




LATIN AMERICAN  
AND CARIBBEAN  
ECONOMIC SYSTEM

A large, light red map of Latin America and the Caribbean is positioned in the background, partially obscured by the text.

# Regional Meeting on Connectivity and regulation in Rural Areas as an Engine for Development: How to Overcome Existing Challenges?

## Rapporteur Report

**Digitalization**

*Regional Meeting on Connectivity and Regulation in Rural Areas as an Engine for Development: How to Overcome Existing Challenges?*

*Caracas, Bolivarian Republic of Venezuela*

*April, 24, 2023*

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## I. **RAPPORTEUR**

On April 24, 2023, the Permanent Secretariat of SELA organized the virtual meeting (via Zoom) on Connectivity and Regulation in Rural Areas as an Engine for Development: How to Overcome the Existing Challenges? The panel of experts were the following: Paul Puig Gabarró, Telecommunications Specialist of the Inter-American Development Bank (IDB); Fernando Rojas, Senior Assistant of the Division of Production, Productivity and Business Development of ECLAC; Teresa Gomes, Executive Director of the "Internet for Everyone (IPT, in Spanish)" Project of Peru; Germán Otalora, Head of Business Operations and Programme Management for Latin America of Microsoft Co; Javier Padrón, President of Telecomunicaciones Gran Caribe (TGC); Lina María Duque del Vecchio, Communications Commissioner of the Communications Regulation Commission (CRC) of Colombia; Carlos Lugo Silva, Senior Executive of the International Telecommunication Union (ITU) Regional Office for the Americas; and Marcelo Rute, Manager of the Telecommunications Development Fund (FDT) of the Undersecretariat of Telecommunications (Subtel) of Chile.

The objectives were as follows: i) to provide a space for discussion and learning of best practices that promote regional cooperation in rural digital connectivity projects, ii) to generate a set of recommendations to enhance public-private partnerships to improve rural digital connectivity in Latin America and the Caribbean.

The opening remarks were delivered by Ambassador Clarems Endara, Permanent Secretary of SELA, who underscored that in LAC, especially in rural areas, the digital gap continues to be significant, limiting access to information, education, health services, job and trade opportunities and, consequently, exacerbating social and economic exclusion. Finally, he referred to some key aspects that should be considered when addressing the connectivity situation in LAC, with special reference to agricultural and remote areas.

For more information on this meeting, including the agenda, opening remarks, presentations and list of participants, as well as the video of the meeting, go to <https://www.sela.org/es/eventos/e/85945/conectividad-y-regulacion-en-zonas-rurales>, on SELA's website ([www.sela.org](http://www.sela.org)).



## II. SUMMARY OF THE PRESENTATIONS

Following the respective agenda, the working day was carried out in three sessions: Session I. Status of connectivity in rural areas, challenges and opportunities; Session II. Projects and successful experiences: making connectivity possible and Session III. Regulating digital connectivity projects. The following is a summary of the papers presented.

### **Session I. Situation of the Connectivity in Rural Areas, challenges and Opportunities**

Paul Puig Gabarró, from Telecommunications Specialist of the Inter-American Development Bank (IDB), presented the Situation of Connectivity in Rural Areas: Challenges and Opportunities. He analyzed the gap in the investment infrastructure, and explained that close US\$28 billion would be required to increase fixed and mobile penetration by 10 p.p. And that close US\$68 billion would be needed to cover the gap with the OECD. He pointed out that the largest percentage of investment is required in rural areas, just over 50%. He also highlighted Internet access as a key factor, adding that although 94% of the Latin American population has access to mobile Internet, 38% do not subscribe to the service.

He noted that there is a notable lack of digital skills among the population. He also commented on the initiatives that have been carried out in LAC aimed at helping to close the digital gap. Regarding the potential impact of connectivity on labor formality in rural areas, he noted that these areas tend to benefit less from broadband deployment because they have a lower: i) concentration of industrial sectors; ii) volume of transactions; and iii) volume of information.

