like? Limits and global (re)distribution for a desirable digitalization

How could we foster a digitalization process that is, at the same time, ecologically sustainable, democratically controlled, and socially and economically equitable, on a global level? What will we have to let go or renounce? How could/should these efforts be distributed globally given current global inequalities?

Framing Presentations:

Peter Bloom (Rhizomatica, Mexico), based on the paper, "Community networks: A people - and environment-centred approach to connectivity", *GISWatch 2020*:

The Local Networks initiative (LocNet) is a project between APC and Rhizomatica, which is an organization that is focused on local, community-based approaches to connectivity. Consider an analogy with smallholder agriculture: it is important for the environment, and this enables us to produce food and other resources for humanity. We think it is the same with connectivity.

The work of Rhizomatica and the LocNet initiative is to support people trying to provide connectivity from the bottom up. It means developing technology to make it easier for people to get connected. It also means pushing for policy and regulation changes in order for that to be possible. Finally, it also means thinking about sustainability models (environmental, social, and economic).

As of today, about half of the world is not able to get online. We attribute this mainly to the fact that the digital world is extremely concentrated. The pie is split between internet service providers, huge tech platforms, and mobile operators. They managed to connect half of the world, but the other half is not able to meaningfully connect. Most of the places without connectivity are in rural areas, and they generally also face the harshest impacts of climate change.

We propose to take the bottom-up approach to the actual infrastructure itself: the wires, the wireless routers, and all the kind of infrastructure needed to create connectivity. Generally, this would mean using renewable energy, especially if there's no power grid, and it certainly means using local power. In other words, local organizations and local people do much of the building out of the network, the design of the network, etc.

We can make another connection here with environmental justice around the issue of favoring small-scale solutions. We try not to take a monolithic approach to connectivity. Especially when it means pushing ideas and concepts based on consumption onto people. If we are able to have a more diverse set of actors engaged in providing connectivity, we can hope to diminish this monolithic, super-corporate, consumer-based internet that we are all used to, but probably not too happy about. There is

also this idea of people just taking care of their own issues. This idea of local involvement, of a "small is beautiful" approach to connectivity, grows out of the appropriate technology movement and considers local people as best suited to solve their local needs.

That doesn't mean there are no barriers and challenges in the way. A lot of the work of LocNet and Rhizomatica is precisely to try and remove some of these barriers. Technologies developed by huge monolithic corporations don't necessarily work in every setting. So, we need to develop technologies that are open-source, low power consumption, and more robust. However, in order for this to happen, the regulatory and policy issues are extremely challenging. For example, from a legal perspective, it is very hard for people to start their own networks. This is not even allowed in many cases. You can't just put up your own Wi-Fi routers or fiber optic cables without requesting permission from the government. When you do request such permission from the government, they are generally mystified as to why a community is requesting something from them – they are used to just speaking with the mobile operators!

In order for more people to be involved, we need to push community networks as a movement and provide all the support needed so as to make participation more equitable, again starting from the actual building out of the network itself. One of the big challenges with digital technologies is this idea of being only a user. There is this idea of being a passive recipient of something versus having an active role and a participatory engagement in building the thing itself. The latter allows you to understand better how it works and to propose different ways of doing it. Hopefully, this can lead to better outcomes.

What are the applications or services running on these community networks? This is extremely important. There are examples of how communities are using their own networks to do things like environmental monitoring, to promote local parties, develop production, protect natural resources, and so on. We think that community networks can be just a general layer for internet access, but they can also be purpose-built for environmental usage. For example, we are about to start working with a group in Nigeria which is going to set up a network of environmental sensors and tie those into a database in order to be able to report on air quality, etc. You can imagine all the different possibilities!

We are trying to grow this movement as much as possible. We work with people all over the world and we are slowly making progress on different fronts. In the checklist of things we'd like to see happen, more public investment is certainly present. Governments are currently investing millions if not billions of dollars in subsidies and givebacks that go to major internet and telecom companies. We'd like to see some of that flowing into communities directly, so that they can build out the internet the way they want, rather than having it imposed on them. Further, they can hopefully do so in ways that are friendlier to the environment, to their local culture, and to the basic general well-being of the community.

Jes Ciacci (Sursiendo, Mexico), based on the article, "Imagining a principle for a feminist internet focusing on environmental justice", *GISWatch 2020*:

I was invited to share a work that has been done around the design of a feminist internet principle focused on environmental justice. This conversation started in a meeting held in Chiapas, in the south of Mexico, in 2019. At the time, we said that a feminist internet is one that respects life in all its forms and does not consume it. Therefore, our proposal is one that redefines technology towards an ethics of collective care, versus the current design of extraction, production, consumption, and disposal of all the technologies involved. This means looking at technologies in the broad spectrum, not just at the beginning and at the end of the production chain.

There was also an effort to think about the narrative, to influence the possibility of creating other worlds. We felt that proposing solutions that end up being framed within a capitalist framework can only leave us with capitalist solutions. And this has already led us to "clean development" or other forms of greenwashing, which don't address our modes of production and consumption. We are made to believe that we can continue consuming in the same way that we are consuming now, but in a more eco-friendly way. When in reality, there is a need for deep changes in our own practices and, above all, from political actions.

We also want to avoid maintaining the structural differences and inequitable logics that have deepened with current technologies. This is why we don't think about these technologies as artefacts but rather as relational devices: relations of involvement, of affectation, of care, and of collectivity. Today, those relations tend to be depoliticized and cut from the affection they create. So, our purpose is to re-politicize them and to show what affections they imply in order to move towards policies of co-responsibility.

To do this, the design issues are fundamental: what are the models, who gets to design them, etc. We know that current technologies tend to separate the whole chain of production. While there are many elements to modify in the middle of the process, the question of design is fundamental. These design considerations can even involve the public policy actions or public investments that were discussed earlier.

