DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

HOUSING AND URBAN DEVELOPMENT

SECTOR FRAMEWORK DOCUMENT

HOUSING AND URBAN DIVISION

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CONTENTS

ABBREVIATIONS	
ADB	Asian Development Bank
AfDB	African Development Bank
AUP	Adaptive Urban Planning
BIM	Building Information Modeling
BRT	Bus Rapid Transit
CAC	Control and Command policies
CAF	*Corporacion Andina de Fomento*
CCAC	Climate and Clean Air Coalition
CDC	United States Center for Disease Control and Prevention
CO_2	Carbon Dioxide
CONAVI	National Housing Commission
CPTED	Crime Prevention Through Environmental Design
DDPLAC	Deep Decarbonization Pathways in Latin America
EBRD	European Bank for Reconstruction and Development
EIU	The Economist Intelligence Unit
EU	European Union
ESCI	Emerging and Sustainable Cities Initiative
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GLA	Great London Authority
HDI	Human Development Index
HUD	Housing and Urban Development Division
IDB	Inter-American Development Bank
ICT	Information and Communication Technologies
IIED	International Institute for Environment and Development
INFONAVIT	*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*
IPCC	Intergovernmental Panel on Climate Change
LBGTQ	Lesbian, Gay, Bisexual, Transgender and Queer
NAMA	National Appropriate Mitigation Action
NBS	Nature Based Solutions
OECD	Organisation for Economic Co-operation and Development
OVE	Office of Evaluation and Oversight of the IDB
PAHO	Pan American Health Organization

ABBREVIATIONS	
PCR	Project Completion Report
PMR	Project Monitoring Report
SDG	Sustainable Development Goals
SFD	Sector Framework Document
SME	Small and medium-sized enterprises
TIF	Tax Increment Finance
TOD	Transit Oriented Development
ULEZ	Ultra-Low Emission Zone
UN	United Nations
UNDESA	United Nations Department for Economic and Social Affiars
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	The United Nations Children's Fund
WB	World Bank
WDI	World Bank data from World Development Indicators
WEF	World Economic Forum
WHO	World Health Organization
WRI	World Resources Institute

The cities in Latin America and the Caribbean (LAC) are changing and in so doing they are leading the transformation of the region. If current demographic trends continue, by 2050 more than 86 percent of the region's population will be living in cities (UN, 2018). Although the region's ten largest cities are home to one of every four households in LAC, fast growing mid-sized cities are increasingly important (Jedwab, Christiansen, and Gindelsky, 2015). At the same time, rural-to-urban migration is gradually being eclipsed by urban-to-urban migration. Currently, more than half of all urban migrants come from other cities (Bernard, Rowe, Bell, et al., 2017). In terms of urban form, 80 percent of LAC's cities have densities above the world average of 1,500 persons per square kilometer (Ferreira and Roberts, 2018). However, LAC cities are sprawling and increasing their consumption of natural resources and rural lands (Hasse and Lathrop, 2003). In fact, urban governance increasingly calls for a greater focus on metropolitan areas expanding over many municipalities that share one single labor market and cultural identity.

LAC cities have tremendous potential to lift people out of poverty, increase productivity, and change consumption patterns to protect the environment. However, cities are dual edged; they are often the epicenters of crises—as in the current COVID-19 pandemic—yet they are also where the tools to solve them originate. To fully benefit from the extent of urbanization, national governments need to proactively tackle urban challenges. More than ever, the ability of local communities and governments to quickly organize effective responses, protect their most vulnerable residents, and support local businesses are essential to maintaining social cohesion and building a better future for the region. Against this backdrop, the goal of this Housing and Urban Development Sector Framework Document is to promote fair, sustainable, and productive cities. To do so, LAC cities need to overcome the following four challenges:

Challenge 1. Structural Social Exclusion. Inequality in cities is persistent and deep. In many countries, including Chile, Brazil, and Argentina, inequality in the main cities is greater than for the country as a whole. And in many cities, including La Paz, Quito, and Santo Domingo, inequality has risen as the total number of people living in poverty has fallen (UN Habitat, 2016). Furthermore, the likelihood of living in an underserved or informal neighborhood depends on household ethnicity, birthplace, and other characteristics beyond the control of households. For example, in Colombia, in 2018, 28 percent of urban households that identified either as Indigenous or Afro-descendant resided in an informal neighborhood compared to 8 percent of households who identified as neither indigenous or Afro-descendant (World Bank, 2020a).

LAC has reduced the share of people living in informal neighborhoods from 26 percent in 2005 to 21 percent in 2015 (UN Habitat, 2016). However, the region cannot thrive while existing levels of spatial inequality continue. For example, informal neighborhoods have proven to be hotbeds for infectious diseases like COVID-19, zika, and dengue. Informal neighborhoods also correlate with the lack of access to adequate housing. Housing deficits affect 55 million LAC households—about 45 percent of the total population (Bouillon, 2012). Quasi-inelastic supply of land with services, rigid housing policies, and undeveloped credit markets constrain adequate housing supply. In fast growing cities, low-income households typically turn either to informal neighborhoods or overcrowding in formal neighborhoods. In rural settlements, housing deficit is often due to poor materials, which exposes residents to soil-transmitted and vector-borne diseases, such as Chikungunya and Chagas.

Safe public green spaces in LAC cities are undersupplied, and their distribution and quality are very uneven. The average green space area per inhabitant in the region is well below WHO's recommendation of 9 square meters per resident (IDB, 2015). LAC cities often lack inclusive planning. Gaps in urban service delivery particularly affect women, children, elders, and people with

disabilities. It is important to underscore that these shortcomings affect the *majority* of LAC's urban residents—a city that only responds to the needs of men ages 15 to 64 without any disability would only be serving about a third of its residents (Libertun, Mastellaro, Brassiolo, et al., 2020).

Challenge 2. Excessive Pollution and Low Climate Mitigation and Resilience. Cities can reduce emissions and improve quality of life by transforming their urban plans, built environment, and energy use. Globally, cities consume two-thirds of the world's energy resources, generate 70 percent of all waste, and emit 75 percent of all carbon dioxide from energy use (IPCC, 2014a). LAC contributes 8 percent of global greenhouse gas emissions, of which 45 percent is due to energy uses of all kinds (Audoly, Vogt-Schilb, Guivarch, et al., 2017). The region has made some progress in incorporating energy- and water-saving technologies in housing, but much remains to be done to reduce cities' environmental footprint. Also, LAC cities are very vulnerable to disasters triggered by natural hazards and climate change. Structural social exclusion, insufficient infrastructure, and weaknesses in governance hinders cities' resiliency. Informal neighborhoods are particularly vulnerable to flash floods, while many cities in LAC, including Mexico City, Lima, and La Paz, are already facing serious challenges in water management. Beyond the economic cost of direct and indirect climate impacts—which are estimated to be at least 3.8 percent of the region's GDP (EIU, 2020)—the region risks losing much of its unparalleled biodiversity due to climate change, high levels of pollution, and gaps in natural resource management.

Finally, pollution in LAC cities has a serious adverse effect on human health. In LAC, at least 150 million people live in cities that do not meet WHO guidelines for air quality; air pollution in the region causes more than 5 percent of all premature deaths. The main causes of air pollution are increasing motorization rates, limited public transport options, and obsolete regulations. Water pollution is also an urban concern. Only 31 percent of sewage is treated, with the remainder being discharged untreated into bodies of water in near proximity to cities (UNICEF and WHO, 2019). In addition, most of the solid waste is disposed in open dumps; poorly managed landfills pollute soil and water. Also, cities suffer high levels of environmental noise pollution, which cause health problems and lower real estate prices.

Challenge 3. Stagnating Urban Productivity. LAC's productivity is highly dependent on a handful of cities, which poses the risk that economic shocks in these cities could destabilize the region's entire economy. Overall, LAC cities are lagging in terms of their productivity levels, albeit with diverse results by subregion. While São Paulo and Buenos Aires have productivity levels comparable to those of OECD cities, most cities in Central America have productivity levels below the level expected for their size (Ferreira and Roberts, 2018). Sparse infrastructure among and within cities undermines productivity. The average daily commute in the 20 largest cities in LAC takes more than 90 minutes (IDB, 2020a). Also, cumbersome municipal regulations increase costs for small entrepreneurs and contribute to the persistence of labor informality, particularly in the construction sector. On average, obtaining a business license or a building permit or registering property takes 10 working hours (Roseth, Reyes, Farias, et al., 2018). In addition, LAC cities do not take full advantage of the opportunities that innovation in the built environment—such as use of Building Information Modeling—provides for increasing urban productivity (MGI, 2017).

Challenge 4. Weak Urban Governance. The weakeness of LAC institutions for urban governance is one of the main causes behind all other urban challenges. Moreover, it limits their capacity to tackle the complex and interdisciplinary issues they face. Most city governments have limited fiscal autonomy, insufficient financial and human resources, and little access to data and technology. On average, LAC cities' own revenues cover only about 30 percent of their total spending, compared with about 60 percent for OECD countries and 75 percent for emerging economies in Asia (Fretes Cibils and Ter-Minassian, 2015). They tend to have low credit rating scores and limited access to credit markets.

Another concern is developing strong institutional arrangements among cities, and between cities and national governments. Although better metropolitan coordination correlates with higher per capita income growth, only half of the region's 54 metropolitan areas have metropolitan governance bodies (Pinzón and de Souza, 2016). Moreover, lack of institutional coordination diminishes the effectiveness of emergency responses for dealing with health and disasters triggered by natural hazards and climate change. Community engagement is critical for the long-term social and fiscal sustainability of projects. Yet, actual citizen participation in LAC cities is quite low; less than 8 percent of LAC municipal residents participate regularly in municipal councils (Nickson, 2016). Further, urban leadership is still behind in terms of using digital technologies to establish an open dialogue with residents.

To fully benefit from the extent of urbanization, LAC's national and subnational governments need to work proactively with local residents and the private sector to improve the performance of cities. To support this goal, this Sector Framework Document recommends policies and programs for cities to: (i) overcome structural social exclusion by upgrading underserved and informal neighborhoods, supporting access to adequate housing and expanding the provision of safe public spaces for all; (ii) reduce environmental degradation and boost climate mitigation and resiliency by reducing air, water, soil, and noise pollution, incorporating the net-zero emission goal in urban areas, and promoting disaster and climate change resilience; (iii) boost urban productivity by supporting comprehensive urban infrastructure, streamlining urban regulations, and promoting innovation in the built environment; and (iv) promote good urban governance by strengthening fiscal and data management capacity, improving coordination among territorial units, and fostering citizen participation.

I. THE SECTOR FRAMEWORK DOCUMENT IN THE CONTEXT OF CURRENT REGULATIONS, THE INSTITUTIONAL STRATEGY, AND INTERNATIONAL AGREEMENTS

A. The Housing and Urban Development Sector Framework Document in the context of current regulations and the Institutional Strategy

1.1 The Housing and Urban Development Sector Framework Document guides the work carried out by the Inter-American Development Bank Group (IDBG) alongside the countries of Latin America and the Caribbean (LAC) in the development of fair, sustainable, and productive cities. Specifically, this Sector Framework Document (SFD) aims to promote cities that: (i) overcome structural social exclusion;[1] (ii) reduce their pollution levels and improve their climate mitigation and resiliency levels; (iii) boost their productivity; and (iv) improve their governance.

1.2 This document has been prepared in accordance with the document "Strategies, Policies, Sector Framework, and Guidelines in the IDB" (GN-2670-5), which states that SFDs should be updated periodically; this SFD replaces the Housing and Urban Development (HUD) SFD aproved in 2016 (GN-2732-6). This SFD further emphasizes the role cities play in achieving national development goals, more proactively promotes the participation of the private sector and the adoption of technological innovation in HUD projects, and aims to mainstream gender and diversity and environmental sustainabilty in all its line of actions. This SFD is closely related with the issues developed on the Water and Sanitation SFD (IDB, 2017d), Environment and Biodiversity SFD (IDB, 2018a), Transportation SFD (IDB, 2020a), and Decentralization and Subnational Governments SFD (IDB, 2018d). Also, for issues related to social exclusion, this SFD complements the insights provided in the Health and Nutrition SFD (IDB, 2016a), Social Protection and Poverty SFD (IDB, 2017a), Citizen Security and Justice SFD (IDB, 2017b), Gender and Diversity SFD (IDB, 2017). For issues related to Climate Change and pollution, this SFD aligns with the Agriculture SFD (IDB, 2019a), Climate Change SFD (IDB, 2018b), and Energy SFD (IDB, 2018c). For issues related to boosting productivity, it relates to the Labor SFD (IDB, 2016b), Tourism SFD (IDB, 2017e), Innovation, Science and Technology SFD (IDB, 2017f), and Support to SMEs and Financial Access SFD (IDB, 2017g). Lastly, for issues related to improving urban governance, this document pairs with the Fiscal Policy and Management SFD (IDB, 2018e), and Transparency and Integrity SFD (IDB, 2020b).

1.3 This Housing and Urban Development SFD is consistent with Update to the Institutional Strategy (AB-3190-2), as it helps address two of the three structural challenges faced by the region: (i) reducing social exclusion and inequality; and (ii) boosting productivity and innovation. It also contributes to the crosscutting theme of addressing climate change and improving environmental sustainability. This document also relates to the Strategy on Social Policy for Equity and Productivity (GN-2588-4), which aims to strengthen the Bank's effectiveness in promoting social policies that increase equality and productivity; to the Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1), which promotes sustainable use of natural resources and resilient territorial development patterns; and to the strategy on Sustainable Infrastructure for

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[1] Underlined terms are defined in Annex IV.

Competitiveness and Inclusive Growth (GN-2710-5), which supports infrastructure to promote prosperity for all.

B.   The Housing and Urban Development Sector Framework Document in the Context of International Agreements

1.4   This SFD aligns with a number of the United Nations' (UN) [Sustainable Development Goals](#) (SDGs) for the year 2030. It aligns with SDG 11 *"Make cities and Human Settlements Inclusive, Safe, Resilient, and Sustainable."* It also plays an important role in attaining SDG 1 *"End Poverty in All Forms Everywhere"* because the majority of low-income households in LAC reside in cities; SDG 6 *"Clean Water and Sanitation,"* since the majority of households lacking these services are located in an urban municipality and good city planning can reduce the cost of providing them; SDG 8 *"Decent Work and Economic Growth,"* given that the search for economic opportunities is one of the leading reasons to migrate to cities and that informal working arrangements affect a sizable portion of LAC's urban residents and also because increases in urban productivity will lead to better jobs; SDG 9 *"Industry, Innovation, and Infrastructure,"* as cities are hubs for creativity and ingenuity; SDG 10 *"Reduced Inequalities,"* given that LAC cities exhibit persistent inequalities; SDG 12 *"Responsible Consumption and Production"* because the behavior of urban households impacts heavily on global consumption and production patterns; SDG 13 *"Climate Action,"* as cities are the largest [Greenhouse Gas](#) (GHG) emitters and polluters; and SDG 16 *"Peace, Justice, and Strong Institutions,"* considering cities are the terrain for collective social action. Likewise, this SFD aligns with the UN New Urban Agenda (UN, 2016), which supports *"building cities that can serve as engines of prosperity and centers of cultural and social well-being while protecting the environment."* Also, this document recognizes the role that cities play in reaching the goals set out in the [COP 21: 2015 Paris Agreement on Climate Change](#) because effective decarbonizing requires a new emphasis on actions below the national level (see [Annex V](#)).

