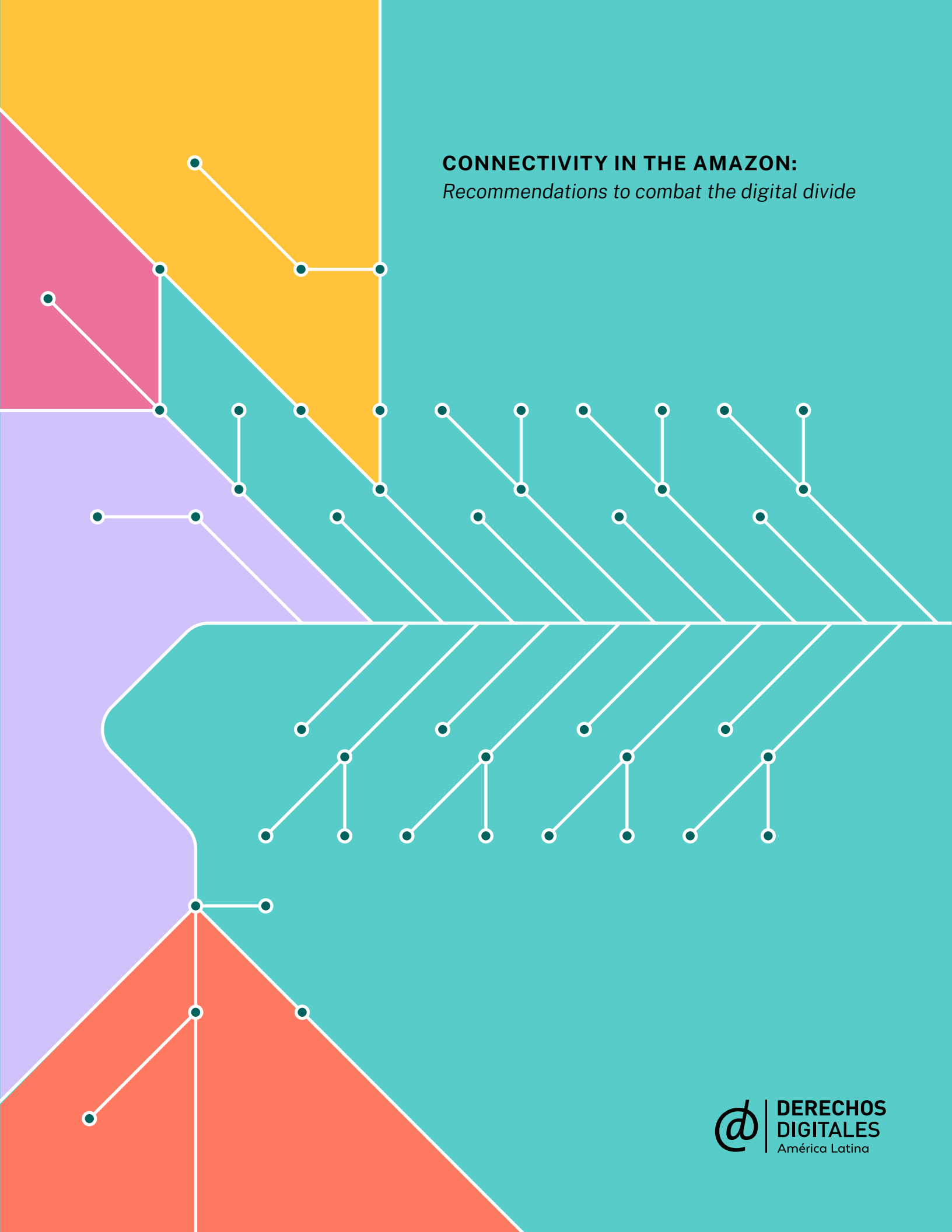
CONNECTIVITY IN THE AMAZON:

Recommendations to combat the digital divide



DERECHOS DIGITALES
América Latina

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Recommendations to combat the digital divide

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This publication was created by Derechos Digitales, an independent non-profit organization founded in 2005, whose mission is the defense, promotion, and development of human rights in digital environments in Latin America.

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We thank Dejusticia, Internet Bolivia Foundation, Fundamedios, and Idec for their support in conducting and systematizing the workshops, as well as the active participation of different communities located in Amazonia.

Octubre, 2024.