Current technologies contribute to a model of dispossession, abuse, and violations of many peoples, territories, and communities. Against this, approaching other processes, other worlds, other ways of building, of thinking, of seeing, of standing in front of the environment, opens up a world of possibilities. In that sense, when we talk about inclusion or inter-relation with others, it cannot be simply from the logic of the market. It cannot just mean to include from one point to another, it must also mean to include ourselves in the visions of others.

This exercise also implies that we must go through the architecture and the current infrastructure of the internet, trying to think how that materiality and those connections at different points could be closer and more dignified for us. An internet that considers both people close to us and environments, as well as more distant people who may be affected by the use or production of these technologies. Then, through a speculative exercise, we can imagine our technologies as an observation system. An observation of the growth cycles of plants, for example, that limit their evolution, their production, their daily activities in the times of nature, which allows other possibilities of sustainability to emerge.

In terms of actions, there is a principle that, like any principle, is a possibility of action. It was established, at least 20 years ago, in one of these United Nations Framework Conventions on Climate Change. This principle is about "common but differentiated responsibilities". All the actions in favor of reducing climate change, such as producing, using, and implementing technologies that are closer to us, fairer, and more environmentally friendly – these are considered a common responsibility. There is, however, a differentiated responsibility in terms of who and how we will use these possibilities. This principle also allows us to understand clearly how we have to act in different ways in different regions. All of us have to do something, but not all of us have to do the same thing.

In any case, we have to move away from this logic of the profuse, of the obscene, of "everything is available" and "everything can be used all the time". We need to be able to generate designs that are more related to local communities that are also affected at some point in the production chain. We need to be generating dialogues and inclusions with these groups and communities. This would also make it possible to generate technologies that are more modular and more recyclable. We must imagine actions against the use and dispossession of technologies. In this sense, thinking about technological sovereignty has to be done from a transversal logic. Starting from the infrastructure, from the more material issues, up to the development of software. From the networks to the devices. We can think about cooperative community services, for example, but we need to think about it from a different political logic. A logic that allows and considers as valid the deceleration and the need not to have access to everything all the time.

This relates to the intention of domestic technologies linked to family and collective care. We all have to rest, so we can also consider that the machines, the processes, and the issues that happen on the internet, also need some time to rest. We can think of an internet that is not mandatory and that is not 24/7. By "mandatory", I am referring to the fact that now even basic medicine or education is centered around the internet, as we saw happen during the pandemic. But in many communities, the internet does not even exist, or the conditions of "literacy" have not been created to be able to use and take advantage of it.

One last aspect for a desirable internet has to do with the notion of a "spiraling internet" that would allow us to approach different communication needs. Often our communication needs just involve people within close environments. We do not need large networks, or an infrastructure designed from the logic of traveling long distances, to be able to communicate with people in our neighborhood or in the next town. This is part of what the current networks imply, but not completely because in the end, it all depends on a more global internet.

To conclude, let me go back to this idea of thinking the internet in and through new ways of perceiving time, including human time, personal time, collective time, intergenerational time, but also spaces of nature, memory, and observation. The different forms of intelligence. The processes of rapprochement that we can have from observing our surroundings. To be in connection with our surroundings and with the people and communities that live in our environment. Above all, thinking about co-responsibility policies. At different scales, in different actions, at different times, of course. But, if we do not think about it from the logic of co-responsibility, we end up with a logic of delegating responsibility to others. And we have seen in history that it tends to lead us back to business as usual. So, we need to be able to broaden that conversation and broaden our view in order to integrate it within a collectively constructed co-responsibility.

Discussion:

Theme 1: How can we articulate a logic of self-determination and the need for strong public policies and services?

Richard Hill:

I agree that we need to fight Big Tech monopolies. I also believe that local solutions and local involvement are necessary. Also, of course, anything that improves connectivity in developing countries at affordable prices is welcome. I think, however, that we have to be careful not to endorse the failure of governments to provide basic infrastructures and basic utilities. If the government has not set up a system that allows everybody to access the internet, you certainly have to do something about it. This should also include complaining about the fact that the government is not fulfilling its basic mission of providing infrastructure.

You can build local roads, but you can't build highways. Somebody at a higher level has to build highways. Just think of the postal service. You can have a little, local, postal service. But it's not going to do much good if it is not interconnected. When you talk about mesh community networks, you are actually talking about the original concept of the internet, but who builds the backbone? I think we should also focus on the internet as a public service. Why should email be provided by private

companies? At least in some countries, the post used to be a public service. Why isn't email a public service? Why isn't the basic search function a public service? Lots of these things should be public services. In a way that is what the community networks do. They say: "Well, we don't have it, so we are going to make our own public services." And that's good! But we also need public services at the national and international level.

Peter Bloom:

I agree, and it is a fine line. Certainly, there are all these existing processes of the neoliberal hollowing out of the public sphere. Actually, there are a lot of public connectivity projects. However, most of them are just funding private companies. So, it is problematic. The question is how do we increase our autonomy in the largest sense of that word without being allowed to build the things we want to see? For those of us working on community networks, the main challenge is the fact that it is illegal most of the time. You are not allowed to dig your own trench, to put up your own tower. Communities that have succeeded in this always relied on some amount of political organizing. Otherwise, you just get shut down. But I agree, the issue is simultaneously opening the space so that more people can act, but at the same time not reducing the pressure on the government to fulfill its obligations. The problem is, most of the time, the government doesn't even know how or what to do. The only thing that comes to their mind is to give the money to private companies, even in places where their business models are not appropriate. So, those projects tend to fail. In those places where connectivity isn't great, you go around and you see the detritus of failed connectivity projects, usually satellite dishes or other things. The government, in its wisdom, was like, "Okay, we're going to connect all these rural schools." The way they're going to do that is by hiring, with the public's money, private companies to provide privatized services to those areas. When the administration changes or when they run out of money or something breaks, it just stops working. In these situations, the local people who haven't been involved have no recourse. They don't know how to fix the broken thing, they are not able to pay for the service themselves, and they are certainly not allowed to do anything different. So, it's a complex problem. Again, in the context of so many public services having been hollowed out over the past decades, I don't think there is really a will to do it, but even if there was, the institutional knowledge of the government seems to be quite limited at this point, certainly in the Global South.