1.5   The rest of the document proceeds as follows. Section II describes the main challenges in developing fair, sustainable, and productive cities. Section III presents international evidence and case studies on the effectiveness of policies and programs that addressed the challenges identified in Section II. Section IV summarizes the lessons learned from the IDBG experience. Finally, Section V presents the lines of action that will serve as a reference to the IDBG in supporting LAC in addressing the challenges identified in Section II.

II.   MAIN CHALLENGES IN THE HOUSING AND URBAN DEVELOPMENT SECTOR

2.1   LAC's cities are changing and in so doing they are leading the transformation of the region. If current demographic trends continue, by 2050 more than 86 percent of the region's population will be living in cities (UN, 2018). Fast growing mid-sized cities are increasingly important. Although the region's ten largest cities are home to one of every four households in LAC, ten mid-sized cities are now home to one of every five households (Jedwab et al., 2015). At the same time, rural-to-urban migration is gradually being eclipsed by urban-to-urban migration. Currently, more than half of all urban migrants come from other cities (Bernard, Rowe, Bell, et al., 2017). In terms of urban form, 80 percent of LAC's cities have densities above the world average of 1,500 persons per square kilometer (Ferreira and Roberts, 2018). However, LAC cities are sprawling and increasing their consumption of natural resources and rural

lands (Hasse and Lathrop, 2003). At the national level, it is important to promote balanced growth that take into account the economic and social interactions between rural and urban areas. At the city level, urban governance increasingly calls for a greater focus on metropolitan areas expanding over many municipalities that share one single labor market and cultural identity (See Annex I).

2.2 **Rates of urbanization in LAC Differ among nations and subregions.** Urbanization is highest in the Southern Cone, where 84.6 percent of the population lives in urban areas, with Paraguay as an outlier at 61.6 percent. In the Andean group it is 76.0 percent, with the lowest rate in Ecuador at 63.8 percent. Central America has an average urbanization rate of 68.4 percent, with Mexico at 80.2 percent and Guatemala, Honduras, and Nicaragua all below 60 percent. The average for the Caribbean group is 42.4 percent, with highly diverse urbanization rates, ranging from 26.6 percent in Guyana to 53.2 percent in Trinidad and Tobago and 55.3 percent in Haiti (Figure 1).[2] Out of the 10 largest cities in LAC, five are in the Southern Cone (three in Brazil), three are in Central America (all of them in Mexico) and two are in the Andean group. In the Carribean group, there is only one city among LAC 100 largest cities.[3]

2.3 LAC cities have tremendous potential to lift people out of poverty, increase productivity, and change consumption patterns to protect the environment. However, cities are dual edged; they are often the epicenters of crises, yet they are also where the tools to solve them originate. To fully benefit from the extent of urbanization, national governments need to proactively tackle urban challenges. In LAC, informal neighborhoods are still home to more than a fifth of urban residents, some 55 million households lack access to adequate housing, and inequalities are deeply entrenched within cities.

2.4 **Against this backdrop, the goal of this SFD is to promote fair, sustainable, and productive cities.** Unfortunately, there is a paucity of studies and data on cities because most data are collected at national and state levels. Despite this difficulty, some general trends are clear, and some important lessons emerge from specific examples. This document is organized around the main challenges linking cities with some of LAC's main development goals: social inclusion and equality, climate and environmental sustainability, productivity and innovation, and institutional capacity and governance. The scale and complexity of these challenges are daunting. Nonetheless, LAC can capitalize on the depth of its experience with urbanization as well as on its ingenuity to transform these challenges into growth opportunities.

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[2] Tables and figures are included in Annex II.
[3] IDB member countries per region category: Central America (CID): Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua and, Panama; Andean Group (CAN): Bolivia, Colombia, Ecuador, Peru and, Venezuela; Southern Cone (CSC): Argentina, Brazil, Chile; Paraguay and, Uruguay; Caribbean Group (CCB): Bahamas, Barbados, Guyana, Jamaica, Suriname and, Trinidad and Tobago.

Box 1. LAC Cities and the COVID-19 Pandemic

Because cities are home to most of LAC's households, they have become the foci of COVID-19 cases. It is still too early to fully understand the impact of this pandemic on the region's cities, or to identify policies that will most successfully reduce its negative impacts and reactivate local economies. Looking forward, it is important to monitor: (i) how urban dynamics will be changing in order to support cities be engines of regional development in the next years; and (ii) how housing standards could respond to post COVID-19 household needs. Thus far, COVID-19 has made more salient the challenges LAC cities face and more urgent the call to address them. For example, residents living in dense informal neighborhoods that lack access to basic water and sanitation services are extremely exposed to COVID-19, while at the same time their economic precariousness hinders their access to compensatory monetary support (Blackman, Ibáñez, Izquierdo, et al., 2020). Likewise, lacking effective mechanisms to share data among local and national governments is an extra hurdle to managing the spread of the disease. Currently, many of LAC's social gains are at risk of being lost due to these and other extra challenges that COVID-19 is imposing on urban health and economic systems. More than ever, effective and representative urban governance, and access to information and communication technologies (ICT), are needed to protect vulnerable residents, support local businesses, and maintain the roots of social cohesion.

COVID-19 and the measures taken to prevent its spread have also changed how people interact with their urban environment, including valuation of residential and commercial real estate, and use of massive public transport systems. There is some early evidence of increasing demand for single family homes—as opposed to multifamily buildings—and a preference to commute by car. If these trends become the norm, they are likely to accelerate urban sprawl and traffic congestion at the same time as they increase social and commercial interactions within neighborhoods. In addition, they may impact the fiscal resources of municipalities, creating pockets of wealth and poverty in metropolitan areas. Additionally, since COVID-19, both urban governments and businesses have increased their reliance on ICT for delivering their services. The use of ICT and the changes in habits in the urban workforce will remain critical for cities' recovery phase and elicits reflections on issues of privacy rights and universality of internet access (OECD, 2020). Likewise, the housing construction industry will be critical for reactivating local economies, providing employment opportunities to a wide diversity of sectors and trades and providing new fiscal revenue opportunities to local governments.

A. Challenge 1. Structural Social Exclusion

2.5 **Although urbanization provided a rapid pathway out of poverty for millions of households, income inequality persists.** Between 2000 and 2018, the share of urban households in LAC with a daily per capita income below $5.50 fell 42 percent (from 31 percent to 18 percent). By contrast, the share in rural areas fell only 23 percent (from 77 percent to 59 percent) (World Bank, 2020a). Even so, inequality within LAC's cities is high (OECD, 2018). On average, the Gini coefficients of cities in the region are higher than for cities in other emerging regions, with only some cities in Africa exhibiting higher Ginis than the most unequal LAC cities (Figure 2). Additionally, several cities, such as Belo Horizonte, Rio de Janeiro, Fortaleza, Goiania, Brasilia, and Curitiba in Brazil; Quito in Ecuador; and Mexico City in Mexico, have Gini coefficients that show even deeper inequalities than for the countries themselves (Figure 3). Overall, within each country, there is great disparity in terms of income inequality within cities. For example, in Brazil, in 2010, while the average city had a Gini coefficient of 0.45, this measure ranged from 0.23 in them most equal to 0.80 in the most unequal city (Chauvin and Messina, 2020). In some cities, such as Santiago de Chile and Buenos Aires, income inequality has risen despite the fall in the total number of people living in poverty (UN Habitat, 2016).

2.6 **Income inequality is just one of the many facets of structural social exclusion of LAC cities.** Social exclusion stems from persistent unequal power relationships across economic, political, social, and cultural dimensions, which, in turn, results in unequal access to urban rights, opportunities, and resources. Social exclusion operates on different levels, including the neighborhood level (e.g., access to basic

services and healthy environments) and the household level (e.g., access to housing and political participation) (WHO, 2020). In LAC, social exclusion has a clear spatial component. Exogenous characteristics, such as ethnicity and birthplace, are highly correlated with household location within the city (Kaltmeier and Breuer, 2020). For example, in 2018 in Colombia, 28 percent of urban households that identified as Indigenous or Afro-descendant resided in an informal neighborhood compared to 8 percent of households who identified as neither indigenous or Afro-descendant. Similarly, this difference was 34 percent vs. 19 percent in Brazil, and 13 percent vs. 5 percent in Mexico (World Bank, 2020a). This type of locational sorting helps explain the persistence of inequality in LAC's cities (Chauvin and Messina, 2020). Location matters for intergenerational social mobility and for children's education attendance rates and future earnings (Chetty and Hendren, 2018). It also matters for individual health and longevity. Even after controlling for key variables, the life expectancy of women living in the neighborhoods in the lowest decile of income of Santiago de Chile is 18 years less than for those living in neighborhoods at the top income decile. Significantly lower life expectancy has also been documented for poorer areas of Panama City, Mexico City, Belo Horizonte, and Buenos Aires (Bilal, Alazraqui, Caiaffa, 2019) (Figure 4).

2.7   Social exclusion in cities is perpetuated and reinforced by the persistence of informal and underserved neighborhoods, limited access to adequate housing, and unsafe and inaccessible public space. The specific dynamics of each of these spatial configurations is as follows:

a. **Persistence of underserved and informal neighborhoods.** LAC has made progress in reducing the number of people living in informal neighborhoods from 25.5 percent in 2005 to 20.4 percent in 2014. It is estimated that currently at least 105 million people reside in these neighborhoods (World Bank, 2020a). These neighborhoods lack access to one or many basic municipal services, including electricity, water, and sanitation; safe public spaces; and suitable education and health management services. For example, in Argentina, it is estimated that more than 98 percent of households in informal neighborhoods lack access to municipal sewerage services and almost 94 percent lack a connection to water services. Further, only 30 percent had access to some health services in the past 12 months (RENABAP, 2020). These neighborhoods are also often the loci of a vibrant informal economy and where migrants locate. 32 percent of migrants in Colombia and 36 percent of migrants in Costa Rica lack acess to adequate housing; 16 percent of migrants in Ecuador are homeless and 60 percent of migrants in Colombia co-habitate with another household (Elias, Granada, Pombo et al., 2020). Within countries, the prevalence of underserved neighborhoods varies drastically from city to city. For example, in Panama, the percentage of households that have access to safe sewerage in a given city varies from more than 95 percent to less than 30 percent (Chauvin and Messina, 2020) (see Figure 5). In addition, these neighborhoods are often located on hillsides, ravines, or riverbanks vulnerable to landslides and floods (Romero-Lankao , Wilhelmi, and Chester, 2018). If they are informal, they also lack legal ownership of the land they occupy (UN Habitat, 2015). The inadequate sanitary infrastructure in these neighborhoods makes them hotbeds for endemic diseases, such as malaria, zika, and dengue. For example, a georeferenced study of dengue cases in Rio de Janeiro identified a correlation between the presence of informal neighborhoods and the main loci of infections (Rodriguez-Barraquer, Costa, Nascimento, et al., 2019). Likewise, in Salvador

de Bahia, the risk of leptospirosis is four times higher for households lacking sanitation (Hagan, Moraga, Costa, et al., 2016). These shortcomings make informal neighborhoods ill prepared for the COVID-19 pandemic, as poor housing conditions make self-quarantine impractical and the rapid spread of infection highly likely (Corburn, Vlahov, Mberu, et al., 2020).

b. **Limited access to adequate housing.** Most updated comparable data in the region show that housing deficits affect 55 million LAC households, or about 45 percent of the total population in the region (Bouillon, 2012). Overall, there is a slow but positive trend toward a reduction in the region's housing deficit. Argentina and Brazil reduced the deficit from 32 percent in 2011 to 26 percent in 2018; Bolivia, from 64 percent in 2011 to 58 percent in 2018; Mexico, from 28 percent in 2010 to 23 percent in 2015; and Peru, from 60 percent in 2012 to 40 percent in 2017 (see Table 2). However, at the current pace, it will take more than 30 years to close LAC's housing deficit. The incidence of housing deficits varies by country, affecting less than 15 percent of the population in Costa Rica and Chile, and more than 55 percent in Bolivia. In all countries, a third of all households with housing deficits are in the lowest income quintile (UN Habitat, 2016). In general, qualitative deficits (inadequate building materials, lack of access to basic services, overcrowding, and inadequate property title) affect 75 percent of households in deficit, while the rest is classified as quantitative (improvised dwellings or cohabitation) (Bouillon, 2012). The type of qualitative deficits depends on city characteristics. For example, large cities with expensive land values show more overcrowding, while smaller cities have a higher percentage of households lacking basic services (CAF, 2018). Also, at all levels of income, women are less likely to own both land and housing. For example, only 13 percent of women in Peru report owning land individually. Similar patterns are present in other countries in the región, such as 14 percent in Honduras, 20 percent in Nicaragua and 24 percent in Haiti (WEF, 2017). An array of factors contributes to housing deficits, including quasi-inelastic supply of land with services, policies that favor housing that is in low demand and that do not support rental markets, and underdeveloped mortgage markets. Basic urban infrastructure is undersupplied in the region. For example, only 79 percent of urban households in Panama have sewerage services, only 74 percent in Brazil, and only 44 percent in Nicaragua (World Bank, 2020a). The combination of under-serviced land and population growth boosts land prices, which in turn leads to more expensive housing prices in the formal market. From 1994 to 2004, the contribution of the cost of land to overall housing costs increased from 7 percent to 20 percent (Brain and Sabatini, 2006). Priced-out households turn either to informal neighborhoods or subpar housing arrangements in formal markets, such as households with overcrowding or cohabitation (Ferreira and Roberts, 2018). In addition, housing policies have also often misallocated resources by supporting affordable housing in peri-urban locations, where land is cheaper but housing demand is limited (Libertun, 2018). For example, in 2014 in Mexico, one of every seven affordable homes built, or five million units, was vacant (Monkkonen, 2014). National policies have promoted home ownership over rental housing, which increases the costs and limits the adequacy of housing solutions, for example for migrant workers and younger households (Blanco, Fretes Cibils, and Muñoz, 2014). Mortgage markets remain undeveloped. In the six most financially open LAC economies (Brazil, Chile, Colombia, Mexico, Peru, and Uruguay), mortgages average just 7 percent of

