

PPP Americas 2023

Partnerships with purpose

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Vice-presidency for
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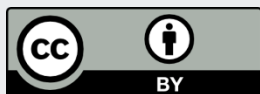
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SECTION 1

INTRODUCTION

According to a study by the Inter-American Development Bank (IDB), Latin America and the Caribbean (LAC) needs to invest USD 2.2 trillion by 2030 in water and sanitation, energy, transportation, and telecommunications sectors to expand and maintain the necessary infrastructure for meeting the Sustainable Development Goals (SDGs). Of this total, 59 percent must be allocated to investments for new infrastructure and 41 percent to investments in maintenance and replacement of assets that reach the end of their useful life and are essential for infrastructure services to be provided with adequate quality standards.¹ This means that LAC will need to invest in infrastructure at least 3 percent of its GDP each year until 2030 to close these gaps.²

The effective collaboration of the public and private sectors is key to meeting these goals.³ In this context, the IDB, a multilateral institution dedicated to developing the region and improving lives, sees great value in generating spaces where the public and private sectors can meet to discuss the latest trends and solutions for infrastructure needs and progress in SDG achievement. These factors will likely influence the selection, design, and implementation of infrastructure projects in LAC, considering the region's infrastructure and public services gaps yet to be addressed.

PPP Americas is one of these spaces, held every two years in partnership with a national or subnational government. This regional forum brings together top professionals and public and private-sector representatives from LAC to discuss groundbreaking topics and exchange solutions on planning, structuring, and managing public-private partnerships (PPPs).

Accordingly, the IDB will hold PPP Americas 2023 in Ciudad de Panamá from July 18-20. The conference's plenaries and panels are organized around six themes, essential in formulating sustainable PPPs that address current issues in the region while helping achieve SDGs in the medium term. These six themes were identified after several high-level consultations between IDB and IDB Invest staff. The six themes of PPP Americas 2023 are:

- Climate Investment
- Digital Transformation
- Supply Chains
- Job Creation
- Driving Inclusion
- Measuring Impact.

1 IDB. 2021. "The Infrastructure Gap in Latin America and the Caribbean – Investment needed through 2030 to meet the Sustainable Development Goals." Accessed May 29, 2023. <https://publications.iadb.org/en/infrastructure-gap-latin-america-and-caribbean-investment-needed-through-2030-meet-sustainable>

2 Ibid.

3 SDG 17, for instance, involves strengthening the means of implementation and revitalizing the Global Partnership for Sustainable Development. This SDG also has two targets on the relationship between the public and private sectors aimed at helping achieve other SDGs. Target 17.16 aims to enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology, and financial resources, to support achieving the Sustainable Development Goals in all countries, particularly developing countries. Moreover, Target 17.17 intends to encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships.

For the 2023 conference, the IDB held three preparatory events, the PPP Talks. Each event was an opportunity to discuss two of the six themes presented above, laying the groundwork for the discussions during the conference in July 2023. This Discussion Paper presents the conceptual framework of the themes discussed during all six panels of the PPP Talks and key insights provided by the panelists during the discussions. The first PPP Talk focused on leveraging PPPs and green financing to help address climate change through mitigation and adaptation measures (Section 2). In parallel, the second panel of this PPP Talk explored the PPPs' role in improving LAC's digital infrastructure and providing digital public services to reduce the digital divide (Section 3).

The second PPP Talk centered on the synergies between PPPs, supply chains, and job creation. First, panel participants discussed how PPPs could help increase the efficiency and quality of infrastructure and speed up its development so that countries can reap the benefits of regionalization trends in global supply chains (Section 4). Moreover, another panel examined how PPPs can be used to ensure that labor markets keep up with the skills required to face quick technological changes and how countries can leverage PPPs to create more and better jobs (Section 5).

The third PPP Talk focused on how inclusive infrastructure is increasingly becoming pivotal for policymakers to address inequality and promote social inclusion in LAC. Furthermore, panelists provided examples of how PPPs can be powerful tools for developing inclusive infrastructure (Section 6). Finally, participants discussed the importance of assessing project performance and impact to estimate PPPs' overarching economic and social outcomes and inform policy, regulatory, and institutional decisions. Panelists also provided guidance on the methods and approaches to measure the performance and impact of PPPs in LAC (Section 7).

The sections below present a summary of each of these areas, which can feed into future discussions and advance the agenda of the PPP Americas 2023 conference. These sections also summarize the main opportunities and challenges in each area.

SECTION 2

CLIMATE INVESTMENT

Infrastructure will determine Latin America's climate future. On average, an estimated 60 percent of current greenhouse gas (GHG) emission levels arise from infrastructure construction and operation.⁴ At the same time, the frequency and intensity of climate events threaten infrastructure reliability and delivery of essential services through more extreme and frequent weather-related events such as hurricanes, storms, and flooding.

Climate change mitigation and adaptation are imperative as climate-related disasters and shocks are becoming more frequent and of a larger magnitude, damaging more infrastructure and repeatedly disrupting the provision of essential services.⁵ Most of these disruptions will derive from flooding, erosion, sedimentation, extreme temperatures, drought, and unpredictable weather patterns.⁶ Infrastructure will need to absorb, withstand, and recover from climate shocks—including sudden changes in demand—to ensure economic viability in the region in the medium and long term.⁷ Moreover, many risks associated with climate change will be felt hardest by lower-income countries, as their ability to prevent and respond to the impacts of climate change is limited. According to the Intergovernmental Panel on Climate Change (IPCC), increased heatwaves, droughts, and floods are already coinciding, exposing millions of people to acute food and water insecurity, especially in Africa, Asia, and Central and South America.⁸ It is, therefore, crucial to ensure that infrastructure in LAC is climate resilient and that its development does not further contribute to global warming.

In its path toward sustainable growth, LAC must invest around USD 2.2 trillion in infrastructure in the next decade to advance the achievement of the infrastructure-related Sustainable Development Goals.⁹ Moreover, the region must spend between USD 15-18 billion each year on its adaptation financing needs (that is, on prevention and response).¹⁰ Nonetheless, it has been estimated that investing in making infrastructure resilient results in more substantial benefits than costs, in a ratio of 4 to 1.¹¹

Today's infrastructure investment levels must be increased to make reality a sustainable, equitable, net-zero, and climate-resilient economy. Moreover, the pandemic has reinforced

4 IDB/IDB Invest. 2018. "What is Sustainable Infrastructure. A Framework to Guide sustainability Across the Project Cycle." Accessed September 15, 2022. <https://publications.iadb.org/en/what-sustainable-infrastructure-framework-guide-sustainability-across-project-cycle>

5 Global Center on Adaptation. 2021. "Climate-Resilient Infrastructure Officer Handbook." Accessed September 26, 2022. <https://gca.org/reports/climate-resilient-infrastructure-officer-handbook/>.

6 Ibid.

7 World Bank. 2022. "Climate Toolkits for Infrastructure PPPs." Accessed September 26, 2022. <https://documents1.worldbank.org/curated/en/099120004052270615/pdf/P1746330d584ff0210a9670dcf49a5becb0.pdf>.

8 IPCC. 2022. "Climate change: a threat to human wellbeing and health of the planet. Taking action now can secure our future." Accessed September 26, 2022. <https://www.ipcc.ch/2022/02/28/pr-wgii-ar6/>.

9 IDB. 2020. [From Structures to Services: The Path to Better Infrastructure in Latin America and the Caribbean](#).

10 IDB Invest. 2022. "Scaling-up Adaptation Finance in the Private Sector." Accessed May 19, 2023. <https://idbinvest.org/en/publications/scaling-adaptation-finance-private-sector>

11 Ibid.

these needs. If recent financing patterns continue, with around 30 percent of private participation in total investment, the investment required from the private sector will reach USD 660 billion in the next decade.¹²

Climate investment is not only urgent but strategic. Decarbonizing LAC's economies could save billions of dollars. The savings are estimated to be above USD 600 billion annually by 2050.¹³ In addition, decarbonization measures, especially nature-based solutions (NbS), could generate millions of new jobs and stimulate economic growth. For example, the transition to net-zero emissions is expected to create 15 million new jobs (net) in LAC.¹⁴ Furthermore, compared to traditional infrastructure, NbS deliver more jobs per dollar, higher economic returns, and are faster to implement and more sustainable in the long run.¹⁵

The private sector plays a significant role in closing the infrastructure investment gap in a climate-smart way—in terms of financing, expertise, willingness to innovate, and technological know-how. Private companies and financial intermediaries are increasingly preparing climate transition plans and gearing their investments for reaching net-zero emissions. Private investment, which accounted for 75 percent of total investment in LAC's energy sector from 2016 to 2020, will continue to be a critical source of capital for the transition to low emissions.¹⁶

PPPs to Achieve Objectives on Mitigation and Adaptation to Climate Change

PPPs are increasingly becoming essential instruments for developing mitigation and adaptation solutions to climate change in LAC. PPPs have a great potential to promote the development of low-carbon, climate-resilient (LCCR) infrastructure and innovative solutions to climate problems. The financing of PPPs through green bonds and other sustainability-linked products is also emerging as an innovative instrument to engage investors interested in financing projects with direct climate-related results.

12 IDB. 2018. “*Descubriendo el velo sobre los Datos de Inversión en Infraestructura en América Latina y el Caribe.*” Accessed November 15, 2022. <https://publications.iadb.org/en/publications/spanish/document/Descubriendo-el-velo-sobre-los-datos-de-inversi%C3%B3n-en-infraestructura-en-Am%C3%A9rica-Latina-y-el-Caribe.pdf>; and authors' calculations.

13 One study estimates that decarbonization of the region's energy and transport sectors by 2050 could save USD 621 billion per year (Vergara, Fenhann, and Santos da Silva 2021). In the case of Costa Rica, the successful implementation of its National Decarbonization Plan, which aims to create a net-zero emissions economy by 2050, could bring USD 41 billion through energy savings, reduced cost of accidents and time wasted in congestion, and improvements in ecosystem services and agriculture yields (Groves, et al. 2020). In Peru, which is far more reliant on fossil fuels to produce electricity than Costa Rica, achieving net-zero emissions by 2050 could bring more than USD 150 billion in net benefits (Quirós Tortós, et al. 2021).

14 IDB. 2020. “*Jobs in a Net-Zero Emissions Future in Latin America and the Caribbean.*” Accessed November 15, 2022. <https://publications.iadb.org/en/jobs-in-a-net-zero-emissions-future-in-latin-america-and-the-caribbean>

15 Global Center on Adaptation. 2021. “*Climate-Resilient Infrastructure Officer Handbook.*” Accessed November 15, 2022. <https://gca.org/reports/climate-resilient-infrastructure-officer-handbook/>.

16 IEA. 2021. “*Financing clean energy transitions in emerging and developing economies.*” Accessed November 15, 2022. https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf

PPPs can help bridge the financing gap and spur the development of LCCR infrastructure. Many developed countries already leverage PPP frameworks to work toward mitigation and adaptation goals. For instance, the new framework used to finance energy generation projects with low GHG emissions in the United Kingdom heavily mirrors a traditional PPP structure.¹⁷ Table 1 describes some reasons why PPPs can help procure LCCR infrastructure projects.

Table 1: Why are PPPs Useful for Climate-Smart Infrastructure Projects

Aspect	Benefits
Incentive Framework	<p>The private sector is remunerated for its participation in the PPP through mechanisms like user fees (e.g., highway tolls) or availability payments, in which the public sector pays the private party based on an assessment of performance indicators. In addition, remuneration to the private contractor is typically based on contractual project specifications, incentivizing the contractor to deliver the asset according to those specifications. This structure provides an opportunity to include climate resilience principles in these incentives. Moreover, PPP contracts could also include climate mitigation KPIs.</p>
Output focus	<p>PPP structures are typically focused on outputs defined by the public client (service levels) rather than input specifications – that is, what needs to be achieved rather than how it should be executed. This provides the opportunity for private sector innovation. Tender requirements can and should promote incentives for innovation and harness the benefits from lower emissions and higher resilience, for example, by giving additional points in evaluating bids.</p>
Consider lifecycle costs	<p>PPPs require public officials to consider the long-term costs of infrastructure assets. This creates greater discipline in the infrastructure procurement process—private parties must look beyond the construction phase to evaluate the costs over the project’s life (25-30 years). In this process, private parties have incentives to consider all potential benefits, risks, and expenses, including climate change-related ones. As a result of this more lifecycle view of the project and its risks, PPPs may lead to better-designed infrastructure projects to withstand climate events.</p>
Include the lender’s due diligence and potential incentives	<p>By their nature, PPPs bring in private finance and, as a result, can bring increased oversight of project robustness through the due diligence performed by financial institutions. Lenders must verify if the project can perform well over its life and service its debt. Climate risks, which materialize, can impact a project’s ability to generate cash flows. As a result, many lenders examine climate risks as part of their environmental and social due diligence. Moreover, there is an increasing trend associated with sustainability-linked pricing; that is, financial institutions are rewarding projects with a lower interest rate conditional to the execution of climate-related investments.</p>

¹⁷ Global Center on Adaptation. 2021. “*Climate-Resilient Infrastructure Officer Handbook*.” Accessed September 26, 2022. <https://gca.org/reports/climate-resilient-infrastructure-officer-handbook/>.

Aspect	Benefits
Robust risk assessment	A robust PPP project comprises a thorough risk assessment that evaluates all possible risks and assigns them to the party best able to manage them. Including an analysis of climate and disaster risk as part of this existing process only makes sense, as PPP project developers are seeking to understand any/all risks which may disrupt services and undercut their returns. A disciplined climate risk analysis assesses climate hazard, exposure, and vulnerability to future events.
Operational experience	PPPs are a relatively common tool for procuring infrastructure projects in specific sectors across the globe. Several governments and private organizations alike have skills and capacity around these arrangements. In addition, climate mitigation and resilience considerations can be integrated into the project design and the PPP project cycle.
Efficiency in recovery after a hazard occurrence	Provided that an adequate and effective risk-sharing mechanism is in place, PPPs may reduce the strain on governments by maximizing private sector efficiencies during the operation and maintenance phase in the event of a climate hazard. The private partner needs to ensure the longevity of the infrastructure and service continuity in the event of a hazard or have the mechanisms in place to restore service quickly. By sharing the burden of infrastructure and service recovery between the public and private sectors, the public sector can redirect potentially saved resources to other aspects of recovery in the case of a hazard.

Source: Adapted from IDB. 2020. “Climate Resilient Public Private Partnerships: A Toolkit for Decision Makers.” Global Center on Adaptation. 2021. “Climate-Resilient Infrastructure Officer Handbook.”

Although LAC countries have made progress toward achieving their climate goals,¹⁸ more is needed to ensure that the region’s infrastructure moves toward carbon neutrality and is prepared to withstand and recover from future climate shocks and stressors. PPP frameworks can help include climate action in procuring and developing infrastructure. The panelists identified three critical types of infrastructure investments that countries in the region should be undertaking for climate action and where PPPs can help develop such solutions. All these categories require significant capital, so it makes sense to incorporate the private sector to reduce the burden on capital investment from the public sector:¹⁹

- **Add-ons and improvements or new technologies that complement old ones.** These investments are mainly for emission reduction and/or resilience improvements in equipment and infrastructure.
- **Infrastructure and new technologies that replace old technologies that are not climate adaptive, resilient, or that are high emitters.** For instance, battery storage and green hydrogen are new technologies that can accomplish this.
- **Nature-based Solutions.** These solutions provide an opportunity to move away from grey sectors into green/grey and hybrid solutions that can be cost-effective and

18 WRI. 2022. “Tracking Latin America’s Progress on Climate Action.” Accessed September 26, 2022. <https://www.wri.org/insights/tracking-progress-climate-latin-america>.

19 Insights provided during the first PPP Talk by Derek Martin, Managing Director at K&M Advisors.

improve the performance of infrastructure PPPs, help safeguard biodiversity, and increase mitigation and adaptation co-benefits. Moreover, there is a growing interest in developing pipelines of NbS projects in the region.

Opportunities and challenges for PPPs to help achieve climate goals in the region

PPPs are well-positioned to leverage the investments needed to help close many of the region’s gaps in infrastructure. In addition to the prolonged effects of the COVID-19 pandemic, LAC economies are now experiencing the global impact of war in Ukraine. These combined factors lead to slower economic growth, inflationary pressures, and higher interest rates. These impacts will likely continue to exacerbate fiscal constraints of governments in the region and jeopardize the utilities’ ability to provide high-quality, reliable services, particularly during climate shocks. PPPs can help governments use available funding more efficiently, particularly during fiscal tightening, and to attract the finance needed for infrastructure development. Private participation in infrastructure commitments accounted for about 0.46 percent of LAC’s regional gross domestic product (GDP) in 2021.²⁰ However, a few countries still concentrate most of the region’s projects.

Governments in LAC must implement enabling conditions to take advantage of PPPs to address climate challenges fully. Many countries need to develop or consolidate institutional and regulatory frameworks for PPPs. Also, most countries must increase their capacity for project structuring and preparation to develop bankable project pipelines. In terms of cross-cutting themes, a recent study commissioned by the IDB, the 2021/22 Infrascopes,²¹ found that only some countries in the region place appropriate attention on developing environmentally and socially sustainable PPPs. Out of 26 countries surveyed, 19 countries neither actively evaluate PPP performance against climate change goals nor evaluate performance against Sustainable Development Goals (SDGs). Only four countries in the region require PPPs to incorporate elements related to resilience and adaptability into their design. The study also found that disaster risk management is one of the region’s weakest areas of PPP risk management.²²

Countries must improve their capacity to identify, structure, and procure projects that help close infrastructure gaps and contribute to achieving climate goals simultaneously. Governments and PPP practitioners must be able to calculate the benefits of climate action over the whole life cycle of PPP projects, including estimating non-monetary benefits.²³ To ensure a comprehensive assessment of cost and savings in PPP investments that incorporate climate mitigation and resilience elements, it is essential to conduct a thorough life cycle evaluation. This evaluation should consider the potential savings and reduced risk of complete asset loss associated with climate-smart projects. Life cycle evaluations will therefore clarify the justification for

20 World Bank, 2021. “*Private Participation in Infrastructure. 2021 Annual Report.*” Accessed November 21, 2022. <https://ppi.worldbank.org/content/dam/PPI/documents/PPI-2021-Annual-Report.pdf>.