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INTRODUCTION

The research "Internet access in the Amazon region: trends from case studies in Brazil, Bolivia, Ecuador and Colombia"[1] launched in 2023, deals with internet access in the Amazon region and highlights the significant connectivity divides in the region. Such divides are particularly evident in terms of unequal access to infrastructure, high costs of services, and limited coverage in hard-to-reach areas.

These deficiencies disproportionately affect the rural and indigenous communities that inhabit this territory, limiting their access to fundamental rights, such as education, health, and cultural participation. These are not only connectivity obstacles but also challenges related to the lack of institutional support and public policies that guarantee adequate, inclusive, and sustainable access.

Based on four case studies in different countries in the region, the study sought to understand the expectations and concerns of some Amazonian communities regarding internet access, recognizing their needs for autonomy and technological self-determination. Clearly, in the Amazonia context, internet access represents access to human rights as well as a crucial tool to reinforce the right to communication and community organization. However, it also implies challenges requiring special attention to avoid widening existing inequalities.

This work, led by Derechos Digitales and developed in partnership with four Latin American organizations based in different countries in the Amazon region, was the basis for conducting participatory workshops inviting communities to reflect on the barriers and opportunities for internet access in the region. These workshops aimed to promote dialogue on how internet access can safely support community dynamics and generate recommendations for the public, private, and civil society, seeking approaches that effectively respond to the challenges identified.

This document attempts to systematize such recommendations, recognizing that in addition to evidence, technical knowledge, and best practices, the construction of connectivity policies must consider local contexts and realities and their requirements. Below are details of the methodology adopted, the recommendations identified in each country, and some final considerations for formulating public policies to overcome connectivity divides in the Amazon.

We see this as a contribution to future conversations about meaningful connectivity in each country. Conversations that will need to be extended to other communities and contexts, given the diversity of what is considered the Amazon region. Therefore, we do not intend to generalize the recommendations that can be drawn from each experience but to emphasize the crucial need for public policies on technological issues to consider the challenges faced by those groups of society that are differentially affected by them.

Numerous studies indicate that connectivity gaps in Latin America exist in both urban and rural contexts and are affected by factors such as class, race, age, and gender; however, addressing them in a territory such as the Amazon requires a particular set of considerations.

(1) See Lara-Castro, P. & Souza, M. (2023). “Latin America in a Glimpse Amazonía: Acceso a Internet en la Región Amazónica – Tendencias en los casos de estudio desde Brasil, Bolivia, Colombia y Ecuador”. Available at <https://www.derechosdigitales.org/wp-content/uploads/DD_Amazonia_5_General-3.pdf>. Accessed september 2024.

METHODOLOGY

The organizations involved in the initial research on internet access in the Amazon area conducted workshops in various rural and indigenous communities in Brazil, Bolivia, Colombia, and Ecuador. These organizations were Dejusticia in Colombia, Internet Bolivia Foundation in Bolivia, Fundamedios in Ecuador, and IDEC in Brazil. The purpose of the workshops was to present and disseminate the research results conducted in 2023 and to create a space for reflection and debate on the challenges and opportunities for connectivity in the region.

Each organization developed the activities according to its context and priorities, working with governments, civil society organizations, academia, and the general public to promote an inclusive dialogue on connectivity barriers. These workshops also aimed to co-create specific recommendations for governments, the private sector, and civil society, adapting them to local realities. Participation was gender-balanced, ensuring equitable representation and the inclusion of diverse perspectives.

Each workshop's methodology was in charge of the organizations. Still, the systematization of the conversations was based on the following criteria designed by Derechos Digitales:

1. Workshop Outcomes: We asked each organization to describe the most relevant discussions, focusing on the challenges and opportunities identified in the dialogues.
2. Recommendations: They were structured according to their primary addressees —governments, civil society, and the private sector— and defined actions to improve connectivity.
3. Learnings and Challenges: Identification of the main learnings and challenges during the workshops' implementation, providing reflections for future projects.
4. Divergences and Priority Issues: We asked the organizations to identify any divergences from the previous analysis and any additional issues that were not addressed.

The key points identified during each cycle of workshops are summarized below according to the country in which they were held. They cover topics such as the conceptualization of technological autonomy, the role of the state, the participation of civil society organizations, and the cultural changes observed as a result of the introduction of new technologies.

Again, we emphasize that this is not an exhaustive mapping of what is happening in the Amazon, in each country, at the regional or national level. As shown below, each community has identified different aspects to consider according to its needs. However, significant common elements will be presented in the final considerations as issues that can be deepened into priority strategies from a regional perspective.

