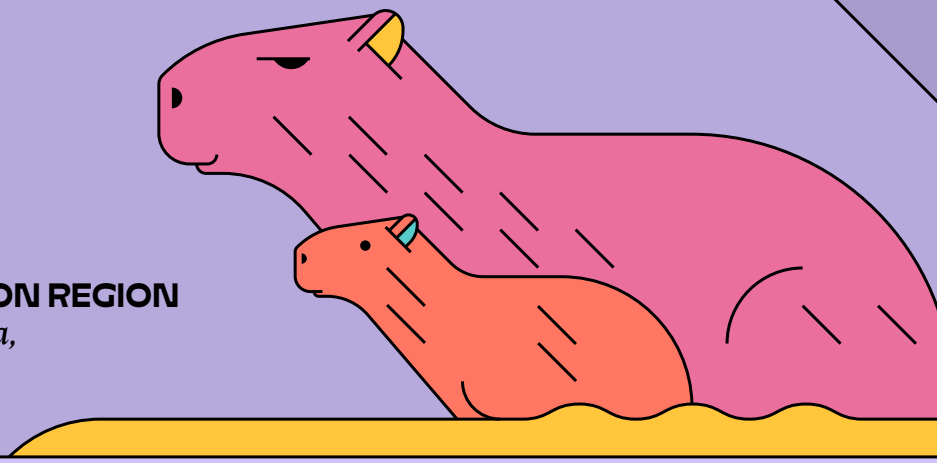
Latin America in a glimpse

The Amazon



INTERNET ACCESS IN THE AMAZON REGION

Trends from case studies in Brazil, Bolivia, Colombia and Ecuador

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América Latina

Latin America in a Glimpse: The Amazon

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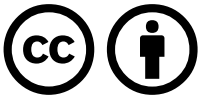

Internet access in the Amazon region: trends from case studies in Brazil, Bolivia, Colombia and Ecuador

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INTRODUCTION

The Amazon is the largest tropical jungle in the world. With an area of approximately 7 million km², it partially covers territories in what are known today as Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela. It is a region with a substantial presence of indigenous communities, inhabited by 410 Indigenous peoples and nationalities and local communities. It is also a region characterized by social inequality. Traditional communities, systematically impoverished, must live alongside the unscrupulous devastation of the land that has historically been their home and that is frequently nicknamed the "lungs of the world."

This inequality is also reflected —or not— in possibilities for accessing the internet. In this setting, there are three overriding factors to consider for public policymaking in the region: geographical location, the importance of the Amazon jungle, and interculturality. In turn, no analysis can be conducted in isolation from its context, which is why it is of utmost importance to bear in mind that many communities are subject to high levels of violence and pressure, due to economic interests in exploiting the territories for various purposes, associated with extractive models.

On the one hand, there are studies on specific government programs to increase internet access in certain areas of the Amazon region (Baía, 2012) and on the state of internet access in some specific regions or cities (Pinheiro; Schor, 2015), and also measurement of access rates in some of the countries that boast sovereignty over jungle territory (Idec, 2022). On the other hand, we find debates over how to combat the environmental crisis, necessarily discussing the role of economic growth in the Amazon, and whether that means the substitution of forest areas (generally occupied by Indigenous and coastal communities) with traditional agricultural activities like soy and cattle ranching (Abramovay, 2020).

From a different angle, the goal of our project is to conduct exploratory research according to the specificities of each country and local communities, as well as to draft proposals that give weight to the socio-environmental perspective and sustainable, intercultural development. Our aim is to extrapolate traditional telecommunications policies and present public policy proposals based on a holistic, situated vision.

In Brazil, the Brazilian Institute for Consumer Defense (Idec)[1] conducted a case study focused on the Nossa Senhora do Livramento community, one of the 6 existing communities in the Tupé Sustainable Development Reserve, in the rural area of Manaus, capital of Amazonas state.

In Bolivia, the Bolivia Internet Foundation[2] undertook investigation with people from two of the Bolivian Amazon departments. In the department of La Paz, the field research focused on the town of Tumupasa, one of three cantons of the San Buenaventura municipality. In the Pando department, field work was conducted among two populations of El Sena and Monte Sinai, in the department capital city of Cobija.

In turn, Fundamedios[3] —an Ecuadorian civil society organization— conducted a study in the Pastaza province, focused on the Kichwa, Shuar and Huaorani nationalities, which are the most numerous in the province.

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(1) https://idec.org.br/

(2) https://internetbolivia.org/

(3) https://www.fundamedios.org/

Lastly, the case study by the Colombian organization DeJusticia[4] highlights the ways in which members of indigenous communities in the Vaupés department of Colombia approach internet access.

The methodology adopted in each study is directly related to each institution's capabilities and objectives, as well as the differences existing in each region. In general, the methodological choice was for the case study as a qualitative method, keeping in mind that this makes it possible to combine methods, based on the analysis of a specific phenomenon or group (Lemos Igreja, 2017). Thus, rather than having a single methodology for all the cases presented, each study adopts a case study methodology adapted to the conditions of the organization conducting the research and of the community or communities participating in the study. Therefore, the questions, number of interviews and specific focus, among other methodological elements, vary depending on the case.