GDP compared to over 20 percent in emerging Asia and over 65 percent in the United States (Cubeddu, Tovar, and Tsounta, 2012). In terms of rural housing deficits, it is important to underscore the continuum between rural and urban designations. Many national censuses classify settlements with more than 2,000 people as urban, even as they are embedded in an agricultural economy. Conversely, rural settlements within daily commuting distance of cities may be considered urban, even if the census records them as rural (Chomitz, Buys, and Thomas, 2005). Regardless of the national level of urbanization, rural households suffer a disproportionately high level of housing deficits (UN Habitat, 2011). For example, in Brazil, the rural population accounts for less than 15 percent of the total population but for 19 percent of the total housing deficit. In El Salvador, the rural population accounts for less than 45 percent of the total population but for 75 percent of the total housing deficit. The most prevalent type of rural housing deficit is inadequate building materials and a lack of basic infrastructure. As a consequence, rural populations in housing deficit are highly vulnerable to what have been called the neglected diseases of neglected populations, including vector-borne and soil-transmitted illnesses, such as Chagas, Chikungunya, and trachoma (WHO, 2003).

c. **Insufficient provision of safe public spaces for all.** Almost 40 percent of LAC's urban population reports having been victims of a crime, which disproportionately affects youth and women (Vilalta, Castillo, and Torres, 2016). LAC cities are undersupplied with safe public green spaces, and their distribution and quality are largely uneven. Apart from a few cities like Curitiba and Brasilia, in the region, the average green space per inhabitant is well below WHO's recommendation of 9 square meters. For example, Mexico City has less than 3.5 square meters per resident and Buenos Aires has less than 1.9 meters (IDB, 2015). In addition, many of these spaces are underused because residents fear being victims of crime (Capirolo, Granguillhome Ochoa, Keefer, et al., 2017). Unsafe public spaces also correlate with a lack of inclusive plans that consider the needs of the whole population. For example, even if women use significantly more public transportation and walk more than men, most urban transport systems do not take their mobility needs into account (Rivas, Alemans Suarez, and Serebrisky, 2019). Therefore, women usually walk through poorly lit areas and have to combine many means of transport to get to their destination, which makes them more likely to be victims of sexual violence (Moser, 2017). Recent surveys in the region show that 60 percent of LAC women has suffered sexual harassment when using public transport (Crotte Granada, Ortiz, et al., 2019). Likewise, gaps in urban service delivery particularly affect people with disabilities. Children with disabilities are four times more likely to experience violence that non-disabled children (Hughes, Bellis, Jones, et al., 2012). It is important to recognize that these shortcomings affect *the majority of* the urban population in LAC. In other words, according to the most recent demographic data, a city that only responds to the needs of men ages 15 to 64 without any disability would only be serving a third of its residents (Libertun et al., 2020).

B. Challenge 2. Excessive Pollution and Low Mitigation and Resilience Levels

2.8 **Cities hold the key to changing the way we interact with our planet and use its resources** (Rees, 2017). Environmental issues that need to be tackled on the scale of cities in LAC include high levels of pollution, which affect the heath of urban

residents; the absence of plans to enable a transition to a net-zero carbon economy, which undermines regional efforts to reduce GHG emissions; and the lack of disaster and climate change resilient development, which exposes residents to serious climatic events.

a. **Increasing air, water, soil, and noise pollution.** According to the World Health Organization (WHO), every year, three million deaths worldwide can be attributed to air pollution, and 90 percent of people in the world breathe low-quality air (WHO, 2016). There is a paucity of up-to-date data on pollution in LAC, particularly at the city level. Most recent data for LAC estimates that at least 150 million people live in cities that do not meet WHO guidelines (Riojas Rodriguez, da Silva, Texcalac-Sangrador, et al., 2016). In the region, air pollution causes more than 170,000 premature deaths annually (or 5 percent of total deaths). Associated welfare losses exceed 2 percent of regional GDP (World Bank and IHME, 2016). Overall, city-level research and data on pollution is very scarce. Only 117 cities distributed among 17 LAC countries have official data on ground-level air pollutants. The annual mean of inhalable particles concentration in most of the cities were over the WHO's Air Quality Guidelines; notably, only Bolivia, Peru, and Guatemala have adopted the guidelines (Riojas Rodriguez et al., 2016). The main sources of air pollution in LAC are transportation, manufacturing, and energy, as well as domestic use of low-quality fuels (WHO, 2020). Water pollution due to poor sewerage management also affects LAC cities. While sewerage collection stands at 87 percent, only 31 percent of sewage is treated, with the remainder discharged untreated into bodies of water near cities (UNICEF and WHO, 2019). Domestic and industrial wastewater and mining and agricultural runoff contaminate many urban rivers, including the rivers Tietê in São Paulo, das Velhas in Belo Horizonte, Bogotá in Bogotá, Rimac in Lima, and Reconquista and Riachuelo in Buenos Aires (Bates, 2008). Similarly, while waste collection in LAC has a relatively high level of coverage (90 percent), only a few large cities, such as Rio de Janeiro, Mexico City, and Buenos Aires, use transfer stations. In these cities, transfer stations only covers about half of their collection. Most waste is deposited in open-air dumps, which harm human health and pollute water and soil (Hettiarachchi, Ryu, Caucci, et al., 2018). Poorly managed landfills are particularly harmful to informal neighborhoods and coastal communities (IDB, 2019c). Finally, traffic congestion, airports, and building machinery cause high levels of noise pollution, which leads to chronic stress, lower educational achievement, and lower real estate prices (Singh and Davar, 2004). However, noise pollution regulations are weak and rarely enforced (Jariwala, Syed, Pandya, et al., 2017). Overall, information about pollutants in the region is lacking, which limits the effectiveness of remedial actions (UNEP and CCAC, 2016).

b. **Most cities lack a plan to enable a transition to a net-zero carbon economy.** Cities will play a critical role in achieving net-zero carbon emissions, a necessary step to stop the climate crisis (IDB and DDPLAC, 2019). Globally, cities consume two-thirds of the world's energy resources, generate 70 percent of all waste, and emit 75 percent of all carbon dioxide (CO_2) from energy use (IPCC, 2014a). Urban form, mobility patterns, building technologies, and cultures of consumption determine cities' emissions and waste production (Jensen, Christensen, and Gram-Hanssen, 2011). Mobility patterns are particularly important. The transport sector is responsible for about 24 percent of total GHG emissions in LAC (Vergara, Gallardo Lomeli, Rios et al., 2016). Despite the role

that cities must play in addressing climate change, most urban plans in LAC do not include decarbonization goals. By promoting urban forms that reduce the need for motorized transport, electrifying public transportation (IPCC, 2014a), mandating energy efficient buildings, and managing waste, cities can significantly reduce sources of GHG emissions (IDB, 2018b). The region has made some progress in energy efficient homes, but much remains to be done. A positive example in green housing comes from Mexico, where housing is responsible for 17 percent of total energy consumption, and this energy is mainly used for food preparation (52 percent), and water heating (29 percent) (Cerón-Palma, Sanyé-Mengual, Oliver-Solà et al., 2013).

c. **Low levels of disaster and climate change resilience.** LAC cities are particularly vulnerable to natural hazards and climatic change. About half of the entire LAC population lives less than 100 kilometers from the coast, a proportion higher than any other region in the world (Blackman, Epanchin-Niell, Siikamäki et al., 2014). In addition, Caribbean port cities that have not been highly vulnerable in the past are among those facing the greatest increase in risk by 2050 (Hallegate, Green, Nicholls et al., 2013). The UN Intergovernmental Panel on Climate Change (IPCC) reports that around 600 extreme climate and hydro-meteorological events occurred in LAC between 2000 and 2013. Disasters between 1980 and 2016 generated losses of around US$282 billion (Guerrero, 2018). These impacts fall disproportionately on vulnerable populations, further limiting their ability to overcome social and economic challenges (Hallegatte, Green, Nicholls et al., 2013). For example, in a 2019 survey of households in 12 informal neighborhoods in Guatemala, Honduras, and El Salvador, 58 percent of households reported having suffered a natural disaster recently (Suarez Vazquez, Bartels, and Guerrero Compean, 2020). Increasing vulnerability to storms and other natural disasters is not the only indication that LAC cities are insufficiently resilient. Many cities in LAC, including Mexico City, Lima, and La Paz, are already facing serious challenges in water management (IPCC, 2014a). In addition, large expanses of impervious pavement and limited green spaces and trees increase Urban Heat Islands (UHI) (Hardoy and Lankao, 2011). Urban spaces are heating up at twice the rate of global average climate change, presenting a broad spectrum of challenges to health and prosperity (Watts, Amann, Arnell et al., 2019). If left unchecked, this trend will cost the average city nearly 6 percent of its economic output (WRI, 2020). Overall, LAC cities lack a solid framework for long-term adaptation to climate change with clear benchmarks and responsibilities, including disaster response and risk management for slow-onset hazards such as drying aquifers (Leal Filho, 2018).

C. Challenge 3. Highly Variable Urban Productivity

2.9 **LAC productivity depends on a handful of cities.** More than 80 percent of global GDP is generated in cities (World Bank, 2020b). However, in LAC, the economic productivity of cities is highly variable, especially among cities that are major metropolises. Standardized statistics on city-level productivity are lacking. An increasingly common proxy measure relies on remotely sensed nightlight data (Henderson, Storeygard, and Weil, 2012). These data show that most LAC cities are lagging, albeit with diverse results by subregion, which may be a factor undermining productivity level. While São Paulo and Buenos Aires have productivity

levels comparable to those of OECD cities, most cities in Central America have productivity levels below the level expected for their size (Ferreira and Roberts, 2018). In addition, for each LAC country, the within-country productivity dispersion—measured as the coefficient of variation of nightlight data—is relatively high, ranging from 700 percent in Honduras to 50 percent in Trinidad and Tobago. Overall, national productivity is highly concentrated in larger cities, which implies that economic shocks in these cities could destabilize the region's entire economy. Nightlight data show that the metropolitan areas of Buenos Aires, Mexico City, and São Paulo are the most productive (Dijkstra and Poelman, 2014) and estimated to account for a quarter of regional GDP (OECD, 2016). Therefore, LAC city systems are not well integrated and thus not fully productive (Ferreira and Roberts, 2018).

2.10   Economic productivity is a function of many factors, including overall size, human capital, institutional capacity, urban density, and innovations. Thanks to agglomeration economies (Fujita, Krugman, and Venables, 1999), it is estimated that, on average, urban productivity rises by about 5 percent with each doubling of the urban population (Collier, Jones, and Spijkerman, 2018). Also, urban density allows for unexpected exchanges of ideas that lead to innovation and creativity (Florida, 2002). For example, in 2008, 45 percent of all patent applications in OECD countries were granted in metropolitan areas (OECD, 2013). Hence, the low levels of productivity observed in LAC countries are not only a consequence of low productivity at the firm level, but also of underperforming urban systems that lead to misallocation of workers across firms (Arias-Ortiz, Crespi, Rasteletti et al., 2014), negative human capital externalities (Moretti, 2004), and insufficient market acess (Krugman and Venables, 1995). In LAC, the main constraints to boosting city-level productivity are incomplete urban infrastructure, cumbersome regulations, and insufficient support for innovation in the built environment.

a.   **Incomplete urban infrastructure.** As noted above, total productivity in LAC is highly dependent on a handful of cities. One reason is the sparse infrastructure network connecting cities with each other and with international markets (Ferreira and Roberts, 2018). LAC's total logistical costs[4] range from 16 to 26 percent of its GDP compared to 9 percent in OECD countries (CAF, 2016), with overall performance below Europe, Eastern Asia, Middle East, and North Africa (World Bank, 2018). Another concern is mobility within cities. In LAC, the average amount of time people spend on public transportation during a weekday commute is 77 minutes, which is above the average of 64 minutes for advanced economies even though the average distance in LAC is shorter (Rivas et al., 2019). In Bogotá, Buenos Aires, Ciudad de México, Lima, and Sao Paulo, a quarter of the population devotes at least two hours every day to getting back and forth from work; four of the most congested cities in the world are in LAC (CAF, 2018). In addition, large cities with inefficient mobility systems have higher levels of informality and lower aggregate productivity, as low-income residents in remote locations face steeper barriers to connecting with formal job markets (Zárate, 2019). Also, investments in infrastructure are needed to bridge the digital divide in LAC. While nearly 70 percent of LAC's population is connected to the internet, lack of infrastructure and high broadband costs limit access to this technology among low-income residents. The COVID-19 crisis has only exacerbated this divide, as lack of connectivity reduces learning, economic, and health conditions (OECD, 2020a). Overall, the region is behind in investments in

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[4]   Logistical costs are the cost of transportation plus stocking plus delivering merchandize (see Transport SFD).

infrastructure and services by more than 5 percent of annual GDP (Cavallo, Powell, and Serebrinsky, 2020).

b. **Cumbersome urban regulations.** Excessive regulations for taxation and municipal permits increase costs for private businesses. On average, obtaining a business license demands multiple visits to the local municipality and often to other service providers as well (Roseth, Reyes, Farias et al., 2018). In LAC, registering a business property takes an average of 64 days, longer than in OECD, Middle Eastern, and Asian countries (World Bank, 2019b). This excessive burden on the private sector hurts small entrepreneurs and contributes to the persistence of labor informality. It is estimated that in 2018, 56 percent of LAC's total workforce of 276 million people were employed in the informal sector (Altamirano, Azuara, and Gonzalez, 2020). Informality results in lower urban productivity, as most informal enterprises remain small, have limited access to capital, and use irregular channels to acquire and distribute their goods and services (La Porta and Shleifer, 2014). In addition, workers who cannot demonstrate a formal source of income are likely to be excluded from formal housing markets, which further undermines urban productivity and increases the cost of municipal services (Banks, Lombard, and Mitlin, 2020).

c. **Insufficient support for innovation in the built environment.** LAC's cities offer little support for innovation and digitalization, leading to higher than average productivity gaps between innovative and non-innovative firms. For example, the median productivity gap in the non-agricultural sector is 70 percent in LAC compared to 20 percent in the European Union (EU) (Crespi, Tacsir, and Vargas, 2016). Lack of collaboration between city governments, the private sector, and universities slows adoption of innovation (Waugaman, 2016). At the city level, the low productivity of the construction sector is an area of concern given its impact on economic activity and local employment (MGI, 2017). In LAC, the construction sector accounts for 8.2 percent of GDP, half of which is due to housing construction. Also, it is estimated that for each job created directly in construction sector, two would be created elsewhere (Arku, 2006). ICTs such as Building Information Modeling, Geographic Information Modeling, 3D printing, mass customization, virtual reality, and 5G are still underused in LAC's housing construction industry, leading to declining productivity levels (MGI, 2017). A study of the construction sector in Brazil, Chile, Colombia, Mexico, and Argentina showed that productivity has been declining faster than national productivity for the past 20 years (MGI, 2017).