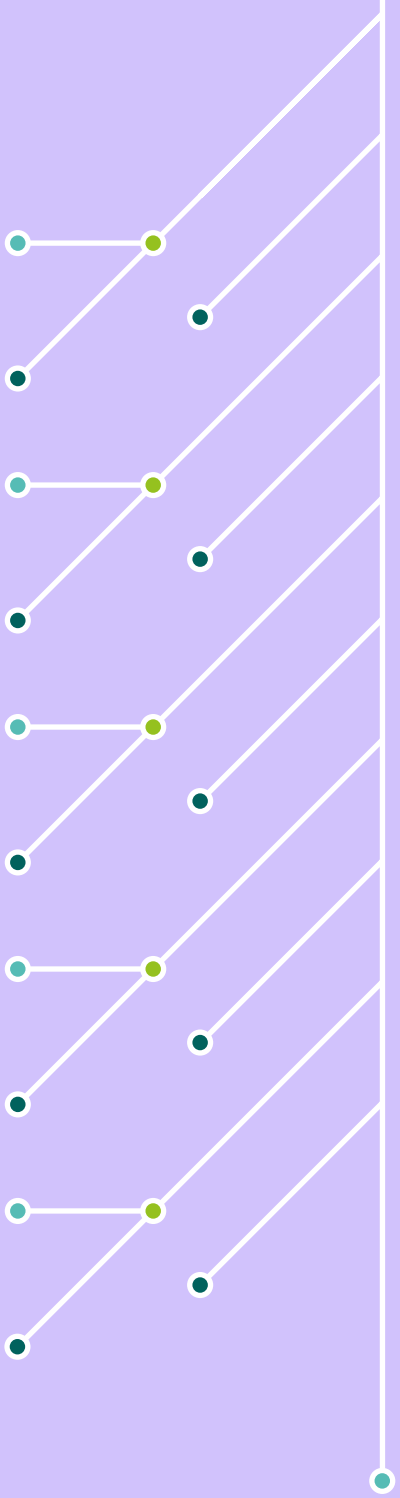
(2) See <https://www.dejusticia.org/>. Accessed September 2024.

(3) See <https://internetbolivia.org/>. Accessed September 2024.

(4) See <https://www.fundamedios.org.ec/>. Accessed September 2024.

(5) See <https://idec.org.br/>. Accessed September 2024.

RECOMMENDATIONS TO COMBAT THE DIGITAL DIVIDE



BOLIVIA

The case of Bolivia focuses on the connectivity situation and the challenges related to digital security, especially in the Tumupasa communities in the Amazon region. It was led by the Internet Bolivia Foundation. The workshops addressed issues such as the value of protecting culture through information and communication technologies (ICTs), the use of the internet for education, and concerns about how technology has distanced many young people from traditional community activities.

Considering previous research findings, it can be confirmed that the state has not implemented policies that have substantially changed the population's connectivity situation. However, there have been improvements in the plans of telecommunications companies, including the state-owned Entel, which now offers short-term unlimited data plans at more affordable prices. This has facilitated students' access to education, research development, and daily workplace activities.

Despite these advances, there is still a lack of training on how to use the devices more efficiently. During the workshops, for example, it was observed that many people were keeping functions activated on their mobile devices, such as location or Bluetooth, which consumed device resources without giving them any tangible benefit.

The situation regarding access to electricity is also complex, as not all communities have a constant supply, which is an additional obstacle to guaranteeing internet connectivity.

TABLE 1 Recommendations of the Tumupasa communities to overcome connectivity gaps in the Bolivian Amazon.

RELEVANT ASPECTS	RECOMMENDATIONS FOR GOVERNMENTS	RECOMMENDATIONS FOR CIVIL SOCIETY	RECOMMENDATIONS FOR THE PRIVATE SECTOR
Internet access	- Implement public policies to improve connectivity infrastructure. - Implement policies that guarantee constant and reliable access to electricity in rural and remote communities.	- Collaborate with local communities to identify infrastructure vulnerabilities and prioritize improvements.	- Promote private investment in alternative connectivity technologies in rural and hard-to-reach areas.
Training in the safe use of technology	- Implement training programs on the proper use of digital devices, focusing on security and privacy. - Conduct diagnostics on training needs in vulnerable communities.	- Promote community workshops on digital security, teaching how to turn off unnecessary functions to improve the performance of the devices - Create support nethels for post-training follow-up.	
Cultural and youth impact	- Develop policies that promote using the internet to preserve and disseminate local culture.	- Facilitate workshops on the responsible use of the internet, fostering the interest of the young population. - Support initiatives for the creation of digital content that promotes cultural identity.	