Fernando Rojas, Senior Assistant of ECLAC's Division of Production, Productivity and Management Development, gave a presentation on Digital Connectivity in Rural Areas of Latin America. He showed, explained, and compare with graphs the level of Internet penetration in rural and urban areas in Latin America and the Caribbean. In terms of broadband access, he pointed out that, although in recent years the region has made progress, such as the exponential increase in connectivity of mobile and fixed services, it still falls significantly behind other countries and other more advanced regions, both in mobile and fixed bandwidth.

He went on to explain the eLAC2024 Digital Agenda, agreed upon at the Eighth Ministerial Conference on the Information Society in Latin America and the Caribbean (Uruguay, November 16-18, 2022). He said that eLAC2024 proposes the use of digital technologies as means for sustainable development and that its mission is to promote the development of the digital ecosystem in LAC. To do so regional integration and cooperation is necessary, so it can strengthen digital policies that promote knowledge, inclusion and equity, innovation and environmental sustainability. He cited Objective N° 1 of the 2030 Agenda: "To promote the availability of affordable, quality broadband connectivity for all people, with special emphasis on those in vulnerable conditions, and in rural and semi-urban areas." Finally, he commented on some recommendations regarding the regulatory framework for connectivity in rural areas, contained in Decision No. 8 of the Inter-American Telecommunication Commission (CITEL).

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### Session II. Projects and Successful Experiences: Making Connectivity Happen

Pablo García de Castro, Director of Institutional Relations of the Inter-American Association of Telecommunications Companies (ASIET), who moderated the session and gave a presentation on Conditions for Improving Rural Connectivity. He offered quantitative data that illustrated the complex situation in LAC due to its topography, which is very complicated and makes infrastructure deployment more expensive. He commented that ASIET is working with ECLAC and that, with the IDB, they have a joint project on the financial sustainability of the sector.

He pointed out that closing the digital gap requires the design of subsidy programs (to promote access to devices) tailored to meet the demand of each area, and that this requires technological and regulatory innovation. He pointed out three major challenges to improve access to rural connectivity: i) deployment of infrastructure; ii) optimization to access devices; and iii) training to develop digital skills and for the efficient use of technology. To view the presentation, go to the meeting webpage by clicking [here](#) and, at the bottom of the page, access the video of the meeting.

Teresa Gomes, Executive Director of the "Internet for Everyone (IPT)" project in Peru, gave a presentation on Connectivity and Regulation in Rural Areas. Her presentation focused on what has been IPT, and that it began its operations in 2019. She explained it is a rural mobile infrastructure operator (RMIO) created by Telefónica del Perú, Facebook, IDB Invest, and CAF-Development Bank of Latin America, with the participation and support of the Peruvian government. Thanks to IPT, more than 3.2 million Peruvians living in rural areas of the coast, highlands, and jungle have access to 4G mobile Internet. This is supported by state-funded transport networks and by an innovative, collaborative and sustainable service model. "Internet For Everyone" aims to: i) connect six million people; ii) reduce the digital divide; and iii) facilitate the arrival of telemedicine, teleeducation, digital government, and financial inclusion in rural areas.

Of the characteristic features of this project, she highlighted the following: it has a regulatory basis that develops and regulates the Operators of Rural Mobile Infrastructure (OMIR) model, leaving the commercial negotiation to the parties, without setting tariff regulations. It is leveraged on a public policy focused on narrowing the existing access gap in rural areas, rather than setting quality regulation and penalties for the service. And it allows the implementation of models such as active infrastructure sharing through RAN Sharing MORAN. Finally, she confidently expressed the possibility of replicating this project in other countries in the region with similar needs.

Germán Otalora, Head of Business Operations and Program Management for Latin America, Microsoft Co. summarized the company's connectivity projects in rural areas of Latin America, with particularly TVWS (TV White Spaces), which, he explained, correspond to unused spectrum in the VHF and UHF frequency band. Regulators allow wireless devices to transmit in these unoccupied channels, if they do not generate interference to TV broadcasters.