Box 2: Creative and Cultural Industries in LAC Cities

Most LAC cities do not promote creative and cultural industries around their heritage despite its great economic potential (de La Roca, Navarrete, and Larrain, 2017). A recent empirical study in the EU found that the productivity of creative services was 9 percent higher than the EU average[5] (Boix and Soler, 2017). In LAC, recent estimates show that these industries generate revenues of US$124 billion, or approximately 2.2 percent of regional GDP (Ernst & Young, 2015). An analysis of supporting cultural festivals in Trinidad found that economic benefits exceeded costs by seven times (IDB, 2017e). Also, enhancing local identity in commercial areas leads to economic benefits. An empirical analysis of business improvement districts in New York City found that they led to a 30.2 percent increase in the price per square foot of commercial properties (Ellen, Schwartz, Voicu et al., 2007). Still, an important concern regarding creative and cultural industries and urban heritage is that it could displace long-time residents due to an increase in property values (Mogensen, 2000). This process of gentrification affects a community's history and culture and reduces social capital (CDC, 2015). Also, it is important to underscore the role urban heritage has for housing and neighborhood development. There is evidence that housing units developed in a leapfrog fashion and with little connection to the historical heritage of the preexisting urban fabric tend to depreciate rapidly (Murray and Clapham, 2015).

D.   Challenge 4. Weak Urban Governance

2.11   **Effective coordination of national and local policies is one of the most powerful tools for development** (Ahrend and Schumann, 2014). By definition, urban governments are closest to the needs of city residents. Increasingly, these governments are at the forefront of global concerns, including health emergencies, economic crises, natural disasters, and the current COVID-19 pandemic. Thus, urban governance is often placed at the vanguard of international development goals (Brenner, 2004). The weakeness of LAC institutions for urban governance is one of the main causes behind all other urban challenges. Moreover, these weakneses limit their capacity to tackle the complex and interdisciplinary issues they face. Specific concerns are low fiscal and data management capacity, insufficient coordination among territorial units, and low citizen participation.

   a. **Low fiscal and data management capacity.** Most city governments have limited fiscal autonomy, insufficient financial resources, and little access to data and technology. On average, in LAC, cities' own revenues cover only about 30 percent of total spending compared to about 60 percent for OECD countries and 75 percent for emerging economies in Asia (Fretes Cibils and Ter-Minassian, 2015). Also, municipalities under-collect real estate property tax, for which average revenue barely amounted to 0.4 percent of GDP in 2015—just over one-third of the OECD figure (Bonet, Muñoz, and Pineda, 2014). Still, with few exceptions (those being the region's largest metropolises), municipal governments are not well prepared to use fiscal instruments to increase their own sources of funding, such as land value capture mechanisms (Blanco, Muñoz, and Fretes Cibils, 2016). Their weaknesses contribute to low credit-rating scores, which, in addition to national limitations on subnational debts and regulatory constraints, restrict their access to private credit markets (Bonilla and Zapparoli, 2017). Most financial and statistical data are produced at the national

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[5]   Several theoretical frameworks connect creative and cultural economies with increases in productivity. Sacco and Segre (2006) proposed that as consumers become more capable, they are more willing to pay extra for the creative component of a product. Marco, Rausell and Abeledo (2014) showed that as GDP per capita increases so does the demand for creative goods and services. See Boix-Domènech and Rausell-Köster (2018).

level and cities often lack the critical information and indicators they need to measure their own development, or to track emergencies such as an unfolding environmental or health crisis. At the same time, cities need more guidance from national governments to regulate digital data to lower acquisition and maintenance costs and facilitate data comparability (IDB, 2020e).

b. **Insufficient coordination among territorial units.** Institutional arrangements for coordination among cities, among territorial units that comprise metropolitan areas, and between cities and national governments are weak, and in some cases can be a source of conflict between different levels of government. As for coordination among cities, there have been few attempts at territorial integration, with Colombia's "System of Cities" being an exception (Pinzón and de Souza, 2016). Only half of the region's 54 metropolitan areas have metropolitan governance bodies. Urban regions, including formations such as metropolises, mega-regions, urban corridors, and city-regions, generally lack the regulatory framework to manage health dangers, hazardous materials, and common natural resources, such as water basins and forests (Gómez-Álvarez, Rajack, López-Moreno et al., 2017). Finally, while national governments are frequently responsible for *defining* sector policies, cities remain responsible for *executing* many of these policies. However, city and national policies are not coordinated. For example, national housing policies determine maximum affordable housing prices at values that do not consider the cost of land in urban areas, which leads to a mismatch between housing location and employment hubs (Monkkonenn, 2018). Also, lack of coordination between national and local governments diminishes the effectiveness of emergency responses to health and climatic disasters (Djalante, Shaw, DeWit et al., 2020), including to the current COVID-19 pandemic.

c. **Low citizen participation.** Citizen participation in LAC cities is quite low and uneven.[6] Citizens tend to mobilize only around specific demands, diminishing their commitment once these demands are met, or depend on the personal initiative of mayors. Less than 8 percent of LAC municipal residents participate regularly in municipal councils (half as many as in the United States). In general, there is a gross deficit in local representative democracy in LAC, especially in larger municipalities where the ratio of citizens per council member ranges from 100,000 to 500,000 (Nickson, 2016). Further, urban leadership is still behind in terms of using digital technologies to establish and maintain an open dialogue with residents (Bason, 2017). It is also important to strenghten residents' access to data as a way to increase the transparency of procurement processes, as well as reducing opportunities for corruption.

III. INTERNATIONAL EVIDENCE OF THE EFFECTIVENESS OF POLICIES AND PROGRAMS IN THE HOUSING AND URBAN DEVELOPMENT SECTOR

3.1 A wide variety of policies and projects, at both national and subnational levels, have addressed urban challenges. This section highlights the international evidence on their effectiveness and provides examples of good practices that focus on the four challenges LAC cities currently face: (i) structural social exclusion; (ii) excessive

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[6] There are some important exceptions to this general trend. LAC has pioneered some important institutional efforts to increase citizen participation in local government. Participatory budgeting, first introduced in the municipality of Porto Alegre, Brazil, in 1989, has been replicated in hundreds of municipalities across the region (Andersson and Van Laerhoven, 2007), and legislative reforms in Colombia (1986) and Brazil (1988), among others, have promoted citizen participation.

pollution, low climate change mitigation, and low disaster and climate change resilience levels; (iii) highly variable urban productivity; and (iv) weak urban governance. Where available, empirical evidence of the benefits of such programs and policies is presented. When such evidence is not available, case studies from the academic literature are used as benchmarks for urban policies and programs.

A.   Overcoming Structural Social Exclusion

3.2   The sections that follow present evidence about programs and policies intended to improve living conditions in underserved and informal neighborhoods through programs to upgrade neighborhoods, increase access to adequate housing for low-income households using national housing policies, and increase the supply of safe and public spaces with place-based interventions.

1.   Upgrading Undeserved and Informal Neighborhoods

3.3   [Neighborhood upgrading programs](#) focus on providing basic services to improve the well-being of low-income communities, including a range of infrastructure interventions frequently undertaken in conjunction with social interventions, such as the regularization of tenure (Field and Kremer, 2006). An important feature of these programs is that residents remain in place while improvements occur to prevent displacement (Perlman, 2010). In LAC, programs date to the 1960s (Magalhães Acosta Restrepo, Lonardoni et al., 2016) and have become a blueprint for similar programs in all developing regions (Harari and Wong, 2016; Corburn and Sverdlik, 2017). Considering the scale and importance of neighborhood upgrading programs, the empirical literature evaluating their effects is quite slim. Also, integral evaluations of neighborhood upgrading programs are challenging because these programs are complex and do not entail random assignment. As a result, care must be taken when considering whether results from one context generalize to others (Jaitman, 2015). Still, empirical studies that consider the impact of these projects as a whole offer some important insights into these programs, suggesting they: (i) increase residents' satisfaction in the short term but face challenges in the long term; (ii) contribute to increased real estate prices in upgraded locations; and (iii) trigger intracity migration to these neighborhoods.

3.4   **Neighborhood upgrading programs can have benefits in the short term, but these benefits tend to attenuate over time.** Empirical studies on the impact of neighborhood upgrading programs in extremely poor neighborhoods in El Salvador, Mexico, and Uruguay show that they led to a positive effect on the overall housing conditions and general well-being of local residents (Galiani Gertler, Undurraga, et al., 2017). Similarly, an impact evaluation of the *Favela Barrio* program in Rio de Janeiro, Brazil, found a positive impact on access to water, sanitation, and garbage collection services, but found no effect on property values except among households with worse-than-average accessibility before the upgrade (Atuesta and Soares, 2016). However, a recent evaluation of the same program in the same neighborhoods found that, after a decade, two-thirds of the 88 neighborhoods upgraded reverted to conditions prior to the upgrading levels. In particular, this was the case for sanitation and paving in neighborhoods with dense populations, steep topography, or endemically high levels of violence (Libertun and Osorio, 2020a). Thus, an important consideration for neighborhood upgrading interventions is to include mechanisms for their long-term sustainability, including coordination with citizen security and environmental resiliency programs.

3.5   **Neighborhood upgrading programs tend to be correlated with increases in real estate values.** A quasi-experimental study in Peru examined a nationwide titling program in which 1.2 million property titles were distributed to urban squatters on public land between 1996 and 2003. The study found that newly titled households invested more in upgrading their own properties than similar untitled households, increasing neighborhood property values (Field, 2005). Another quasi-experimental study in Argentina explored the impact of titling on property values. It found that the titling premium, which is the difference in the amount paid for a house of similar characteristics between titled and untitled properties, was 18.5 percent, controlling for housing investments (Galiani and Schargrodsky, 2010). These results align with studies evaluating programs to improve urban infrastructure. Habitat was a Mexican federal program that funded US$68 million in infrastructure investment randomly allocated to poor urban neighborhoods in 60 municipalities across 20 different Mexican states between 2009 and 2012. An empirical study of its impacts found that the value of a square meter of land in treated neighborhoods increased by more than US$2 for every US$1 invested by the program (McIntosh, Alegría, Ordóñez, et al., 2018). Also, families invested more in their homes after their streets were paved (through random allocation), which led to overall increases in real estate values (Gonzalez-Navarro and Quintana Domeque, 2016).[7] Likewise, a difference-in-difference empirical evaluation of road improvements in Campo Grande, Brazil, found that these improvements increased property prices by 6.1 percent, which translated into a return of US$4.25 per dollar invested (Acevedo, Hobbs, and Martinez, 2017).

3.6   **Neighborhood upgrading programs can lead to intracity migration to these affected neighborhoods.** A strand of literature focuses on whether neighborhood upgrading programs incentivize relocation of poor households to these neighborhoods from other parts of the city, which could undermine the effectiveness of the intervention. For example, in Rio de Janeiro, the population in favelas slated to be upgraded has tended to grow as soon as upgrading programs were announced (Abramo, 2009). Similar phenomena occurred in Lima between 1996 and 2000 (Calderón, 2004) and in Buenos Aires between 2000 and 2010, where the areas built informally increased 12 percent faster than any other neighborhood after improvement plans were announced (Galiani and Schargrodsky, 2010).

2.   Increasing Access to Adequate Housing

3.7   Housing policies in LAC have focused on market-based, demand-side subsidies for homeowners as well as managing urban land and promoting rental housing. Most evidence on the efficacy of these policies comes from quasi-experimental or qualitative studies, since it is logistically and ethically difficult to randomly assign housing conditions (Zavisca and Gerber, 2016). This evidence suggests: (i) subsidies can help reduce quantitative deficits; (ii) housing quality and female ownership have direct impacts on household health; (iii) housing ownership might not increase household wealth; and (iv) for some households, rental housing is the preferred solution.

3.8   **Subsidies for homeownership can reduce housing deficits, though they have been more successful in reducing quantitative deficits than qualitative ones**. For example, in Peru, an impact evaluation of the *Techo Propio* program showed

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[7]   However, issues of endogeneity and fuzzy definitions of urban areas make causality between better infrastructure and higher productivity hard to tease out (Venables, 2007).

that, while it reduced the Peruvian quantitative deficit by 25 percent (by producing a total of 100,000 units of the 400,000 needed), it reduced the national qualitative deficit by less than 5 percent (Calderón, 2015). At the municipal level, the program reduced the deficit due to poor materials from 33 percent to 18 percent, but no impact was detected on overcrowding (Libertun and Osorio, 2020b). In Ecuador, the National Social Housing Program funded more than US$93 million in direct monetary subsidies to low-income households to allow them to acquire a housing unit. An impact evaluation of the program associated it with a reduction of 18.8 percentage points in the national quantitative housing deficit between 2013 and 2014 (IDB, 2019d). Programs that support access to housing through land management also provide benefits in terms of reducing quantitative housing deficits. For example, Ahmedabad, India, has innovative land regulations that lower housing prices. Between 2000 and 2010, Ahmedabad developed 2,600 hectares, leaving 5 percent of the area free of municipal limitations on density. Of the remaining 95 percent, a quarter was offered to the private sector and sold at market prices and the rest was reserved as a land bank for the city to maintain usable space at affordable prices. This approach significantly lowered the cost of land for housing and helped reduce quantitative housing deficits among low-income households (Bertaud, 2015).

3.9 **Building codes can effectively improve housing quality.** Housing codes tend to successfully regulate and improve sanitary and climatic standards in new formal housing stock (WHO, 2018). However, this implies that both existing formal housing stock and informal housing units are not affected. Fortunately, recent innovations have lowered the overall cost of code enforcement and data collection. Drones, for example, help collect highly detailed geospatial information from which to infer the quality of the housing stock and thus faciliate targeting efforts to enforce regulations. In Kigali, Rwanda, drones have been used to map the quality of roofs and toilets in low-income neighborhoods to rapidly identify housing units in need of upgrades and prioritize enforcement (Gevaert, Sliuzas, Persello, et al., 2018). Improving housing quality is particularly relevant for rural housing stock, where lack of services and inadequate materials prevail (Fay, Hallegatte, Vogt-Schilb et al., 2015). In 2000, Mexico launched the *Piso Firme* program to require and install cement floors in the housing stock of the 50 Indigenous municipalities with the lowest [Human Development Index (HDI)](#) score. In 2005, an impact evaluation of the program in the State of Coahuila showed that it had significantly reduced the incidence of diarrhea in children 5 years old and younger (Cattaneo, Galiani, Gertler et al., 2009).