Shalmali Guttal (Focus on the Global South, India):

I think the issue doesn't have to be "either-or". On one hand, we have to push for internet digital technologies and ICT as a public good and as a public service because they do, actually, have a huge public function. At the same time, however, we can't rely on governments all the time, because then, we may lose the autonomy and agency of local action. I think we can try and learn from anti-privatization struggles in the past (anti-privatization of water, etc.). We were always trapped between this binary of a

state monopoly or a private monopoly. Why does it have to be that way? Why can't democratization be more plural, more diverse, more grounded? Especially if you talk about participatory democracy. There are struggles we can learn from, to figure out how to work on digital technologies in terms of local agency and local autonomy, while making sure that there is a strong public interest and public good aspect to the regulation. We can think about it in terms of "nested commons". You build a common, and then you nest it in a larger societal, regional, and global system.

Theme 2: How can this idea of self-determination go beyond networks into services, data, and even perhaps, AI systems? How could an ethic of collective care and co-responsibility work in those areas? What would be the policy implications?

Jes Ciacci:

There is a complexity in today's internet, in which there are different issues to be taken into account. In terms of data, and especially personal data, I believe it is very important to go back to this idea of not having everything available all the time for everybody. Today, the storing of personal data responds to market logics, because these data are used to profile and sell different things. So, there is no proportionality between what is stored and what it is stored for. The problem, however, is that these decisions and formats are made by other people. We do not even understand the languages of the internet! Many of these languages are not made in a way that we can understand them. Current technologies make invisible not only the form in which they are constructed, but also the multiple scientific, technical, and human languages in which they are constructed. Therefore, we cannot make decisions about what kind of data is stored, how long it is stored for, and for what purpose we would like to use it. But then, how could we take care of ourselves if we don't even understand these basics?

So, going back to the conversation around personal and community data and where we should store it and who should be in charge, etc., – it seems to me that it is dangerous to think of a model that goes simply from the private to the public. We need to imagine other models, maybe also at scale, that establish which data we want to have in the community, which data we can open to wider spaces, etc. While doing this, it is fundamental to think about it not in terms of single solutions, but in conversation and in relationships in which we can understand each other.

Peter Bloom:

In terms of self-determination, the question could be: How do we go back to an internet or a digital world that is more like what was going on at the beginning? Take this issue of data. It is not that it was not an issue before, but data wasn't yet the gasoline that the internet ran on. That has emerged with the space being taken over by these companies. The way I think about it is: if you need to build all these privacy-enhancing tools, it's like driving in the public square in a tank. If you have to engage in this "public

sphere" in body armor, it means there has been a larger breakdown. Something isn't right. So, of course, we need to make sure that we are safe in those spaces, but we should also rethink what those spaces are.

How do we do that? How does everyone, everywhere – not just in the Global North – get a chance to rethink the infrastructure, the structure, etc., and create something different? The only way to actually create something different is to do it. It is to think about it, it is to have access to the tools and the knowledge. It is being able to fail and to get back up and keep trying.

Right now, that's very hard. Community networks are one way to do it, and there are many other ways. The point is, we are not going to get there simply by engaging with the hegemonic system that has grown up around us. We also need the ability to rethink and do things differently, and not necessarily expect that it is going to turn into a global thing. We just need to get in a situation where we are engaging with the technology and the social and the environmental issues, and get thinking, and actually putting that thinking into action.

Shalmali Guttal:

In relation to this, we hear more and more that the argument for proprietary technologies is innovation. Innovation has to be rewarded. But what is often ignored is the contribution of society to innovation. Universities, public institutions, families, etc. No innovation is purely private. All innovation has a collective element to it. So, given that our societies are nurturing innovation, how is it that we allow corporations to take this innovation and make it proprietary without giving anything back to society? We really need to challenge this aspect of innovation and how it should be rewarded.

This might sound like a crazy stretch of imagination, but I see a lot of parallels between this and the care work that women do. Women do care and reproductive work as well as productive work. This work is not recognized. I'm not saying it should be economically "valued", but how do you value that which you don't see? Especially when it holds up a lot of infrastructure that we rely on. I think it is a good time for us to push for the public function during Covid, because during Covid people have seen the breakdown of global supply chains. I think the combination of Covid and climate change has made the world open up. A lot of ordinary people just open up and realize that we are in a very bad place with the amount of influence and power that corporations have.

Theme 3: How can we make sure that the environmental impacts of technologies on local populations are taken into account by the companies producing them?

Jes Ciacci:

It is a complex issue. For example, Mexico and Colombia are two countries in the world where the most territorial defenders are killed. This is because the people living there have to deal with a lot of extractive projects like mining or large hydroelectric dams. Some of these projects are linked to “clean energies” and other “green capitalism” solutions, which still imply dispossession of territory, displacement of people, and environmental degradation. So, many communities are opposing such projects. They want to continue living in their territory. If they leave, they will no longer have a territory to cultivate, a cultural space, or certain mountains to go to for their celebrations and so on.