In this text, we present a comparative analysis of the four case studies, highlighting those elements that may be indicators of trends in the Amazon region, identifying spaces for improvement and lessons for new experiences and initiatives, in addition to offering recommendations for the different stakeholders.

LINES OF RESEARCH: INFRASTRUCTURE, SUSTAINABILITY AND IMAGINATIONS FROM/TOWARD OTHER POSSIBLE WORLDS

Internet access: between social, technological, cultural inequalities and impact on rural and Indigenous populations

Internet access has been recognized by the United Nations System and the Inter-American Human Rights System as a potential enabler for the exercise of various human rights, especially the right to freedom of expression, but also for the full enjoyment of other rights such as public participation, health, and education, among others.

In this respect, internet access is not limited to the physical ability to be connected, but rather must be addressed from a real and holistic standpoint: internet access exists when there is an ability to modify technology and its infrastructure and the ability to deeply understand and integrate them into our daily lives; there are relevant, locally created content and services; and there is trust in information and communication technology (ICT). For this, prices must necessarily be accessible to all socioeconomic spheres and access must be protected by a legal framework that offers legal security and enables the exercise of fundamental rights in digital spaces.

In turn, even when they offer information on progress, indicators of coverage need to be complemented by the communities' real usage, how they get into the mainstream of internet use, which security tools they have and, further, what possibilities for independent connectivity they can achieve—information that organizations and activists doing community work already have or have the capacity to gather.

This approach has digital literacy as an essential component. This is understood as the set of skills and abilities that enable citizens to interact respectfully and responsibly on the internet, including the skills necessary for, on the one hand, judging the provision of accurate, trustworthy information, comparing it to other sources of information, distinguishing useful

(4) https://www.dejusticia.org/

information from unuseful, and refraining from sharing untrustworthy information or that which undermines others' rights; and, on the other hand, the ability to interact in the digital environment without committing crimes due to simple ignorance of norms (e.g., intellectual property) and the skills and tools needed to communicate adequately in writing (such that the message can be understood by the receiver, reducing the space for misunderstandings that lead to avoidable conflicts). Likewise, digital literacy is the set of skills and strategies that serve in searching for, critically evaluating, synthesizing and sharing information from diverse sources —available on the internet— to relate to the community and have an impact on the exercise of democracy, through the use of technological devices. Through these skills, citizens can evaluate whether a certain piece of information is trustworthy and can share that information to appropriately engage in public debate and thus collaboratively build democratic spaces.

It is important to note that digital literacy must be understood as more than a passive, instrumental relationship to technology and media and information production. Along these lines, there are diverse experiences in Latin America stemming from initiatives that include access to knowledge on how a technology functions as an element central to communities achieving technological appropriation.

In 2011, international and regional mandates on freedom of opinion and expression promoted a Joint Declaration on Freedom of Expression and the Internet,[5] in which they set forth that States have the obligation to promote universal network access, not only to guarantee freedom of expression but also for the exercise of other rights such as access to education, the right to assembly and association, and the right to free elections. The Declaration concludes that States have the obligation to facilitate universal access to the internet and, minimally, to put in place regulatory mechanisms to "foster greater access to the Internet, including for the poor and in 'last mile' rural areas," in addition to the need to "put in place special measures to ensure equitable access to the Internet for [...] disadvantaged persons."

Along the same lines, the IACHR Special Rapporteur for Freedom of Expression —acknowledging the importance of online environments— has indicated that it *"has not only made it easier for citizens to express themselves freely and openly, but has also provided ideal conditions for innovation and the exercise of other fundamental rights such as the right to education and free association."*[6] For its part, the United Nations, via the "Promotion, protection and enjoyment of human rights on the internet" resolution, has urged States to adopt internet-related public policies that seek to guarantee basic access and universal enjoyment of human rights, especially to education.[7]

How the internet functions, as a platform for exercising fundamental rights, is directly linked to the network architecture and principles that govern it such as, for example, the principles of openness, decentralization and neutrality. Accordingly, the IACHR Rapporteur for Freedom of Expression emphasized that State efforts and public policymaking must be adapted to guiding

(5) Available at: https://www.oas.org/es/cidh/expresion/showarticle.asp?artID=849&lID=2

(6) Special Rapporteur for Freedom of Expression Inter-American Commission on Human Rights "Freedom of expression and the internet," paragraph 2. Available at: https://www.oas.org/en/iachr/expression/docs/reports/2014_04_08_Internet_ENG%20_WEB.pdf

(7) UN, Report from the Special Rapporteur on the right to education Res A/HRC/32/37, April 6, 2016, paragraph 40 and following.

principles that include access in equal conditions, pluralism, non-discrimination and privacy, as well as network neutrality and multi-sector governance as crosscutting components of these principals.[8] For this, it is critical that States take action to promote universal access to the internet. In this vein, it is conceived of as access not only to infrastructure, but also to the technology needed for its use and to the greatest possible amount of information available on the network; the elimination of arbitrary barriers to access to infrastructure, technology and online information; and the adoption of positive differentiation measures to enable the effective enjoyment of this right for individuals or communities who require it due to their circumstances of marginalization or discrimination. The International Telecommunication Union (ITU) even proposes that States must consider "appropriate regulatory measures" and "mechanisms to facilitate the deployment of broadband services in rural and remote areas by small and non-profit community operators."[9] Furthermore, the ITU understands the need to have complementary access to telecommunications/ICT, through regulations and public policies created for that purpose, as mentioned in Resolution 37 (Rev. Kigali) of ITU-D, on bridging the digital divide.[10] Thus, some actors have developed community networks to supplement traditional public policies on connectivity in Latin America.[11]