3.10 **There is no clear correlation between becoming a homeowner and increase in wealth among low-income households.** Housing is a critical component of wealth, particularly for low-income and minority owners who tend to have few other assets (Turner and Luea, 2009). However, very low-income households often overinvest in homeownership and sell at a real loss (Herbert and Belsky, 2008).[8] A comparative study in Europe likewise concluded that owning a low-quality home can cause economic hardship and limit capacity to accumulate wealth (Mandic, 2010). As in non-subsidized housing markets, location is the most relevant variable for housing value. In a comparative study in the cities of Barranquilla in Colombia, Goiania in

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[8] There is evidence that household health improves after women become homeowners, which may indirectly lead to improved income. Evidence from Ecuador, Ghana, India, and Tanzania found a correlation between women's housing ownership and a reduction on intimate partner violence (Pereira, Peterman and Yount, 2017). Also, a study in Ethiopia found that female housing ownership correlates with shorter periods of illnesses, as women invest more in healthcare (Muchomba, 2017).

Brazil, and Puebla in Mexico, households that acquired an affordable housing unit within 10 kilometers of the city center saw the price of their property increase by an average 5 percent in one year. Conversely, households that acquired a similar property located more than 20 kilometers from the center saw a 2 percent decrease in the price of the unit during that time (Libertun, 2018).

3.11 **Housing policies need to include support for rental housing options.** LAC housing policies typically focus on increasing homeownership, but rental housing has many significant advantages. It is an effective policy to reducing housing deficit, as many housing units in LAC remain vacant or underused. For example, in Brazil, 5.2 million housing units remained vacant in 2008, and in Argentina 2.5 million in 2010 (Gilbert, 2016). The rental housing stock is usually better located (Blanco, Muñoz, and Fretes Cibils, 2016) and building quality and services are like that of owner-occupied homes and better than that of informal housing (Moya, 2012). For example, a study in the United States found that, after controlling for income, housing quality, and health, homeowners were not more satisfied with their status than renters (Bucchianeri, 2009). Furthermore, rental housing responds better to the needs of highly mobile households—such as students, short-term workers, informal workers, and migrants—for whom the potential capital gains of owning a home do not offset the sale transaction costs (Belsky, Goodman, and Drew, 2008). Additionally, in the United States, policies incentivizing rental housing allow for better integration of low- and high-income households within neighborhoods, which has led to positive impacts on children's school achievement (Anacker, 2020).

3. Expanding the Provision of Public and Safe Spaces for All

3.12 Place-based policies aimed at increasing access to public spaces focus on reducing violence as well as on removing physical barriers that limit access to public space. The principle behind this approach is that shared public spaces can facilitate conviviality (Damm and Dustmann, 2014). Most of the evidence on these policies comes from case studies, and lack of data and comparability hinders rigorous quantitative evaluation. Existing studies suggest that: (i) increasing access to public space is a multisectorial policy; and (ii) public space design affects accessibility to urban benefits.

3.13 **Spatial characteristics can influence levels of local violence.** Crime Prevention Through Environmental Design (CPTED) aims to enhance the safety of public spaces by focusing on infrastructure and urban design rather than the perpetrators of the crime (Moser and McIlwaine, 2006). Although there are no experimental evaluations on CPTED, there are several studies building knowledge on its impact (IDB, 2017b). For example, in Baltimore in the United States, after the *Safe Street* program[9] was implemented in four of the most violent neighborhoods, there were 5.4 fewer homicides and 34.6 fewer non-fatal shooting incidents during 112 cumulative months of post-intervention observations than before the program was implemented (Webster, Mendel Whitehill, Vernick, et al., 2012). Also, in La Paz, a survey of 100 of the 868 households residing in four violent informal neighborhoods found that, after installing lights in public streets, 77 percent strongly agreed that crime and robberies were reduced (Libertun, 2020a).

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[9] Since 2007, Safe Streets Baltimore has worked to prevent violence and change community norms in Baltimore City. In four community sites, Violence Interrupters canvass the neighborhood daily and build relationships with high-risk youth and young adults to mediate conflicts and connect residents to resources (City of Baltimore, 2020). In addition, following a public health approach, Baltimore launched the *Cease Fire* program to reduce violence associated with firearms (Webster et al., 2012).

3.14 **Case studies indicate that increasing access to safe public spaces can generate an array of local public benefits**. Increasing the safety of public spaces leads to higher use, which renders important benefits to population health (Ward Thomspon, Roe, Aspinall et al., 2012). There is a strong correlation between access to parks and healthy weight, especially among low-income households (Rigolon, 2016). Strategies that have resulted in increased park access combine an array of efforts, including support for affordable housing and adequate fiscal management (Chiesura, 2004). For example, the New York City Community Parks Initiative addresses a historical pattern of neglect using a data-driven approach based on the geography of public disinvestment, household demographic trends and income levels, and levels of community engagement. The initiative led to investments in 67 low-income areas, each receiving about US$5 million in improvements funded by the city and another US$15 million in in-kind contributions from local business (Schoen, 2020). All of these parks followed sustainable landscape design protocols (NYC DPR, 2010).

3.15 **Case studies indicate that increasing the accessibility of public spaces delivers important social benefits for all residents.** For example, in Campinas, Brazil, families with children with disabilities mobilized to increase the accessibility of public spaces. Their action led to the city developing the *A Paz em Língua de Brincar* (Peace Through Play) program, which funded a series of inclusive parks, integrating children with and without disabilities, exercise stations for people who use wheelchairs, and special fares for public transportation. While no impact evaluation has been completed for the program, there is evidence that it helped further integrate society and delivered important physical and mental health benefits (Mastellaro, 2020). Another example comes from Nagareyama, Japan. In 2007, the city invested in greater gender equality and attracted young families to head off an imminent fiscal crisis generated by its declining population. Nagareyama invested in more green spaces, support for young mothers who wanted to reenter the workforce, and measures to alleviate the burden of childcare for those who commute. The program included a dedicated, subsidized school-bus service at main train hubs where parents could drop off their young children. The children were transported to one of the area's daycare centers that offers flexible hours. That investment has paid off; the number of children per family rose above Japan's averages, from 1.16 in 2007 to 1.53 in 2017, and the number of married couples with children living in the city has significantly increased (Hiramatsu, 2018).

B. Reducing Pollution and Increasing Mitigation and Resiliency Levels

3.16 Some cities have proactively reduced pollution levels, and have mitigated and adapted to climate change. By transforming their consumption patterns and their urban plans and built environment, and by changing how they use energy and land resources, these cities are increasing the quality and sustainability of urban ecosystems. Important aspects of this aim are reducing air, water, soil, and noise pollution; incorporating net-zero goals in emission plans; and promoting disaster and climate change resilience.

1. Reducing Air, Water, Soil, and Noise Pollution

3.17 Evidence presented here focuses on command-and-control (CAC) regulations like emissions standards, technology standards, and driving restrictions, all of which dictate how and how much polluters should reduce emissions. Such regulations

continue to be the workhorse of environmental regulatory regimes throughout LAC. The evidence also focuses on policies to promote green infrastructure using natural or quasi-natural systems to supply infrastructure services. In all cases, reducing pollution levels requires a long-term commitment to collaboration between government and community leaders (Ostro, Spadaro, Gumy et al., 2018). Evidence on implementing CAC at the city level shows that successful cases require the ability to consistently monitor and enforce regulations. For example, for green infrastructure, most literature focuses on implementation and design challenges. Conclusions can be drawn from this literature: green infrastructure projects: (i) can deliver multiple social and environmental benefits; and (ii) must be carefully planned and implemented to take into consideration place-based factors.

3.18 **When enforced, CAC policies can effectively reduce air and water pollution**. A recent review of rigorous studies of CAC policies in developing countries clearly indicates that such policies can be effective but that their efficacy depends critically on robust enforcement (Blackman, Li, and Liu, 2018). A firm-level data study from Mexico analyzed the effect of regulatory inspections on polluting emissions, including both air pollution and water pollution. The author concluded that the inspections caused reductions in both air and water pollution (Dasgupta, Hettige and Wheeler, 2000). Another study evaluated the effect of a randomly assigned intervention to improve the responsiveness of industrial polluters to various CAC environmental regulations in Gujarat, India. The intervention strengthened incentives for plant inspections to be honest and thorough. The intervention was found to cause auditors to report more truthfully and caused plants to reduce emissions (Duflo, Greenstone, Pande et al., 2013).

3.19 **CAC approaches can also reduce solid waste and soil pollution.** San Francisco, California, offers an example of how CAC policies can be used to manage solid waste. In 2002, the city set a goal of sending zero waste to landfills by 2020. Since then, the city has banned the use of styrofoam and polystyrene foam in food service and plastic in shopping bags and water bottles; mandated recycling for construction debris and composting for both residents and businesses; and introduced the first urban food waste composting collection program in the country. As a result of these efforts, San Francisco achieved nearly 80 percent waste diversion in 2012 (Kaza, Yao, Bhada-Tata et al., 2018). In developing countries, soil pollution often correlates with obsolete practices in solid and industrial waste management. In addition, cities close to mining and agricultural areas that use pesticides excessively suffer high levels of soil pollution. In these countries, informal waste recycling is common. Studies suggest that when organized and supported, informal waste recycling can protect the environment. Recycling aluminum, for example, requires only 5 percent of the energy needed to obtain aluminum from bauxite. In Jakarta, Indonesia, 37,000 waste pickers recover a quarter of the city's waste (378,000 tons a year), saving the city US$300,000 a month and producing an economic impact of more than US$50 million a year (Medina, 2008).

3.20 **Case studies indicate that green infrastructure can be an effective and efficient means of addressing urban pollution problems**. An increasingly common approach to controlling water pollution in urban areas is relying on green spaces—vegetated areas designed to filter and reduce the quantity of stormwater runoff. Two key types are bioswales, which are strips of vegetated land, and rain gardens, which are gardens that use plants, soils, and configurations effective in retaining rainwater. Case studies indicate that green spaces are effective at

attenuating stormwater runoff. For example, experimental bioswales in California reduced runoff by 89–99 percent, and a raingarden network in Ohio retained around half of the water volume flowing into the water ecosystem over a four-year study period (Xiao, McPherson, Zhang et al., 2017). Another type of green infrastructure common in urban areas is constructed wetlands, which can be used to treat wastewater and manage flooding (IDB, 2017d). In terms of noise pollution, New York City's High Line Park achieved a 37 percent higher average reduction in noise pollution than the footpath below it (King, Bourdeau, Zheng et al., 2016). More so than conventional gray infrastructure, the efficacy and cost effectiveness of green infrastructure depends critically on place-based factors; therefore, it requires careful planning and implementation (Cavallo, Powell, and Serebrinsky, 2020).

2. Incorporating the Net-Zero Emission Goal in Urban Plans

3.21 Reducing urban GHG emissions relies on integrating urban planning with greener mobility and buildings, and a new approach to consumption. Empirical studies about reducing urban emissions conclude that: (i) emissions from urban transport can be reduced by combining territorial planning with vehicle regulations; and (ii) national building codes are cost-effective measures to promote energy-efficient homes. The circular economy is still a novel approach. Early data suggests it can be effective to reduce consumption of natural resources.

3.22 **Evidence from several cities shows that integrating mixed-land-use in urban planning with promotion of non-motorized, zero-emission, and electric vehicles can effectively reduce emissions related to transportation in cities.** Master plans help consolidate the use of sustainable public transit and dense, mixed-land-use developments (Bueno and Vasallo, 2019). London has implemented an urban plan with a 2041 target of having 80 percent of all commutes made by walking, cycling, or public transport (GLA, 2019). This plan included coordinating transport plans with land uses and building densities. Curitiba has deployed a comprehensive urban plan that incorporates shaded bike-lanes and linear parks to support modal transportation and biodiversity (C40, 2018). Also, as of 2017, Bogota's *Transmilenio* Bus Rapid Transit (BRT) system had reduced CO_2 equivalent barrels per year by 246,563, to a total of 1,671,045 tons, and halved the number of road traffic accidents in BRT corridors (Combs, 2017). Bogota's positive results qualified it to receive funding from the Clean Development Mechanism, a tool of the *UN Framework Convention on Climate Change* (UNFCCC) through which donor countries can acquire emission reduction certificates (UK Aid, 2012). If the current fleet of buses and taxis in LAC's 22 largest cities were electric, the region could save up to US$64 billion in fuel costs and prevent the equivalent of 300 million tons of CO_2 from entering the air by 2030 (IDB and DDPLAC, 2019). Mixed-land-use plans also help reduce transport emmisions by promoting reliance on public transportation systems. In a study of the impact of urban development around BRT stops in seven LAC cities—Bogota, Curitiba, Goiania, Guatemala City, Guayaquil, Quito, and Sao Paulo—stop types with mixed-land-uses had higher ridership than other stops burdened by incompatible land uses and barriers to station access (Rodriguez and Vergel-Tovar, 2018). It is worth noticing that mixed-land-use played a less significant role in incentivizing ridership that in similar studies in U.S. cities (Atkinson-Palombo and Kuby, 2011), most likely because the urban grid in LAC cities exhibits a highly homogenous, high degree of mix-land-uses.

3.23 **National policies that combine subsidies and regulations for green housing have effectively reduced emissions in the housing sector.** Net-zero emission goals at the city level need to take into account the housing sector (IDB and DDPLAC, 2019). In Mexico, the housing sector is responsible for about 17 percent of the country's total energy consumption, and the number of units increases at about 600,000 per year. If measures had not been implemented to promote energy efficient homes, new homes would have emitted about 25 million tons of CO_2 per year by 2020. Fortunately, in 2012, Mexico's National Housing Commission (CONAVI) developed the world's first National Appropriate Mitigation Action (NAMA) to promote cost-effective and energy-efficient home construction. In 2015, CONAVI launched a subsidy program for construction projects with at least a 20 percent reduction in CO_2 emissions compared to conventional housing. Since then, around 30,000 subsidies have been awarded for new homes built to NAMA standards. Also, CONAVI initiated long-term training programs for private builders and energy experts, and awareness-raising campaigns for local authorities, private investors, and consumers (GIZ, 2020). It is important to underscore the need to fully incorporate consumer education for this program to succeed. A field trial in Mexico provided a quasi-experimental sample of new homes with insulation and other energy-efficient upgrades. An evaluation found that the upgrades had no detectable impact on electricity use or thermal comfort because most households have their windows open on hot days, nullifying the thermal benefits of roof and wall insulation (Davis, Martinez, Taboada, 2020).