21 The 2021/22 Infrascopes is an informational tool and benchmarking index that assesses the capacity of countries in Latin America and the Caribbean (LAC) to carry out sustainable public-private partnerships (PPPs) in infrastructure.

22 IDB and Economist Impact. 2022. “*The 2021/22 Infrascopes. Evaluating the environment for public-private partnerships in Latin America and the Caribbean.*” Accessed on November 3, 2022. <https://impact.economist.com/projects/infrascopes>.

23 World Bank. 2022. “*Climate Toolkits for Infrastructure PPPs.*” Accessed September 26, 2022. <https://documents1.worldbank.org/curated/en/099120004052270615/pdf/P1746330d584ff0210a9670dcf49a5becb0.pdf>.

potential cost increases. In some situations, countries can consider developing GHG offsetting mechanisms—such as carbon credits—into the PPP designs when needed and feasible.

The IDB has published instruments to help PPP practitioners in the region to embed climate mitigation and resilience considerations into the PPP development process. For instance, the Toolkit for Climate Resilient PPPs presents pragmatic, practical solutions to integrate the assessment of climate risks and resiliency opportunities in preparing infrastructure projects through PPPs.²⁴ The toolkit provides decision support tools to include climate resilience considerations into four key steps of the PPP process—project identification, business case, transaction, and contract management. The toolkit has been instrumental in the revision of the Development Bank of Jamaica’s (DBJ) operational guidelines, which now include climate-related instruments for DBJ personnel to use.

The IDB has supported governments in the region in this regard. Jamaica, for example, recently approved its revised PPP policy, which is the first in the region to include a chapter on climate and disaster risk, making resilience an explicit policy objective. Moreover, the policy document provides a framework on how to integrate climate resilience considerations into the country’s PPP development process.²⁵ For example, in 2021, Colombia approved a new 5G transport concessions policy highlighting sustainability as a core objective. IDB adapted the Toolkit for Climate Resilient PPPs to the transport sector and helped the procuring agency (ANI) integrate each project’s sustainability profiles in their infrastructure platform to support assessment by investors.²⁶

Building a climate-smart pipeline is also critical to scaling up climate investments and creating replicable PPP models across the region. Panelists of the first PPP Talk identified three key considerations to develop climate-smart PPP pipelines that can increase success rates and reduce delays and costs:²⁷

- **Ensuring that projects are bankable.** Conducting due diligence and value-for-money analyses before projects are taken to market is fundamental to ensure that projects are commercially viable for the private sector. Moreover, rigorous project preparation is crucial to ensure projects are well structured and of high quality. Ensuring proper pre-feasibility and feasibility studies, technical studies, and climate risk assessments to map out hazards and climate scenarios within the context of the region is also essential. These climate risks need to be appropriately allocated across the various stakeholders. In addition, the PPPs’ financial structure and payment mechanisms must incorporate climate provisions and leverage concessional funds where appropriate.
- **Developing projects that are designed for scale.** It is crucial to develop projects with sufficient scale to cover the costs associated with a project finance structure and have an attractive revenue stream to the private sector. This can imply bundling a set of assets into a single project (for example, regional airports). Creating structures that can

24 IDB. 2020. “Climate Resilient Public Private Partnerships: A Toolkit for Decision Makers.” Accessed June 9, 2023. <https://publications.iadb.org/en/climate-resilient-public-private-partnerships-a-toolkit-for-decision-makers>

25 Government of Jamaica. 2023. “The PPP Policy.” Accessed June 9, 2023. <https://ran-s3.s3.amazonaws.com/dbankjm.com/wp-content/uploads/2021/12/17164651/Updated-Policy-Institutional-Framework-for-the-implementation-a-Public-Private-Partnership-Programme-March-2023-1.pdf>

26 ANI. 2023. “Proyectos 5G.” Accessed June 9, 2023. <https://aniscopio.ani.gov.co/proyectos5g-public>

27 Insights provided during the first PPP Talk by Carmel Lev, Program Officer at GIF.

be replicated in subsequent projects or other contexts is ideal, which can be facilitated by standardized procurement or contract documents.

- **Strengthening the institutional capacity of key players.** The private and public sectors need to work together to structure investible projects from the outset through better policies and incorporating climate considerations into their infrastructure planning agenda. Panelists highlighted that the emphasis should be on the quality of projects rather than quantity.

PPPs as Tools to Promote Innovation in Low Emissions and Resilient Infrastructure Projects

Leveraging PPPs for climate action includes enabling innovation. A significant challenge related to PPPs for climate action is government and private parties' choice between requesting and bringing forward projects that employ established technologies versus proposing innovative solutions. It is common for PPP procurement procedures to incentivize lower-cost solutions, which may translate to mainstream technologies.²⁸ In addition, public sector entities may need more knowledge of the appropriateness of specific technologies in projects, and it is not typical for the private sector to provide feedback on this during the early stages of project development. Later in the procurement phase, there is less room to put forward these considerations if they are not explicit in the tender documents.²⁹

Synergies between the public and private sectors to allow for climate innovation in PPPs are key. How much PPPs can be leveraged to promote innovative solutions to climate problems will largely depend on synergies between the public authorities developing project pipelines and the private sector working on new technologies and approaches or the flexibility of the contract structures. The competitive dialogue procedure³⁰ during project preparation allows bidders to propose innovative ideas under competitive conditions. With government awareness, climate change mitigation and adaptation considerations can be included in the Request for Proposals. PPP contracts can also be structured to allow for the introduction of appropriate climate-smart technologies as they become available.

NbS are an example of a nascent yet innovative approach that could be harnessed in PPPs. NbS could be incorporated into a PPP contract to build resilience and minimize the effects of climate shocks and stresses. The European Commission defines NbS as solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social, and economic benefits, and help build resilience; such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes, and seascapes, through locally adapted, resource-efficient and systemic interventions.³¹ Besides contributing to climate change adaptation and resilience, NbS can help countries in LAC achieve other SDGs. NbS can help capture carbon, make net biodiversity gains, improve

28 Koppenjan, J.F.M. 2015. "Public-Private Partnerships for green infrastructures. Tensions and challenges." Current Opinion in Environmental Sustainability, 12 (February 2015), 30-35.

29 Ibid.

30 Ibid.

31 European Commission. 2020. "NbS - State of the Art in EU-funded Projects." Accessed September 26, 2022. https://ec.europa.eu/info/files/nature-based-solutions-state-art-eu-funded-projects_en.

water quality and waterbody conditions, contribute to microclimate regulation and air quality, and improve health and well-being.³²

Green Bonds as Instruments to Finance PPPs

The financing of PPPs through green bonds and other sustainability-linked products is increasingly used to mobilize resources from investors interested in projects with direct climate-related results.³³ Sustainability-linked finance aims to motivate borrowers to achieve environmental, social, or governance objectives by offering pricing incentives. Since their introduction, sustainability-linked products have experienced rapid growth and become the fastest-growing form of sustainable finance. However, these instruments are still relatively new in emerging markets, accounting for only 5 percent of the total issuance thus far.³⁴

A green bond is a form of sustainability-linked financing that uses the funds raised exclusively to finance or refinance climate and environmental projects. Green bonds are usually fixed-income financial instruments that raise capital from investors through the debt capital market.³⁵ Although green bonds have traditionally been used to finance low-carbon projects—for example, projects related to renewable energy and energy efficiency—they can also raise funds for other sectors such as transport, water, and sanitation. In addition, green bonds are increasingly being used to finance projects related to adaptation and resilience to physical climate risks.³⁶

The market for green bonds has snowballed since the first issuance in 2007 by the European Investment Bank. By 2021, USD 1.5 trillion labeled green bonds had been issued worldwide.³⁷ Demand for green bonds increased significantly in recent years as investors aim to meet climate mandates and commitments, which has led to demand outstripping supply.³⁸ In 2021, USD 578 billion in green bonds were issued globally, representing an 89 percent increase from 2020. However, the global capital markets experienced a downturn in 2022 due to Russia’s invasion of Ukraine, leading to increased energy prices, inflation, and rising interest rates. This impact was also felt in green bonds, which saw a year-on-year decrease of 16 percent.³⁹ Figure 1: Shows the annual green bond issuance by region from 2014 to 2022.

32 Global Center on Adaptation. 2021. “*Climate-Resilient Infrastructure Officer Handbook*.” Accessed September 26, 2022. <https://gca.org/reports/climate-resilient-infrastructure-officer-handbook/>.

33 IDB. 2022. “Sustainable Financing of Economic and Social Infrastructure in Latin America and the Caribbean: Trends, Key Agents, and Instruments.” Accessed November 15, 2022. <https://publications.iadb.org/en/sustainable-financing-economic-and-social-infrastructure-latin-america-and-caribbean-trends-key>

34 IFC. 2022. “*Sustainability-Linked Finance—Mobilizing Capital for Sustainability in Emerging Markets*.” Accessed June 9, 2023. https://www.ifc.org/wps/wcm/connect/publications_ext_content/ifc_external_publication_site/publications_listing_page/sustainability-linked+finance

35 OECD. 2015. “*Green bonds. Mobilizing the debt capital markets for low-carbon transition*.” Accessed September 27, 2022. <https://www.oecd.org/environment/cc/Green%20bonds%20PPP%20%5Bf3%5D%20%5Blr%5D.pdf>.

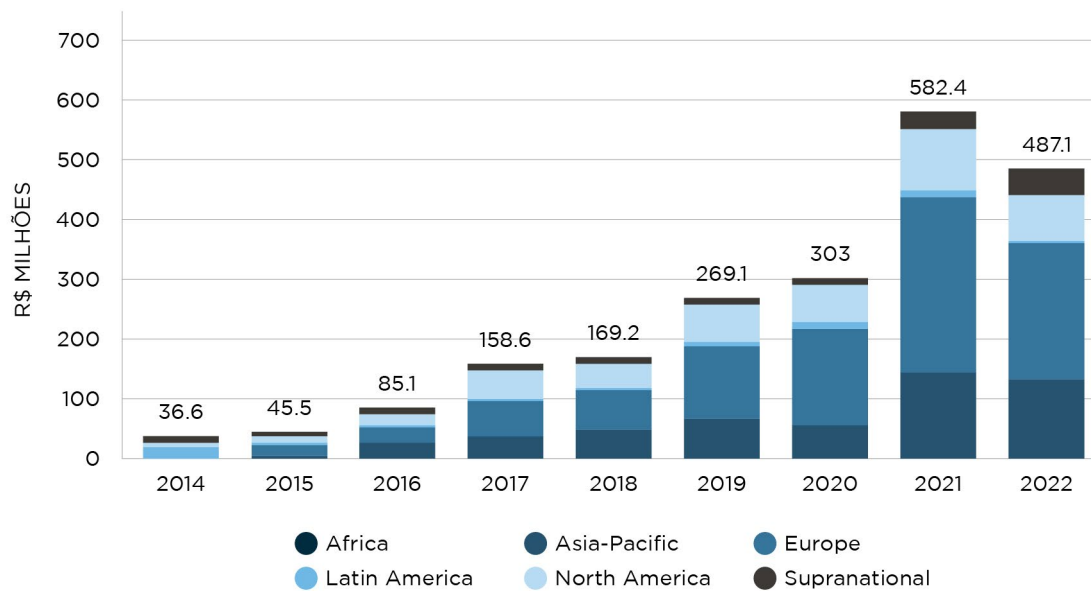
36 Global Center on Adaptation. 2021. “*Green Bonds for Climate Resilience – State of Play and Roadmap to Scale*.” Accessed September 27, 2022. https://gca.org/wp-content/uploads/2021/10/Green-Bonds-for-Climate-Resilience_State-of-Play-and-Roadmap-to-Scale.pdf.

37 Ibid.

38 OECD. 2015. “*Green bonds. Mobilizing the debt capital markets for low-carbon transition*.” Accessed September 27, 2022. <https://www.oecd.org/environment/cc/Green%20bonds%20PPP%20%5Bf3%5D%20%5Blr%5D.pdf>.

39 Climate Bonds Initiative. 2023. “*Interactive Data Platform*.” Accessed June 9, 2023. <https://www.climatebonds.net/market/data/>

Figure 1: Annual Issuance of Green Bonds by Region, 2014-2021



Source: Consultant elaboration based on data from Climate Bonds Initiative. 2023. “Interactive Data Platform.”

Market- and government-led efforts to standardize the definition of green bonds have led to a growing consensus on standards and criteria for issuance.⁴⁰ This has spurred the development of critical guidelines for issuing green bonds, such as the Green Bond Principles (GBP) and the Climate Bond Standard. The GBP is a self-regulatory initiative designed to promote integrity in the green bond market through guidelines recommending transparency, disclosure, and reporting.⁴¹ Similarly, the Climate Bond Standard and its certification scheme aim to give the green bond market the trust and assurance it needs to achieve scale.⁴²

The growth opportunity for green bond issuance in LAC countries is promising. Green bond issuance in the region increased from USD 200 million in 2014 to USD 9.1 billion in 2021.⁴³ However, the issuance of green bonds in the region experienced a decline in 2022, dropping to USD 3.1 billion due to challenging global economic conditions.⁴⁴ The total size of the LAC green bond market was estimated to be USD 30.2 billion by the end of June 2021, more than double the size reported two years prior (USD 13.6 billion).⁴⁵ Non-financial corporates

40 Ibid.

41 International Capital Market Association. 2021. “Green Bond Principles Voluntary Process Guidelines for Issuing Green Bonds.” Accessed September 27, 2022. <https://www.icmagroup.org/assets/documents/Sustainable-finance/2021-updates/Green-Bond-Principles-June-2021-140621.pdf>.

42 Climate Bonds Initiative. 2019. “Climate Bonds Standard Version 3.0.” Accessed September 27, 2022. <https://www.climatebonds.net/files/files/climate-bonds-standard-v3-20191210.pdf>.

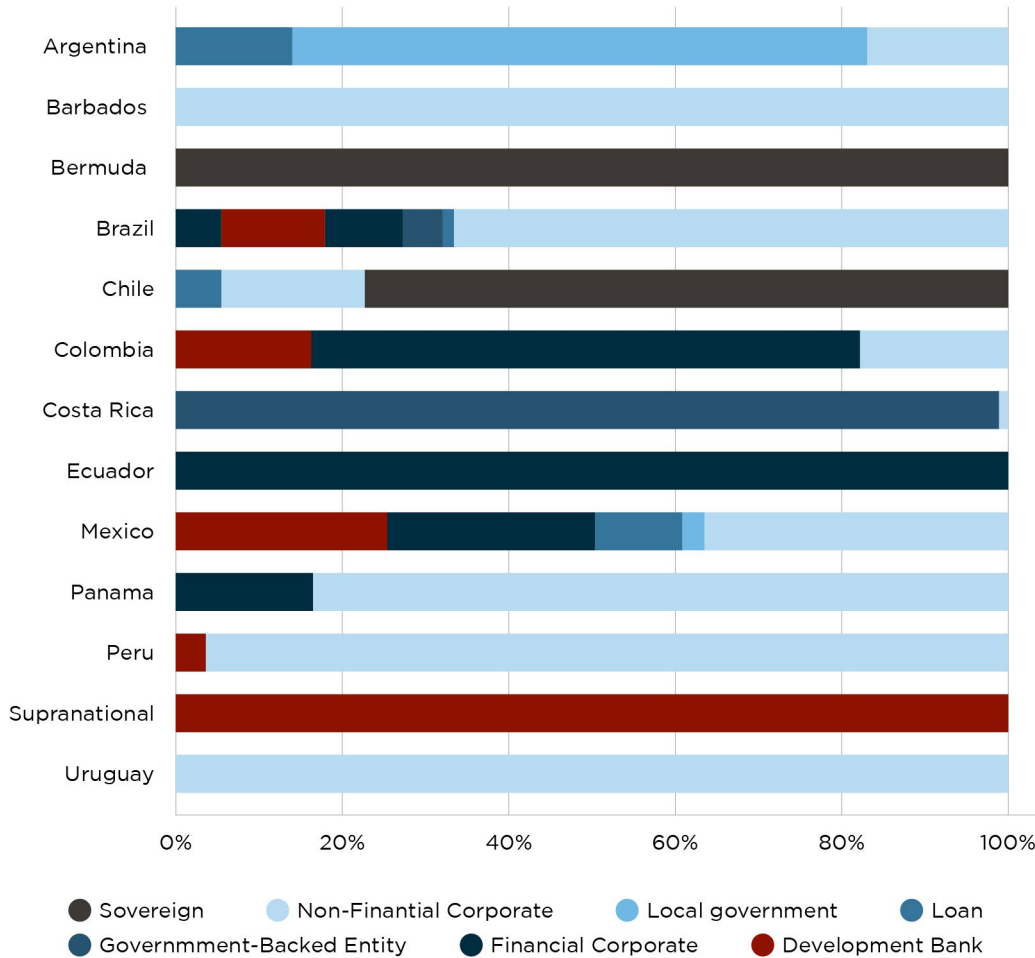
43 Climate Bonds Initiative. 2023. “Interactive Data Platform.” Accessed June 9, 2023. <https://www.climatebonds.net/market/data/>.