He pointed out that through TVWS, telecommunications network operators can offer Internet access in a sustainable, secure and cost-effective manner. Thus, he added that schools and libraries can extend their networks over long distances and penetrate natural and man-made obstacles, while benefiting traders, industrialists, farmers and entrepreneurs, among others. Finally, he summarized the company's strategy in three efforts: i) technical and technological, aimed at bringing purposeful or meaningful connectivity to rural areas; ii) conducting studies of habits, customs, behaviors, and culture of the different areas because each community must be approached according to its peculiarities to which the appropriation model must be adjusted; and



iii) making these services permanent over time, regardless changes in government and the administrative non-continuity characteristic of the countries in the region, so that economic autonomy must be promoted by stimulating productive activities.

Javier Padrón, President of Telecomunicaciones Gran Caribe (TGC), who described TGC's major project: the Alba-1 Submarine Cable System through which data traffic takes place between Venezuela, Jamaica, and Cuba.

### **Session III. Regulating Digital Connectivity Projects**

Lina María Duque del Vecchio, Commissioner of Communications of the Communications Regulation Commission (CRC) of Colombia, spoke on Digital Connectivity in Rural Areas as a Driver of Development in Colombia. She explained the five axes on which the CRC bases its regulatory approach, and on which the policy aimed at bringing connectivity to rural areas is based: i) geographic analysis; ii) promotion of fixed Internet connectivity; iii) the quality; iv) regulation of infrastructure sharing; and v) elimination of barriers to deployment, the latter with a view to facilitating the massification of ICTs throughout the country.

Carlos Lugo Silva, Senior Executive of the International Telecommunication Union (ITU) Regional Office for the Americas, who, in addition to moderating the session, gave a presentation on Innovation in Public Policy and Regulation for Digital Development. His presentation focused on the regulatory and public policy challenges in terms of connectivity development. In referring to innovation in public policy, he highlighted the need to: i) incorporate new agents involved in financing; ii) promote a rational fiscal policy that includes intelligent incentives; and iii) build local innovation ecosystems. He stressed that closing the digital divide in LAC requires innovative measures in the public policies sector, and in the area of regulation. Finally, he made several recommendations that are included in section III of this report.

Marcelo Rute, Manager of the Telecommunications Development Fund (FDT) of Chile's Undersecretary of Telecommunications (Subtel). He explained that the FDT is a financial instrument of the Chilean government that generates projects and offers subsidies aimed to: i) reducing the digital divide; ii) increasing the coverage of telecommunications services, with special emphasis on low-income urban and rural areas; iii) increasing the deployment of telecommunications infrastructure to support citizen service; and iv) promoting inclusion in extreme sectors. He added that the FDT strategy contemplates three stages, namely: construction of optical (submarine and terrestrial) telecommunications infrastructure nationwide; v) activation of a nationwide supply of public telecommunications services; and vi) design of subsidized projects based on demand. To view the presentation, go to the meeting web page by clicking [here](#) and, at the bottom of the page, open the video of the meeting.