3.24 **Early data on the [circular economy](), a novel approach to environmentally friendly urban planning, shows that it has potential to help cities get to the net-zero emissions goal.** This approach promotes local value chains and reducing the amount of resources wasted at every stage of the product lifecycle. For example, Brussels, Belgium, has worked with the urban textile sector to enable savings of 128 kilograms of textile raw materials, and a life-saving 57 kilograms of fertilizers and pesticides, 200 cubic meters of water, more than five tons of CO_2, and 9,000 kWh of energy (Brussels, 2020; C40, 2018). Tax systems play a key role in facilitating the shift from a traditional linear economy to a circular economy. This is the case for the construction sector in the Netherlands, where the sector's charter launched a manifesto calling on the Dutch government to shift the tax burden from the cost of labor to the use of material resources (ExTax, 2020).

3. Promoting Disaster and Climate Change Resilience

3.25 Several approaches have been used to increase the resilience of cities to disasters and climate change. Hard engineering projects can effectively help cities adapt to climate change; however, they can be costly to build and maintain. The estimated capital costs just for sea dykes in LAC under the medium sea level scenario (from the 2010s through to the 2040s) is US$7.1 billion per year (World Bank, 2010). In addition, such projects may disturb natural processes, such as habitat migration and sea flows (Zhu, Linham, and Nicholls, 2010). Because of that, cities need to include adaptation measures that integrate physical, social, and economic dimensions with natural processes (Otto, Reckien, and Reyer, 2017). Both, [Adaptive Urban Planning]() (AUP) and [Nature Based Solutions]() (NBS) champion this approach. Evidence on AUP and NBS shows that: (i) they are cost effective measures that can be integrated into existing urban settings; and (ii) they have positive environmental externalities, like increasing biodiversity and preserving local species.

3.26 **Evidence shows that AUP is a very cost-effective approach to improving resiliency and focusing on long-term processes** (Birkmann, Garschagen, Van Tuan et al., 2012). An example of AUP is establishing mandatory setbacks to provide a buffer area that can accommodate the naturally dynamic nature of the coast. Also, setbacks protect coastal property from the immediate impacts of storm waves at a cost much lower than shoreline erosion or flood protection via seawalls (Zhu et al., 2010). Barbados relies on coastal setbacks to ensure that built development is located away from the zone of risk where coastal erosion and flooding occur. Accordingly, it establishes a minimum building setback for all new buildings along sandy coasts of 30 meters from the mean high-water mark (Mycoo, 2006). Another AUP good practice for managing floods is elevating infrastructure. For example, in Guyana, pump stations were elevated after accepting that flooding on a massive scale will likely take place (Mycoo and Donovan, 2017). Building design standards, another relevant AUP approach, can reduce urban heat islands. A study in Toronto, Ontario, Canada, showed that covering half of the available roofed area with green roofs could reduce surface air temperature by 0.1°–0.8°C without irrigation and up to 2°C with irrigation (Bass, Krayenhoff, Martilli et al., 2003). Also, a study in Los Angelesin the United States, showed that increasing citywide albedo levels of sidewalks by 15 percent could reduce surface air temperature in the downtown area by up to 2°C in the midafternoon (Taha, 1997).

3.27 **Evidence shows that NBS actions can significantly increase cities' resilience while preserving valuable biodiversity in urban settings.** NBS are actions inspired by, supported by, or copied from nature (IDB, 2020d). NBS have the potential to remove up to 12 gigatonnes of GHG per year, build climate resilience in various sectors and regions, add US$2.3 trillion in productive growth to the global economy, and support vital ecosystem services (UN, 2019). A well-studied example of NBS is the use of trees to reduce urban heat islands and heat stress. A modeling study demonstrated that increasing tree cover by approximately 40 percent in New York City, Philadelphia, and Baltimore, reduced urban surface air temperature by as much as 6°C, with more typical reductions of 1 to 2°C. Also, trees can directly reduce energy demand by shading windows and built surfaces (Rosenzweig, Solecki, Parshall et al., 2009). Another NBS use is to rely on natural mangrove forests and other costal vegetation to reduce the effects of tsunamis, hurricanes, floods, and other natural disasters on coastal communities (IDB, 2018a). In LAC, coastal ecosystems can provide up to US$720 million annually in protection benefits by mitigating the impacts of wind, waves, storm surge, erosion, and infrastructure damage (Lemay, Cotta, and Del Rio Paracolls, 2016). Also, NBS can help flood management by promoting sustainable urban drainage systems based on the natural water cycle of urban watersheds. For example, Curitiba relies on permeable pavements, urban parks, and green areas to manage water currents (IDB, 2017d). Several metrics are being deployed to measure the success of NBS, including [carbon sequestration](#) levels, water-use efficiency and pollination, investment over revenue, and the aggregated effects on the health of the population (Nesshöver, Assmuth, Irvine, et al., 2017).

C.   Boosting Urban Productivity

3.28 Highly productive cities are the outcome of a combination of factors that allow them to attract skilled labor and private firms, support innovation, and profit from economies of scale (Glaeser, 2011). Some of these factors require investing directly

in people (e.g., by supporting better education and health systems for all) while others involve investing in places, such as better infrastructure –including to suport access to digitalization– and territorial plans. The examples that follow focus on infrastructure and territorial plans, particularly on the urban scale: supporting comprehensive urban infrastructure, streamlining urban regulations, and promoting innovation in the built environment.

1. Supporting Comprehensive Urban Infrastructure

3.29 Good infrastructure—among and within cities—and high levels of productivity are very highly correlated (Ferreira and Roberts, 2018). The likely reason is that infrastructure lowers costs of production and, in turn, triggers investments from households and firms. It is likely that productive cities invest more in infrastructure *and* that good infrastructure attracts high-performing people and firms. Infrastructure per se does not trigger higher productivity. Complementary factors of production, such as human capital, are required for that (Canning and Bennathan, 2000). Empirical studies on the relationship between infrastructure and urban productivity conclude that: (i) the layout of infrastructure has long-term impacts on economic geography; and (ii) managing density is the key to efficiency in infrastructure investments.

3.30 **The layout of infrastructure for mobility has a lasting impact on the location of production nodes** (Acemoglu and Robinson, 2005). For example, an empirical study of the impact of British colonial railroads in India found that their location explains current inter-regional price gaps (Donaldson, 2018). Likewise, the U.S. federal program to support the growth of the Tennessee Valley Authority poured more than US$30 billion into local projects from 1933 to 1958. More than 40 years after these transfers, manufacturing jobs in the Valley were still growing faster than those in comparable parts of the country (Moretti, 2013). Endogeneity issues make understanding the dynamics of these regionalized investments difficult. Pre-existing social and economic interactions may lead to investing in regional connectivity and infrastructure, but it also clear that regionalized, physically, and digitally connected urban economies are powerful growth engines unto themselves. For example, the economic output of the Boston–New York City–Washington corridor matches the world's seventh largest economy (Vicino, Hanlon, Short et al., 2007).

3.31 **Within cities, alleviating congestion should guide investments in urban infrastructure since well-planned density allows for overall cost reductions.** An empirical study of municipal expenditures in Brazil, Mexico, Ecuador, and Chile showed that the per capita cost of providing basic infrastructure such as water, trash collection, and electricity declines dramatically with urban density up to an optimum level of 9,000 people per square kilometer (Figure 6) (Libertun and Guerrero, 2016). Similarly, the cost of transport falls in inverse proportion to population density (Collier and Venables, 2016). Congestion pricing policies based on the principle of marginal cost can also contribute to reduce congestion in downtown areas (Eliasson, 2017).[10] In London, congestion pricing has reduced congestion by 30 percent at peak times in the six years since implementation, at the same time as it freed time for other

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[10] Several studies, in cities in developing countries, found that welfare gains are negligible because the social benefits of travel time savings are almost fully offset by the scheduling costs incurred by drivers who now avoid the peak hour. This was the case in an empirical study based on a panel data set of trips from a sample of around 2,000 car and motorcycle commuters from Bangalore, India (Kreindler, 2018), and from a study combining data from travel surveys and Google Maps in Bogota (Akbar and Duranton, 2017).

transport modalities. These results are in line with those achieved in Stockholm (Eliasson, 2008) and Milan (Danielis, Rotaris, Marcucci et al., 2012).The principle of managed density is behind the [Transit-Oriented Development](#) (TOD) planning approach, which aims for easily accessible multifunctional public transit nodes (Cervero, Ferrell, and Murphy, 2002). TOD projects have proved to significantly increase economic productivity (Suzuki, Cervero, and Iuchi, 2014). For example, a survey of 25,124 U.S. firms located within 1.25 miles of 137 TOD hubs found that these firms, on average, sold 35 percent more units than 132,370 firms within the same distance of 3,357 non-TOD hubs (Zandiatashbar, Hamidi, Foster et al., 2019). In LAC, TOD hubs in Mexican and Brazilian cities exhibit higher rates of employment and higher real estate values (Medina and Veloz, 2013). In addition, accessibility to jobs by public transport lowers the likelihood of informal employment. There is evidence of this dynamic in Mexico City after new subway lines were constructed (Zárate, 2019), and in Sao Paulo after the public transportation system was expanded (Boisjoly, Moreno-Monroy, El-Geneidy et al., 2017). Likewise, in Lima, an impact evaluation of the Metropolitan BRT and Metro Line 1 found that residents living within 1 kilometer of the two systems experienced an increase of 3.3 percent in their employment rate, with higher impacts (roughly 5 percentage points) in the latter years (Scholl, Martínez, Mitnik et al., 2020). In addition, a complementary evaluation of both systems (Martinez, Mitnik, Salgado et al., 2020) found increased use of urban transport systems among women and large gains in employment (up to 10 percentage points) and hourly earnings (close to 25 percentage points, driven by increased employment) for women (with no changes for men).

2. Streamlining Urban Regulations

3.32 **Local governments can support productivity by not burdening the private sector with cumbersome permitting processes and wait lines** (Herd and Moynihan, 2019). The one-stop-government approach helps lower the government burden on firms and households by providing a single point of entry for residents to get licenses, registrations, and commercial permits. An empirical study in Mexico found a 5 percent increase in the number of registered businesses in municipalities that implemented one-stop-government (Bruhn, 2011). This result coincides with a similar study in Colombia, which also found a 5 percent increase in business registrations in the six cities where one-stop-government was adopted (Cárdenas and Rozo, 2009). Effective public service delivery is heavily intertwined with e-governance, an efficient processing system, and access to up-to-date ICT. For example, Guadalajara, Mexico, and Campinas, Brazil, deliberately sought to increase productivity by incorporating digital innovation in their urban plans. The novelty of ICT programs calls for further research (IDB, 2017f).

3. Promoting Innovation in the Built Environment

3.33 In general, there is agreement that cities can benefit from policies that promote innovation, and creative and cultural industries, as these have positive externalities in the form of knowledge spillovers and intangible assets (Benavente and Grazzi, 2017). However, impact evaluations and empirical studies on these policies, especially at the city level, are scarce. Most of the existing literature comes in the form of case studies and focuses on project design and implementation. These studies suggest that local governments can promote adoption of new technologies by its contractors.

3.34 **Cities can promote technology adoption through procurement and acquisition policies.** For cities, innovation in the construction sector is particularly relevant given its rapid impact on local employment productivity. For example, in 2006, the U.S. General Services Administration mandated that new construction designed through its Public Buildings Service use Building Information Modeling, Geographic Information Modeling, 5G, and open-standard facility management data for all project milestones. The cost savings on one pilot project using these technologies paid for the cost of another nine pilots in the first year (MGI, 2017). Also, as in Belgium, cities can support innovation by reducing the burden of adopting emerging technologies by avoiding contracts that punish contractors who opt to implement new technologies (MGI, 2017).

D.   Improving Urban Governance

3.35 While all the challenges facing cities are interconnected, good institutions are the "levers of history" that allow cities to overcome their difficulties and thrive. All successful cities have in common capable, representative, and innovative arrangements for governance that can establish the necessary agreements to manage their territories and establish long-term development goals, including strengthening fiscal and data management capacity, improving coordination among territorial units, and fostering citizen participation and diversity in urban leadership.

1.   Strengthening Fiscal and Data Management Capacity

3.36 The literature highlights several tools to strengthen institutional capacity by increasing its economic resources and capabilities. Some of the conclusions that emerge from this body of literature are that: (i) changes at municipal level can effectively increase fiscal resources; and (ii) incorporating digital technologies is essential for strengthening local government capabilities.

3.37 **Several strategies effectively increase municipal tax revenues, including behavioral economics, updating cadasters, and mechanisms to capture land values**. Behavioral economics provides strategies for increasing voluntary taxpayer compliance. For instance, the municipality of Junín in Argentina sent messages to a group of taxpayers describing the penalties for failure to make timely and proper tax payments, which led to a 5 percent increase in the rate of municipal tax payments among those receiving the messages (Castro and Scartascini, 2015). Updating cadasters is also a cost-effective way to boost municipal tax revenue. For example, Bogota, Colombia, increased tax collection by US$24 million per year after updating the cadaster of more than 100,000 properties at a cost of US$4 million (Ruiz and Vallejo, 2010).[11] Tax Increment Finance (TIF) is a way to capture appreciation in the value of urban land by underwriting public bonds to fund new infrastructure. The bond prices are calculated according to expected future increases in property values after the new public infrastructure gets built (Blanco et al., 2016). However, empirical studies on TIF in the United States, where the best data are available, could not verify the hypothesis that they generated economic development opportunities that would not have otherwise occurred (Lester, 2014).

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[11]   Using of clear language is also relevant to improving the quality and effectiveness of municipal cadasters, as shown by a study on the Cadaster in Bogota (Cuesta, Reyes, and Roseth, 2019).

3.38 **ICT is now essential to municipal capabilities.** Using ICT to enable Smart City approaches, including cloud services, advanced analytics for Big Data, Blockchain, 5G, and others, can accelerate the quality of services provided by municipalities, such as emergency services and crime management (IDB, 2019b). In Madrid, the creation of an Integrated Center for Emergencies reduced response times by 36 percent (CISEM, 2020). Similarly, Rio de Janeiro's Operation Center, which integrated more than 30 city departments, improved emergency response times by 30 percent (Bouskela, Casseb, Bassi et al., 2016). In Korea, the city of Namyangju reduced traffic congestion and increased average speed by 7.2 kilometers an hour by informing drivers of traffic in real-time through an integrated intelligent traffic system (IDB, 2016c).

2. Improving Coordination among Territorial Units

3.39 The literature on metropolitan development converges on the need for an autonomous metropolitan body of governance at the scale of the metropolis. That is, metropolitan areas need to ensure that differences in access to and quality of services do not render those services non-viable (Rojas and Vera, 2019). In that regard, two ideas in the literature on metropolitan development are salient: (i) specific arrangements for metropolitan governance have positive impacts; and (ii) issues of coordination at the metropolitan level resonate with national development.