Regarding the above and considering that indigenous peoples are vulnerable communities that have historically been excluded, it is important to turn to the intercultural approach as necessary for ensuring access to the internet for these communities, within a paradigm of respect, protection and defense of their rights as collective subjects. The intercultural approach consists of acknowledging the coexistence of diverse cultures in society, which "must live together based on respect for their different worldviews, human rights, and rights as peoples."[12] This approach includes —at least— two dimensions: on the one hand "the distribution of power over decision-making on their specific development priorities and control of their lives" and, on the other, "the level of recognition of their cultural differences, without that being

(8) Rapporteur for Freedom of Expression, Standards for a Free, Open and Inclusive Internet, Inf17/17, March 15, 2017. Available at: https://www.oas.org/en/iachr/expression/docs/publications/INTERNET_2016_ENG.pdf

(9) World Telecommunication Development Conference. Recommendation ITU-D 19. Telecommunication for rural and remote areas. Available at: https://www.itu.int/dms_pubrec/itu-d/rec/d/D-REC-D.19-201003-I!!PDF-E.pdf

(10) 2022 World Telecommunication Development Conference (WTDC-22). Final Report. Available at: https://www.itu.int/dms_pubrec/itu-d/rec/d/D-REC-D.19-201003-I!!PDF-E.pdf

(11) Carlos Baca, Luca Belli, Erick Huerta, Karla Velasco. Community Networks in Latin America: Challenges, Regulations and Solutions. Internet Society, APC, FGV Direito Rio y Redes AC. Available at: https://www.internetsociety.org/wp-content/uploads/2018/12/2018-Community-Networks-in-LAC-EN.pdf

(12) UNFPA, UNDP, UNICEF and UN Women. Ampliando la mirada: La integración de los enfoques de género, interculturalidad y derechos humanos [Widening the lens: Integrating gender, interculturality and human rights approaches]. Santiago de Chile: 2012, p. 24., cited in: http://www.oas.org/en/iachr/reports/pdfs/panamazonia2019-en.pdf

grounds for exclusion or discrimination."[13] According to inter-American system jurisprudence, when States adopt measures that involve indigenous peoples, they must grant "effective protection that takes into account their specificities, their economic and social characteristics, as well as their situation of special vulnerability, their customary law, values, and customs."[14]

Over the years, Indigenous communities have fought for their rights as distinct peoples based on their cosmovision, emphasizing the value of their cultures, their own political and social organizations, the connection with their ancestral lands and their right to self-determination. As a result of those struggles, different declarations have been approved by international law which recognize and promote their rights, acknowledging that they are holders of human rights from both an individual and collective dimension.[15]

Thus, both the United Nations Declaration on the Rights of Indigenous Peoples in 2007 ("UN Declaration on the rights of indigenous peoples") and the American Declaration on the Rights of Indigenous Peoples at the level of the Organization of American States (OAS) in 2016 ("American Declaration on the Rights of Indigneous Peoples"[16]) recognize the right of Indigenous peoples to self-determination, consisting of the right to freely determine their political condition and free pursue their economic, social and cultural development.[17] Both declarations contain the right to self-determination applicable to all people in general in accordance with the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights.[18]

In this regard, the IACHR has indicated that the revindication of this right "responds to the aspirations of indigenous peoples around the world to determine their own fate in equal conditions and to participate effectively in the decision-making process over decisions that

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(13) German Development Cooperation. Programa Buen Gobierno y Reforma del Estado. "Guía metodológica de "Transversalización del enfoque de interculturalidad en programas y proyectos del sector gobernabilidad" a partir de la experiencia del Programa "Buen Gobierno y Reforma del Estado del Perú" ["Methodological Guide for 'Mainstreaming the interculturality approach in governability programs and projects' based on the experience of the 'Good Governance and Reform of the Peruvian State' Program"]. Lima, 2015, p. 17. Cited in: http://www.oas.org/en/iachr/reports/pdfs/panamazonia2019-en.pdf

(14) Inter-American Court. *Case of the Yakye Axa Indigenous Community v. Paraguay*. Merits, Reparations and Costs. Judgment of June 17, 2005, Series C No. 125, paragraphs 51 and 63.

(15) IACHR, Right to Self-Determination of Indigenous and Tribal Peoples OEA/Ser.L/V/II, December 28, 2021. Available at: https://www.oas.org/en/iachr/reports/pdfs/self-determination-en.pdf

(16) OAS. American Declaration on the Rights of Indigenous Peoples. AG/RES. 2888, June 4, 2016. Available at: https://www.oas.org/en/sare/documents/DecAmIND.pdf

(17) United Nations Declaration on the rights of indigenous peoples, adopted by the General Assembly on September 13, 2007, Art. 3; and American Declaration on the Rights of Indigenous Peoples, AG/RES. 2888 (XLVI-O/16)(June 15, 2016), Article III.