### III. CONCLUSIONS AND RECOMMENDATIONS

#### A. Conclusions

- 1) The increase in the income of the population in rural areas occurs more slowly, although it is long-lasting and sustainable in the long term. In the short term, the introduction of broadband does not have a significant effect on incomes in rural areas. In this context, the economic impact of broadband depends on: i) the level of human capital; ii) digital skills for Internet use; and iii) access to equipment.
- 2) In isolated areas, the telecommunications sector faces common issues with other basic services such as education, electricity, energy and water and, in turn, these problems are compounded by the low purchasing power in some isolated areas, as well as the shortage of local labor, both for infrastructure deployment and operation.
- 3) Efforts to bring connectivity to rural areas face, among others, the following key challenges: i) complicated and costly logistics and communications; ii) low purchasing capacity that hinders the return on investment; and iii) insufficient qualified local labor for the operation and maintenance of infrastructure and equipment.
- 4) Households in rural areas tend to benefit less from connectivity because they are not sufficiently prepared to derive the greatest possible benefit from digital technologies. In this context, the socioeconomic impact of connectivity depends on, among other enabling factors, formal education, and it is a proven fact that in rural areas there is less formal education than in urban areas, partly because educational centers, from a certain level upwards, are more concentrated in urban areas.
- 5) Rural areas tend to benefit less from broadband deployment in terms of employment, as they have a lower: i) concentration of industrial sectors; ii) volume of transactions; and iii) volume of information.
- 6) Closing the digital gap imposes the need to determine the specific challenges of each of the zones, and to assessing the possibility of developing demand subsidy programs, among other actions.
- 7) Although the greatest development in connectivity in the region has been in fixed broadband, there are also important gaps and significant differences with other countries and regions. In LAC, one of the factors that explain the existence of such gaps is the very poor affordability of a basic digital basket of goods and services.
- 8) The concept of effective connectivity, also called meaningful or purposeful connectivity, implies having access to quality and affordable services, provided through devices that allow making use of that connectivity. And, more importantly, it implies that the individual has the basic digital skills that allow him/her to take advantage of both services and devices in an intelligent manner.
- 9) In terms of connectivity, although there is homogeneity among the countries of Latin America and the Caribbean, in general, the region is behind more advanced countries. It is below the world average.
- 10) Close to 190 million Latin Americans, in both urban and rural areas, live in areas covered by mobile technology and yet do not have effective access to the Internet. The percentage of significant connectivity in urban areas is double that of rural areas.
- 11) For rural areas or, in general, areas that are difficult to access, the effort to provide them with truly significant connectivity requires the presence of three key elements: i) technological innovation; ii) regulatory innovation; iii) collaboration between the different agents of the digital ecosystem; and iv) the use of up-to-date technology with the most relevant and modern technologies.

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- 12) The topography of the region is very complicated and makes network deployment more costly and, in many cases, makes it difficult to obtain positive revenues on investment. This difficulty highlights the need for cooperative work between the public and private sectors, as well as the importance of the co-responsibility of all the agents involved in the digital ecosystem.
- 13) It is not enough to bring connectivity to rural areas if the populations are not given tangible value through better education, water, electricity and energy services, among other basic services.

### B. Recommendations

- 1) Latin America and the Caribbean needs to: i) solve the major problem of the digital gap, especially in terms of access to broadband Internet service; ii) facilitate access by lowering the cost of services and devices and subsidy policies for both supply and demand; iii) optimize the quality of connections and iv), very importantly, promote the digital capabilities of the population, with special reference to rural and remote areas, so that they can make intelligent and meaningful use of the infrastructure and digital services offered to them.
- 2) Adopt, as a priority, items 1, 2, 5, 7, 8, 10, 11, 12, 15, 16, 18, 19, 20 of Decision 108 of the OAS Inter-American Telecommunication Commission (CITEL) Initiatives for the Expansion of Telecommunications/ICTs in Rural Areas and in Underserved and Underserved Areas.
- 3) Rethink the way in which the State, through digital agendas and Universal Service Funds (USF), can generate a new set of incentives to be applied by the different service providers.
- 4) Support regional governments in developing national strategies aimed at fostering digital skills in the population and, in turn, be able to design, implement and evaluate the impact of activities to develop such skills, following, by way of illustration, the IDB's best practices in Argentina, El Salvador, Guatemala and the Dominican Republic. In this way, the significant use of digital connectivity in LAC would be increased.
- 5) Promote the simplification of procedures and licenses of operators that have been cooperating and the inclusion of new operators that may benefit from the FSU.
- 6) Promote infrastructure sharing, especially telecommunications, and USFs, as ways to facilitate access to digital infrastructure for the population, based on public-private partnerships (PPP) and multi-stakeholder partnerships.
- 7) Strengthen human talent through the development of digital skills, which could include: i) designing public policies aimed at strengthening connectivity as a key component of the digital infrastructure in each country; ii) formulating national strategies to develop digital skills and, at the same time, evaluating the impact of activities to develop such skills; iii) constructing tools and disseminating their use; iv) formation of necessary alliances with different actors; v) promoting public and private sector investment in ICTs in general, and digital connectivity, in particular; vi) promoting affordability of services and devices; vii) producing digital content and resources; viii) developing training and digital literacy programs for children and youth, teachers, students and entrepreneurs; and ix) encouraging the rural population to incorporate digital skills that will eventually enable them to adopt a better way of life.
- 8) Complement broadband access with policies that help level the playing field for those who are not in the best position to benefit from the technology.
- 9) Assume the following key challenges regarding connectivity in LAC: i) encourage the deployment of infrastructure based on regulatory innovation and complementarity; ii) promote access to devices by the population, for which subsidy and tax exemption programs could be considered; iii) generate interest in relevant content at the local level; and v) promote effective access to content to stimulate the appropriation of ICTs by users.