BRAZIL

The Brazilian case focuses on connectivity challenges in the community of Nossa Senhora do Livramento, located in rural Manaus on the banks of the Rio Negro, and was led by Idec. During the workshops, several key issues were discussed, such as connectivity infrastructure, the effects of extreme weather conditions on connectivity, the use of the internet for work, and the fight against disinformation. There were also activities to promote the safe use of the internet.

Infrastructure challenges were highlighted, including the removal of equipment by the Brazilian telecommunications company Oi S.A., which left the community without internet access. According to testimonies collected by Idec, the antenna structure remains in place but no longer guarantees an internet signal — this could not be confirmed during the visit. However, the community considers internet access via telephone inadequate due to poor quality and frequent signal drops.

Another topic discussed was the lack of constant access to the internet in the educational context. School follow-up was severely affected during the pandemic due to a lack of connectivity. Despite the presence of a telecenter in the local school, limited access restricts educational opportunities for students, especially when they need to continue secondary education in other communities.

Discussions also highlighted the impact of the extreme drought the region is facing in terms of connectivity infrastructure. During periods of drought, river levels drop significantly, leaving some of the internet cables exposed. Last year, the situation was so severe that the community remained isolated: larger boats could not access it, and only small boats, known as "rabetas", could navigate. These passing vessels damaged the cables with the propellers of their engines, disrupting not only transport but also communications. This isolation, aggravated by extreme weather conditions, evidences the vulnerability of the internet infrastructure in the region.

The situation reveals a significant problem: internet access is not a priority for local consumer protection agencies. According to the Idec report, these entities rarely take specific action on connectivity issues and are limited to cases related to power outages.

The proposed recommendations include investing in climate-resistant infrastructure, prioritizing public policies that guarantee community access to the internet, and providing financial incentives to facilitate access to internet plans for communities in hard-to-reach areas.

TABLE 2 Recommendations from the community of Nossa Senhora do Livramento in Manaus for overcoming connectivity gaps in the Brazilian Amazon.

RELEVANT ASPECTS	RECOMMENDATIONS FOR GOVERNMENTS	RECOMMENDATIONS FOR CIVIL SOCIETY	RECOMMENDATIONS FOR THE PRIVATE SECTOR
Connectivity infrastructure	- Prioritize investments in internet infrastructure resilient to extreme weather conditions, such as droughts. - Implement public policies that ensure community access to the internet in schools and community centers, including infrastructure, maintenance, and expansion of telecenters. - Strengthen regulation and monitoring of telecommunications operators to ensure that they meet their coverage and quality of service obligations in rural and remote areas. - Create subsidies to facilitate access to internet plans for low-income populations in remote regions.	- Organize educational campaigns aimed at communities on safe and efficient internet use. - Advocate for inclusive public policies to improve the digital infrastructure.	- Invest in infrastructure that guarantees stable and high-quality connectivity in communities, expanding coverage.
Climate conditions impact	- Coordinate efforts between sectors to improve infrastructure for extreme weather incidents.	- Build volunteer networks to monitor connectivity infrastructure conditions and activate maintenance processes for extreme weather conditions. - Expand training programs to teach digital skills to the community.	- Publish reports on service quality and response times for technical problems in weather-affected areas.
Use of the internet as a work tool	- Facilitate access to digital tools to promote local economic activities. - Develop economic incentives to enhance internet access, focusing on independent workers and entrepreneurs in rural areas.	- Train the community on how to use technology to improve economic activities.	- Promote digital platforms and services that support local entrepreneurship, ensuring an adequate infrastructure for digital commerce.

COLOMBIA

The Colombia case, led by Dejusticia, focuses on the opportunities and challenges of internet access in the department of Vaupés. During the workshops, discussions were held on recent Constitutional Court[6] rulings that recognize access to the internet as a fundamental right to guarantee other rights, such as education.

A review of current policy documents on reducing the digital divide and improving connectivity in the country[7] was also conducted. The analysis[8] led to two main conclusions. First, according to official data,[9] the last two adopted documents show a lower level of implementation than projected. Second, the Vaupés department, which has Colombia's greatest internet access problems,[10] is not being prioritized according to its needs.