(18) IACHR, Right to Self-Determination of Indigenous and Tribal Peoples, OEA/Ser.L/V/II, December 28, 2021. Available at: https://www.oas.org/en/iachr/reports/pdfs/self-determination-en.pdf

affect them. The right to self-determination is a fundamental right, without which the human rights of indigenous peoples, both collective and individual, cannot be fully exercised.[19]

Directly connected to the issue at the heart of the present study, the right to self-determination —internationally protected— has its basis in the traditional knowledge and wisdom of indigenous and tribal peoples, as well as the diverse manifestations of their science, technology and cultures as key elements of their identity.[20]

Along the same lines, the United Nations Declaration on the Rights of Indigenous Peoples (2007), approved by the UN General Assembly in 2007 with votes in favor from the Amazonian States,[21] is of utmost importance. Articles 11 and 31, for example, guarantee the rights to "practice and revitalize their cultural traditions and customs," including the right to keep their cultures and technologies, in addition to the right to "protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures." Article 8.1 also states that "Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture." Furthermore, Article 16 of the Declaration considers protections so that indigenous peoples may "establish their own media in their own languages and to have access to all forms of non-indigenous media without discrimination." Karla Prudencio and Erick Huerta (2022) call attention to the fact that this is a positive obligation of the State, meaning that it is an obligation for States to undertake "positive actions so that indigenous peoples and communities can have their own communications media."

In this vein, it is important to highlight that the experiences of indigenous communities regarding communication and telecommunications are based on the idea that the process of communication goes beyond merely exchanging information. According to the abovementioned authors, these processes are understood instead as ways of articulating and strengthening social relationships, activating channels to meet their needs and objectives. This is clearly seen in the research findings in the following sections, where the interviewed communities identify internet access as an essential element for accessing fundamental rights, communicating with members of the community and strengthening community projects.

The case studies: digital divide with a huge impact on the Amazon's local population

Generally, the studies show that the region is characterized by social inequality which, in turn, is reflected in inequality in internet access and sets up a deep digital divide that has enormous impact on the local population. In particular, this impact was identified in access to and exercise of fundamental human rights such as the rights to education, to health and to freedom of expression, among others, and also in access to public services. Thus, these groups that have historically been excluded from access to fundamental rights encounter not only the same barriers in terms of access to and use of technology, but also that those inequalities

(19) UN Human Rights Council, Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya, A/HRC/12/34 (July 15, 2009), paragraph 41.

(20) IACHR, Right to Self-Determination of Indigenous and Tribal Peoples, OEA/Ser.L/V/II, December 28, 2021. Available at: https://www.oas.org/en/iachr/reports/pdfs/self-determination-en.pdf

(21) See: http://www.oas.org/en/iachr/reports/pdfs/panamazonia2019-en.pdf

are made more complex and amplified in the interaction with technology or in its absence, creating new forms of exclusion.

The latter is seen by the communities interviewed in these studies, as —beyond certain differences and opinions regarding the internet and its uses— connectivity is identified as a need. On the one hand, as a medium for dealing with difficulties in communication, which are exacerbated by the region's geographic conditions; and on the other, as a tool through which they would have access to basic rights like health, education, and access to information. Moreover, as an opportunity for community development and collective projects.
In terms of the aforementioned digital divide, the pandemic is identified as a period of time relevant to this discussion, as a direct relationship is identified between the mandatory digitalization measures related to COVID-19 and the statistical growth in connectivity. However, that growth is not synonymous with greater digital inclusion, which, as we shall see below, can be especially seen in the persistence of obstacles in infrastructure, connection quality and services costs.

Lastly, taking the interculturality factor as the basis for analysis and a crosscutting aspect of the topics developed, the studies highlight the complexity of the relationship between digital spaces and their impact on the communities' cultural identity. Although those impacts are perceived in different ways in the communities in question, they have a common starting point: the lack of representivity of their communities in digital spaces, where there is a conspicuous occidental predominance. In some cases, its negative consequences stand out, especially in the younger population, as well as the opportunities to use digital tools for cultural strengthening.

INFRASTRUCTURE AS A CENTRAL ASPECT OF THE DIGITAL DIVIDE

As mentioned earlier, while each country studied has its specificities, as a general conclusion, the studies show the existence of a marked digital divide for the communities residing in the areas studied within the Amazon.

Although a statistical increase is noted in connection with the pandemic context, inequality of access remains. For example, in Brazil, data gathered by annual surveys published by the Brazilian Network Information Center (NIC.br), referred to in the Idec study, indicate that there is growth in the percentage of households with internet access as compared to data prior to the pandemic. Even so, this progress does not reduce existing inequalities in access and the quality of these connections. An example of this is that the North is the region with the fewest households using a fixed internet connection. Likewise, despite the fact that in Ecuador there is also an increase in internet service users documented by Ecuador's Telecommunications Regulatory and Control Agency (ARCOTEL), Fundamedios emphasizes that the pandemic actually deepened the digital divide, especially affecting the right to education, given that for many students it was impossible to access online classes.

This inequality illustrates the enormous difficulties of certain populations to connect to the internet, which leads to a large number of people being disconnected or lacking their own possibilities for connecting. In turn, when they do manage to get connected, the connection quality is very low, and this hampers accessing the possibilities offered by the web. All of this is made even more complex by the lack of digital literacy.