- 10) Accompany public policies aimed at closing the digital divide with a transformation of the educational system that promotes the acquisition of digital skills for both teachers and students, as well as the promotion of the use of technologies for business development.
- 11) Promote initiatives from the productive sector that facilitate connectivity including, where applicable, the possibility of binational or cross-border solutions.
- 12) Enable and promote greater participation of the State and local public organizations, in both, the provision of services and the development of relevant infrastructure.
- 13) Streamline the processes and times for granting permits and enabling titles, particularly by the municipalities, in order to facilitate and speed up the construction of infrastructure and the supply of services.
- 14) Review the regulation regarding shared infrastructure for both fiber optics and infrastructure support towers.
- 15) Recognize, in the regulation applicable to rural areas, the differential characteristics of each one of them and contemplate the regulatory flexibility necessary for the delivery of services in these areas, such as the establishment of response times for the replacement of service and the review of the requirements for the construction of infrastructure.
- 16) Promote, actively and continuously, the participation of the communities to be benefited by the digital coverage.
- 17) Design effective public policies that encourage private investment in adequate telecommunications infrastructure, and to promote technical and financial training in rural communities.
- 18) Study the possibility that the productive sector, in general, or any productive activity located in a specific remote rural area may facilitate and/or collaborate with the deployment and development of telecommunications infrastructure.
- 19) Promote a regulatory framework that: i) is stable; ii) foster investment in broadband infrastructure; iii) offers stability and certainty for the full use of public funds as a complement to private investment; iv) promotes capacity building among the population; and v) encourages the productive use of connectivity. Moreover, including in this framework a regulation that, by reducing the cost of deployment, helps to promote the expansion of infrastructure.
- 20) Address the demand gap with subsidy programs for the 31% of people who live in areas with Internet coverage, but do not have the capacity to access services.
- 21) Promote the adequate use and valorization of the radio electric spectrum in the different markets, with bids that move away from looking for revenue as a priority and focus on maximizing the social benefit of the use of this resource.
- 22) Generate regulations that: i) promote investment; ii) consider the current market situation; and iii) consider how business models are developing in the sector, with a view to developing a strong and sustainable industry over time.
- 23) Strengthen complementarity among the different actors and favor the incorporation of large technological platforms and companies.
- 24) Promote the efficient use of public funds for projects that contribute to closing the digital divide, focusing projects on rural areas and vulnerable populations, encouraging the deployment of networks and studying the possibilities of subsidizing demand.
- 25) Prioritize the deployment of connectivity networks piloted by companies and operators with sufficient know-how to carry them out and operate them efficiently and with quality of service.
- 26) Explore new connectivity models for areas where the coverage gap is particularly deficient, coupled with new specific regulatory approaches for these areas, providing incentives for new developments and alternative connectivity solutions. To this end, it will be very useful to

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- promote regulatory flexibility, public-private collaboration and the provision of sufficient radio spectrum to operators under appropriate conditions.
- 27) Think of rural solutions as part of the digital ecosystem and, accordingly, promote access to the radio spectrum, the financial sustainability of the industry, the complementarity of the different stakeholders and the co-responsibility of the public and private sectors and other stakeholders, as key concepts for the development and expansion of connectivity.
  - 28) Promote projects to strengthen public subsidy models and facilitate access to state infrastructure.
  - 29) Enhance the development of the entire digital ecosystem by including education programs, telemedicine and economic activity.
  - 30) Review the Universal Service Funds (USF) and use them for connectivity projects.
  - 31) Establish Regulatory Sandboxes for rural areas.
  - 32) Promote the greatest possible synergy among the different stakeholders and greater coordination among utility regulators with a view to designing a unified digital policy that includes electricity, telecommunications and road services.
  - 33) Create tax incentives for companies that invest in remote areas to strengthen telecommunications infrastructure.
  - 34) Promote innovative business models that facilitate greater financial inclusion of rural communities and introduce the use of mobile solutions such as electronic payments or microcredit for small businesses.