44 Ibid.

45 Climate Bonds Initiative. 2021. “Latin America and Caribbean (LAC): State of The Market 2021.” Accessed November 15, 2022. https://www.climatebonds.net/files/reports/cbi_lac_2020_04e.pdf

have issued 39 percent of all green bonds in the region, while sovereign-issued green bonds account for 25 percent of the market.⁴⁶ Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, and Peru are the only countries in LAC to have issued public sector green bonds—that is, green bonds issued by sovereigns, local governments, national development banks, or government-backed entities.⁴⁷ Figure 2 shows the region’s green bond market by issuer type and country by 2021.

Figure 2: Green Bonds Issuance by Issuer Type and Country



Source: Climate Bonds Initiative. 2021. “Latin America and Caribbean (LAC): State of The Market 2021”.

Opportunities and challenges for green bonds in PPP projects in LAC

Given the characteristics of green bonds, these instruments have the potential to finance further PPP projects related to climate mitigation and adaptation. However, although issuance has increased substantially in the region, green bonds issued in LAC represented

46 Ibid.

47 Ibid.

only 1.5 percent of the total global issuance in 2021, trailing behind all other regions except Africa.⁴⁸ In addition, a recent study found that 13 countries in LAC have yet to employ sustainable financing instruments—such as green-, climate-, or development impact bonds—for infrastructure development.⁴⁹ Therefore, there is still room for this type of financing to grow in the region, possibly by financing well-structured PPPs.

Developing local capital markets is critical to scaling green bonds and other associated instruments. As shown in Figure 2, the green bond market is still concentrated in a few economies. The low development of local capital markets partly explains this. Strengthening local capital markets, including the sophistication of actors and associated regulation, are key enablers. However, it is also important to note increases in the issuance of green and other sustainability-linked financing instruments in recent years in the local markets of Chile, Colombia, and Mexico from sovereign issuers.

Project creditworthiness is a common challenge faced by issuers in the region. Special Purpose Vehicles (SPVs) are created as entities solely for construction and management tasks, which usually means that SPVs need more assets and financial history.⁵⁰ Therefore, the project's sponsors must back up the bond issuance using their financial capacity.⁵¹ Alternatively, international finance institutions—such as the IDB—can support bond issuance through guarantee schemes. These schemes may be essential in some contexts. In 2020, for example, Ecuador issued the world's first sovereign social bond with the support of an IDB guarantee.⁵²

In addition, prospective bondholders are typically unwilling or unable to take risks associated with constructing new assets and technologies. As a result, risks are considerably higher in the construction phase than in the operational phase.⁵³ Cost overruns and delays are common problems in infrastructure development in LAC, where they can be as much as two times the world average.⁵⁴ Therefore, up to now, bonds have been better suited for financing operations of projects that already have a steady and predictable cash flow. Between 2012 and 2021, about 60 percent of the region's project refinancing operations in infrastructure were carried out using bonds.⁵⁵ For this reason, PPPs developed in LAC need to identify and mitigate risks adequately to improve access to green bond markets.

Moreover, PPP practitioners in the region's public and private sectors need to improve their capacity to evaluate the implications of including green bonds in the projects' financial

48 The small relative size of LAC capital markets compared to other regions is one factor to take into account when analyzing this share.

49 IDB and Economist Impact. 2022. “*The 2021/22 Infrascope. Evaluating the environment for public-private partnerships in Latin America and the Caribbean.*” Accessed November 3, 2022. <https://impact.economist.com/projects/infrascope>.

50 IISD. 2015. “*Green Bonds in Public-Private Partnerships.*” Accessed September 27, 2022. <https://www.iisd.org/publications/report/green-bonds-public-private-partnerships>.

51 Ibid.

52 IDB. 2020. “*Ecuador issues world's first Sovereign Social Bond, with the support of an IDB guarantee.*” <https://www.iadb.org/en/news/ecuador-issues-worlds-first-sovereign-social-bond-support-idb-guarantee>

53 IDB. 2022. “*Financiamiento sostenible de la infraestructura económica y social en América Latina y el Caribe: tendencias, actores e instrumentos.*” Accessed November 3, 2022. <https://publications.iadb.org/es/financiamiento-sostenible-de-la-infraestructura-economica-y-social-en-america-latina-y-el-caribe>

54 Ibid

55 Ibid.

structure. Bond issuance usually takes longer and has higher structuring costs than standard bank lending, as more stakeholders are involved, and greater coordination is needed. Price volatility can also be an issue, as this type of financial instrument has a pricing risk based on possible bond price differences between when the bid is accepted and when the bond issuance is performed.⁵⁶

Other significant challenges of prospective issuers in the region include identifying eligible assets, preparing dedicated documentation (frameworks), and obtaining certifications and independent verification that are a requirement of market standards. To help overcome these challenges, the IDB Group has brought 45 issuers to this market, representing more than 81 issuances for cumulative support at roughly 30 percent of the overall market volume (more than USD 38 billion).

From the investor side, the first PPP Talk panelists have observed an increased interest in infrastructure that can accelerate positive environmental and social outcomes. Initially, most of the infrastructure that benefited from green and sustainable bonds was related to renewable energy (wind and solar), where projects easily fulfilled green criteria. However, increasingly, there are more opportunities to expand the LAC green bond market in other sectors, such as transport, sustainable mobility, electric vehicles, resilient transport systems and logistics, and water and sanitation. Moreover, there are opportunities in terms of types of issuers, for instance, by increased issuance by sovereigns and national development banks. In addition, water and energy utilities with sound financial management and the appropriate enabling environment could explore green bonds to finance infrastructure development.⁵⁷

In conclusion, green bonds are increasingly becoming a viable financing mechanism for PPPs in LAC, particularly for brownfield projects. However, the region faces several barriers to the large-scale use of green bonds for PPPs. Enabling conditions include developing capital markets and incentivizing bond instruments. In addition, from a project standpoint, improved capacity for financial structuring and solutions such as guarantee schemes and other risk mitigation mechanisms can scale green financing through bonds. This, in turn, can be a powerful tool to help countries in LAC mobilize resources to achieve their climate mitigation and resilience goals.

⁵⁶ IISD. 2015. “*Green Bonds in Public-Private Partnerships.*” Accessed September 27, 2022. <https://www.iisd.org/publications/report/green-bonds-public-private-partnerships>.

⁵⁷ Insights provided during the first PPP Talk by Maria Netto, Principal Specialist at IDB.

SECTION 3

DIGITAL TRANSFORMATION

The last decade has evidenced the gaps in digital infrastructure in LAC. Remarkably, the COVID-19 pandemic taught how essential internet connection has become to a large share of the region’s population. The second panel of this PPP Talk highlighted PPPs’ role in improving LAC’s digital infrastructure, emphasizing remote areas, and solving “last mile” problems. In addition, the panel discussed the role that PPP projects will play in providing and improving digital public services in the region and reducing the digital divide. This section explores these topics, which provided the basis for the panel’s discussion.

The Role of PPPs in Improving Digital Infrastructure

There is a clear consensus among policymakers that developed digital infrastructure can increase productivity and business efficiency and improve living standards.⁵⁸ First, widespread broadband access can contribute to the transition to the formal economy, allowing governments to increase revenues through higher tax collection rates.⁵⁹ Second, digital infrastructure can improve access to better education, health, and e-government services, promoting human capital and productivity. Third, studies on developed economies have also shown correlations between higher access to broadband and GDP and employment growth through efficiency gains for companies.⁶⁰

Panelists of the first PPP Talk agreed that lockdowns driven by the COVID-19 pandemic showed that enhancing digital infrastructure and broadband access is more relevant than ever.⁶¹ However, while many employees with broadband access used their home spaces to work, this was not feasible for many—the poor, minorities, the elderly, the disabled, women with a disproportionate share of family care, and people living in rural or remote areas without internet access.⁶² Therefore, transitioning to a digital economy is not an option for those disconnected from broadband.⁶³

Although there have been substantial improvements in internet connectivity in LAC during the last decade, broadband penetration in the region is still limited and highly concentrated

58 The United States Federal Communications Commission defines broadband access as an internet connection with a minimum of 25 Mbps download and 3 Mbps upload speeds. This definition may vary depending on the country.

59 IDB. 2009. “Economic Development and Inclusion through Local Broadband Access Networks.” Accessed October 3, 2022. <https://publications.iadb.org/publications/english/document/Economic-Development-and-Inclusion-through-Local-Broadband-Access-Networks.pdf>

60 Ibid.

61 IDB. 2020. The Impact of Digital Infrastructure on the Consequences of COVID-19 and on the Mitigation of Future Effects. Accessed November 3, 2022. <https://publications.iadb.org/publications/english/document/The-Impact-of-Digital-Infrastructure-on-the-Consequences-of-COVID-19-and-on-the-Mitigation-of-Future-Effects.pdf>

62 World Bank. 2021. “We need more progress on delivering digital broadband PPPs to underserved communities.” Accessed October 3, 2022. <https://blogs.worldbank.org/ppps/we-need-more-progress-delivering-digital-broadband-ppps-underserved-communities>.

63 Insights provided during the first PPP Talk by Manuel Wiechers, CEO Iluméxico.

in urban areas. The gap is particularly significant when compared to average OECD levels. For instance, the fixed broadband penetration in the region reaches 13.5 percent, almost a third of the penetration in the OECD.⁶⁴ Similarly, the average mobile broadband penetration rate in LAC is just 73 percent, far from the OECD level (128 percent).⁶⁵ Moreover, the limited digital infrastructure deployed in the region has a direct impact in terms of the quality of services. While in OECD countries, the average speed is 142 Mbps, in LAC, the average speed rate is just 60 Mbps.⁶⁶ This directly impacts the quality of services households and public institutions such as schools, hospitals, and police stations may enjoy.

Adequate access includes increasing not only coverage but also quality, speed, affordability, and adoption. As of today, 47 percent of the population in LAC does not have internet access (280 million people), and those who are connected have limited access to 4G and 5G, which affects quality and speed. In addition to problems related to digital infrastructure, affordability is also an issue—the cost of service can be up to 19 percent of the monthly income of the population within the bottom 40 percent. Moreover, 70 percent of the region’s population lacks basic digital skills.

The IDB estimates the digital infrastructure gap in LAC to catch up with OECD countries is USD 108 billion. Closing this gap could help increase the region’s GDP by 8 percent per year, increase productivity by 6.5 percent, and generate more than 16 million direct jobs in the digital economy.⁶⁷ Of this amount, 41 percent relates to investment in rural and isolated areas required to ensure digital inclusion and equality across the population regardless of location.

Opportunities and challenges for PPPs to improve digital infrastructure in LAC

The affordability of broadband internet access and investment needs for digital infrastructure improvements are critical problems in LAC. According to the Broadband Index that the IDB publishes every year, households in LAC spend, on average, between 2 percent and 5 percent of their monthly revenues to have internet access. This is above the 2 percent threshold considered affordable by the International Telecommunications Union (ITU). Figure 3 shows countries with affordable internet prices highlighted in blue. However, dispersed populations and the prevalence of rural population living in remote areas without appropriate transportation links increases the costs of connecting these communities making services less affordable. The combination of limited digital infrastructure and high prices explains the low penetration of Internet services, especially in rural areas, which impacts the continuity of public services. For instance, only 40 percent of schools in LAC are connected, far from the 98 percent of schools connected in OECD countries.⁶⁸

64 IDB. 2022. “*Digilac*.” Accessed November 15, 2022. <https://digilac.iadb.org/en>.

65 Ibid.

66 Ibid.

67 Ibid.

68 Ibid.

Figure 3: Countries in LAC with Affordable Internet Prices, 2020



Source: Alliance for Affordable Internet. 2020.

PPPs can be a helpful framework to harness the investment needed to reduce LAC’s digital infrastructure gaps.⁶⁹ PPP projects to reduce the urban-rural gap in internet connectivity are already underway in some countries in the region. For instance, the Internet for All project in Peru—developed in partnership between the IDB, Development Bank of Latin America (CAF), Facebook, and Telefónica Peru—aims to expand mobile internet access to 30,000 rural locations in the country and reach around 6 million people.⁷⁰

69 PPPs can be a way to accelerate some specific type of digital infrastructure. However, there are also other alternatives to attract investments for digital infrastructure such as digital bonds, universal service funds, and minimum subsidies.

70 IICA. 2020. “Rural connectivity in Latin America and the Caribbean. A bridge for sustainable development in a time of pandemic.” Accessed October 3, 2022. <https://repositorio.iica.int/handle/11324/12896>.

However, these initiatives have yet to be widespread, and governments can make more effort to harness innovation and resources from the private sector to connect more people in rural areas. Governments need to review and update their regulatory frameworks to ensure that PPPs can be employed to promote innovative information and communication technologies. Many LAC governments are yet to enact regulations on infrastructure sharing, green networks, and other models that could help reduce capital expenditure (CAPEX) and operational expenditure (OPEX) in digital infrastructure. This can help improve productivity, economic resilience, and marginalized communities' living standards. Finally, stakeholders focused on providing PPP digital infrastructure must address the long-term sustainability risks of providing services in remote areas, such as technological obsolescence, costs, consumer needs, and reliable revenue streams, among other factors, to incentivize private sector participation.⁷¹ This will turn these projects into bankable opportunities for risk-averse investors and more accessible to marginalized groups.⁷²

Despite the well-known importance of investing in connectivity and the significant financing gap, funding for ICT infrastructure is scarce, and resource mobilization is complex due to coordination failures and the involvement of multiple stakeholders:

- First, ICT infrastructure differs from other infrastructure sectors, with a significant extent of private sector involvement from network operators, ISPs, and tower builders motivated by commercial returns.
- Governments and development banks have played a minor role in funding ICT infrastructure compared to other sectors, partly due to the perception that internet connectivity is primarily the private sector's responsibility.
- The lack of established markets and investment vehicles for the ICT sector, similar to other infrastructure asset classes, further contributes to the limited investment.
- Banks, private investment firms, and technology companies are cautious about investing in ICT infrastructure due to competition and technological uncertainties associated with a challenging and unstructured regulatory environment. Thus, many private sector investors exclude ICT infrastructure from their portfolios or limit investments to core population centers unless there is significant public or international funding support, as returns are too low for the perceived risk.
- Furthermore, average revenue per user (ARPU) levels are declining, reducing operators' incentive to invest in infrastructure beyond profitable markets. Private investors lack knowledge and capabilities in unfamiliar territories or have limited mandates and incentives to focus on public returns.

Meeting the global need for advanced network infrastructure requires collaboration among the various funding sources to develop new funding models that consider returns on investment beyond simple business cases.

⁷¹ World Bank. 2021. "We need more progress on delivering digital broadband PPPs to underserved communities." Accessed October 3, 2022. <https://blogs.worldbank.org/ppps/we-need-more-progress-delivering-digital-broadband-ppps-underserved-communities>.

⁷² Ibid.

Digital Public Services through PPPs

An often-overlooked area in digital transformation in the region is the provision of digital public services. The European Commission defines digital public services—also known as smart public services or e-government—as the use of technology to provide services to citizens at local, regional, and national levels.⁷³ These services may encompass most public services governments offer, such as public education and health provision, identification issuance and management, and tax filing, among many others. Digitalizing public services can help governments increase efficiency through automatization, reduce the time people take to request services or follow procedures, and reduce the administrative load of businesses. Also, digitalization has the potential to reduce red tape and improve the user experience of public services, which can lead to increasing people’s trust in their governments.

The potential for PPPs to help governments in the region provide efficient and accessible digital public services is significant. PPPs can help governments leverage innovation and technologies from private parties that otherwise would never reach public service. In addition, PPPs can reduce the need for upfront investments from public budgets, creating fiscal space for other priorities. Panelists of the first PPP Talk identified five key types of digital public services that could be implemented as PPPs in the region, including:⁷⁴

- **Wide-scale services.** These services are employed by most of the population, are less risky, and, therefore, are more attractive to the private sector. These include citizen identification and health services such as medical appointments and records management.
- **Highly advanced technologies.** These services require advanced technical knowledge, which public institutions likely lack the technical capacity to manage. These technologies include data analytics and artificial intelligence.
- **Tax collection services.** Services related to tax collection activities are traditionally good examples of PPPs for digital public services, such as cadasters. Panelists argued that these projects usually pay themselves since they typically increase tax collection rates.
- **Citizen security.** Those related to prosecuting crime, complaints, and, more recently, facial recognition.
- **Government “back-office.”** Including human resources management and public procurement.

Governments offer, on average, more than 2,000 government procedures that millions of citizens use every year. In the US, during the last 30 days, government websites received 5.31 billion visits, and more than 170,000 documents are downloaded daily from US government websites.⁷⁵ Therefore, the connectivity demand generated by digitalizing public services is instrumental in building the business case for PPPs on digital transformation. For instance, SONDA and the Government of Rio Grande do Sul (Brazil) recently signed a PPP to deploy 7,000 km of digital fiber and deliver services to 1.7 million people in the Brazilian state.⁷⁶

73 European Commission. 2022. “Digital public services and environments.” Accessed October 4, 2022. <https://digital-strategy.ec.europa.eu/en/policies/digital-public-services#:~:text=Smart%20public%20services%2C%20also%20known,local%2C%20regional%20and%20national%20levels>.