Not all the production chains of technologies are based on such extractivism, but capitalism is. Technology is generally seen as the obedient, most beautiful child of capitalism because all the processes of production and dispossession that take place in order to create technologies are made invisible. For example, try to track the production chain of the dozens of minerals that are needed to build an electronic device like a cell phone. It is very difficult because there is no logic of transparency from any of the areas of production of technology or mineral extraction.

This is what I mean when I talk about complexity. We need to understand that technology stands on mechanisms that in themselves are built so as to not be transparent. These mechanisms are made so as to not show the territories where the technologies come from, the struggles, the relationships, and the conversations that happen elsewhere. What technology does is to stand on a unique model, which reproduces the dispossession and the invisibilization of other forms of life. So, we need to understand this complexity and to try to get involved in the struggles of others. Obviously, we cannot attend to everything, but we need to understand that it is very intricate. That somehow the practices and changes that we make in one place can be reproduced in other spaces with other characteristics and with other formats. But, of course, it is very complex and very challenging.

Session 4: Political implications for the digital, social, and environmental justice agendas

What are the political implications of the first three sessions and their outcomes? Do these outcomes mean we should change our priorities in terms of digital, social, and environmental justice agendas? If so, how? What should eventually be done differently in the Global North and in the Global South to better articulate these different objectives, in terms of demands, alliances, and targets?

Framing Presentations:

Parminder Jeet Singh (IT for Change/Just Net Coalition, India):

The Just Net Coalition is a global coalition for digital justice. It has a bias towards macro- and policy-level activity. It has organizations from many key sectors as its constituents, and it works on digital justice, but involving intersection with environmental justice, trade justice, gender justice, media justice, and so on. We try to be a bridge between all these sectors and the digital. Further, within that, our work has a bias towards policy and macro structures. We feel that it is important for progressive groups to frontally engage with macro-level policy debated apart from with all the micro, demonstration work, and actual projects being done everywhere, of which great examples were shared during these two days.

So, this presentation will be placed in that macro-policy perspective, knowing that there is a dialectic between the macro and the micro. It is not either-or. The macro engagements provide spaces for micro possibilities. It becomes very difficult for those micro possibilities to survive or flourish without certain macro interventions opening up spaces. Of course, some of those initiatives operate in resistance and create spaces for themselves. That said, it is still important to work on the macro elements that can create spaces where self-determination is possible in the digital and the environmental realm.

This is even more important in the digital space, given its characteristics. Today, we are being organized in large systems in which the internet centricity of the digital has been superseded by data and AI centricity. We have moved from the PC (personal computer), which was the first general-purpose technology created in this digital system, to the internet, the second general-purpose technology, to the third general-purpose technology, which is data and AI. Each time, the superior layer supersedes the inferior layers on which it works, in terms of the control which is being exercised. The greatest value shifts to the higher layer. It shifted from the PC to the internet, and now it has shifted from the internet to AI.

So, the question is: how do we break open these monoliths? This issue has already been widely discussed. The problem today is that every sector is getting organized around what we can call “intelligence corporations”. Uber is an intelligence corporation. Amazon is an intelligence corporation. They are not really e-commerce or transport corporations. They are transport intelligence and e-

commerce intelligence corporations. What they own is not the particular service or product that they sell. What they own is the intelligence of a given sector. We are getting organized globally by these huge corporations that dominate each of these sectors. These corporations are much bigger than the corporations of the industrial age. Intelligence has this great centralizing tendency, which is even higher than the centralizing tendencies of the industrial age. These are the larger points that we need to understand.

Not only is the centralizing tendency of intelligence higher, much higher than physical industrial systems, the dependency on intelligent systems is also much higher than in the physical systems. For example, if a country wants to stop using imported cars and only use local cars, it can do so even though the local cars won't necessarily be great. However, if we are talking about an intelligence dependency built over years – whether it is in terms of how we're organizing the kitchen, salon visits, or kids' homework – once that dependence is built, it's nearly impossible to disengage, which was at least plausible in the industrial era. Therefore, unless we address these systems directly at a larger macro level along with our local experiments, we will not go far. That is the main proposition here.

Therefore, the question is: how to break up these monolithic digital systems? We can start by looking at the policy efforts happening at a larger level, and then look at how alliances can be formed between the different kinds of activities, all of which are valuable in their own place. We are in this position where we need to look at policies to break up large systems into smaller systems. Somebody talked about the need to move towards a modular internet and modular digital technologies. However, digital technologies used to be modular. A PC could have been assembled by a local store. Today, Facebook makes its own chips, Amazon makes its own chips, Apple makes its own chips. Right from the chips to the user and services, everything is integrated. This is one of the big issues today. To address this, our organization made a proposal that different parts of the digital value chain should be split so that companies collecting data, for example, will not be in the cloud business, and those in the data or cloud spaces will not be in the intelligence space or in the business of customer-facing services. We have to deliberately split up these vertically-integrated companies, and this requires a national-level if not a global approach.

There are many things happening in this regard. Europe has come up with a Digital Markets Act that gives traders on Amazon the right to take back and use their data. The same could be done with Uber drivers, who could use their data to co-own that business. These are just some examples of what is possible. But unless larger policy frameworks and new conceptions are developed, we will not have the local spaces for self-determination and environmentally-friendly digital practices. These two things should go together.

Therefore, coming to the practical strategies, we need to work in networked ways. Our civil society strategies have to get networked, both vertically and horizontally. Vertical networking means that the

micro efforts on the ground and the macro policy efforts have to go together. This is because when micro and macro efforts don't go together, we could end up with greenwashing, for example. As power and value move to higher digital layers like of AI, companies like Facebook and Google are very happy to support community networks. This is because they, of course, actually want more connectivity. Later on, they can greenwash their harmful businesses by saying that they are supporting local community networks and environmentally-friendly practices. This is what happens when appropriate civil society networking does not take place. Sometimes, those who are fighting Google and Facebook for creating global-level systems that are highly energy-intensive, they are not adequately supported by the community network systems, people who are happy with the tools that Google and Facebook provide. It is not that those who are working on community-building efforts are not doing great work, but this civil society networking is required so that we all know what is politically appropriate as well.