3.40 **Metropolitan coordination has positive impacts on several economic and environmental indicators.** An empirical analysis of the impact of a metropolitan body of governance on metropolitan performance in OECD countries found positive outcomes for productivity and environmental protection (Ahrend and Schumann, 2014), with similar results achieved in the United States (Nelson and Foster, 2002). The Green Finance Lab in Amsterdam is a good example of metropolitan coordination. This initiative promotes new financing arrangements for the city's transition to a sustainable metropolitan region, including ecosystem services, energy, water, raw materials, and transportation (OECD, 2014). Likewise, Lille is a transnational metropolitan area in France and Belgium that coordinates mobility and environmental issues (Nelles and Durand, 2014).

3.41 **Improving metropolitan coordination provides benefits on all geographical scales.** From an urban point of view, comprehensive national planning is one of the keys to preventing unmanageable urban primacy and disorganized metropolitan growth. To address this challenge, various national and regional governments have created national and territorial development plans. For example, Tokyo developed a comprehensive strategy to manage its earthquake risks by combining a system of 4,000 seismographic control points with a dedicated agency to manage natural disasters, leading to significant reduction in costs and casualties (Bouskela et al., 2016). Uneven territorial development and poor metropolitan coordination is a concern for cities and for national development. As COVID-19 made evident, effective coordination between national and local governments is required to effectively manage environmental and health risks.

3. Fostering Citizen Participation

3.42 **Many policies champion citizen participation. While there is clear agreement on the merits of their goals, the empirical literature on their effectiveness remains scarce.** Experiences with voluntary citizen participation, such as the *Bogotá Cómo Vamos* program in Colombia and the *Observatorio do Recife* in Brazil, have improved

urban management (Quiñones, 2011). Nonetheless, the evidence regarding the results attributable to these programs remains insufficient (IDB, 2018d). Increasingly, citizen participation depends on ICT deployment. In 2018, Cape Town, South Africa, when the city experienced its very severe water crisis after the worst drought in more than 300 years, digital transformation enabled data-informed communication with the citizenry, which contributed to reducing water consumption, maintaining South African dams at over 80 percent full, and averting the worst case scenario (WEF, 2019). Another valuable approach to promoting diverse participation in urban planning processes is ethno-engineering, which includes culturally appropriate designs for urban indigenous populations (MOP, 2016a, 2016b). Likewise, an empirical study in Zambia identified that citizen participation has resulted in increased resilience to climate change, among participant households, because it has helped them understanding of their own environmental risks (Fuller and Lain, 2018).

IV.   LESSONS LEARNED FROM THE IDB GROUP'S EXPERIENCE IN THE HOUSING AND URBAN DEVELOPMENT SECTOR

4.1   The lessons below are based on the review of documentation and interviews related to 22 sovereign-guarantee operations, three investment grants, nine IDB Lab projects, and four IDB Invest projects (see Annex III).[12]

A.   Technical Lessons from Interventions

1.   Overcoming Structural Social Exclusion

4.2   **Resident participation in transforming their neighborhood improves the design and sustainability of the interventions.**[13] The experience emerging from projects in Brazil, Guyana, Suriname, and Nicaragua, among others, shows that early dialogue with future beneficiaries increases trust and credibility between executing agencies and communities. Open channels of participation with civil society help strengthen residents' role as beneficiaries and overseers of goods and services. For example, PROURBIS in Brazil established on-site local desks to promote greater interaction with residents and to minimize conflicts during project execution. Likewise, the *Barrio 31* project in Argentina shows the importance of continuous dialogue with local community leaders. The experience in Honduras underscores the importance of maintaining the presence of social development agents in upgraded neighborhoods, even after the works have been completed, to preserve social harmony (OVE, 2016). Operational experience in the Caribbean shows better results when communities participate in the decision-making process defining quality standards, public space design and use, and housing typologies included in the projects (OVE, 2017).

4.3   **Affordable housing programs need to strengthen their collaboration with the private sector.**[14] Furthermore, aligning IDB and IDB Invest work in the housing sector—for example, upstream and downstream interventions—can increase the impact of interventions. Despite progress in private sector participation in affordable

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[12]   The Knowledge and Learning Division supported the HUD Division in preparing this section. See Annex III for a list of operations analyzed, and paragraph ¶4.16- ¶4.18 for lessons from special initiatives, including ICES, HUD Cities Lab and The Cities Network.

[13]   4303/OC-AR;   2221/OC-BR;   2258/OC-BR;   2267/OC-BR;   2102/BL-GY;   1786/SF-HO;   2373/OC-ES;   2565/BL-NI; 2259/OC-SU.

[14]   2373/OC-ES; ATN/ME-15926-ME; 2797/OC-EC.

housing production, these efforts are still below the scale needed to tackle housing deficits. Mexico's experience shows that using innovative technologies, such as geocoding for planning, fosters collaboration with the private sector and civil society. Also, El Salvador's experience underscores the importance of establishing adequate incentives for the private sector to attain cost reductions and economies of scale. In addition, experiences related to IDB Invest operations in Colombia, Ecuador, and Mexico[15] show that national programs that subsidize low-income borrowers are critical for private mortgage lenders to finance homes for such households. Also, housing developers who are experienced in the sector and align their products and site selection with available government programs can have significant impact on the affordable housing market. Further, it is important that national programs offer local currency products to support the funding of housing development through the entire supply chain to avoid a mismatch between revenues and debt service payments.

4.4   **Housing programs must include a transparent targeting and beneficiary selection method.**[16] In Honduras, the subsidy targeting model was managed efficiently and disbursed subsidies quickly and thus was an effective mechanism to improve the quality of floors in housing units for households with up to two minimumsalaries. Also, in Ecuador, the targeting program allowed households in the two lowest income quintiles to access housing units and thus significantly reducing housing deficits in rural areas. Additionally, applying this mechanism in the Caribbean did not require land purchases, which is often a long process given the complexity of land titling. However, it should be noted that this system is difficult to deliver in countries that have an undeveloped banking network (OVE, 2017).

4.5   **Gender-focused urban planning benefits all residents.**[17] In Curitiba, Brazil, and in Guyana, women-led safety audits and the application of a gender-sensitive walking index helped identify barriers to mobility and design elements that contributed to increase perception of safety among women and girls, and thus increased residents' use of public spaces.

2.   Reducing Pollution and Improving Mitigation and Resiliency in Cities

4.6   **Sound governance schemes support the reduction of GHG emissions.**[18] The experience of building energy efficient homes in Argentina and in Brazil indicates that adopting bioclimatic design measures requires sound inter-agency coordination, new guidelines within the national framework for social housing regulations, and homogeneous application of regulations by different regional bodies.

3.   Effective promotion of mitigation and adaptation measures increases their adoption.[19]

4.7   Educating consumers, providers, and public sectors about energy savings from adopting cleaner technologies increases their adoption. Also, locals are key agents for mainstreaming climate change actions. For example, Joao Pessoa, Brazil, incorporated natural disaster risk reduction in its urban plan. Last, private sector engagement in Sao Paulo leveraged a circular economy model based on a

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[15]   Mexico (11307-04 and 11307-5), Colombia (12114-01), and Ecuador (12283-01).
[16]   1786/SF-HO; 2797/OC-EC.
[17]   4958/OC-BR; 2741/BL-GY,2741/BL-GY-1,2741/BL-GY-2,2741/BL-GY-3.
[18]   GRT/FM-15083.
[19]   4444/OC-BR; ATN/ME-15837-BR, ATN/NV-15838-BR.

centralized oil collection system (IDB LAB, 2019). Also, the experience of IDB Invest in Mexico shows that incorporating sustainable development in the practice of private sectors could have demonstration effects.[20]

4. Boosting Urban Productivity

4.8 **Successful interventions integrate infrastructure work with social actions.**[21] Urban interventions demand an organic and multisectoral approach to solving urban challenges linked to the social and infrastructure challenges of creating employment. For example, since the design phase, the Caracol Industrial Park in Haiti combined regional economic development in urban areas with worker training. Likewise, the Colonial City of Santo Domingo in the Dominican Republic promoted the strengthening of residential, commercial, and tourism activities through urban renewal and conservation, including the participation of public institutions and social and private actors.

4.9 **Partnerships increase the effectiveness of interventions.**[22] The Housing and Comprehensive Habitat Improvement Program in Nicaragua shows the importance of building alliances with local governments and strong channels of coordination to leverage the technical knowledge of each sector. Coordinated planning with the entities responsible for providing services is a key element to ensure that those services align with a city's expansion plan.

5. Improving Urban Governance

4.10 **Building the capabilities of smart cities requires a long-term approach.** The transition to a smart city approach requires strong political leadership, an organizational culture that supports innovation, and a strong technical team with data management capabilities. It also requires mid- to long-term commitments, and a national strategy to promote collaboration with academia, civil society, and the private sector.

4.11 **Metropolitan areas require specific governance arrangements on the metropolitan level.**[23] Experiences in The Bahamas, Colombia, and Chile indicate that successful metropolitan governance requires structures with high political legitimacy and accountability systems, and with self-identity and self-financing capacity. Also, they require the participation of all stakeholders in governance agreements and staff trained to ensure quality management of goods and services (Rojas and Vera, 2019). In addition, the experience from the Emerging and Sustainable Cities Initiative (ESCI) shows that alignment with political priorities ensures commitment from municipal and national governments and facilitates coordination and data sharing to carry out the pre-investment and investment stages of initiatives (OVE, 2016).

B. Cross-Cutting and Operational Lessons

4.12 **A program management committee with representatives from national authorities supports coordination.**[24] These committees need well-defined competencies, a schedule of meetings, and a focus on central strategic issues.

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[20] Mexico (11307-04 and 11307-5).

[21] 2587/OC-DR; GRT/AI-14794-HA.

[22] 2565/BL-NI.

[23] 3780/OC-AR; 4987/OC-BA; 3842/OC-CO.

[24] 2221/OC-BR; 2258/OC-BR; 2267/OC-BR; ATN/ME-15842-BR.

Otherwise, lack of coordination between service providers may lead to difficulties in project implementation, including delays in connecting systems such as home drinking water or gas networks.

4.13 **In situ management units improve project execution.**[25] In Brazil, Honduras, and Ecuador, the significant territorial presence of management teams helped establish bonds of trust with residents and improve the dynamics of project execution. Continued support for the executing unit to improve management tools and conduct ex-ante evaluation processes contributed to the success of the interventions.

4.14 **Climate change, gender, and diversity considerations should be included in all projects**. The cumulative experience from all projects in the Sector shows that successful projects conceptualize these dimensions within IDB action plans (Climate Change, GAP, and DAP plans) to prioritize and define goals that can be translated into project budgets. For climate change, this required that specialists and counterparts understand the challenges and the impact of projects at the city level with and without the climate lens. Different ways to include climate change issues in projects included applying a climate lens to the sector diagnostic policies and to the project activities, resource allocations, and integral monitoring of climate change and geophysical hazards. For gender and diversity, meanigful inclusion required working with governments and executing agencies to get better information on population indicators at the subnational level to have meaningful metrics and benchmarks during the whole project cycle.

4.15 **Health crises require that cities act rapidly, employ innovative solutions, and coordinate between all levels of government.** Crises require immediate recovery actions. Regarding the COVID-19 crisis, key actions are enabling households in informal settlements to comply with physical distancing policies and supporting cities' emergency management systems to develop, disseminate, and coordinate municipal emergency plans. In the recovery phase, at the municipal level, focus should be on stimulating the economy and reconstructing social networks. Key actions are promoting the construction of municipal infrastructure, streamlining administrative procedures to register new companies, providing financial support for local businesses, and developing public spaces (see a compilation of answers to combat the current COVID-19 crisis at the city level).

C. Lessons from IDB's special initiatives on cities

4.16 **The Emerging and Sustainable Cities Initiative (ESCI).** ESCI is a non-reimbursable technical assistance program that provides direct support to national and subnational governments to develop and execute city action plans. The initiative employs a multidisciplinary approach to identify, organize, and prioritize urban interventions based on three pillars: environmental and climate change sustainability; urban sustainability; and fiscal sustainability and governance. The ESCI was successful in implementing different types of partnerships with over 70 development partners from government, academia, and the private sector, both inside and outside the region. The initiative has developed a strong brand thanks to its urban planning process, which fostered cooperation and coordination among stakeholders both inside and outside cities. As part of its lessons, the IDB Group explored ways to use the ESCI model of partnerships and knowledge sharing in

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[25] 2258/OC-BR; 2320/OC-BR; 2267/OC-BR; 1786/SF-HO; 2797/OC-EC.

other initiatives. This approach informs current initiatives in the Cities Lab and Cities Network.

4.17 **The Cities LAB.**[26] It is a platform for innovation, co-design, and experimentation that provides a critical step where knowledge and pre-operational stages can converge in experimentation, evaluation, and scaling-up of innovative proposals. Given the complex urbanization processes in LAC, there is a need for more platforms capable of promoting the transfer of knowledge and the development of collaborative interventions and management tools between the sectors and the different disciplines involved with urban issues. The Cities LAB builds on the ESCI Action Plans and the Cities Network as frameworks to identify critical urban challenges and to explore, experiment with, and implement innovative urban solutions. The main lessons learned from the lab are to: (i) explore alternative mechanisms to close the gap between experimentation (through proofs of concept) and scaling up (through implementation); (ii) connect experimentation with financing mechanisms such as land value capture and place management tools; (iii) systematically integrate urban experiments with land-use planning and policy programs; and (iv) start with the definition of the problem, not the identification of solutions, and define the evaluation method in parallel with the design of the experiment.

4.18 **The Cities Network.**[27] It is a platform for knowledge, relationships, and solutions at the municipal level that aims to socialize the knowledge, lessons learned, and good practices in environmental, economic, and social sustainability from more than 160 cities in LAC. Through meetings, the network promotes institutional support, innovation, and the exchange of knowledge between the public and private sectors, civil society, and academia to boost the demand for and capacity to absorb loans and investments to solve the main urban challenges in the region. The network has become one of the IDB Group's mechanisms to strengthen multisectoral activities by offering local governments practical solutions for urban challenges. The main lessons learned from the network are to: (i) consider the size of cities when articulating problems and solutions in urban management; (ii) foster real dialogue among city officials to help them learn about relevant and real city interventions; and (iii) include multiple sectors and levels of governments in the dialogue to deal with the problems that cities face; and (iv) include the private sector not only for financing but also to motivate innovative solutions and processes.

V.   LINES OF ACTION FOR THE IDB GROUP'S WORK IN THE HOUSING AND URBAN DEVELOPMENT SECTOR

5.1 The main goal of this SFD is to promote cities that are fair, sustainable, and productive. To promote this objective, the document provides lines of action where progress can be made in each of the four challenges presented here: (i) structural social exclusion; (ii) high levels of pollution and low levels of climate mitigation and resiliency; (iii) lagging productivity; and (iv) weak urban governance.