74 Insights provided during the first PPP Talk by Miguel Porrúa, eGovernment Principal Specialist at IDB.

75 Analytics USA Gov. 2023. “Visits in the Past 90 Days.” Accessed on June 7, 2023. <https://analytics.usa.gov/>

76 BNamericas. 2023. “Chile’s Sonda inks its biggest-ever Brazilian PPP fiber contract.” Accessed on June 7, 2023.

SECTION 4

SUPPLY CHAINS

Global supply chains are the backbone of international trade, which has a key role in supporting economic growth and reducing poverty throughout the globe. Container port traffic, a common marker of global trade, has grown almost uninterrupted in the last two decades. Container traffic rose from 225 million twenty-foot equivalent units (TEUs)⁷⁷ in 2000 to 807 million TEUs in 2019, representing more than a 3.5-fold increase in less than 20 years.⁷⁸ The only two exceptions to this trend were observed during the 2008 global financial crisis and the COVID-19 pandemic. However, container traffic fell less sharply in 2020 (-1.9 percent) than during the financial crisis (-8.5 percent).⁷⁹ Trade performance during supply shortages and regional recessions helps understand these events' effects on broader economic trends.

In addition to the COVID-19 pandemic, other recent global events, such as the war in Ukraine, Europe's energy crisis, and China's zero-COVID policy, have further disrupted global supply chains and put significant strains on production networks. Panelists of the second PPP Talk agreed that these disruptions have dragged on economic activity and international trade, impacting businesses, consumers, and people's livelihoods worldwide. For example, a study estimates that, between November 2020 and September 2021, world trade would have been around 2.7 percent higher cumulatively if supply chain bottlenecks had not occurred, while global industrial production would have been 1.4 percent higher.⁸⁰ Moreover, freight prices increased 8-fold between March 2020 and September 2021.⁸¹ Freight prices have since decreased substantially and are now similar to the average prices observed shortly before the COVID-19 pandemic.⁸²

More recently, deteriorating economic circumstances and increasing uncertainties observed in many developed and developing countries are some factors that exert pressure on global trade and supply chains during the second half of 2022.⁸³ Although global trade is estimated to have reached US\$32 trillion in 2022, trade growth turned negative during the third and fourth quarters of the year.⁸⁴ Moreover, geopolitical tensions, enduring inflation, and depressed global demand are expected to continue affecting international trade into 2023.⁸⁵

<https://app.bnamericas.com/article/section/all/content/x5cosfbvy-chiles-sonda-inks-in-fiber-its-biggest-ever-ppp-contract-in-brazil>

77 TEU refers to a twenty-foot equivalent unit. One TEU equals the volume of a 20-foot-long container, which is the standard container size in the industry.

78 World Bank. 2023. "Container port traffic (TEU: 20-foot equivalent units)." Accessed January 30, 2023. <https://data.worldbank.org/indicator/IS.SHP.GOOD.TU>

79 Ibid.

80 European Central Bank. 2021. "Economic Bulletin Issue 8, 2021." Accessed November 21, 2022. <https://www.ecb.europa.eu/pub/economic-bulletin/html/eb202108.en.html>

81 Freightos Data. 2023. "Freightos Baltic Index (FBX): Global Container Freight Index." Accessed January 30, 2023. <https://fbx.freightos.com/>

82 Ibid.

83 UNCTAD. 2023. "Global Trade Update (December 2022)." Accessed January 30, 2023. <https://unctad.org/webflyer/global-trade-update-december-2022>

84 Ibid.

85 Ibid.

These events have evidenced the multiple vulnerabilities that characterize global supply chains. First, global supply chains are highly interconnected; therefore, a shock in one place can produce disruptions in various locations along the chain.⁸⁶ Moreover, global supply chains are also highly vulnerable because of their high levels of specificity—companies usually rely on a set of suppliers that cannot be easily substituted. In addition, it is common for global supply chains to extend to several tiers of suppliers. A vulnerability in a single supplier can therefore reverberate throughout the subsequent levels of suppliers, affecting hundreds or thousands of companies down the chain.

An outstanding example of the disruption of global supply chains in LAC is food security. Resulting from the war in Ukraine, fertilizer shortages are widespread in many countries in the region, which has led to increasing food prices and lower crop yields. This has been threatening the already fragile food security of the region's poorest while exacerbating inflation pressures across the region. The average year-on-year food inflation in 24 LAC countries was estimated at 17.2 percent by the end of 2022.⁸⁷ In some countries, food inflation is much higher than the regional average. Haiti, for instance, reported a 53.1 percent increase in food prices by October 2022, while in Suriname, food inflation reached 61.1 percent by December of the same year. Countries such as Chile and Colombia also reported significant increases in food prices—24.7 and 27.8 percent increases by December 2022, respectively.⁸⁸

Participants of the PPP Talk 2 argued that supply chain disruptions present both an opportunity and a challenge for countries in LAC. The regionalization of supply chains can provide great dividends to countries in LAC with the infrastructure needed to support logistics operations. However, these new circumstances could further isolate countries with deficiencies in, for example, ports, airports, and intermodal transport. It is, therefore, imperative for governments in LAC to reduce the gap in investment in this type of infrastructure.

A survey of 113 supply chain leaders worldwide, accounting for organizations from several industries, found that companies are increasingly taking measures to mitigate supply chain risks.⁸⁹ Revised inventory stocks and dual-sourcing strategies are the most common measures taken by companies to increase their resilience to supply chain shocks. However, the regionalization of supply chains is increasingly becoming a tool for companies to reduce supply chain risks. The survey found that the share of respondents developing regionalized supply networks increased from 25 percent in 2021 to 44 percent in 2022.⁹⁰

The IDB estimates that attracting supply chains to LAC could add an annual USD 78 billion in additional exports of goods and services in the region in the near and medium term.⁹¹ The

86 IDB. 2022. "Global and Regional Value Chains in Latin America in Times of Pandemic." Accessed November 21, 2022. <https://publications.iadb.org/en/global-and-regional-value-chains-latin-america-times-pandemic>

87 Estimation done using data from Trading Economics. Month of the data varies for each country and ranges from October to December 2022. Estimates do not include data for Argentina and Venezuela. Trading Economics. 2023. "Food Inflation | America." Accessed January 30, 2023. <https://tradingeconomics.com/country-list/food-inflation?continent=america>

88 Trading Economics. 2023. "Food Inflation | America." Accessed January 30, 2023. <https://tradingeconomics.com/country-list/food-inflation?continent=america>

89 McKinsey & Company. 2022. "Taking the pulse of shifting supply chains." Accessed November 21, 2022. <https://www.mckinsey.com/capabilities/operations/our-insights/taking-the-pulse-of-shifting-supply-chains>

90 Ibid.

91 IDB. 2022. "Nearshoring can add annual \$78 bln in exports from Latin America and Caribbean." Accessed

key industries that could lead this growth are the auto industry, textiles, pharmaceuticals, and renewable energy. However, improving trade, connectivity, transportation, and logistics infrastructure is critical to ensuring that regional companies are cost-competitive.⁹² According to IDB and World Bank estimates, reducing international shipping costs by 10 percent can increase the value of exports by at least 30 percent.⁹³

Efficient infrastructure and services for trade usually translate into lower transportation and logistics costs, promoting trade growth. Critical infrastructure for trade includes ports, airports, and other infrastructure for multimodal transportation like roads, rail, and inland waterway transportation. A recent IDB study estimated that, for instance, maritime transportation costs could decrease between 5 percent and 15 percent of the developing countries analyzed were as efficient as the country with the most efficient port sector in the study’s sample.⁹⁴ This is just an example of the potential to promote trade in the region through targeted investments in efficient, sustainable infrastructure and services in the sectors related to supply chains.

While investment needs for ports and airports in the region loom large in the next two decades, fiscal constraints are deepening due to slower economic growth, persistent inflation, and higher interest rates. According to a recent study by the IDB, countries in the region need to invest USD 146 billion to meet the expected growth in the air transport market between 2020 and 2030.⁹⁵ Meanwhile, the region’s ports’ investment gap is estimated to be USD 246 billion by 2040.⁹⁶

Panelists identified five main challenges related to supply chains and PPPs in the region, including governance, investments, and technology. These aspects are explained below:⁹⁷

- **Governance.** Panelists agreed that the region’s supply chain infrastructure governance responds more to the reforms carried out in the 90s than to the current global challenges. To overcome this challenge and attract new investments, it is crucial to have strong institutions, update objectives, and commit more deeply to PPPs.
- **Understanding of the concept of supply chains.** In the region, supply chains are still seen as independent modules for trade and logistics (airports, ports, highways). However, supply chains should be understood and developed as synchronized and holistic systems.

November 21, 2022. <https://www.iadb.org/en/news/nearshoring-can-add-annual-78-bln-exports-latin-america-and-caribbean>

92 Ibid.

93 Ibid.

94 IDB. 2021. “On the historical relationship between port (in)efficiency and transport costs in the developing world.” Accessed January 31, 2023. <https://publications.iadb.org/en/historical-relationship-between-port-inefficiency-and-transport-costs-developing-world>

95 IDB. 2020. “Public-Private Partnerships in Airports in Latin America and the Caribbean: Main Figures and Trends in the Sector.” Accessed November 21, 2022. <https://publications.iadb.org/en/public-private-partnerships-airports-latin-america-and-caribbean-main-figures-and-trends-sector>

96 IDB. 2020. “Public-Private Partnerships in Ports: Main Figures and Trends in Latin America and the Caribbean.” Accessed November 21, 2022. <https://publications.iadb.org/en/public-private-partnerships-ports-main-figures-and-trends-latin-america-and-caribbean>

97 Insights provided during the second PPP Talk by Ricardo Sánchez, Head of the Caribbean Research Institute; and Karla Bertocco, Partner Mauá Capital.

- **Investment in public infrastructure.** Infrastructure investment in several LAC countries is far below than needed. The region requires investment in infrastructure, but governments must be selective and precise when selecting investment projects, whether through public procurement or PPPs. This requires implementing a well-established decision-making process with greater involvement from all stakeholders, including the private sector.
- **Technological improvements.** While ports, airports, and land borders are physical gateways for trade, they are also relevant points of information flow. Therefore, governments in the region need to harness technology improvements to ensure information management can maximize efficiency at ports, airports, and land borders.
- **Capacity of supply chains for infrastructure projects.** When investments increase quickly in specific sectors, supply chains may be unable to supply all the goods, machinery, and services required by new projects. For example, panelists mentioned the case of Brazil’s water supply and sanitation sector, where spending approximately doubled within a short period.

Faced with these challenges, the region can leverage PPPs to increase the efficiency of supply chain infrastructure and services, use available funding more efficiently—particularly during fiscal tightening—and attract the finance and expertise needed for infrastructure development. For instance, panelists mentioned that Panama plans to develop the East and West Pan-American highways through PPPs.⁹⁸

PPP and the Reconfiguration of Supply Chains

PPP have been vital in developing LAC’s supply chain infrastructure, particularly in airports and container port terminals. The region had 168 airports operating under a PPP scheme, accounting for 70 percent of the region’s total passenger traffic by 2017.⁹⁹ Regarding ports, 91 percent of the cargo moving through state-owned container port terminals was moved through a terminal under a PPP contract in 2018.¹⁰⁰ As shown in Table 2, the share of passenger traffic going through an airport operated under a PPP scheme is above 80 percent in most of the region’s countries. In addition, Figure 4 presents the share of containerized cargo moving through state-owned ports that goes through a PPP terminal, which in many countries is 100 percent.

98 Insights provided during the second PPP Talk by Oscar García Cardoze, Director of the Office of Commercial Intelligence at Panama’s Ministry of Commerce and Industries.

99 IDB. 2020. “Public-Private Partnerships in Airports in Latin America and the Caribbean: Main Figures and Trends in the Sector.” Accessed November 21, 2022. <https://publications.iadb.org/en/public-private-partnerships-airports-latin-america-and-caribbean-main-figures-and-trends-sector>

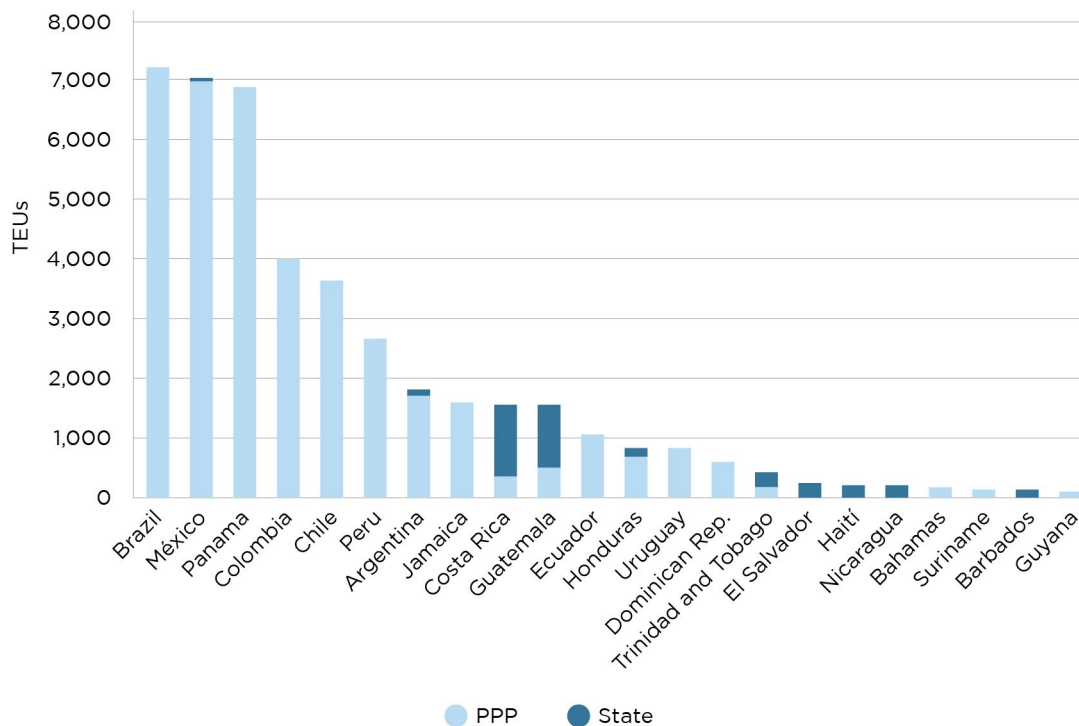
100 IDB. 2020. “Public-Private Partnerships in Ports: Main Figures and Trends in Latin America and the Caribbean.” Accessed November 21, 2022. <https://publications.iadb.org/en/public-private-partnerships-ports-main-figures-and-trends-latin-america-and-caribbean>

Table 2: Share of Total Passenger Traffic that goes through PPP Airports (2017)¹⁰¹

Country	Passengers (million)		PPP share of total
	PPP	Total	
Argentina	38.5	38.8	99%
Colombia	60.8	65.9	96%
Honduras	2.1	NA	>95%
Jamaica	5.9	NA	>95%
Ecuador	10.1	NA	>95%
Uruguay	2.2	NA	>95%
Chile	30.3	33.9	89%
Peru	29.1	33.2	88%
Costa Rica	5.9	7.0	85%
Brazil	134.5	202.6	66%
Mexico	30.7	46.7	65%
Dominican Republic	4.9	11.2	44%

Source: IDB. 2020. “Public-Private Partnerships in Airports in Latin America and the Caribbean: Main Figures and Trends in the Sector.”

Figure 4: Share of Containerized Cargo Going Moving through a State-Owned Port that Goes through PPP Terminal (2018)



Source: IDB. 2020. “Public-Private Partnerships in Ports: Main Figures and Trends in Latin America and the Caribbean.”

¹⁰¹ Honduras’ figures are for 2016 and Ecuador’s (Cuenca Airport) are for 2018.

As PPPs can help increase the efficiency and quality of airport and terminal port services and speed up infrastructure development, they can be a facilitating tool for countries trying to reap the benefits of regionalization trends in global supply chains. The operational efficiency of ports in LAC is estimated to have increased by an average of over 20 percent between 2000 and 2020, a period marked by increasing private-sector participation in port operations.¹⁰² In addition, the best ten airports in South America, according to Skytrax, which measures several indicators of service efficiency, are all operated through a concession to a private operator.¹⁰³ PPPs can also help countries use fiscal resources more efficiently and attract the additional financing needed to develop new airports and port terminals and refurbish existing ones. These advantages of PPPs fit very well with the need to quickly develop efficient infrastructure that the regionalization of supply chains requires.