We are also into a political negotiation of an intergenerational kind, where certain generations have a greater digital engagement than others, and we can't simply tell them to give up their digital engagement. We need to enter into a negotiation that aims to make everybody happy, or least unhappy. Not just the older generations that would be culturally happy with less digital or the newer generations who want more digital. We need to figure out common spaces, both in terms of projects and in terms of policies.

Coming now to horizontal civil society networking, we also need networking to happen between different kinds of justice movements. This event is about exploring links between digital justice and environmental justice, but the Just Net Coalition is also working simultaneously on initiatives with the trade justice movement, the gender justice movement, etc. From the gender justice angle, for example, comes the notion of an eco-feminist internet. Further, from the trade justice angle comes the resistance to global e-commerce policies, which are trying to create global-level systems that would make micro systems more difficult. So, we need to have a networked way of working together. The hope is that this event should result in the creation of a working group on the intersection between environmental justice and digital justice.

Paula Martin (APC, Canada):

My proposal is also to focus on the macro policy issues. First, by going through the public policy frameworks, mainly at the international level, and then by discussing the issue of policy implications and the impact on our work agenda from that point of view. One thing that came through very strongly in this event was that, today, the concern for the environment seems to be effectively influencing the digital agenda, both from a rhetorical point of view and from a de facto point of view. There are many initiatives

at the international level that seem to indicate that there is a momentum to discuss or to put these macro-political issues on the agenda.

What does this mean for us as a movement? First, a message of opportunity. This is a moment we should take advantage of, and try and change the work plan to make sure that these issues are prioritized. However, there is a second message: there is also an urgency embedded in this idea of a moment to seize. We cannot let the bus leave without us. This is the moment to really try to influence the agenda right from the beginning. So, there is a call to action that came out very strongly from the conversations that we have had up to this point. Both in terms of opportunity and urgency. It also seems clear that we lack an articulated, common agenda, and also a more structured movement around this agenda, so that we can be more strategic and more effective. So, my comments will be based on the two fronts of building a movement and building a common agenda.

In relation to movement building – creating alliances, creating dialogues, creating more space for interaction between different movements – is crucial. It starts by discussing our language, to try and find a common jargon in the terms, but also in the principles and the forms of advocacy that we use. This needs interactions to know each other better, to learn from the action strategies of other movements. From there on, it is possible to have a common articulation of those themes that we believe are priorities.

Obviously, the most explicit articulation that comes out from our conversation here over the last couple of days is the approximation between the environmental movement and the digital movement. Today, environmental concerns seem to be increasingly impacting the digital world, but I don't know if we have the same truth the other way around. That is, if digital issues today are really as present in the environmental agenda or within the environmental movement as we would like. There is still a lot to be worked on. Further, besides the environmental movement and the digital movement, I also agree that there needs to be an articulation with other movements, like the labor movement, the feminist movement, or the human rights movement.

Regarding the issue of agenda-building, a few points can be made based on what came out of the discussions of the last two days. First, the fact that the levels of interaction between the environmental agenda, the social agenda, and the digital agenda are multiple and complex. Often it doesn't even make sense to think of them as three different agendas. Rather, there is a continuum of issues that cuts across them. At least, this is a very specific perspective that comes from the Global South, and from the kind of conversations that we have had here. This perspective doesn't come out so clearly in the mainstream discussions about the links between the digital and the environmental. So, it is very important that we keep thinking about how these agendas have common roots.

That said, it is also important to break down the specific sub-themes. This helps us, from a practical point of view, to better identify what our advocacy objectives are, the public policies and regulations spaces

that we want to work in or that we want to influence, and then, to map out the points of intersection between these agendas that basically start from common problems. It is really important to identify, in a very explicit way, these points of connection. Some of what has been done in the last two days was precisely a mapping of the themes and the intersections between these agendas. This has to be continued.

Within this mapping that we did, one thing that appeared very interesting is that there is a two-way street between the digital and the environment. On one side, there is the digital negatively impacting the environment, and on the other, there is the digital as an enabler of environmental defense. Maybe there are other fronts, but these two came out very clearly in the concrete examples that were shared.

Regarding the negative impact of the digital on the environment, we talked about the environmental degradation caused by mining for the production of devices and components, the consequences of mining on the territories and communities where exploitation takes place, the armed attacks against environmental defenders, both physically and in terms of stigmatization and disinformation, the isolation and exclusion of disconnected communities, the difficulties of access arising from the increasing use of proprietary technologies, the problems caused by the lack of management of electronic waste, etc. A series of issues that we looked at here in the discussions from the point of view of the local communities, mainly from the Global South.

We also looked at the digital as an enabler of environmental defense. We talked about the importance of communication in integrating communities, and expanding the possibilities of exchange and sharing. We talked about building local and solidarity technological solutions for inclusion and the role of technology in making this happen. We talked about new forms of environmental monitoring and protection led by the citizenry itself and by the communities, all of which are made possible with the use of new technologies. We talked about the use of open environmental data and the use of these data for different purposes, and other uses of open source solutions. This is just to show that in terms of action points to continue working on this agenda, this kind of mapping is important and it has to be complemented with more research.

We need more documentation and a deeper analysis of the impacts and inter-relationships. We need more evidence to draw up a more robust advocacy agenda. So that when we start trying to influence discussions at the international level, we are able to use these examples and all this content. This is because the main concern with the discussion spaces that are currently being opened is that the experiences that are discussed there are generally centered solely on the Global North.