A central element for assessing the challenges presented by the territory for access to rights is infrastructure, which is identified in the studies as a cause and evidence of the obstacles

for access to services related to fundamental rights, among which we also find access to the internet. As developed below, the lack of infrastructure seriously limits the possibilities for access, as well as its sustainability. The lack of services from the State means that, in most cases, people have no option other than private services, whose higher costs cannot always be afforded. In light of these situations, in all the cases a strong sense of community is identified, which responds by creating strategies both for demanding better access conditions and by sharing internet services among friends and family.

For example, in Ecuador most public services are dependent on access roads that link populations directly to the rest of the country and which, in turn, enable the extension of electricity and the installation of internet services. Similarly, despite the province of Pastaza being the largest in Ecuador, it is one of the regions with the least infrastructure for internet access: 41% of those surveyed only have access via satellite internet, as they live in towns that do not have permanent electricity; 40% access the internet via cable; and 10% via cellular connection. This leads to private initiatives being the only way to connect and having to pay high costs that people cannot always afford. Thus, of the abovementioned percentage, it is noteworthy that people access service sporadically, having to pay prices that are equivalent to 17% of the national base salary.

Similarly, the statistics compiled in the study conducted in Colombia indicate that 95% of the population of Vaupés have no internet access. Coincidentally, the percentage of households that have access to public services in Vaupés is very much below the national average. The main reason for why people do not have internet is identified as the lack of coverage. Thus, in contrast with the national population on average, who do not have access because of the high cost, in Vaupés people do not connect because they have no way to do so. As related specifically to the population of some indigenous peoples and not to all inhabitants of the department, the situation is not much different, but it does highlight the lack of public services coverage for those residing in communities outside the urban core. For example, only a small share of the Tujyuca, Siriano and Cubeo peoples have access to electricity, water supply and internet services. As DeJusticia puts it, this shows that the indigenous peoples of the Colombian Amazon are at a considerable disadvantage compared to the rest of the population in terms of access to telecommunications and the rest of government services, whether due to the region's geographic conditions or to the lack of government action.

In the case of Bolivia, while it has not been possible to know connectivity statistics for the Amazon area, departmental data allow us to estimate this reality, indicating low internet access in the departments that have more Amazonian territory, like Beni and Pando. According to the 2020 INE household survey, only 1.4% of Beni's rural population has internet access in their homes. In the case of Pando, the percentage of the rural population with internet access in their homes is 24.2%. According to the study's estimate, the scope and availability of internet connection infrastructure are not uniform across the Amazonian region and are directly related to local organizing capacity and the capacity for pressuring government institutions and service providers (ISP). As in Ecuador, electricity services are identified as a key element for connectivity. This service, recently implemented via the national system network construction of power lines in Tumupasa, has enabled these communities to later negotiate radio-based antennae to access telephony and mobile internet, a benefit still missing in other communities that do not have electricity. This means that mobile telephony use is greatest among those accessing the internet.

Thus, 53.3% of users access the internet only over a mobile device, due to the connection mainly using base radios to connect, and not fiber optics. Cellular telephony has the ability to

extend access to telecommunications, but it depends on a fixed network and on the base radios, where the latter serve as a connecting point between the cell phone and the fixed network. One important data point is that in the communities of Tumupasa and Monte Sinai, it was determined that community organizing, in several cases through extreme, desperate pressure tactics, was essential to mobilizing the State and achieving a base station for mobile telephony.

In Brazil, for its part, while an increase in internet access was noted as compared to years prior to the pandemic (82% of Brazilian households today have internet access), the data illustrate the differences in internet access between the North Region and the rest of the country, and between populations in rural and urban areas. Thus, with the North Region being the one with the fewest households using fixed internet connection, access mostly (85%) happens over mobile phones. This has been confirmed by the interviews conducted with community members. Firstly, it stands out that not everyone interviewed has access to the internet. Of those who do use the internet, the majority shared that they began to use it between 2018 and 2020, which is in line with the increase in the number of households in Classes C, D and E identified by Nic.br in its 2021 ICT Household survey. However, of the nine community members who do use the internet, only five can afford a fixed connection at home and another seven use pre-paid telephony plans, whose data packages in most cases do not cover their monthly needs. It is also observed that there is no clear identification of which companies offer fixed internet connection in the community, and there isn't even obvious information on the connection quality, either from the local broadband companies or of the telephony and internet packages contracted from telephony operators. Among the twelve, only one person knew the names of the providers offering fixed internet, which reveals weaknesses in this consumer relationship. One person even indicated that these companies began to operate irregularly in the community, without the consent of the Municipal Health Office (Semsa) and, therefore, without meeting the legal requirements for operating in a Sustainable Development Reserve. In addition, the people interviewed identify constraints on the use and operation of the internet, as in the example of power outages linked to the river drying up; it was stated that every week they experience power and internet outages.

The infrastructure-related problems and the lack of internet access are directly related to the lack of adequate public policies for promoting internet access that are specific to the region, keeping in mind its geographic characteristics and the interculturality factor. The word "adequate" is emphasized in the above statement because disconnection is not a synonym for an absolute lack of public policies on it; rather, there is a lack of targeted measures that contemplate existing challenges and that are uniformly sustainable over time. For example, in the case of Brazil, there are noteworthy policies underway, e.g., the Programa de Amazonia Conectada (PAC) [Connected Amazon Program] and Programa Amazonia Integrada y Sostenible (PAIS) [Integrated and Sustainable Amazon Program]. However, a weakness is identified in the transparency of their activities, as well as a lack of specific regulation on issues central to deploying infrastructure and monitoring. In Colombia, government initiatives for providing internet in the department's schools stand out, which has generated among the population a direct link between internet access and education. Despite this, the implementation of that policy is identified as insufficient, as it has not managed to adequately ensure that students benefit from educational content available online.