However, governments must address some of the common challenges seen in airport and port PPPs in the region. For instance, a study found that the average delay in constructing airport PPPs exceeds 25 months, representing cost overruns in most cases.¹⁰⁴ In addition, the study also found that renegotiations are common in airport PPPs, translating into changes in the required investment in half the cases surveyed, in the operators' tariffs (30 percent of cases), or payments to the government (25 percent of cases).¹⁰⁵ Although systematic information is unavailable for port PPPs in LAC, anecdotal accounts suggest that delays and cost overruns are common.¹⁰⁶ For example, renegotiations took place in 90 percent of the cases of port PPPs surveyed by a recent study, affecting the required investment in 71 percent of cases, the areas occupied by operators (62 percent of cases), or the terms of payments to the government (57 percent of cases).¹⁰⁷

To help decrease delays, cost overruns, and the prevalence of contract renegotiations, countries in the region must have effective legal, policy, and institutional PPP frameworks in place and promote a balanced allocation of risks. Moreover, governments should apply formal methodologies to prioritize and select infrastructure projects, enhance procurement methods to the best international practices, and apply them consistently. In addition, governments must carry out appropriate project preparation, including technical, financial, and legal pre-feasibility and feasibility studies and ex-post assessments to learn from previous experiences and draw lessons for future PPP projects. PPP frameworks and procurement methods in LAC countries were improved substantially compared to when the region's first port and airport PPP projects were developed. For example, ten of the 12 countries in the region that implemented airport PPPs did not have a PPP regulatory framework in place during their first stages.¹⁰⁸ In contrast, the 2021/22 Infrascope Index, a benchmarking tool commissioned

102 Ibid

103 Skytrax. 2020. "Best Airports 2022 by Global Region." Accessed January 31, 2023. <https://www.worldairportawards.com/best-airports-2022-by-global-region/>

104 IDB. 2020. "Public-Private Partnerships in Airports in Latin America and the Caribbean: Main Figures and Trends in the Sector." Accessed November 21, 2022. <https://publications.iadb.org/en/public-private-partnerships-airports-latin-america-and-caribbean-main-figures-and-trends-sector>

105 Ibid

106 IDB. 2020. "Public-Private Partnerships in Ports: Main Figures and Trends in Latin America and the Caribbean." Accessed November 21, 2022. <https://publications.iadb.org/en/public-private-partnerships-ports-main-figures-and-trends-latin-america-and-caribbean>

107 Ibid

108 IDB. 2020. "Public-Private Partnerships in Airports in Latin America and the Caribbean: Main Figures

by the IDB that evaluates the readiness and capacity to implement sustainable and efficient PPPs, ranked 18 out of 26 countries in the region as having either mature or developed PPP regulations and institutions.¹⁰⁹ However, there is still room for improvement.

Besides ports and airports, consolidating other components of sustainable multimodal transportation networks—such as roads, rail, and waterway transport—is vital to strengthening regional supply chains. LAC depends heavily on its road network to transport goods and services. At the same time, most countries suffer from road coverage, quality, and connectivity challenges. The United Nations Economic Commission for Latin America and the Caribbean (CEPAL) estimated that no more than 18 percent of the total road network in the region was surfaced by 2015.¹¹⁰ In the same year, the region had an average of 18 km of roads for each 100 km² of land area, which is much lower than in other developing countries in other regions like Asia.¹¹¹ PPPs have been employed extensively to build road networks in LAC—the Private Participation in Infrastructure (PPI) database shows that 294 PPP road and highway projects are either active or have been completed since 1998 in 12 countries in the region.¹¹² In comparison, the PPI Database shows 289 active or completed PPP projects during the same period when adding airports, ports, and railways together.¹¹³

Rail and inland waterway transport are less developed means of transportation in the region, with much fewer PPPs in these subsectors than in roads, airports, and ports. A study by the International Union of Railways found that railways in the region “if they exist, some have deteriorated, are outdated, or closed due to various reasons. Regulations, infrastructure, rolling stock, and procedures in Latin America are not homogenous, all contributing to more complex border crossings in regions where the infrastructure exists. This discontinuity has a severe impact on effective logistical chains, time consumption as well as costs.”¹¹⁴

Waterway transportation in the region needs to be more efficient and is usually hindered by challenges such as low dredging capacity and environmental and management issues. However, it has great potential to serve as a mode of transportation between LAC countries. CAF estimates that 75 percent of the surface water belongs to basins shared by two or more countries.¹¹⁵ In addition, the benefits are threefold—waterway transport is the cheapest mode

and Trends in the Sector.” Accessed November 21, 2022. <https://publications.iadb.org/en/public-private-partnerships-airports-latin-america-and-caribbean-main-figures-and-trends-sector>

109 IDB and Economist Impact. 2022. “The 2021/22 Infrascopes. Evaluating the environment for public-private partnerships in Latin America and the Caribbean.” Accessed on November 3, 2022. <https://impact.economist.com/projects/infrascopes>.

110 Cepal. 2018. “Road transport in Latin America: evolution of its infrastructure and impact between 2007 and 2015.” Accessed January 31, 2023. https://repositorio.cepal.org/bitstream/handle/11362/44459/1/S1801183_en.pdf

111 Ibid

112 Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Jamaica, Mexico, Paraguay, Peru, and Uruguay.

113 World Bank. 2023. “Private Participation in Infrastructure (PPI) Database.” Accessed January 31, 2023. <https://ppi.worldbank.org/en/ppi>

114 UIC. 2019. “Strategic Action Plan for UIC Latin America Region.” Accessed January 31, 2023. https://www.developmentaid.org/api/frontend/cms/file/2021/12/latin_america_strategic_vision_2019.pdf

115 CAF. 2016. “Rivers could transform transportation and communications in South America.” Accessed January 31, 2023. <https://www.caf.com/en/currently/news/2016/07/rivers-could-transform-transportation-and-communications-in-south-america/>

of inland cargo transportation, has the lowest CO₂ emissions per unit of cargo, and is the most energy-efficient mode of transportation.¹¹⁶

Moreover, there is room for improvement in other areas, particularly in several vulnerabilities evidenced during the COVID-19 pandemic—particularly the need for contractual flexibility and provisions to restore the project’s economic equilibrium in case of force majeure events. Airport demand, for example, was severely affected by travel restrictions imposed by countries trying to limit the spread of the virus. The reluctance of passengers to travel given the uncertainty of complex entry requirements (tests, vaccine certificates, quarantines) and the risk of contagion also continued impacting demand after some of the travel restrictions were eased. For instance, the concession owner in charge of expanding, renovating, maintaining, and operating an international airport in South America recently filed an arbitration process against the public authority. The concession owner claims about USD 1 billion in damages, given that the pandemic substantially affected actual demand compared to the demand projections prepared during project procurement.¹¹⁷

The case described above is just an example of the need for PPP practitioners to reflect on innovations that allow for more contract flexibility when events like the pandemic, which was not a risk allocated to any of the parties, significantly change the conditions of the concession owner. This could help decrease the number of disputes between concession owners and concession providers, thereby minimizing the likelihood of disruption in providing infrastructure services related to supply chains.

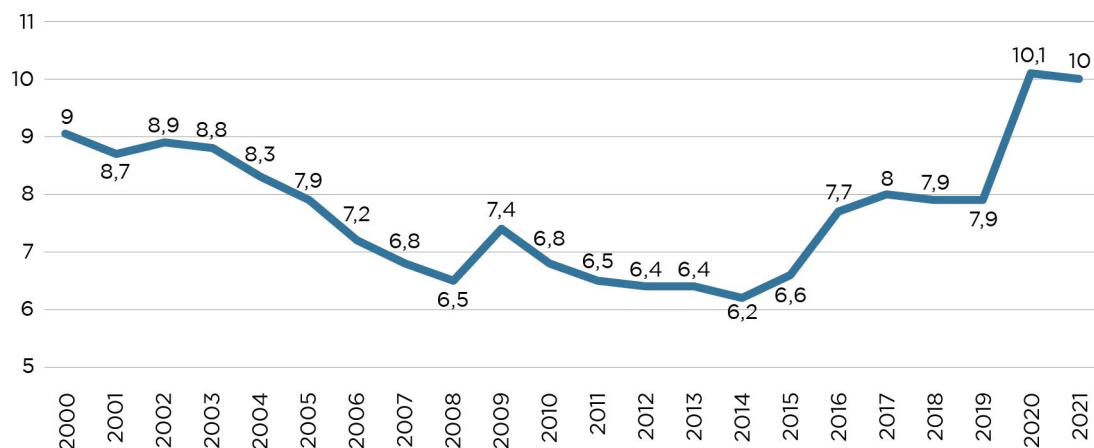
116 Hunt, J.D.; Pokhrel, Y.; Chaudhari, S.; Mesquita, A.L.A.; Nascimento, A.; Leal Filho, W.; Biato, M.F.; Schneider, P.S.; Lopes, M.A. Cleaner Engineering and Technology Challenges and Opportunities for a South America Waterway System. *Clean. Eng. Technol.* 2022, 11, 100575.

117 BNamericas. 2023. “Cómo la concesionaria del aeropuerto de Santiago afrontará tiempos turbulentos.” Accessed January 31, 2023. <https://www.bnamericas.com/es/entrevistas/como-la-concesionaria-del-aeropuerto-de-santiago-afrontara-tiempos-turbulentos>

SECTION 5 JOB CREATION

Recent macroeconomic conditions have evidenced the importance of strengthening the region’s labor markets. Forty-nine million jobs were lost in LAC by the second quarter of 2020 due to the COVID-19 pandemic, of which 4.5 million were yet to be recovered by February 2022.¹¹⁸ The average unemployment rate in the region was estimated at 10 percent by the end of 2021, which is higher than at any point in the last two decades.¹¹⁹ Figure 5 shows the average unemployment rate in the region between 2000 and 2021.

Figure 5: Unemployment, total (% of total labor force), 2000-2021



Source: World Bank. 2022. “World Bank Open Data—Unemployment, total (% of total labor force) (modeled ILO estimate) – Latin America & Caribbean”

More worryingly, 49 percent of the region’s workers are part of the informal economy, leaving their jobs unprotected and vulnerable to future macroeconomic shocks.¹²⁰ Therefore, governments in the region must promote quality jobs and strengthen labor markets to reduce the vulnerabilities that recent global events have exposed.

During the panel discussion, participants argued that the private sector has a pivotal role in job development in LAC. Notably, the context of rapid changes in global trends seen in recent years—that is, automation, digitalization, and the transition to cleaner energy sources—makes the demand for job skills challenging. In this context, training systems may not be adapted as

118 ILO. 2022. “ILO: After two years of the pandemic, labour market recovery has been insufficient in Latin America and the Caribbean.” Accessed December 2, 2022. https://www.ilo.org/caribbean/newsroom/WCMS_836156/lang--en/index.htm

119 World Bank. 2022. “World Bank Open Data—Unemployment, total (% of total labor force) (modeled ILO estimate) - Latin America & Caribbean.” Accessed December 2, 2022. <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=ZJ>

120 ILO. 2022. “ILO: After two years of the pandemic, labour market recovery has been insufficient in Latin America and the Caribbean.” Accessed December 2, 2022. https://www.ilo.org/caribbean/newsroom/WCMS_836156/lang--en/index.htm

quickly as changes occur. Therefore, the private sector can collaborate with the public sector through three main avenues, including:¹²¹

- Identification of skills demand
- Development of curriculums for skills training programs
- Implementation of skills development programs that involves co-financing between the public and private sector.

Overall, PPPs can also be an effective tool to stimulate job growth by leveraging the resources and expertise of both the public and private sectors. For example, PPPs can lead to the development of infrastructure projects, such as highways, airports, or schools, that otherwise would not have been developed. Therefore, these developments can create jobs for workers in the construction industry. Additionally, PPPs can lead to the expansion of existing businesses or industries associated with infrastructure by aligning private and public objectives.

However, a well-known caveat regarding employment in infrastructure development is that jobs are usually temporary, and informality is highly prevalent, particularly in the LAC region. For this reason, the section below will focus on synergies between PPPs and skills development to promote quality jobs in the region.

PPPs and Skills Development

Rapid technological change and the emergence of new industries are increasingly influencing the dynamics of labor markets worldwide. Therefore, countries in LAC must ensure that their labor markets keep up with the skills required to face these changes and reap the benefits of quick technological changes. Moreover, upskilling and reskilling are essential to increase labor productivity, which grows too slowly in the region—at about 1 percent per year—and is vital to create good employment conditions.¹²²

PPPs will play a role in this endeavor as much of the infrastructure developed through private participation will likely be related to climate change mitigation and adaptation. For example, the generation of clean energy through solar photovoltaic, concentrated solar power, and wind, as well as energy storage through green hydrogen and lithium-ion batteries, are technologies that are being developed or could be developed through PPPs in LAC. However, these technologies need pools of qualified and specialized labor, which many countries in the region may lack if technological changes continue.

More specifically, how PPPs may contribute to upskilling and reskilling workers to ensure projects are appropriately staffed throughout contract durations is another critical question that needs to be answered so LAC countries can benefit from technological change. Unfortunately, LAC countries have often seen many highly specialized professionals and academics move to more developed economies looking for better living standards and working opportunities. Overcoming these challenges is vital to increasing the ability of PPP projects in new technologies or industries to find the skilled workers necessary for success.

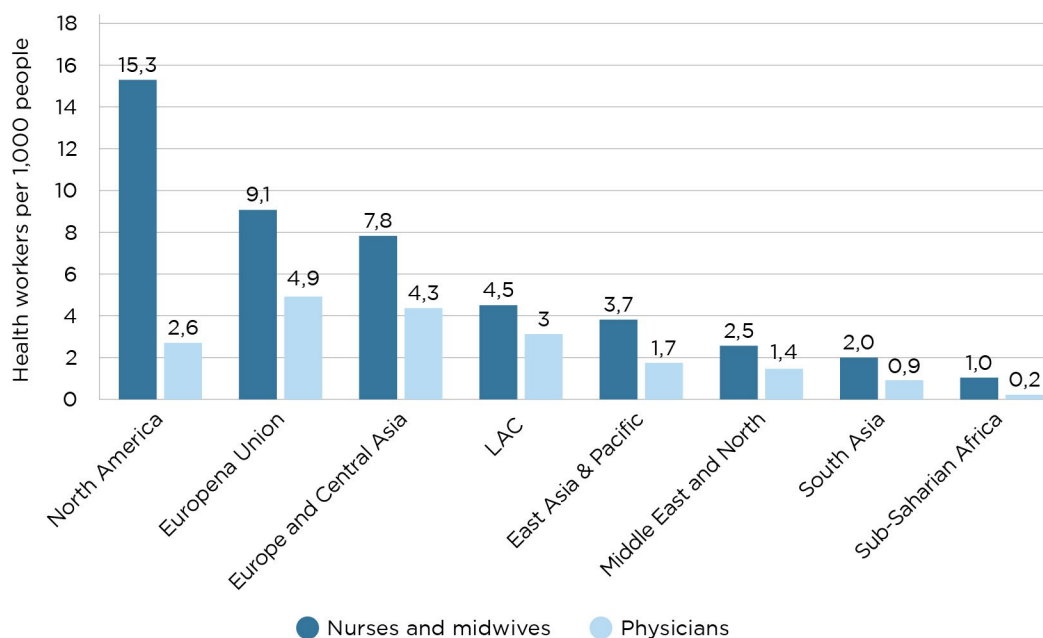
¹²¹ Insights provided during the second PPP Talk by Laura Ripani, head of the IDB's Labor Markets and Social Security Division.

¹²² IDB. 2021. "Labor Sector Framework Document." Accessed February 6, 2023. <https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents>

The participants of the second PPP Talk highlighted Jamaica’s Global Service Sector (GSS) Project as an excellent example of a successful partnership between the Global Service Skills Sector Council and the Government of Jamaica that led to job creation. The IDB funds the GSS project, which aims to enhance the opportunities for Jamaicans to receive training and secure improved employment in the global services sector. This sector includes knowledge process outsourcing, information technology outsourcing, and business process outsourcing. The Jamaica Promotions Corporation (JAMPRO) is responsible for executing the project. As a result of this partnership, the gross employment in areas related to the training provided by the GSS project increased from 43,000 in 2019 to 59,000 in 2023—a 37 percent increase in only four years.¹²³ Projects like these can help staff service-oriented infrastructure PPPs in countries with labor markets that are not able to meet the demand.

Developing service-oriented infrastructure through PPPs also requires a coordinated approach to ensure services can be staffed according to project needs. One example is staffing in social infrastructure such as hospitals and schools. Quality staffing is critical to project success, as providing healthcare and education services is only possible with specific skills. However, local labor markets may be insufficient to staff these projects once operation begins, particularly in small cities and rural areas. Accordingly, ensuring appropriate staffing for new social infrastructure PPPs is also a pivotal topic of discussion. For example, Figure 6 below presents the number of nurses/midwives and physicians per 1,000 people in LAC by 2017 compared to other regions. The figure shows that the region trails North America, Europe, and Central Asia in these metrics.

Figure 6: Nurses/midwives and physicians per 1,000 people, 2017



Source: World Bank. 2023. “World Bank Open Data— Physicians (per 1,000 people) / Nurses and midwives (per 1,000 people) - Latin America & Caribbean, East Asia & Pacific, European Union, North America, South Asia, Europa and Central Asia, Sub-Saharan Africa, Middle East and North Africa”

123 Insights provided during the second PPP Talk by Marjorie Straw, Program Director of Jamaica’s GSS Project.

Governments could start addressing these challenges by incorporating upskilling and reskilling clauses in PPP contracts likely to face staff or skills shortages. For example, these clauses could require the training of local workers in using specific machinery or equipment for the construction or operation of infrastructure that uses new technologies. Moreover, other incentives can be incorporated to ensure that upskilling and reskilling of local workers goes beyond the minimum requirements of contract clauses throughout the duration of the contract.

To strengthen local labor markets and develop skills that may be lacking for specific infrastructure projects, governments and private stakeholders can also implement programs on vocational education and training (VET).¹²⁴ VET programs can be provided through outcome-based, policy/program PPPs, which differ from the traditional long-term infrastructure PPPs.¹²⁵ Policy/program PPPs usually do not seek to overcome financial constraints or increase project efficiency but aim to increase the effectiveness of policies and programs through private-sector participation.¹²⁶ Improved effectiveness may derive from the private sector’s higher competence or innovation capacity and from allowing several stakeholders and institutions to work together toward a common goal.¹²⁷

Countries in the European Union employ VET programs to upskill and reskill people in several sectors of the economy. Moreover, a recent study by the European Training Foundation identified 23 case studies of policy/program PPPs in Europe and Asia that have been used to develop and provide VET programs.¹²⁸ This study concluded that this type of PPP could improve VET programs, leading to more people with high-quality skills that benefit individuals, companies, and society. It also found that interactions between private and public stakeholders are largely dynamic, often not governed by a formal contract but by agreements.