The latter is particularly relevant given that Vaupés has the lowest internet access in the country (0.16 per 100 inhabitants in 2023). Despite this urgent need, the department has received very little attention.

In the workshops, members of the educational system and indigenous leaders reported using the internet to communicate, access norms and policies, obtain basic medical advice, improve the educational system, and exercise their rights. Still, they face several challenges: electricity service failures, delays in contracting internet service, and the need to appropriate the technology while maintaining their cultural identity. Participants suggested that community leaders should guide access to the internet, especially for minors, and that training programs should accompany this. They also recommended that communities take the initiative to demand compliance with the state's obligations legally.

Regarding the role of private mobile telephone companies, it was noted that they have failed to provide adequate coverage in the department of Vaupés. Some communities, however, have begun to access alternative private satellite technologies to obtain connectivity, in many cases at their own expense.

(6) Colombian Constitutional Court Rulings T-030 of 2020 and T-372 of 2023.

(7) CONPES 3968 dated August 30, 2019. Available at: https://colaboracion.dnp.gov.co/CDT/Conpes/Económicos/3968.pdf; CONPES 4001 dated August 5, 2020. Available at: https://micrositios.mintic.gov.co/centros_digitales/pdf/documento_CONPES_4001.pdf; CONPES 4079 dated April 18, 2022. Available at: https://colaboracion.dnp.gov.co/CDT/Conpes/Económicos/4079.pdf

(8) Information regarding this analysis was obtained from an internal Dejusticia working paper funded by INCLO.

(9) Available at: https://sisconpes.dnp.gov.co/ReportesSisCONPES/Reportes/RPBIAvanceDocumento

(10) Vaupés is the department with the least fix internet access in Colombia, with only 0.16 accesses per 100 inhabitants in the fourth quarter of 2023, compared to Bogotá (28.26) and Risaralda (22.3). Available at: Statistics on the Information and Communications Technology sector (mintic.gov.co)

TABLE 3 Recommendations from the communities of the Department of Vaupés to overcome connectivity gaps in the Colombian Amazon.

RELEVANT ASPECTS	RECOMMENDATIONS FOR GOVERNMENTS	RECOMMENDATIONS FOR CIVIL SOCIETY	RECOMMENDATIONS FOR THE PRIVATE SECTOR
Access to the internet as a fundamental	- Guarantee access to the internet as a fundamental right. - Prioritize policies that ensure connectivity in rural areas and vulnerable communities.	- Promote education on internet access rights among communities. - Accompany communities to legally demand compliance with these rights.	- Collaborate with the public sector to improve infrastructure and ensure equitable access to the internet in rural areas.
Implementation of public connectivity policies	- Effectively implement existing connectivity plans, prioritizing the department of Vaupés. - Improve transparency and accountability in the execution of these policies.	- Inform and educate communities about the benefits and objectives of existing public policies for connectivity. - Involve communities in monitoring the progress of these policies.	- Encourage investment in infrastructure and ensure equitable coverage in underserved areas, such as the department of Vaupés.
Challenges of energy and connectivity infrastructure	- Review electric power supply policies in Vaupés to improve service stability and ensure connectivity. - Coordinate efforts between sectors to guarantee the availability of electricity as a basis for connectivity.	- Raise community awareness on the importance of demanding improvements in the electrical infrastructure. - Create community mechanisms for monitoring and reporting power failures that affect connectivity.	- Promote public-private collaboration to solve infrastructure problems that limit access to internet and electricity in the region.

ECUADOR

The Ecuador case, conducted by Fundamedios, focuses on the benefits and impacts of internet use for communities in the province of Pastaza, particularly the Kichwa, Shuar, and Waorani. The purpose of the socialization was to share the study results and invite the communities to reflect on the role of the internet in integration, cultural identity, and the improvement of education.

The workshops discussed the challenges and benefits of internet access. Concern about the impact of internet use on local culture, especially on native languages, was expressed, and emphasis was placed on the importance of creating content in local languages to preserve cultural identity.

The conversations showed that since the first research was conducted, communities have seen improvements in connectivity, reflected in a significant reduction in the prices of internet plans. Where once access was limited to satellite services costing between $60 and $100, this has now been reduced to more affordable plans of around $30 plus the cost of the last mile, thus improving digital inclusion.