At the same time, besides talking about the challenges and the specific problems that come from the Global South and from the local communities, we also have to unmask false solutions. This was also discussed a lot here: the need to unmask solutions that are not sustainable and that are completely

disconnected from people's reality. The concern with greenwashing, therefore, has to be a central objective of our work at the international level, while at the same time bringing alternative solutions that come from the diversity of bottom-up experiences. It is still early to talk about specific solutions, but a theme that resonated a lot here was the issue of transparency and greater accountability, especially from the companies in relation to all these situations that we mentioned.

In conclusion, we can see that the challenge is very big, and that the changes will not be easy. The main political implication is that we need articulation, coordination, and strategy, because what we are looking for is a change of paradigm, a very deep change. This has been clear to the environmental movement for some time now, and maybe it has also become clearer recently to the digital movement. So, at this point, what we need are strategies to propose another development model to break the logic of extractive and consumer capitalism. In this sense, the digital movement has a lot to learn from the environmental movement.

Complementary Comment:

Parminder Jeet Singh:

I would like to make a comment to make sure we don't leave here without some concrete outcomes. I think we need to do two things. One is to map the intersections like Paula suggested, and have these intersections as a formal body of knowledge. And then, from this mapping, we can arrive at some high-level principles of what should be done. This is a challenging exercise, but if done in a collaborative manner, it can take us somewhere within a few months. We should try and put up a working group that would do this intersection mapping and then identify common principles.

Collective Exercise: Mapping Priorities and Spaces for Action:

This exercise was carried out by using the collaborative tool “IdeaBoardz”. Participants were asked to answer (and rate/upvote the answers to) five specific questions:

a) What actions need to be taken in North countries to move to digital-environmental justice?

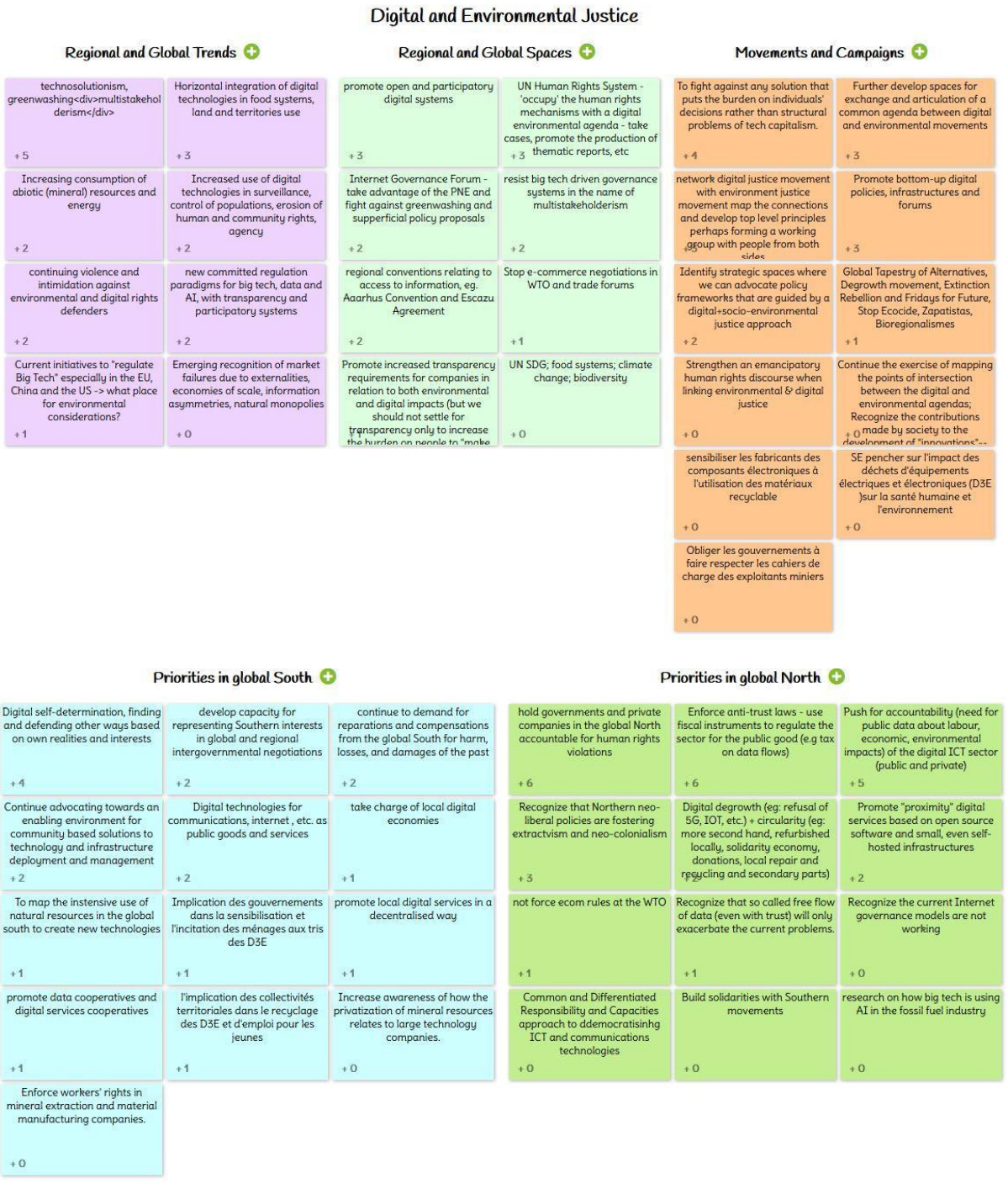
b) What actions need to be taken in South countries to move to digital-environmental justice?

c) Which regional and global trends and initiatives should we monitor that have implications for digital-environmental justice?

d) Which regional and global governance platforms/spaces should we monitor that have implications for digital-environmental justice?

e) Which campaigns, movements, and organizations should we build alliances with to work towards digital-environmental justice?