Job Creation Through PPPs Promoting Service-Intensive Sectors

Another potential opportunity to indirectly support job creation in the region is through PPPs that enhance service-intensive sectors such as sustainable tourism and agribusiness. For instance, airports, roads, and other transportation infrastructure are direct tourism enablers. PPPs could create jobs in these areas if they align private investment and expertise with sustainable growth policies in these sectors.

Tourism employs one out of 11 workers in the world. It represents 10 percent of the world’s GDP while employing more women, young people, and people with limited educational backgrounds compared to other industries.¹²⁹ However, countries in LAC need to develop

124 The European Union defines VET as “the training in skills and teaching of knowledge related to a specific trade, occupation or vocation in which the student or employee wishes to participate. Vocational education may be undertaken at an educational institution, as part of secondary or tertiary education, or may be part of initial training during employment, for example as an apprentice, or as a combination of formal education and workplace learning.”

125 ETF. 2020. “Public-Private Partnerships for Skills Development. A Governance Perspective.” Accessed December 9, 2022. https://www.etf.europa.eu/sites/default/files/2021-01/ppps_for_skills_development_volume_i.pdf

126 Ibid

127 Ibid

128 Ibid

129 IDB Invest. 2020. “Tourism development through PPPs: An opportunity to generate employment in Latin

further and maintain infrastructure such as roads, bus terminals, rail, airports, and ports to ensure competitiveness on the global stage. Countries in the region could thereby rely on this type of infrastructure to enable sustainable tourism.

An example of close collaboration between the private and public sectors to promote tourism in the region was implemented in Salta, Argentina, between 2003 and 2010. The provincial government conducted several policies—collectively known as the Tourism Development Policy (TDP)—to foster tourism in the city and create jobs, particularly after the country’s 2001 economic crisis.¹³⁰ The TDP consisted of three pillars:¹³¹

- Construction and modernization of tourism and transport infrastructure through PPP projects
- Tax credits for construction, expansion, and refurbishment of hotels and other hospitality infrastructure
- Strengthening of the tourism governance

A recent study of the measures implemented through the TDP found that employment in the tourism sector grew by 11 percent annually, which accounted for a 112 percent aggregate increase during the TDP’s implementation period.¹³² In addition, the TDP created 750 new formal jobs in the hospitality industry.¹³³

America and the Caribbean?” Accessed December 6, 2022. <https://idbinvest.org/en/blog/development-impact/tourism-development-through-ppps-opportunity-generate-employment-latin>

130 Ibid

131 IDB. 2019. “Política de Desarrollo Turístico en Salta, Argentina.” Accessed December 6, 2022. <https://publications.iadb.org/es/politica-de-desarrollo-turistico-en-salta-argentina>

132 Ibid

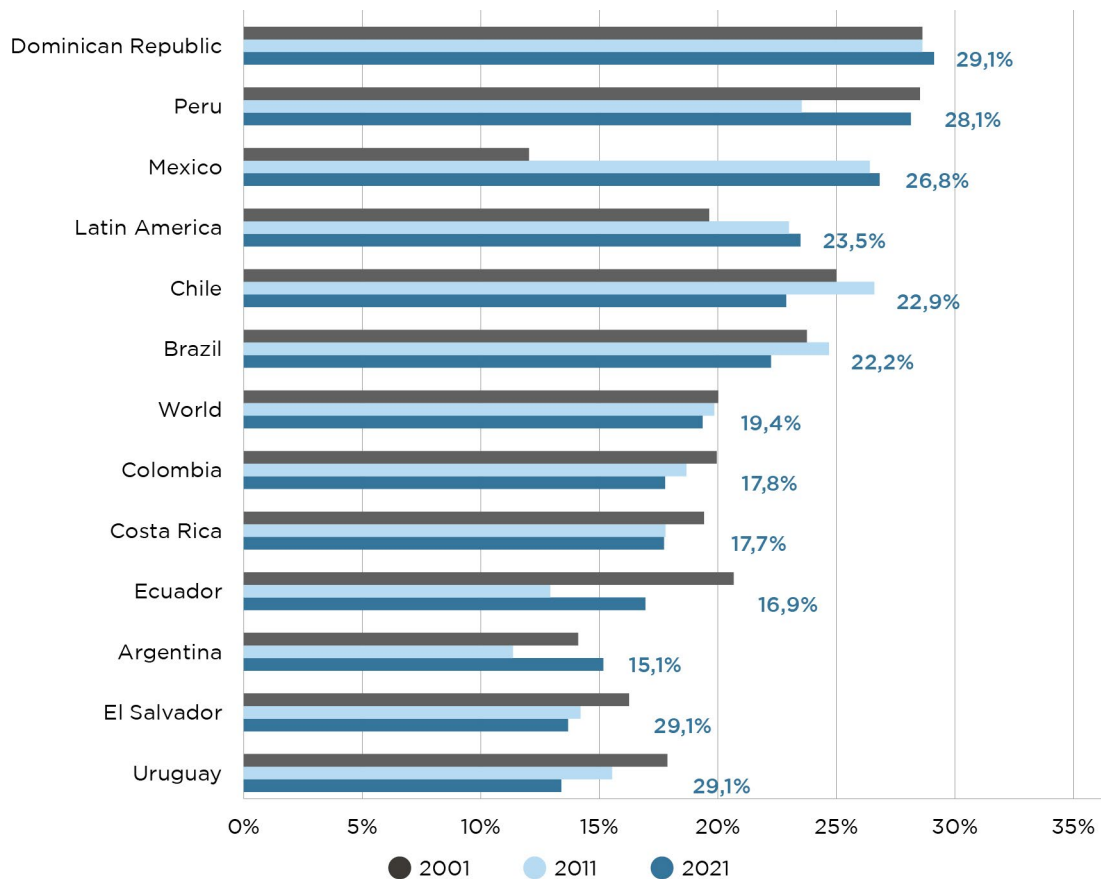
133 Ibid

SECTION 6 DRIVING INCLUSION

LAC is one of the most unequal regions in the world. According to World Inequality Database (WID) data,¹³⁴ the richest 1 percent earned 23.5 percent of the region’s income by 2021, while the poorest 50 percent earned only 7.9 percent. These levels of inequality are worse than world averages, which are 19.4 percent of income earned by the top 1 percent and 8.3 percent earned by the bottom 50 percent.

Income inequality in some countries in the region has improved since the early 2000s thanks to a commodity boom that allowed governments to implement wide-reaching welfare policies. However, this trend has largely reversed in recent years, mainly due to the reduction in commodity prices and the effects of the COVID-19 pandemic. Figure 7 shows the income share of the wealthiest 1 percent for countries with data in WID for 2001, 2011, and 2021. The figure also indicates regional and world averages.

Figure 7: Income Share of Richest 1 Percent, 2001, 2011, 2021



Source: Own elaboration based on data from WID. 2023.
Note: Percentages shown refer to data for 2021.

134 WID. 2023. “Data.” Accessed on March 6, 2023. <https://wid.world/data/>

Gender inequality is also highly prevalent in LAC countries, which leads to depressed economic growth and lower social development. For example, at. A recent study by the IDB found that women hold only 15 percent of management positions in LAC, they are owners of only 14 percent of the region’s companies, and only one in ten companies is run by a woman.¹³⁵ The study also found that most companies do not have systems to identify gender salary gaps—only 15 percent of companies in the study’s survey do.¹³⁶

In LAC, around 12 percent of people live with at least one disability.^{137, 138} Moreover, women, indigenous peoples, and low-income groups have a higher prevalence of disability.¹³⁹ Studies have also found that poor people are more at risk of a disability, while people with a disability are more likely to be poor.¹⁴⁰

The indigenous population in LAC is estimated to be between 28 and 34 million people, accounting for roughly 10 percent of the region’s total population. Additionally, the Afro-descendant population is estimated to be around 150 million people.¹⁴¹ Typically, indigenous and Afro-descendant women work in the informal sector, characterized by low human capital and low wages.¹⁴²

Promoting inclusive infrastructure is a way policymakers can address inequality and enhance social inclusion in LAC. Moreover, PPPs are suitable tools for developing this type of infrastructure. Several studies have found empirical evidence suggesting that more inclusive infrastructure leads to reduced inequality, drives productivity, boosts economic growth, and can help to respond to the climate crisis.^{143, 144, 145, 146} The section below introduces the concept of inclusive infrastructure and explains its possible links with SDGs. In a later section, this paper describes methods to develop inclusive infrastructure through PPPs.

135 IDB. 2021. “Una olimpiada desigual: la equidad de género en las empresas latinoamericanas y del Caribe.” Accessed on March 13, 2023. <https://publications.iadb.org/es/una-olimpiada-desigual-la-equidad-de-genero-en-las-empresas-latinoamericanas-y-del-caribe>

136 Ibid

137 IDB. 2019. “Goodbye Barriers! A Guide to Design More Accessible Spaces.” Accessed on March 13, 2023. <https://publications.iadb.org/en/goodbye-barriers-guide-design-more-accessible-spaces>

138 A disability is an evolving concept that results from the interaction between people with impairments and barriers due to the attitude and environment that prevent their full and effective participation in society on equal terms with others. A disability can be physical, mental, intellectual, or sensory. Source: IDB. 2019. “Goodbye Barriers! A Guide to Design More Accessible Spaces.”

139 IDB. 2019. “Goodbye Barriers! A Guide to Design More Accessible Spaces.” Accessed on March 13, 2023. <https://publications.iadb.org/en/goodbye-barriers-guide-design-more-accessible-spaces>

140 Ibid

141 IDB. 2021. “Equality needs everyone: The role of men in gender equity, diversity and inclusion.” Accessed on April 25, 2023. <https://www.idbinvest.org/en/publications/equality-needs-everyone-role-men-gender-equity-diversity-and-inclusion>

142 Ibid

143 Global Infrastructure Hub. 2019. “Inclusive Infrastructure and Social Equity. Practical guidance for increasing the positive social outcomes of large infrastructure projects.” Accessed on March 13, 2023. <https://inclusiveinfra.gihub.org/>

144 UNOPS. 2022. “Inclusive Infrastructure for Climate Action.” Accessed on March 13, 2023. https://content.unops.org/publications/Inclusive-infrastructure_EN.pdf

145 Ekos. 2022. “Measuring and Valuing the Inclusive Growth Impact from Infrastructure Investment” Accessed on March 13, 2023. <https://www.scottishfuturetrust.org.uk/storage/uploads/ekosinclusivegrowthhandinfracturereportjune22.pdf>

146 Global Infrastructure Hub. 2019. “Inclusive Infrastructure and Social Equity. Case Studies.” March 13, 2023. <https://inclusiveinfra.gihub.org/case-studies/>

Overview of Inclusive Infrastructure

Inclusive infrastructure can be understood as the design and implementation of physical and digital infrastructure that promotes positive outcomes in social inclusivity while ensuring that no individual, community, or social group is prevented from benefiting from such infrastructure development.¹⁴⁷ Moreover, the United Nations has recently defined five principles that characterize this type of infrastructure. According to these principles, inclusive infrastructure is equitable, accessible, affordable, do-no-harm, and empowering.¹⁴⁸

To design inclusive infrastructure effectively, it is critical to understand which groups are at risk of being excluded. Some of the groups that have historically been at risk of being excluded from infrastructure include:¹⁴⁹

- **Low-income groups and unemployed.** Infrastructure that is not affordable or does not serve the needs of low-income groups. For example, non-affordable housing, public transportation, or basic utilities can exclude these groups from essential resources and services.
- **Women and girls.** Infrastructure may not be inclusive if it is not designed to address the specific needs of women, such as safe and accessible public spaces, transportation, and childcare facilities. In addition, the needs of women are often excluded from decision-making processes in infrastructure. Box 1 presents the key findings from a recent survey on these topics highlighted by the third PPP Talk participants.¹⁵⁰
- **People living with a disability.** Infrastructure not designed to accommodate the needs of persons with disabilities—for instance, accessible buildings and transportation systems—can exclude them from essential services and opportunities.
- **Children, youth, and older people.** Children may be excluded from using public spaces, such as parks and playgrounds, if they are not designed to be safe and accessible. This can prevent them from engaging in physical activity and socializing with peers, leading to social exclusion and health issues. Youth can be excluded from training and employment opportunities. Infrastructure not designed to accommodate the needs of older people can exclude them from essential services. Accessible buildings and transportation systems are clear examples of where this can happen.
- **Indigenous and minority groups.** Minority communities may be excluded from infrastructure investments and development projects, which can perpetuate existing disparities and limit their access to essential services and resources. Moreover, minorities may face exclusion from public spaces that are unsafe or unwelcoming, which can limit their ability to socialize and engage in recreational activities.

147 Global Infrastructure Hub. 2019. “Inclusive Infrastructure and Social Equity. Practical guidance for increasing the positive social outcomes of large infrastructure projects.” Accessed on March 6, 2023. <https://inclusiveinfra.gihub.org/>

148 UNOPS. 2022. “Inclusive Infrastructure for Climate Action.” Accessed on March 13, 2023. https://content.unops.org/publications/Inclusive-infrastructure_EN.pdf

149 Global Infrastructure Hub. 2019. “Inclusive Infrastructure and Social Equity. Practical guidance for increasing the positive social outcomes of large infrastructure projects.” Accessed on March 13, 2023. <https://inclusiveinfra.gihub.org/>

150 Insights provided during the third PPP Talk by Mariana Silva Zuñiga, Senior Infrastructure Finance Specialist at the Global Infrastructure Facility (GIF).

- People living in informal settlements, isolated communities, or vulnerable environments. Infrastructure that is not available or insufficient in remote areas, such as roads, transportation, and broadband internet, can exclude these communities from job opportunities and public services.

Box 1. Findings from a survey of infrastructure private investors regarding gender awareness and gender considerations during decision-making

The Public-Private Infrastructure Facility (PPIAF) and the Global Infrastructure Facility (GIF) recently spearheaded a survey of infrastructure private investors and lenders in emerging markets and developing economies. Investors were surveyed on their level of gender awareness, gender considerations during decision-making processes, and gender integration during the project cycle. These are the key findings from the study:

- Private investors and lenders’ awareness of the linkage between gender and infrastructure is often informed by the role they themselves play in infrastructure projects.
- Investors and lenders do not have their own consistent standards to screen for social (and gendered) impact during investment decision making. Instead, they typically rely on national laws and policies to provide the framework for environmental and social compliance. In the absence of these frameworks, they face challenges.
- The absence of standards among private investors and lenders for vetting investments for their potential gendered impact is exacerbated by their limited understanding about why and how inclusion of women and girls may affect financial performance and long-term value of investments.
- Many respondents had a limited understanding of why and how gender matters to the success of investments in infrastructure and its performance as a social asset.
- Limited involvement of investors and lenders in the project cycle, along with constraints imposed by competitive procurement, limit their influence to create and implement plans for inclusion of women and girls. There are, however, opportunities to mitigate these constraints.
- While some active investors have social and gender equality plans and on-site capacity to implement them, they have faced cultural challenges in doing so.

Source: PPIAF and GIF. 2022. “Preliminary Findings Report on Gender-Inclusive Approaches in Private Participation in Infrastructure”.

Developing inclusive infrastructure can help achieve several SDGs, such as reducing poverty and inequality.¹⁵¹ Inclusive infrastructure can have direct benefits, such as promoting gender equality and enhancing the inclusion of low-income groups in education services.¹⁵²

Developing this type of infrastructure can also have indirect benefits. For example, more inclusive infrastructure can lead to improved health and well-being through greater access to education, healthcare services, and cleaner technologies.¹⁵³ By investing in inclusive infrastructure, policymakers can promote sustainable development in their countries and make progress toward multiple SDGs—directly or indirectly—including:

- SDG 1 (No poverty), SDG 8 (Decent work and economic growth), SDG 10 (Reduced inequality)
- SDG 3 (Good health and well-being)
- SDG 4 (Education)
- SDG 5 (Gender equality)
- SDG 6 (Clean water and sanitation), SDG 7 (Affordable and clean energy), SDG 9 (Industries, innovation, and infrastructure), SDG 11 (Sustainable cities and communities)
- SDG 13 (Climate action).

Inclusive Infrastructure through PPPs

PPPs can be a powerful tool for promoting inclusive infrastructure that accommodates the needs and rights of all groups. There is a growing recognition of the need to ensure that these projects promote social inclusion and benefit all groups, including marginalized communities, low-income groups, women and girls, children and youth, and minorities. PPPs involve collaboration between government entities and private sector organizations to design, finance, and deliver infrastructure, so they can be leveraged to ensure that infrastructure investments and policies promote social inclusion and equity.

To promote inclusive infrastructure through PPPs, it is key to consider the needs and perspectives of all groups, particularly those at risk of being excluded, throughout the projects' planning, implementation, and evaluation stages. This can involve i) engaging with communities and stakeholders to gather feedback on infrastructure and service necessities, demand patterns, willingness to pay, and potential impacts, ii) incorporating social impact assessments into the project design, and iii) establishing mechanisms for accountability and transparency.