The public telecommunications policy 2023-2025[11] was also mentioned as a government attempt to improve connectivity; however, no significant changes have been observed in the participating communities so far. The document established the expansion of infrastructure and the massification of telecommunications services as objectives, with a focus on rural and hard-to-reach areas.

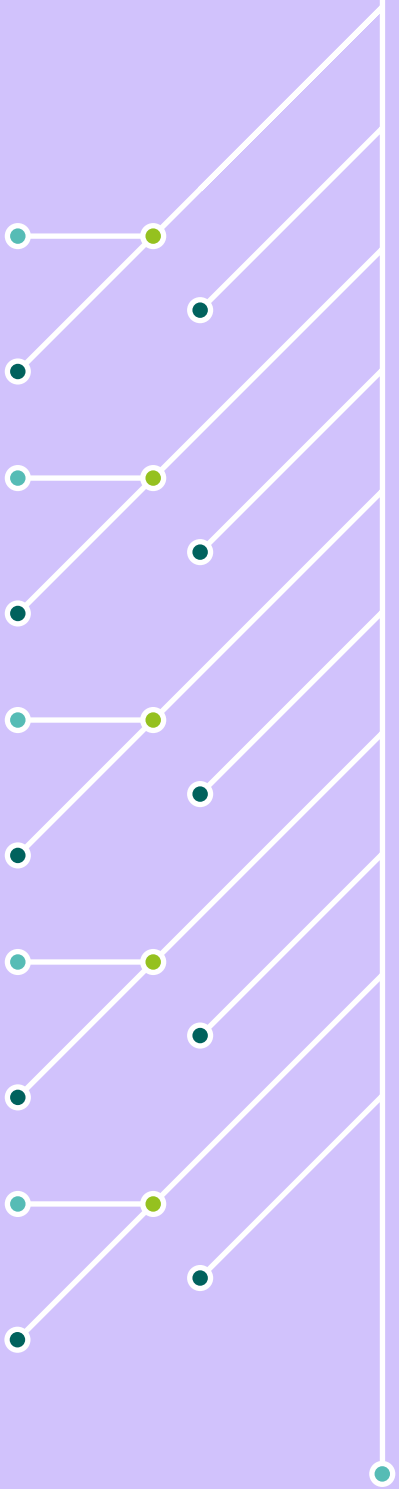
Recent changes in the Ecuadorian government have not resulted in the announcement of specific plans to reduce the digital divide in rural areas. Although the new government has set general goals for universal connectivity and digitization, no clear indicators have been established to measure progress. On the other hand, there are records of satellite internet use in communities, but there is no official data on its use in the country.

(11) Available at: https://www.telecomunicaciones.gob.ec/wp-content/uploads/2023/06/Pol%C3%ADtica-Pública-Telecomunicaciones-2023-2025-con-ANEXOS-nuevos-signed-signed-signed-signed_firmado.pdf

TABLE 4 Recommendations of the Kichwa, Shuar, and Waorani communities of the Pastaza province to overcome connectivity gaps in the Ecuadorian Amazon.

RELEVANT ASPECTS	RECOMMENDATIONS FOR GOVERNMENTS	RECOMMENDATIONS FOR CIVIL SOCIETY	RECOMMENDATIONS FOR THE PRIVATE SECTOR
Internet use and culture	- Promote the creation of content in native languages and related to local culture in order to maintain cultural identity. - Foster programs that facilitate digital literacy in rural communities. - Conduct a diagnosis of community educational centers with limited internet access to identify infrastructure and connectivity needs and develop strategies to improve their access to information and communication technologies. - Establish subsidy mechanisms for access to internet services in rural communities, allowing low-income populations access to quality connectivity at a reduced cost.	- Coordinate efforts with local organizations to create cultural content. - Develop digital literacy workshops.	- Install phone antennas in rural communities to improve coverage and ensure more stable and widespread access to telecommunications services. - Implement actions to continuously optimize internet and telephone service quality in rural areas, guaranteeing faster, more stable, and reliable connectivity.
Impact of connectivity on young people	- Implement a digital literacy program in the communities, offering basic training on using technological devices and internet tools. - Develop programs aimed at young people, focused on using the internet for education and developing digital skills, promoting a more productive and responsible use of technologies.	- Support communities in the creation of cultural content through the use of technology.	- Provide affordable internet access plans and ensure quality of service to support digital education.

CONCLUDING REMARKS



The analysis of the communities' priorities and recommendations shows that despite the particularities arising from the context -even in terms of connectivity policies -and the diversity of realities experienced in each country, there are some common concerns and demands. Such a diagnosis is a key starting point for thinking about policies to overcome divisions in the Amazon context.