Similarly, it is recognized that in Bolivia and Ecuador, the State has policies on access, but it must promote them more decisively to drive a satisfactory digitalization process, for example, regarding the provision and sustainability of electricity services and high-quality telecommunications in the case of Bolivia, and in terms of Ecuador, the need for investment in digital inclusion projects that enable improving connectivity and digital literacy for the most

remote populations, via subsidies for the use of satellite internet and renewable or solar energy solutions for areas without roads.

INTERNET ACCESS AS AN ENABLER FOR EXERCISING HUMAN RIGHTS

The statistics mentioned above not only speak to the communities' reality regarding access, but they also allow us to grasp the dimensions of the relationship between the internet and access and the effective exercise of human rights. Mainly, this relationship focuses on how access to basic services depends on internet access, an issue that became even more evident with the forced digitalization stemming from pandemic-related public health measures. The studies highlight the need for States to make evident that, in a geographic context like the Amazon, the internet enables the guarantee of access to multiple rights. Along these lines and understanding that this is not an exhaustive list, the rights that stand out primarily due to their urgency are analyzed: the right to health, the right to education and freedom of expression.

Right to health

The studies show that, because the Amazon is a territory geographically located far from urban centers, the communities that live there generally do not have hospitals nearby. For example, the communities residing in Vaupés, Colombia, must necessarily contact or visit the hospital in Mitú, the department capital, to obtain basic care. Similarly, in Brazil the communities must make a 30-minute trip by boat to Manaus to access a health center. This situation in and of itself illustrates inequality in access to fundamental rights, which was conspicuously worsened when public health measures decreed the digitalization of medical care as the sole possibility. However, despite the measures being loosened over time, they offer the possibility of glimpsing how effective, high-quality internet access could contribute to facilitating access to health, through the guarantee of effective communication. For example, according to DeJusticia, the internet would allow inhabitants of remote areas to access non-urgent medical appointments, without the need to navigate for hours to the nearest urban center which, in addition to the effort entailed, generates costs that cannot always be afforded by everyone. Nonetheless, despite this it is important to keep in mind that, beyond the way the partial digitalization of health care for non-urgent cases could positively contribute to effective care, it does not completely address the problem: for example, access to medicines or emergency treatment continues to be an issue that requires specific, compelling actions in public health and not in connectivity.

In Bolivia, this relationship was announced by the State in 2015, with the Ministry of Health's Telesalud program, which aimed to facilitate access to medical professionals for diagnoses and prescriptions for the country's 339 municipalities. As Internet Bolivia mentions, it was not possible to implement the program, mainly due to the wide spectrum of broadband required. Nevertheless, it planted the hopeful idea of better health services via internet access.
In turn, as shown in the Fundamedios study, in Ecuador health centers are also places that offer possibilities for connection, where the number of people interviewed who manage to access the internet is greater for health centers than for schools. However, rather than the result of a government policy, this corresponds to the fact that in the medical dispensary, the institution's professionals are the ones subsidizing internet use and making it available to the community, as the cost of internet in many cases is covered by the professionals themselves and not by the institution or the State.

Right to education

The studies indicate that the instrumental role of internet access for guaranteeing the right to education seems to be clearer for States, which has been reflected in the installation of connection points in schools, or in the distribution of computers to teachers and students.

While this need became especially relevant in the studied communities due to the online education imposed during the pandemic, government recognition of this relationship has had longer implementation time. Notwithstanding, various challenges to achieving homogeneous, high-quality access remain.

In Colombia, DeJusticia highlights that, for the State, the internet and technology are nearly exclusively part of the educational process, which is in keeping with the Colombian Constitutional Court's legal approaches to the relationship between internet access and the right to education, and with the public policies that the Ministry of ICT has deployed nationally. In this vein, it is mentioned that in the Amazon, priority has been given to educational centers (boarding schools) having internet spots with the goal of enabling students to connect. However, the implementation of educational projects linked to technology use is far from effective. For example, of the 121 educational sites in Vaupés, only 16 have a satellite internet connection via the execution of a national project, and another 29 are in the installation phase, through a Ministry of ICT project. In turn, contrary to the opinions of government officials, the teachers of some of the beneficiary schools indicate that up to now they have not been able to take advantage of the internet's potential, given that connection quality only allows interacting over WhatsApp or making a few calls.

In the case of Bolivia, the State established the "*Una computadora por docente*" [One Computer per Teacher] and "Una computadora por alumno" [One Computer per Student] programs in 2009 and 2014, respectively, providing computers for teachers and students, as well as technological floors to educational institutions through the public equipment assembly company, Quipus. However, that equipment is not available in Monte Sinaí, El Sena or Tumupasa. According to Internet Bolivia's analysis, the problems that keep this equipment from being used effectively for educational purposes are the direct effect of the public policy's design that creates incentives for holding the equipment in storage, leading to disuse, compounded by the lack of professionals who know how to use the devices for teaching. During the pandemic, the implementation of online classes was so problematic that in July 2020, the end of the school year was decreed via ministerial resolution. The main difficulties identified were the lack of connectivity, the lack of devices and the lack of knowledge around using these tools for teaching.