Incentives and legal and regulatory controls in PPPs are key tools that can be used to promote inclusivity outcomes. However, these tools must be applied at the policy and project levels

¹⁵¹ UNOPS. 2022. "Inclusive Infrastructure for Climate Action." Accessed on March 13, 2023. https://content.unops.org/publications/Inclusive-infrastructure_EN.pdf

¹⁵² Global Infrastructure Hub. 2019. "Inclusive Infrastructure and Social Equity. Practical guidance for increasing the positive social outcomes of large infrastructure projects." Accessed on March 13, 2023. <https://inclusiveinfra.gihub.org/>

¹⁵³ For example, developing a BRT system with electric buses that replace traditional diesel buses can help improve mobility while also reducing greenhouse gas emissions and health problems related with air pollution.

to bring more significant inclusivity benefits.¹⁵⁴ Clear policy and regulation on inclusion and inclusivity standards can lead to better inclusion outcomes from private-sector participation in infrastructure. In addition, project-level measures such as linking project performance to inclusivity indicators can also enhance inclusion.

Moreover, tools that can be used in PPPs include measures to improve inclusion outcomes from the demand and supply sides. Demand-side mechanisms include subsidy schemes to improve access and affordability. At the same time, supply-side measures may involve incorporating inclusivity measures in bidding criteria and fostering inclusive environments for the participation of businesses owned by women or other minority groups in PPPs. These and other incentives are explained below:¹⁵⁵

- **Applying subsidy schemes to increase accessibility and affordability of infrastructure services**—To ensure that infrastructure services remain affordable for all income groups, governments often use subsidy schemes. This is because tariffs determined based on financial viability can make these services unaffordable for some. Therefore, by providing subsidies, governments can increase the accessibility and affordability of infrastructure services for all. In addition, subsidy schemes can also increase the demand for the infrastructure facilities being developed, thus making PPPs more bankable for the private sector.
- **Incorporating inclusivity measures in bidding criteria**—Governments can use the competitive processes of PPPs to improve inclusivity outcomes. For example, through bidding criteria, private providers can be asked to employ a percentage of excluded population during asset construction and operation or ensure gender-equal management positions. Also, bidding rules can incorporate weighting so bidders compete in inclusivity measures.
- **Fostering a more inclusive environment in PPPs for businesses owned by women or other minority groups**—This can be achieved in multiple ways. For example, governments can apply minimum targets for incorporating women- and minority-owned enterprises in PPP procurement. Governments can also develop transparency programs to provide information on the level of participation of minority-owned companies in PPPs to identify cases of unequal access and the barriers to entry. This can, in turn, help develop strategies to address those roadblocks.

Legal and regulatory controls act similarly to incentives by applying payment deductions or penalties to non-compliance. Clear regulatory and legal frameworks and project key performance indicators (KPIs) incorporating inclusivity measures can enhance inclusion outcomes when developing infrastructure through PPPs. Examples of these measures are explained below:^{156, 157}

154 Global Infrastructure Hub. 2019. “Inclusive Infrastructure and Social Equity. Practical guidance for increasing the positive social outcomes of large infrastructure projects.” Accessed on March 13, 2023. <https://inclusiveinfra.gihub.org/>

155 Ibid

156 PPIAF, GIF. 2022. “Preliminary Findings Report on Gender-Inclusive Approaches in Private Participation in Infrastructure.” Accessed on March 20, 2023. <https://documents1.worldbank.org/curated/en/099520111082218500/pdf/IDU0491c55960383c045880a2440291443992454.pdf>

157 Global Infrastructure Hub. 2019. “Inclusive Infrastructure and Social Equity. Practical guidance for increasing

- **Clear legal and regulatory framework on inclusivity standards**—Private providers in infrastructure may lack inclusivity standards in the absence of regulation. Governments can enhance inclusion outcomes by providing policy and guidance on the standards they want to achieve. For instance, clear government standards on reasonable accommodation and universal design for infrastructure, such as public transport, schools, and hospitals, can ensure that private providers develop accessible infrastructure for people living with disabilities.
- **Using payment mechanisms to achieve inclusion objectives**—Procuring agencies can incorporate payment mechanisms that incentivize private providers to achieve inclusivity outcomes such as gender equality in their corporate structures or the provision of their services.
- **Incorporating inclusivity measures in KPIs and other performance standards**—Similar to payment mechanisms, including inclusivity measures in project KPIs can ensure that private providers are penalized when they fail to meet specific inclusivity targets and social outcomes. In addition to penalties, bonus payments can be linked to performance above minimum requirements. Both these tools will help align the private stakeholder’s profit drivers with the government’s inclusivity objectives. However, it is crucial that PPP practitioners impose reasonably attainable KPIs.¹⁵⁸
- **Establishing reporting and evaluation mechanisms on the private sector provider’s approach to inclusion**—Requesting that the private sector reports and evaluates its approach to inclusion can improve transparency and allow independent reviewers and customer groups to provide feedback. This higher level of accountability can help ensure that private stakeholders apply their approach to inclusion in the design of assets and provision of services.

A key aspect in promoting inclusive infrastructure is incorporating inclusion perspectives into PPP design, construction, and execution. Panelists argued that PPPs present an important opportunity for the private sector to be innovative regarding public tenders or outsourcing, which can focus on inclusion and diversity. For instance, a panelist shared an example of a tourism PPP which incorporated preferences for diversity and social inclusion. This resulted in the private sector creating a consortium of several partners with various experiences in social equity and inclusion that was awarded the PPP project.¹⁵⁹ Participants also discussed the government’s role in preventing the exclusion of vulnerable communities from infrastructure development and the role of conservation in protected areas to promote the inclusion of vulnerable communities. Panelists emphasized the importance of implementing the principles outlined in international conventions at the project level. It is crucial to involve various actors, consider their interests in land planning, and ensure governance and social participation in national projects. Public hearings involving traditional communities should take place before implementing projects, and insights from these hearings should influence project execution.¹⁶⁰

the positive social outcomes of large infrastructure projects.” Accessed on March 13, 2023. <https://inclusiveinfra.gihub.org/>

158 IFC’s Environmental and Social (E&S) Performance Standards are usually regarded as international best practice in E&S safeguards for development projects. However, it should be noted that inclusive infrastructure goes beyond the “do no harm” concept that is inherent to the IFC’s E&S Performance Standards.

159 Insights provided during the third PPP Talk by Judith Morrison, Senior Advisor for Social Development at the IDB’s Gender and Diversity Division.

160 Insights provided during the third PPP Talk by Katia Torres Ribeiro, Director of Social and Environmental Actions and Territorial Consolidation at Chico Mendes Institute for Biodiversity Conservation in Brazil.

Figure 8 below presents several ways to include inclusion perspectives in the PPP cycle from project inception and screening until contract management.

Initial Concept	Progress toward PPP Contract	Possible ways to involve inclusion perspectives
<p>Identify Priority Project</p> <p>↓</p>	<p>Initial Concept</p>	<ul style="list-style-type: none"> • Stakeholder engagement based on inclusion perspectives • Gender analysis and other studies related to minority groups • Criteria incorporating inclusion perspectives for PPP prioritization
<p>Screen as PPP</p> <p>↓</p>	<p>Key Commercial Terms</p>	<ul style="list-style-type: none"> • Terms of Reference for consulting firms • Stakeholder engagement based on inclusion perspectives • Feasibility assessments: environmental, social, technical, financial and economic viability assessment • Legal feasibility assessment • Business case
<p>Structure PPP Appraise PPP</p> <p>↓</p>	<p>Draft PPP Contract</p>	<ul style="list-style-type: none"> • Include inclusion considerations in PPP contractual provisions regarding environmental & standards; safeguards; procurement; stakeholder engagement; employment/entrepreneurship; project monitoring; grievance redress mechanisms; technical and performance requirements • Procurement strategy – can actively promote empowerment of women, low income groups, indigenous, and other minority groups; e.g., inclusion of women and minority owned businesses
<p>Design PPP Contract</p> <p>↓</p>	<p>Final PPP Contract</p>	<ul style="list-style-type: none"> • Bidder qualification requirements consider inclusion considerations; e.g., does bidder have a code of conduct? • Evaluation criteria – extra points can be given to bidders demonstrating they have implemented gender and other inclusion requirements in the past
<p>Manage PPP transaction</p> <p>↓</p>		<ul style="list-style-type: none"> • Collect disaggregated data based on gender, income level, and other groups at risk of being excluded • Reporting obligations regarding performance requirements related to inclusion objectives • procedures for continued stakeholder engagements related to inclusion objectives
<p>Manage PPP Contract</p>		<ul style="list-style-type: none"> • Procedures for continued stakeholder engagement based on inclusion perspectives • Include women’s and other minority groups’ representatives in all related activities – e.g., for more sensitive grievance redress mechanism

Source: Figure edited based on IFC. 2019. “Gender Equality, Infrastructure, and PPPs – A Primer.”

Promoting inclusivity outcomes can also leverage financing that incorporates social outcome criteria such as social bonds. Social bonds are any type of bond instrument where the proceeds will be exclusively used to finance or re-finance — in part or entirely — new and existing eligible social projects.¹⁶¹ Projects should also be aligned with the four core components of the Social Bond Principles (SBP), published by the International Capital Market Association (ICMA), on the use of proceeds, the process for project evaluation and selection, the management of proceeds, and reporting.¹⁶²

In 2022, IDB Invest supported the issuance of a social bond to finance the Rumichaca-Pasto highway in Colombia. The project will reduce travel times and transportation costs, directly impacting the inhabitants of the seven municipalities that make up the road corridor. The bond was issued by the concessionaire while IDB Invest acted as the anchor investor of the global social bond, with an investment of USD 135 million equivalent in Colombian pesos. IDB Invest played a vital role in this transaction by supporting an innovative long-term solution in local currency to refinance part of the project through international capital markets and mobilize institutional investors that prioritize social impact investments. As part of the bond issuance process, IDB Invest also accompanied the methodological framework design for the use of proceeds, which contains the criteria for selecting, monitoring, and evaluating projects aligned with the principles of social bonds of ICMA.¹⁶³

161 ICMA. 2021. “Social Bond Principles. Voluntary Process Guidelines for Issuing Social Bonds.” Accessed June 9, 2023. <https://www.ifc.org/wps/wcm/connect/6fb7d3be-9e88-49a1-bbca-c28c1ccaa7ca/SBP+June+2021.pdf?MOD=AJPERES&CVID=nDR.IQ9>

162 Ibid

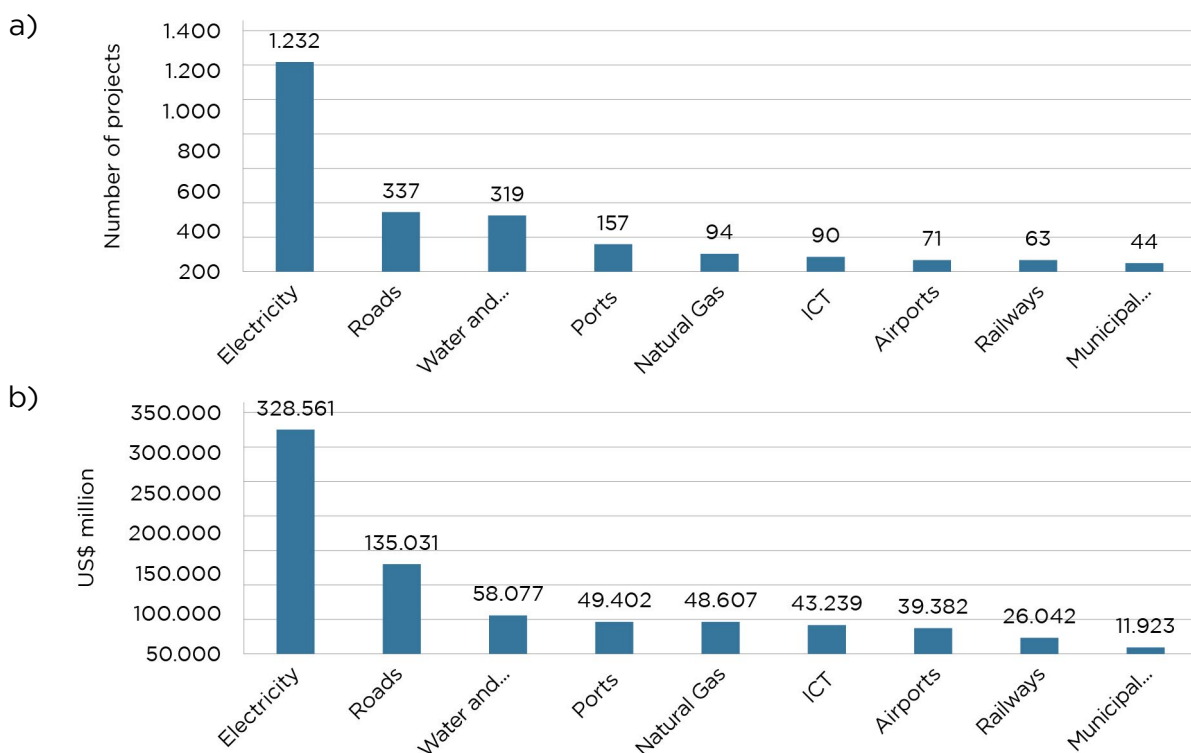
163 IDB Invest. 2022. “BID Invest participa como inversionista ancla en el mayor Bono Social de infraestructura en Latinoamérica y el Caribe.” Accessed June 9, 2023. <https://idbinvest.org/es/medios-y-prensa/bid-invest-participa-como-inversionista-ancla-en-el-mayor-bono-social-de-infraestructura>

SECTION 7 MEASURING IMPACT

Private-sector participation (PSP) in infrastructure has increased in LAC over the past few decades. PSP in infrastructure development can be a way to improve the quality and efficiency of public services while reducing the burden on the government’s budget. Therefore, many LAC countries have implemented policies to attract private investment in infrastructure and public services, which has led to sustained growth in the development of PPPs in the region.

According to data from the PPI Database, LAC is the region with the most significant investment in infrastructure with PSP among emerging markets and developing economies (EMDEs). Between 1990 and the first half of 2022, at least 2,400 projects reached financial close in the region.¹⁶⁴ During the same period, the total investment in infrastructure projects with PSP added up to more than US\$740 billion.¹⁶⁵ The sectors where PSP has been most prevalent in LAC include energy, transportation, telecommunications, and water and sanitation. Figure 9 below presents the number of projects reaching financial close and the total investment by sector since 1990.

Figure 9: a) Number of Infrastructure Projects with PSP Reaching Financial Close by Sector / b) Total Investment in Infrastructure Projects with PSP by Sector, 1990 - H1 2022



Source: Own elaboration based on data from World Bank. 2023. “Private Participation in Infrastructure (PPI) Database. Regional Snapshot – Latin America and the Caribbean.”

164 World Bank. 2023. “Private Participation in Infrastructure (PPI) Database. Regional Snapshot – Latin America and the Caribbean.” Accessed on March 28, 2023. <https://ppi.worldbank.org/en/snapshots/region/latin-america-and-the-caribbean>

165 Ibid

Despite the high prevalence of PSP in the region, few studies in LAC have evaluated the performance and impact of PPPs. Assessing impact is crucial to estimate PPPs' overarching economic and social outcomes and inform policy, regulatory, and institutional decisions. Only through evaluation it is possible to draw lessons to replicate success factors and avoid approaches that have not led to positive outcomes. Moreover, it is essential to develop learning curves from evaluation, which involves applying ex-ante, monitoring, and ex-post techniques to understand the performance of PPPs before, during, and after their implementation. Therefore, evaluations of PPPs can help governments in the region increase the long-term positive social and economic impact, maximizing the efficiency of private or public resources invested in these projects.

When evaluating the pertinence of PPPs, practitioners have usually relied on two methods—cost-benefit analysis (CBA) and value for money (VFM). CBA is a decision-making tool to evaluate a PPP's potential economic and social costs and benefits. CBA involves comparing the total expected costs of the project with its expected benefits to determine the net benefit (or net cost).¹⁶⁶ VFM is also a decision-making methodology that compares the costs and benefits of a PPP project with those of a traditional public procurement option (public sector comparator) to determine whether the PPP provides better value for money.¹⁶⁷

Moreover, the third PPP Talk panelists highlighted the importance of conducting stakeholder analysis to identify the groups that may be particularly affected by a specific PPP project. Whereas CBAs help identify a project's aggregate economic, environmental, and social costs, stakeholder analysis can provide a more detailed view of the costs borne by specific groups, which can further inform decision-making.¹⁶⁸

The panel participants argued that these methods are mainly used when evaluating the feasibility of PPPs (ex-ante) but are rarely employed in the region after PPPs have been completed (ex-post). Nevertheless, ex-post CBA and VFM analysis can provide PPP practitioners valuable lessons on whether the benefits of PPP portfolios have outweighed their costs and provide information on whether they have created value for societies. Panelists emphasized several aspects that are needed to conduct ex-post CBA and VFM, including a specific public institution with appropriate capacity; standard methodologies that are simple enough to be applied across projects and sectors; a method that considers indicators for climate change, resilience, and social and environmental sustainability; systematic data collection; and results transparency.¹⁶⁹

Monitoring and supervision are also critical components for the appropriate management, performance, and impact evaluation of PPPs. Effective monitoring and supervision ensure that PPP projects are delivered according to the contract terms and objectives and that any issues or risks are identified and addressed promptly. Monitoring involves tracking and assessing project progress against agreed targets, timelines, and quality standards.¹⁷⁰ Monitoring

166 Global Evaluation Initiative. 2023. "Cost-benefit analysis." Accessed on March 28, 2023. <https://www.betterevaluation.org/methods-approaches/methods/cost-benefit-analysis>

167 World Bank. 2023. "Assessing Value for Money of the PPP." Accessed on March 28, 2023. <https://ppp.worldbank.org/public-private-partnership/assessing-value-money-ppp>

168 Insights provided during the third PPP Talk by Rodolfo Stucchi, Head of Development Effectiveness for Andean countries, and the Southern Cone region at IDB Invest.