All the cases demonstrate how internet access is fundamental for the exercise of rights such as the right to education, labour, and culture. They also show how, despite the existing gaps, Amazonian communities are interested in and willing to adopt and use technology as a tool to improve their living conditions, preserve their culture, and guarantee access to fundamental rights.

Below, we describe key aspects of the conversations held in the communities in an attempt to contribute to the construction of an action agenda based on Amazonia's demands.

Connectivity infrastructure

Both the UN and the IACHR have stressed the importance of connectivity for the exercise of human rights, urging States to implement effective measures to guarantee it.[12] When we look at the context of the countries analyzed, although there is notable progress in the formal commitments of some States in this regard –with the recognition of access as a right and the adoption of connectivity policies– it is clear that such efforts are still insufficient to account for the reality of Amazonian communities.

In this regard, the Brazilian case summarizes the crossroads of challenges faced in the region. On the one hand, there are still gaps in access to electricity that affect the connection of devices. It should be noted that this is not an isolated case and affects remote areas throughout the region. On the other hand, a historic drought puts the scarce existing access infrastructure at risk. The situation observed in Manaus indicates that addressing existing infrastructure demands must consider extreme weather conditions, requiring specific policies and coordination between governments, companies, and civil society.

Concerns about climate change also emerge in other cases, with a focus on promoting sustainable energy sources to overcome challenges related to access to electricity.

Salient recommendations:

- Coordinate efforts between sectors to guarantee the availability of electricity as a basis for connectivity, prioritizing clean and sustainable energy sources;
- Increase investment in infrastructure to improve internet coverage in rural and hard-to-reach areas;
- Prioritize investments in infrastructure resistant to extreme weather conditions;
- Encourage private investment in alternative connectivity technologies in rural and hard-to-reach areas (e.g., through community networks and local providers);
- Improve transparency and accountability in the execution of connectivity policies and involve communities in evaluating their implementation.

(12) Office of the Special Rapporteur for Freedom of Expression Inter-American Commission on Human Rights "Freedom of Expression and the Internet," para. 2. Available at: https://www.oas.org/es/cidh/expresion/docs/informes/2014_04_08_Internet_WEB.pdf; UN, Report of the Special Rapporteur on the right to education, Res a/hrc/32/37, April 6, 2016, para. 40 et seq.

Technology appropriation

Another fundamental aspect of connectivity policies highlighted in the discussions is technology appropriation. Beyond access to technology, communities need to be able to adapt and use it according to their own needs and contexts. This appropriation is directly related to indigenous peoples' right to self-determination, allowing them to decide how to integrate technology into their socio-economic and cultural development. This is clearly evident in the discussions in Bolivia, Brazil, and Ecuador, which reflect concerns about cultural preservation and the generation of content in indigenous languages to avoid the risk of acculturation and strengthen the cultural identity of the communities.

At the same time, a priority related to digital literacy and security emerges, reflecting the concerns of participating communities about the impact of access, particularly on younger people.

It is crucial that states, in collaboration with the private sector and civil society and with the active participation of communities, work in coordination to close the digital divide in the region. This implies not only providing the necessary infrastructure but also guaranteeing knowledge and training so that communities can appropriate the technologies effectively and beneficially.

Salient recommendations:

- Implement training programs on the proper use of digital devices, focusing on security and privacy, and conduct periodic diagnostics on the training needs of vulnerable communities;
- Promote the creation of content in native languages and related to local culture in order to maintain cultural identity;
- Facilitate access to digital tools to encourage the creation of digital content that supports community cultural identity and to promote local economic activity;

Participation

The dialogues systematized above demonstrate the need for flexible public policies with a holistic approach that includes both the creation of infrastructures and the strengthening of capacities to enable the social appropriation of technologies. To this end, coordinating the various sectors is essential, as is creating mechanisms for listening to and effectively involving communities in formulating these policies.

This must be done with due respect for the communities' complete autonomy at each stage of the public policy design process. They must be part of the decision-making process in planning, designing, monitoring, and evaluating access policies. Only with the active and autonomous participation of the communities will it be possible to develop sustainable solutions that are appropriate to their realities and needs. The recommendations resulting from the workshops are crucial for amplifying the voices of the communities and advancing effective policies aligned with their needs. This will contribute to a more inclusive and equitable approach for the region.

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