#### IV. BEST PRACTICES

During the working session, several of the panelists reported on practices that, due to their scope, initial impact and sustained success, could be replicated in other national contexts in the region. Some of these are summarized below:

**Brazil.** The enactment of *Law No. 14,424 dated July 27, 2022*, which allows the positive silence procedure for infrastructure installation requests not answered after 60 days, thus speeding up the network installation process. The objective is to ensure agility in the provision of phone and internet infrastructure, since each municipality has local rules that collide. In addition, the authorities are prohibited from imposing conditions that affect the operators' decision to select technology, network topology, and quality of services.

**Chile.** The Digital Transformation Strategy - Chile 2035, an initiative of the Senate Transportation and Telecommunications Commission, with the support of ECLAC, the Association of Telecommunications Companies (Chile Telcos) and the Chilean Chamber of Digital Infrastructure, and with the participation of the main actors of the digital ecosystem: representatives of the public and private sectors, academia and civil society, and municipal associations.

**Colombia.** Agro 4.0 project of the Ministry of Information Technologies and Communications (MinTIC), with the Center for the Fourth Industrial Revolution (C4IR.CO). It is a project focused on improving competitiveness through digital transformation in some sectors such as coffee, cocoa and avocado by promoting and facilitating the use of digital technologies among small and medium producers in the agricultural area.

**Colombia.** Enactment of the ICT Modernization Law, which creates the conditions to encourage private investment in the ICT sector, generate legal certainty and facilitate the deployment of high-cost infrastructure, so that investment can be focused on connecting the vulnerable and low-income population, as well as rural and remote areas of the country, to the Internet.

**Costa Rica.** The FONATEL Program, created by the Superintendence of Telecommunications (SUTEL), develops projects supported by demand-side subsidies to bring telephony and Internet to remote areas, provide computers to low-income families and connect health centers, early childhood care centers, Intelligent Community Centers, schools and public schools to the Internet.

**Honduras.** Alianza Hispasat, an initiative between this Spanish satellite operator, the Spanish Agency for International Development Cooperation (AECID) and the Honduran Ministry of Education, with the support of the Spanish government, for the deployment of 15 satellite W-Fi points and a teleducation solution that allows downloading and accessing educational content on local servers. HISPASAT provided a digital classroom solution in which a satellite terminal receives educational content and stores it so that students can download it thanks to the deployed Wi-Fi network. In this way, students can continue their education and work at home without needing their own Internet access that their families cannot afford. This service, whose characteristics can be adjusted to the needs of each government or school, and which could be extended to the rest of the country's schools and include other equally important applications such as telemedicine, is exportable to any point in Latin America thanks to the coverage of HISPASAT satellites.

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**Peru.** Enactment of the Law for Strengthening the Expansion of Telecommunications Infrastructure, which establishes that the process for obtaining municipal authorizations is automatic. In addition, it offers the possibility of exchanging royalties (effective participation enjoyed by regional and local governments of the total income and revenues obtained by the State for the economic exploitation of natural resources) for coverage, which lowers the costs of the radio electric spectrum and allows operators to have these resources available for the extension of connectivity and rural coverage in those areas where they are needed and are part of the program carried out with the authority.

**Peru.** "Internet for Everyone" (IPT), is a project whose objective is to connect six million people with high-speed Internet in all rural areas of Peru, located in a difficult geography, with a population with a very low level of information, affected by very precarious services, in order to transform and improve the living conditions of people through all the opportunities offered by connectivity to achieve their social and economic inclusion. IPT deploys a mobile access and transport infrastructure in all rural areas of Peru, through a wholesale model, and makes it available to all mobile operators in the country so that they can use it on a shared basis. In addition, IPT allows any mobile operator to use its 3G and 4G infrastructure.