169 Insights provided during the third PPP Talk by Fernando García Canales, Director of Infrastructure Advice and PPP Financial Advisory at Deloitte Spain.

170 European PPP Expertise Centre. 2014. "Managing PPPs during their contract life." Accessed on March 28,

enables the public partner to identify any issues or delays in project milestones and to take corrective actions if necessary. Supervision involves more active oversight and intervention by public authorities to ensure the private provider fulfills its contractual obligations. This may include reviewing and approving plans, designs, and milestones, conducting audits and inspections, and enforcing compliance with environmental, social, and other standards.

The following sections outline the foundations of the panel discussions on Measuring Impact held during the third PPP Talk. The first section describes how PPP practitioners in the region may assess the performance of PPPs, while the second section explains the opportunities and challenges of assessing the broader impact of PPPs in the region.

Assessing Performance

Assessing performance focuses on how well PPP projects are executed and whether they meet their objectives, timeline, and budget. Performance assessments usually involve evaluating the PPP's financial performance, the project management's efficiency, and the quality of the services. This type of assessment is typically conducted during the implementation phase of the PPP. It aims to identify any issues or challenges that may arise and recommend solutions to improve the project's implementation. This is usually done through monitoring and supervision, as discussed above.

Effective monitoring and evaluation require clear and transparent contractual arrangements with defined roles and responsibilities for all stakeholders.¹⁷¹ The contract should include specific performance indicators and targets and transparent reporting requirements. The public partner should also have adequate resources and capacity to conduct monitoring and supervision activities.¹⁷² In addition to monitoring and supervision by the public off-taker, independent oversight mechanisms can also play an essential role in ensuring accountability and transparency in PPPs. These mechanisms may include external auditors, regulatory bodies, and citizen monitoring groups.

This paper presents the case for conducting systematic performance assessments of PPPs after implementation. Ex-post evaluations can help determine the effectiveness of PPPs in achieving their intended objectives, which can inform the design of future PPPs and pipeline development. For instance, governments in the region could leverage ex-post CBA and VFM studies for this purpose:

- **Ex post-CBA** could help PPP practitioners determine whether the net benefits estimated before the implementation of the PPP did materialize. These studies could also provide information on the appropriateness of the assumptions made to identify and quantify the costs and benefits associated with the PPP. In addition, an ex-post CBA could allow evaluators to include the costs and benefits of both negative and positive unintended effects that the project may have produced.

2023. https://www.eib.org/attachments/epec/epec_managing_ppps_en.pdf

171 Global Infrastructure Hub. 2023. "PPP Contract Management Report." Accessed on March 31, 2023. <https://managingppp.github.org/report/overview/>

172 Ibid

- **Ex-post VFM** can also provide valuable information on the appropriateness of the PPP model for the project. For example, officials could reassess the comparison of the PPP against the public sector comparator based on the actual costs and benefits of the project, including any risks that may have materialized during project implementation. However, an explicit limitation of this method is that the actual costs and benefits of the traditional public procurement option cannot be known with certainty.

The IDB’s PPP Network¹⁷³ has carried out studies on the performance of several PPP projects and programs in the region. For instance, the PPP Network recently evaluated the performance of road concessions in Peru against the scenario in which they would have been procured through a traditional public works scheme. The study used a propensity score matching (PSM) methodology, which guarantees the comparability between concession and non-concession roads.¹⁷⁴ This is how the study describes this methodology:

“This technique seeks to find, for each element of the treatment group, a similar element or elements of the control group, given their pre-observed characteristics. Thus, using the values of these characteristics, the probability of participation in the program is calculated for each treatment and control unit, which is called the propensity score. This probability of participation allows the construction of a dummy control group statistically comparable to the treatment group, with which the respective pairing can be performed. This technique matches the unique characteristics that distinguish the control (to try to make them more alike) and treatment groups. That is, the PSM reduces the bias due to variable confounding that can be found in an estimate of the treatment effect obtained from the simple comparison of the results between units that received the treatment versus those that did not.”¹⁷⁵

This study found that concessioned sections present fewer cost overruns and fewer delays than the non-concessioned sections. The impact of these concessions was also assessed in this study and will be presented in a later section. Box 2 offers an example of a performance assessment that allowed the IDB to measure the effectiveness of a performance-based contract in reducing non-revenue water (NRW) in New Providence, Bahamas.¹⁷⁶

173 The PPP Network has its origin in the PPP Risk Management Group, a regional public good available to the governments of the region dedicated to generating a space for exchange and cooperation among public-private financing specialists on the management of associated risks. With this foundation, the PPP Network expands the scope of analysis and best practices for the development of projects, and it counts with the knowledge and expertise of several recognized centers which work in the analysis of infrastructure: from the regulatory, fiscal, and institutional frameworks, to feasibility analysis and structuring of projects, and also covering the most relevant issues of financing and risks for the region. Source: PPP Network. <https://reddeapps.org/en/sobre-la-red/quienes-somos/>

174 IDB. 2021. “Asociaciones público-privadas versus obra pública: Una comparación para el caso de redes viales en Perú y la región.” Accessed on April 1, 2023 <https://publications.iadb.org/es/asociaciones-publico-privadas-versus-obra-publica-una-comparacion-para-el-caso-de-redes-viales-en>

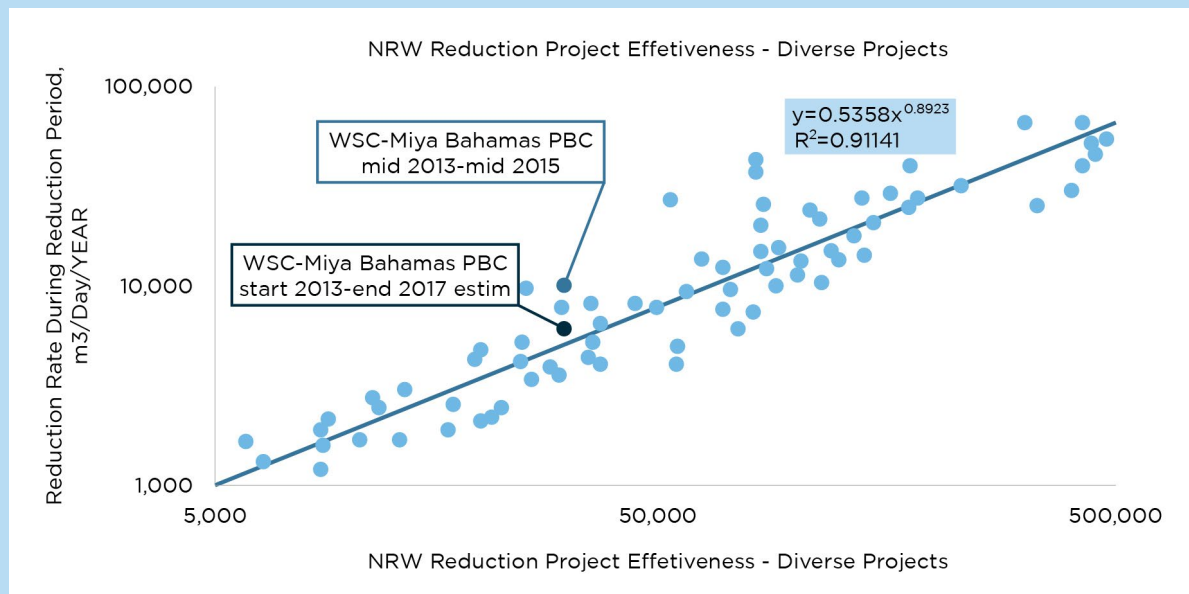
175 Ibid

176 IDB. 2018. “Case Study: Performance-based Contract for NRW Reduction and Control New Providence, Bahamas.” Accessed on April 1, 2023 <https://publications.iadb.org/en/case-study-performance-based-contract-nrw-reduction-and-control-new-providence-bahamas>

Box 2. Example of Successful Performance of a PPP in the Water Sector: The Case of a Performance-based Contract for NRW Reduction and Control in New Providence Bahamas

In 2018, the IDB prepared a case study that assessed the performance of a non-revenue water (NRW) reduction project carried out through a performance-based contract (PBC) in New Providence, Bahamas. The comprehensive financial assessment carried out in the study demonstrated that the project would be self-sufficient within the PBC period. Furthermore, the analysis revealed that the considerable financial and operational advantages of a swift NRW reduction project outweighed those of a traditional NRW undertaking— even at a lower overall expense. While the Bahamas Water and Sewerage Corporation (WSC) would benefit from reduced NRW and enhanced service quality, a tariff increase is necessary, although it had been delayed for a long time.

In this study, the IDB measured effectiveness as the rate of NRW reduction in the PBC, which as then compared to the author’s database of numerous NRW projects that tackle both actual and apparent losses. Two periods were selected for analysis: the primary reduction phase from mid-2013 to mid-2015 and the period from the beginning of 2013 to the projected end of 2017. The figure below presents the findings, which indicated a substantial decrease in NRW. The study attributed this outcome to precise baseline data, a well-planned approach, and successful implementation of the program.



Source: IDB. 2018. “Case Study: Performance-based Contract for NRW Reduction and Control New Providence, Bahamas”. Accessed on April 1, 2023 <https://publications.iadb.org/en/case-study-performance-based-contract-nrw-reduction-and-control-new-providence-bahamas>

Ex-post performance assessments are usually methodologically complex, costly, and often not regarded as crucial as ex-ante studies. This could undermine the allocation of resources needed to carry out these studies. To address these issues, the IDB is developing a methodology to assess the performance of PPPs in LAC. This methodology aims at being as

cost-efficient as possible and reducing the need for other resources, such as the number of evaluators. This tool will be presented at PPP Americas 2023 as part of the panel discussions.

Assessing Impact

Assessing impact is key to estimating PPPs' overall social and economic effects, which can help inform policy, regulatory and institutional decisions. Measuring impact, as opposed to performance, focuses on the broader, longer-term effects of the PPP project on the economy, society, and the environment. Impact assessments are usually conducted after the PPP has been completed or in operation for a couple of years, and its results can be observed over time. For example, the impact assessment may include the evaluation of the PPP's contribution to economic growth, job creation, poverty reduction, improved quality of life, enhanced inclusion outcomes, and environmental sustainability.

The impact assessment results can inform policy and regulatory decisions, such as designing future PPP pipelines, establishing performance targets and indicators, and developing monitoring and evaluation frameworks. Impact assessment can also help to identify areas where institutional reforms or capacity building may be needed to improve the effectiveness and efficiency of PPPs. By assessing the impact of PPPs, policymakers can make informed decisions about which sectors to invest in and how to design and implement them to maximize social and economic benefits while minimizing risks and costs. Impact assessment can also help to build public trust and confidence in PPPs by providing evidence of their effectiveness and accountability.

For instance, the IDB study on road concessions in Peru mentioned above found that the concessioned sections had lower rates of accidents, injuries, and fatalities than those not concessioned. The average yearly expense per accident on the concessioned highways between 2015 and 2019 was USD 65.72 million, compared to USD 254 million for non-concessioned highways. This suggests that Peru could save around USD 189 million annually if all highways were under a concession due to reduced traffic accidents.¹⁷⁷ These are clear positive impacts that can be communicated to the broader public, and that could not have been elucidated without impact assessments. This was corroborated by panelists from the private sector, who highlighted the importance of measuring impact to show communities the benefits of infrastructure projects, such as those improving water supply and sanitation services. Panelists also mentioned the crucial role that impact assessments play in guiding social and private investments to maximize the projects' social and economic benefits.¹⁷⁸

Moreover, further IDB studies have shown that PPP projects have positive fiscal impacts. According to these surveys, PPPs can not only eliminate the necessity for the public sector to commit significant resources but also have the potential to generate revenue for

177 IDB. 2021. "Asociaciones público-privadas versus obra pública: Una comparación para el caso de redes viales en Perú y la región." Accessed on April 1, 2023. <https://publications.iadb.org/es/asociaciones-publico-privadas-versus-obra-publica-una-comparacion-para-el-caso-de-redes-viales-en>

178 Insights provided during the third PPP Talk by Carlos Almiro Melo who leads BRK's ESG Strategy and Corporate Risk Cycle.

the states.^{179,180} As a result, this can create fiscal room for other public sector projects or current expenditures. Projects such as ports and airports in the region serve as excellent illustrations of such initiatives since they can generate fees while also enhancing the quality of services provided.^{181,182}

However, impact assessments are currently not being carried out systematically by LAC governments. According to the 2021/22 Infrascopes Index, a benchmarking tool commissioned by the IDB that evaluates the readiness and capacity to implement sustainable and efficient PPPs found that 19 out of 26 countries in the region failed to score on any of the three indicators related to impact evaluations—evaluating PPP performance against climate change goals, evaluating performance against the SDGs, and requiring PPPs to actively incorporate elements of “future-proofing” (for example, resilience or adaptability) into their design.¹⁸³ Overall, 14 countries have no documented proof of conducting ex-post evaluations of their PPPs.¹⁸⁴ This shows the low priority governments in the region are giving to impact assessment of PPPs, despite their clear benefits.

Evaluating the impact of PPPs and, in general, infrastructure projects is a challenging task, mainly due to the difficulty in constructing an appropriate counterfactual. A counterfactual can be understood as what would have happened—what the outcome of a project would have been for the project beneficiaries—in the absence of the project.¹⁸⁵ A counterfactual is needed to compare and isolate the impact of development programs and projects, but establishing one for a specific project is difficult given the several factors that are in play in most infrastructure sectors. Therefore, evaluation experts usually rely on a combination of the following approaches to assess the impact of infrastructure projects and, therefore, PPPs:¹⁸⁶

- **Constructing a counterfactual based on similar countries and time series data.** This approach involves identifying an example of a similar country or region lacking the infrastructure being evaluated. For instance, an evaluator could assess the impact of an airport in terms of increased exports or higher tourism revenue in a determined region by comparing it to a region that lacks an airport.

179 IDB. 2020. “Public-Private Partnerships in Airports in Latin America and the Caribbean: Main Figures and Trends in the Sector.” Accessed on April 1, 2023. <https://publications.iadb.org/en/public-private-partnerships-airports-latin-america-and-caribbean-main-figures-and-trends-sector>

180 IDB. 2020. “Public-Private Partnerships in Ports: Main Figures and Trends in Latin America and the Caribbean.” Accessed on April 1, 2023. <https://publications.iadb.org/en/public-private-partnerships-ports-main-figures-and-trends-latin-america-and-caribbean>

181 IDB. 2020. “Public-Private Partnerships in Airports in Latin America and the Caribbean: Main Figures and Trends in the Sector.” Accessed on April 1, 2023. <https://publications.iadb.org/en/public-private-partnerships-airports-latin-america-and-caribbean-main-figures-and-trends-sector>

182 IDB. 2020. “Public-Private Partnerships in Ports: Main Figures and Trends in Latin America and the Caribbean.” Accessed on April 1, 2023. <https://publications.iadb.org/en/public-private-partnerships-ports-main-figures-and-trends-latin-america-and-caribbean>

183 IDB and Economist Impact. 2022. “The 2021/22 Infrascopes. Evaluating the environment for public-private partnerships in Latin America and the Caribbean.” Accessed on April 1, 2023. <https://impact.economist.com/projects/infrascopes>.

184 Ibid.

185 Gertler, Paul J.; Martinez, Sebastian; Premand, Patrick; Rawlings, Laura B.; et al. “Impact Evaluation in Practice.” Second Edition.

186 World Bank. 2011. “Strategies for Evaluating the Impact of Big Infrastructure Projects: How can we tell if one big thing works?” Accessed April 25, 2023. <https://blogs.worldbank.org/impacetevaluations/strategies-for-evaluating-the-impact-of-big-infrastructure-projects-how-can-we-tell-if-one-big-thing>

- **Constructing a counterfactual based on different industries.** This approach evaluates the impact of an infrastructure asset by comparing beneficiary industries to industries that will not likely benefit from the asset. For example, the evaluator could assess the effects of an airport in terms of increased exports for businesses that export their products through air freight, such as flower exporters. Conversely, the counterfactual could be businesses that do not rely on air freight, instead exporting most of their products through maritime transport, such as food exporters.
- **Working through causal chains.** This approach involves the evaluator thinking through the logic chain needed for a project to have the impact being evaluated. This approach also requires establishing falsifiable predictions along the causal chain. Identifying an appropriate counterfactual and eliminating alternative explanations is also crucial when using this approach.

SECTION 8

CONCLUSION

As argued throughout the sections above, PPPs can be leveraged to achieve objectives on mitigation and adaptation to climate change, improve digital infrastructure and public services, promote the efficiency of supply chains, create more and better jobs, and enhance inclusivity outcomes in the region. However, successful implementation of PPPs in these areas requires careful planning, transparent governance, and a robust institutional and regulatory framework to balance public and private interests and manage risks, bankable structures, and accountability. Moreover, measuring the performance and impact of past PPPs will allow governments in the region to understand whether these projects are generating value for money and provide lessons for future PPPs.

These six themes will be further discussed during the five plenary sessions and 12 panels of the PPP Americas 2023 conference to provide more insights into these crucial topics. These discussions will provide a holistic view of why LAC's public and private sectors must consider these aspects when working together toward SDG achievement and addressing the region's current and future infrastructure challenges.

Everyone is invited to participate in PPP Americas 2023 on July 18, 19, and 20 through the [PPP Americas virtual platform](#) and join the discussion.