The result of this exercise is presented in the next page.


Digital and Environmental Justice
Regional and Global Trends
technosolutionism, greenwashing multistakeholderism
+5
Horizontal integration of digital technologies in food systems, land and territories use
+3
Increasing consumption of abiotic (mineral) resources and energy
+2
Increased use of digital technologies in surveillance, control of populations, erosion of human and community rights, agency
+2
continuing violence and intimidation against environmental and digital rights defenders
+2
new committed regulation paradigms for big tech, data and AI, with transparency and participatory systems
+2
Current initiatives to "regulate Big Tech" especially in the EU, China and the US -> what place for environmental considerations?
+1
Emerging recognition of market failures due to externalities, economies of scale, information asymmetries, natural monopolies
+0
Regional and Global Spaces
promote open and participatory digital systems
+3
UN Human Rights System - 'occupy' the human rights mechanisms with a digital environmental agenda - take cases, promote the production of thematic reports, etc
+3
Internet Governance Forum - take advantage of the PNE and fight against greenwashing and supperficial policy proposals
+2
resist big tech driven governance systems in the name of multistakeholderism
+2
regional conventions relating to access to information, eg. Aaarhus Convention and Escazu Agreement
+2
Stop e-commerce negotiations in WTO and trade forums
+1
Promote increased transparency requirements for companies in relation to both environmental and digital impacts (but we should not settle for transparency only to increase
+1
UN SDG; food systems; climate change; biodiversity
+0
Movements and Campaigns
To fight against any solution that puts the burden on individuals' decisions rather than structural problems of tech capitalism.
+4
Further develop spaces for exchange and articulation of a common agenda between digital and environmental movements
+3
network digital justice movement with environment justice movement map the connections and develop top level principles perhaps forming a working group with people from both
+3
Promote bottom-up digital policies, infrastructures and forums
+3
Identify strategic spaces where we can advocate policy frameworks that are guided by a digital+socio-environmental justice approach
+2
Global Tapestry of Alternatives, Degrowth movement, Extinction Rebellion and Fridays for Future, Stop Ecocide, Zapatistas, Bioregionalismes
+1
Strengthen an emancipatory human rights discourse when linking environmental & digital justice
+0
Continue the exercise of mapping the points of intersection between the digital and environmental agendas; Recognize the contributions made by society to the
+0
sensibiliser les fabricants des composants électroniques à l'utilisation des matériaux recyclable
+0
SE pencher sur l'impact des déchets d'équipements électriques et électroniques (D3E)sur la santé humaine et l'environnement
+0
Obliger les gouvernements à faire respecter les cahiers de charge des exploitants miniers
+0
Priorities in global South
Digital self-determination, finding and defending other ways based on own realities and interests
+4
develop capacity for representing Southern interests in global and regional intergovernmental negotiations
+2
continue to demand for reparations and compensations from the global South for harm, losses, and damages of the past
+2
Continue advocating towards an enabling environment for community based solutions to technology and infrastructure deployment and management
+2
Digital technologies for communications, internet , etc. as public goods and services
+2
take charge of local digital economies
+1
To map the instensive use of natural resources in the global south to create new technologies
+1
Implication des gouvernements dans la sensibilisation et l'incitation des ménages aux tris des D3E
+1
promote local digital services in a decentralised way
+1
promote data cooperatives and digital services cooperatives
+1
l'implication des collectivités territoriales dans le recyclage des D3E et d'emploi pour les jeunes
+1
Increase awareness of how the privatization of mineral resources relates to large technology companies.
+0
Enforce workers' rights in mineral extraction and material manufacturing companies.
+0
Priorities in global North
hold governments and private companies in the global North accountable for human rights violations
+6
Enforce anti-trust laws - use fiscal instruments to regulate the sector for the public good (e.g tax on data flows)
+6
Push for accountability (need for public data about labour, economic, environmental impacts) of the digital ICT sector (public and private)
+5
Recognize that Northern neo-liberal policies are fostering extractvism and neo-colonialism
+3
Digital degrowth (eg: refusal of 5G, IOT, etc.) + circularity (eg: more second hand, refurbished locally, solidarity economy, donations, local repair and recycling and secondary parts)
+2
Promote "proximity" digital services based on open source software and small, even self-hosted infrastructures
+2
not force ecom rules at the WTO
+1
Recognize that so called free flow of data (even with trust) will only exacerbate the current problems.
+1
Recognize the current Internet governance models are not working
+0
Common and Differentiated Responsibility and Capacities approach to ddemocratisinhg ICT and communications technologies
+0
Build solidarities with Southern movements
+0
research on how big tech is using AI in the fossil fuel industry
+0

Discussion:

Theme 1: In trying to build alliances with human rights or digital rights movements, for example, how can we make sure to avoid the risks of corporate and neoliberal takeover?