In Ecuador, it is noteworthy that, despite the implementation of certain platforms, online education as set up during the pandemic widened the digital divide. Thus, due to lack of internet or devices, many students found it extremely difficult to keep up with the school curriculum.

Rights of association, assembly, freedom of expression and thought

While the digital divide involves enormous difficulties for accessing an affordable, high-quality connection, it is important to highlight that those communities who have been able to connect emphasize its importance as a channel enabling the exercise of the right to freedom of expression, both personally and at the community level, especially for internal organizing processes and external advocacy actions.

Communication is a key factor in the exercise of indigenous leadership. For example, in Vaupés, leaders generally use the radio to communicate with captains in each community, and they identify the internet as a political tool that significantly facilitates this exchange while offering a space for publicizing their causes. Similarly, in Bolivia the people interviewed identify the internet as a channel for leadership coordination that enables the possibility of obtaining information and dates for in-person meetings more fluidly and effectively, as well as providing a space where they can disseminate their culture and local expressions.

In Ecuador, the Fundamedios study highlights that, within their possibilities for access, certain community leaders are sufficiently organized to make use of the benefits of connectivity. For example, they have a radio station, FM TUNA, and Amazonia TV, media that broadcast meeting notices, activities and assemblies, and which are also rebroadcast to increase their reach. In this vein, they consider the internet to be primordial for the dissemination of ventures existing in the territory.

In the case of the Nossa Senhora do Livramento community, studied by Idec in Brazil, although the community's presence in digital spaces is timid, it is a topic that appears in conversational groups on administrative and financial issues. Idec comments that it seems that, if the spaces were used in an organized manner, members of the community would like to participate and interact in them more.

CONCLUSION: OPPORTUNITIES AND CHALLENGES IN INTERCULTURALITY AND INTERNET USE

One of the main objectives of this project is to offer public policy recommendations with a holistic, situated perspective. For this, it is essential to raise the profile of the local population's voices, along with their viewpoints. Their observations are found throughout the research texts, making it possible to conduct the referenced assessments. This section attempts to synthesize the perspective on interaction with digital spaces, together with the risks and opportunities identified in the exploratory case studies carried out by DeJusticia, Fundamedios, Idec and Internet Bolivia. Considering the diversity of contexts and of the communities, as well as the different levels of debate at which this topic is found, it is possible to identify the main points connecting the studies and to offer an overview.

A first element to highlight is the widespread recognition that the internet is a necessary tool for being able to communicate and exercise human rights, especially in terms of education and health. In some cases, as in Colombia, there is greater clarity around internet access as enabling for the exercise of rights. In others, like in Brazil, the answers on digital inclusion show that community members understand how important internet access is. There is hope for the possibilities of the internet, linked to some expectations and ideas of a space that could ensure the rights to health and education, cultural rights, the right to self-determination and freedom of expression. Spurred on by this expectation, all the interviewed communities express, in different ways, the need for effective access for all. There is a desire to participate in a prosperous technological experience that guarantees improvements in their lives and in the lives of the people they relate to.

The access they have had up to now enables them to identify the changes that the internet could bring and the effects that it could have in the community, in terms of both its benefits and concerns raised by the possibility of losing their cultural identity, especially among young people, mainly due to the lack of content around ancestral knowledge and an overproduction of western content. For example, in Colombia, community leaders identify this double effect as a risk. They comment that, although material access to the internet is just beginning, they can see that some children are abandoning their indigenous language, a sign of changes in the community's cultural practices. Similarly, in Ecuador the leaders state that there is an unquestionable influence of internet use on the loss of identity among young people nationally and globally, where more dominant cultures are displacing smaller ones. According to the thinking of some adults surveyed, young people in Amazonian communities access foreign content that leads to processes of acculturation, since there is no content reflecting the values of their nationality. Teachers and community leaders agree that the influence of information via social media has an impact on their culture, which could lead to social problems.

In light of that problem, they maintain that it is necessary to accompany the bridging of the digital divide in the Amazon with organizing processes around the value of traditional culture. In fact, in some cases, the leaders or teachers themselves have initiated strategies to conserve ancestral practices using digital technologies. For example, in Colombia, teachers work to recover and promote the languages of the indigenous peoples living in Vaupés through use of the International Phonetic Alphabet to transcribe knowledge in traditional language. In Bolivia —where they can refer to digital activism used to recover and strengthen the Aymara language— the internet is considered a means enabling identity-building practices, e.g., the promotion of the Tacana language, currently spoken by few people. In the region, many indigenous peoples have found in the internet and, more specifically, in social media, a medium not only for communicating, but also for transmitting their culture.

In the case of Brazil, the interest expressed by members of the community in having access to courses that teach subjects related to how the internet operates is noteworthy. According to Idec, there is a huge potential in the community for organizations who want to contribute to these people having greater knowledge of their rights as citizens and as consumers, in addition to providing information on how the telecommunications market works in the north of Brazil, and what solutions exist as alternatives to the ones offered by the market.

Considering the problems, as well as the opportunities described, it becomes clear that technologies can end up being important allies for the economic and social development of these communities, where the creation of an enabling environment is a key element to achieve technological autonomy as part of the exercise of the right to self-determination, recognized internationally. In this sense, an enabling environment is not just about providing connectivity; instead, it involves creating a context that allows indigenous peoples the full use of ICT to promote their worldviews and to expand their capabilities and possibilities for choice.

Along the lines of the recommendations of the *Política Pública para el Desarrollo de las tic en Comunidades Indígenas* [Public Policy for ICT Development in Indigenous Communities], prepared by Redes de Diversidad, Equidad y Sustentabilidad, connectivity is the first step in a series of diverse actions that are necessary for ICT to be used in benefit to the communities. In the same vein, it is important to note that technological appropriation is created when there is a dynamic combination of the technical instrument and a community's needs. This means not just the use of a technological tool to meet a need, but rather a continuum of development/reuse/expansion of technology by the community, at the same time as they continue to identify more needs that can be addressed with the tools.

Thus, according to the recommendations of the abovementioned study, public policies in the area of ICT development must be flexible, such that they allow the choice of technology to be made based on the context and with community participation, so that the needs shape the choice of technology to use. In turn, the creation of infrastructure is key, above all in hard-to-reach places, as seen in the case studies. For this, the technology developed for remote areas must necessarily have the following characteristics: be accessible, cost effective, robust, scalable and with capacity to allow the applications considered relevant. An example of best practices that has worked in other locations[22] is that of creating and sharing community infrastructure, together with setting up connectivity infrastructure in larger or "base" locales from which wireless communication can be deployed.

(22) Redes por la Diversidad, Equidad y Sustentabilidad A.C., Recomendaciones de Política Pública para el Desarrollo de las TIC en Comunidades Indígenas. See: www.redesac.org.mx

It is critical for actions to be sustained within a conducive legal framework that prioritizes universal connectivity and addresses it from a meaningful perspective, guaranteeing the effective engagement of indigenous peoples at each stage of the process, based on full autonomy in decision-making around the planning, design, monitoring and evaluation of the public policy on access, through participation in skills building. This, understanding that consultation with and participation of the communities on the issues that concern them is an internationally recognized human right that lays the foundation for any public policy regarding these communities. For its part, community engagement is necessary for achieving social appropriation of technology, as involvement in processes benefits the gradual appropriation of technologies as a tool at the service of life plans and community organizing.[23] Furthermore, it is important to keep in mind that in 2018, the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean was adopted.[24] In the case of Brazil and Colombia, both have signed and ratification of the agreement is pending, while Bolivia and Ecuador are parties as of April 2021.[25] This Agreement, which is the only binding agreement issued by the United Nations Conference on Sustainable Development, has important provisions that must be considered in these contexts on public engagement from the very earliest steps in the decision-making process, which must respect the rights of indigenous peoples and local communities.

According to Rabadan and Bassi (2002), social appropriation means that *the Internet's resources have helped to solve concrete problems for the transformation of reality. The evidence of appropriation is not ICT use, but rather the changes that these produce in the real world...*[26] Thus, to ensure the sustainability of connectivity projects in remote areas, a holistic strategy is required, that considers all aspects of an enabling environment, especially the participation of the target communities.

Bearing the above in mind —and in connection with the wishes and opportunities identified by the communities in the case studies— we believe it is important to recommend fostering national projects and initiatives and the networks and access solutions that supplement telecommunications/ICT, through regulations and public policies created for that purpose, as mentioned in Resolution 37 of the ITU-D on bridging the digital divide,[27] which is further grounded in the right to self-determination. The development of community networks could be one of the alternatives, since they are deployed communications infrastructure, managed and negotiated by the very community that uses them. However, it is important to understand

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(23) Idem.

(24) ECLAC. Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean. Available at: https://repositorio.cepal.org/handle/11362/43583

(25) ECLAC. Parties and Signatures. Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean. Available at: https://observatoriop10.cepal.org/en/treaty/regional-agreement-access-information-public-participation-and-justice-environmental-matters

(26) Rabadan, Silvia; Bassi, Roxana. "Centros Tecnológicos Comunitarios: La experiencia argentina", p. 23. https://www.roxanabassi.com.ar/files/ctc-peru.pdf

(27) 2022 World Telecommunication Development Conference (WTDC-22). Final Report. Available at: https://www.itu.int/dms_pubrec/itu-d/rec/d/D-REC-D.19-201003-I!!PDF-E.pdf

that there are diverse factors of a technical, practical, institutional, economic and legal nature that can affect the possibilities of satisfactorily implementing a community network.[28]

Considering the different rights along with the problems identified is also an important task in verifying the different possibilities for having access to technology with the necessary autonomy. Thus, the diverse experiences of indigenous peoples in Latin America are essential inputs for continuing to develop proposals that take into account the socio-environmental perspective and sustainable, intercultural development, in order to extrapolate the traditional telecommunications policies and present public policy proposals with a holistic, situated vision.

(28) On the multiple challenges facing community networks in Latin America, see: Marianne Días Hernández. Marcos regulatorios para las redes comunitarias: Argentina, Brasil, Colombia y México. Derechos Digitales. Available at: https://www.derechosdigitales.org/wp-content/uploads/redes-comunitarias-2018.pdf

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