Sofia Monsalve:

In every sector we see that human rights are being captured by corporations. We see companies increasingly funding human rights institutions, for example, and using human rights to develop a kind of "checklist" approach that allows them to pretend that they are doing "due diligence" or other accountability initiatives in a very deficient and rigged way. I was recently reading a report of the advisory committee to the UN Human Rights Council on this issue of digital technologies. I was shocked to see that they were proposing such reductionist solutions as making human rights experts work with engineers to integrate a checklist that would guarantee that a given algorithm is not discriminatory anymore. This is really concerning! Where is the human rights analysis on the impacts of ICTs on economic and social rights? On the political economy of ICTs and how this is further increasing inequalities? We need to work in the realm of the human rights systems to develop and to strengthen more emancipatory understandings of human rights, building on the treaty process, for example, the binding treaty on human rights and TNCs (transnational corporations). We have to go beyond due diligence and aim for liability. We can also take inspiration from the UN Declaration on the Rights of Peasants, which is extremely relevant for climate justice, and its insistence on collective human rights, and on substantive economic rights. Today, the mainstream is just focused on individual rights, like the right to privacy. Of course, this is extremely important, but we also have a lot of work to do in terms of protecting natural commons, or developing an understanding of the recently acknowledged right to a healthy environment, for example. We need to join forces and have these agendas very clearly in mind because the UNSG (United Nations Secretary-General) is going for a completely opposite agenda, which is really subverting the UN human rights system.

Paz Peña:

I think we also need to be cautious about the alliances we build with the digital rights movement. This is a movement that is heavily influenced and financed by the promoters of "internet freedom", a basically Northern and pro-corporation agenda. We see a lot of revolving doors between civil society and corporations in this movement. One day, you are working for "digital rights", and the next you are working for Google or Twitter. We really have to ask ourselves if this agenda can be an allied one, and how it will eventually come to the field of the environment and technology. Because very soon they will

be interested in those themes. We have to be very careful about it, because they are pushing for a neoliberal agenda that is far from sharing our goals of social and environmental justice.

Richard Hill:

I totally agree with Paz. Once you start to criticize Google, for example, they immediately accuse you of being on the side of authoritarian governments who are trying to suppress internet freedoms. The whole focus is on freedom of speech, but they have nothing to say about economic and collective rights. This is actually a subset of a Northern discourse, but it's important not to be dragged into it. Of course, freedom of speech is important but it's not the only thing.

Conclusion

Several **lessons and future courses of action** can be drawn from this meeting. Returning to the questions that were used to frame each session:

What can we say about the environmental record of digital technologies, and the way this record is distributed across different regions of the world?

The main takeaways in this regard seem to be both the **heavy cost paid by countries and regions of the Global South**, in terms of **resource extraction** to build and run digital technologies, and also to handle a large part of the **e-waste** generated, and at the same time, the **limited advantages** that these same countries and regions can derive from these technologies and the digital economy at large. This imbalance is even more acute if we look at the damage that digital technologies can also inflict on the **social ecologies** of societies around the world. Another key point made during the first session was the realization that environmental mobilizations and movements directed to the impacts of digital technologies were **still lacking**, especially in the Global South.

What are the prospects for a just and sustainable digitalization?

Here, the discussions explored **concrete solutions and initiatives** underway around the world, with various examples taken from the "**circular economy**" model and the **community networks movement**. While promising in terms of their ability to limit the environmental footprint of digital technologies in ways that are also conducive to **self-determination**, the limits of these experiences also need to be acknowledged, especially if we want to avoid their recuperation by neoliberal capitalism. One of the key questions, therefore is: **how to articulate these initiatives in terms of wider principles** regarding the functioning of the digital economy and societies at large? Examples from this wider framing were also mentioned in the dialogues, with some involving the search for **a coexistence between different models and ways of life**, rather than the current logic of predatory development, and others based on the mobilization of **feminist principles**.

What are the political implications for the digital, social, and environmental justice agendas?

Lastly, we tried to figure out **how to move forward** with the different elements that were discussed during the two days of the event. The first observation here was on the **usefulness of creating spaces like these**. Indeed, it quickly became apparent during the dialogues that the links between ecological and digital transitions were still not studied enough. Further, the movements that carry progressive agendas in these fields still too often evolve in an isolated way, both thematically and geographically. It is therefore essential to continue to organize and multiply places and moments of cross-fertilization, **a 'fortiori' with a critical perspective and in a way that is concerned with the differences and asymmetries between the Global North and South.**

This is all the more important because a second observation on the way forward was on **the growing urgency of thinking about this articulation between digital justice and environmental justice, including on an international scale**. Not only because the challenges in this area are increasingly critical, but also because this situation is pushing a growing number of dominant actors and institutions to seize on these issues in an attempt to integrate them into a logic of perpetuating capitalism, which relies primarily on greenwashing or (false) technocratic solutions.

To counter these tendencies, one of the avenues mentioned is to begin by **mapping more precisely the interactions that exist between the issues of environmental justice and digital justice** in the South as well as in the North. We could cite extractivism (at work in natural resources as well as in digital data), issues of sovereignty or sobriety, and the fight against permanent acceleration, as examples of these interactions that have already been discussed in part during this meeting.

In the same vein, another avenue is to try to **draw inspiration and support from the methods and demands developed in different struggles**, past and present, especially when they have proven their relevance and effectiveness. The lessons learned from the mobilizations against the privatization of water, for example, in many countries of the South, could thus nourish the current struggles against the appropriation of the digital commons. Similar crossovers have been evoked from ecofeminism or struggles for the defense of the rights of indigenous or peasant communities.

Another important element is the **need to develop, and above all, to constructively articulate between, micro and macro perspectives and courses of action**. Working on concrete alternatives from the grassroots and local contexts (like community networks, for example) is thus fundamental, but these alternatives will have all the more chance of bearing fruit if the macro-political context is favorable to them...and vice versa. It is therefore necessary **to refuse the false dilemma of opposing these two orientations** and we must instead work to make them meet and feed into each other.

Finally, it is essential to **have a critical and reflexive approach to our own uses and representations of the digital world** insofar as these can often contribute – at least in part – to reproducing the dominant discourses and representations on the inevitability of the “digital transition” or on its fundamentally desirable character. Progressive digital alternatives, supported by appropriate law and ‘commons’ infrastructure, are key, and an important area for environment activists and digital groups to work together on.