5.2 Given the persistence and magnitude of these four challenges, the lines of action presented here focus on addressing the most urgent needs and removing the hurdles that prevent cities from delivering the benefits expected of them. All actions proposed need to be adapted to the specific social, geographical, economic, and

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[26]   See "IDB Cities Laboratory" at https://www.iadb.org/en/urban-development-and-housing/idb-cities-lab.
[27]   See "IDB Cities Network" at https://www.iadb.org/en/urban-development-and-housing/idb-cities-network.

institutional context of each city. Also, they entail multisectoral interventions, an integral urban planning apporach that combines territorial investments with policy changes, proactively promotes the participation of the private sector and the adoption of technological innovation in HUD projects, and have residents as main beneficiaries.

Box 3: A Knowledge Agenda for LAC Cities

One important knowledge gap that was identified is the still very limited data and evidence at the city level,which needs much more research. Some of the priority research lines are:

1. Measure critical outputs and identify indicators for each of these four lines of action at city and national levels.
2. Research how to scale up neighborhood upgrading programs and social housing programs, given the magnitude of this challenge.
3. Study the role of cities in the low levels of productivity in LAC.
4. Research the effectiveness of regulations on all kinds of pollution in cities.
5. Study which governance models are a better fit for managing environmental and health challenges in LAC cities.

A.   Line of Action 1. Overcoming Structural Social Exclusion

5.3   Inequality in cities has a notorious spatial imprint, dividing neighborhoods across economic lines and underserving those with fewer economic resources. Some groups are systematically less likely to have adequate access to urban benefits. These groups tend to include low-income households, households led by women or people with disabilities, and households whose members identify as Afro-descendant, Indigenous, LBGTQ, migrants or ethnic minorities. The following subsections outline specific actions to promote better access to urban benefits for all, as well as opportunities to build communities. While investment in social services, labor markets, and fiscal policies is fundamental for building fairer societies, the actions below focus on overcoming the urban barriers to fairness in cities.

1.   Upgrading Underserved and Informal and Neighborhoods[28]

5.4   The main pillars of the upgrading work are to: (i) promoting urban plans and works that connect neighborhoods to the city's main service grids, including electricity, water, sanitation infrastructure, and trash collection services; (ii) providing neighborhoods with qualitative health and social services and with adequate public green spaces, streets, and sidewalks that are integrated into the city grid; (iii) supporting effective accessibility, mobility, and affordable connectivity among neighborhoods and the rest of the city, both through public transportation and digital technologies; (iv) when neighborhoods are informal, working with local communities and legal bodies to regularize property deeds; (v) promoting local economic activities, entrepreneurship, participation in formal labor markets, and access to digital services, especially in communities highly affected by COVID-19; (vi) including neighborhoods in environmental plans that manage environmental hazard and climatic risks; (vii) working with local communities to increase safety and reduce opportunities for criminal activities; (viii) defining mechanisms to ensure the long-term sustainability of the upgrading work, including to increase climate resilience levels; (ix) working with national and subnational governments to provide

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[28]   Joint work with the Transportation, Water and Sanitation, and Citizen Security sectors.

critical services and infrastructure to manage the spread of pandemic diseases in underserved and informal neighbrohoods; and (x) considering mechanisms to increase the availability of serviced land to underseved neighborhoods.

2. Increasing Access to Adequate Housing[29]

5.5 To support dynamic housing markets that enable more people to access better housing, coordinate national and subnational land and housing policies and foster private sector participation. Specific actions include: (i) supporting housing subsidies and credit markets to reduce quantitative deficits among low-income households; (ii) supporting programs that improve the quality of existing housing stock; (iii) promoting urban plans and land management strategies to increase the supply of urbanized land; (iv) revising building codes and their enforcement to promote in-house productive activies, universal access to adequate health and climatic standards in existing and new housing stock; (v) improving rural housing stock to reduce exposure to endemic and pandemic diseases, environmental hazards, and climate risks; (vi) supporting inclusion of women on property deeds; (vii) promoting access to affordable and resilient housing in areas that match households' location needs and consider geographic and climatic conditions; and (viii) facilitating access to rental housing in the formal market among low-income households, including provisions for managing disruptions on rental and mortgage payments after COVID-19.

3. Expanding the Provision of Safe Public Spaces for All[30]

5.6 Cities need to provide safe and enjoyable public and green spaces that allow people to interact safely with each other and with nature. Specific actions are (i) fostering spatial settings that reduce opportunities for violence and crime; (ii) increasing access to parks in densely populated and underserved areas; (iii) promoting active engagement of local organizations and communities with public spaces; (iv) planning and promoting urban plans that include integral mobility systems, which consider the diverse transit needs of all residents; (v) removing existing architectural and infrastructure barriers that limit access to public spaces by the elderly, people with disabilities, and children; and (vi) establishing universal design standards for private and public spaces.

4. Knowledge Gaps to Overcome Structural Social Exclusion

5.7 Overall, data on housing deficits and on household characteristics need to be updated and regionalized. Also, more research is needed to understand the housing preferences of low-income households, the distributional effects of regularizing land in peri-urban areas and informal neighborhoods, and efficient mechanisms to stimulate private production of affordable housing stock for sale and for rent in well located urban areas. Also, further knowledge is needed to design safe public spaces and to effectively promote the adoption of universal design standards.

B. Line of Action 2. Reducing Pollution and Increasing Climate Mitigation and Resiliency Levels

5.8 Cities should focus on integrating natural processes and holistic urban planning approaches to minimize their negative impacts on the environment and protect their

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[29] Joint work with the Water and Sanitation, and Climate Change sectors.
[30] Joint work with the Citizen Security and Gender and Diversity sectors.

residents and buildings from negative climatic impacts with actions that are tailored to their own unique environmental challenges.

1. Reducing Air, Water, Soil, and Noise Pollution[31]

5.9 Better coordination is needed among urban and non-urban actors, national leaders, the private sector, and local communities to make effective changes in pollution levels. Key actions include: (i) changing the mobility matrix to reduce the use of private motorized vehicles while improving regulations and controls of private emissions; (ii) reversing water pollution by incorporating natural filtration systems, reducing impervious surface areas, and securing adequate treatment of municipal solid waste to prevent the contamination of local aquifers and river basins; (iii) enacting regulations to minimize the production of solid waste and enforce its proper disposal to minimize soil and water pollution; (iv) relying on regulation and green infrastructure and technological innovations to reduce noise levels; and (v) strengthening the capacity of cities to monitor pollutants and pollution levels.

2. Incorporating the Net-Zero Emission Goal in Urban Plans[32]

5.10 Measures should include cross-cutting approaches tailored to the ecosystem in which each city is located. These efforts should include (i) promoting urban forms that incentivize safe mobility based on non-motorized, zero emissions, and public transport and that reduce the need for motorized private vehicles and promote road safety through urban design; (ii) promoting trees and green spaces for carbon sequestration, better drainage, and fewer heat island effects; (iii) supporting energy efficient homes and buildings that reduce waste in energy and water consumption, rely on renewable energy sources, and use low-energy building materials; and (iv) deploying circular economy strategies that reinforce local value chains.

3. Promoting Disaster and Climate Change Resilience[33]

5.11 Actions require a whole-of-the-city approach along with targeted interventions for vulnerable neighborhoods. These actions rely on: (i) implementing AUP approaches that incorporate disaster risk management and climate change criteria and fully integrate natural ecosystems as risk management measures, such as buffer zoning codes and planned floods; (ii) promoting the use of NBS to prevent and reduce disasters and climatic change impacts; (iii) identifying and prioritizing protective and emergency actions where vulnerable populations and critical city infrastructure is located; and (iv) monitoring and preventing slow-onset but critical hazards related to changes in drinking water availability, provision, and quality.

4. Knowledge Gaps to Reducing Pollution and Increasing Mitigation and Resiliency Levels

5.12 Research on environmental sustainability and climate is advancing rapidly. Specific gaps in LAC cities relate to better monitoring and communicating the impact of polluting practices, incentivizing positive behaviors toward the environment, and understanding existing regulations and their effectiveness. Also, there is a need to improve understanding of the dynamics of climate change and biodiversity at the city level and how to establish effective and sustainable financing and regulatory mechanisms for urban ecosystem services and to protect water basins. Last, more

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[31] Joint work with the Transportation, Environment and Biodiversity, Water and Sanitation sectors.
[32] Joint work with the Transportation and Climate Change sectors.
[33] Joint work with the Environment and Biodiversity, Water and Sanitation, and Climate Change sectors.

research is needed to develop resilient strategies for informal neighborhoods and vulnerable communities.

C. Line of Action 3. Boosting Urban Productivity

5.13 Achieving highly productive cities is the outcome of many factors, including successful investment in social capital and technological development. But unless cities manage and capitalize on the opportunities that their density affords them, congestion will undermine productivity gains for the cities and their nations. Therefore, this line of action focuses on overcoming the hurdles to increasing economic output that emerge from specific urban characteristics.

1. Supporting Comprehensive Urban Infrastructure[34]

5.14 Investing in functional and reliable infrastructure is the backbone for facilitating the efficient flow of people, goods, and ideas that enable cities to take advantage of the economies of agglomeration. While the specific bundle of infrastructure needed varies significantly from city to city, main actions to consider are: (i) improving critical infrastructure to integrate cities into regional and global value chains; (ii) expanding provision and access to ICT and digitalization tools, especially for communities gravely impacted by COVID-19; (iii) supporting national and urban territorial development plans towards integrated urban economies; (iv) alleviating urban congestion by expanding access to urban infrastructure and mobility; and (v) relying on TOD to coordinate density and mobility investments.[35]

2. Streamlining Urban Regulations[36]

5.15 City leaders can promote economic activity by removing institutional hurdles and facilitating private sector investments by: (i) relying on a one-stop-government approach to taxation and municipal permitting processes; (ii) adopting e-governance to support efficient public service delivery; and (iii) simplifying approvals for private-investments that increase job opportunities in low-income areas gravely impacted by COVID-19.

3. Promoting Innovation in the Built Environment

5.16 Cities can improve their own productivity by taking advantage of their own potential. Specifically, they can: (i) stimulate the adoption of new technologies in the construction sector through procurement and acquisition policies, and further participation of the private sector in housing markets; (ii) promote local creative and cultural expressions and urban heritage to catalyze economic growth; and (iii) support private business and entrepenurial activities that provide identity to commercial and retail districts.

4. Knowledge Gaps on Boosting Urban Productivity

5.17 The research on urban productivity is quite advanced in developed countries, but issues of endogeneity are hard to tease out. In addition, in LAC, there is insufficient data on economic output at the city level and on the role cities play in productivity. Also, better understanding the impacts of congestion according to households' characteristics is missing. More studies are needed to understand the dissemination

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[34] Joint work with the Innovation in Citizen Services and Transportation sectors.
[35] Joint work with the Transportation sector.
[36] Joint work with the Decentralization and Subnational Governments and the Innovation in Citizen Service sectors.

of innovation in the construction industry and the value spillover effects of urban heritage programs.

D.   Line of Action 4. Promoting Good Urban Governance

5.18   Weak governance correlates with low economic productivity, socio-spatial exclusion, and environmental degradation. Improving governance is an effective way to break this vicious cycle because, while each city is unique, at the heart of every successful city are well-functioning institutions.

1.   Strengthening Fiscal and Data Management Capacity[37]

5.19   Currently, municipalities are the weakest link in the institutional arrangements of urban governance.[38] Specific actions to strengthen capacity include: (i) increasing the financial resources of municipalities by improving their ability to design and implement taxes, increasing tax collection rates, updating cadasters, and incorporating and promoting the adoption of land value mechanisms; (ii) supporting the institutional capacity needed to achieve creditworthy ratings that enable cities to acquire long-term debt from capital markets; and (iii) improving the generation and management of data and digital capabilities toward smart city approaches, including their ability to track data on health and environmental emergencies and to generate comprehensive urban plans.

2.   Improving Coordination among Territorial Units[39]

5.20   Effective city policies require coordination with adjacent urban and rural municipal governments and national institutions by: (i) developing effective metropolitan governance arrangements to manage, among other issues, mobility, waste, pollution, water resources, environmental and climate hazards, justice and citizen security, and local-police forces focused on communities' wellbeing; (ii) incorporating urban plans and urban land use models when defining national housing and environmental policies; and (iii) improving communication and coordination between cities and national governments to manage health and environmental emergencies that enter national territories through cities, including pandemic diseases.

3.   Fostering Citizen Participation[40]

5.21   Cities cannot work for all if they do not allow for wide and meaningful participation of all residents. Likewise, community engagement is critical for the long-term sustainability of urban projects. Specific actions include: (i) promoting meaningful and voluntary resident participation in urban governance; and (ii) increasing transparency and accountability of urban leadership and public procurement by promoting open information portals and access to data.

4.   Knowledge Gaps to Promote Good Urban Governance

5.22   Research in this area in emerging countries and at the city level is quite recent and is grappling with incorporating new technologies. For LAC cities, the areas of great concern are fiscal sustainability and an engaged citizenry, including new mapping technologies integrated with fiscal frameworks, technologies that strengthen the

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[37]   Joint work with the Fiscal and Municipal Management and the Innovation in Citizen Service sectors.
[38]   See Decentralization and Subnational Governments SFD.
[39]   Joint work with the Decentralization and Subnational Governments, Environment and Biodiversity, Waste and Sanitation, Justice and Citizen Security and Transportation sectors.
[40]   Joint work with the Decentralization and Subnational Governments, Gender and Diversity and Innovation in Citizen Services sectors.

abilities of residents to monitor local government performance, and affirmative action programs that effectively promote diverse urban leadership.

5.23   The four dimensions of success outlined in this document will guide the IDB's operational and analytical activities in cities going forward. The overarching purpose of the set of policies, programs, and studies presented here is to contribute to the development of a fair and prosperous region whose progress is sustainable over time.

ANNEX I. WHAT ARE THE MAIN CHARACTERISTICS OF LAC CITIES TODAY?

Summary

LAC cities are changing as the region changes, Historically, the region has had one of the highest urbanization rates in the world, and today mora than 80 percent of its citizens live in cities, including six cities with populations of over 10 million. Overall, the region's largest cities account for one out of every four households in LAC, yet it is the region's midsize cities that are growing the fastest and expected to boost the urbanization rate in LAC even higher in the years ahead. At the same time, household sizes are declining, and the population is aging. Rural-to-urban migration is gradually being eclipsed by urban-to-urban migration, and there is evidence of increasing social polarization by income level. It should be noted, however, that some changes in urban population data are due to issues of definition. "Urban" may mean different things in different places: population size, administrative unit boundaries, proportion of non-agricultural activities, and density are some of the many criteria used in LAC countries to define urban areas. In terms of form, most cities in the region are dense in area, but there is evidence of an expansion of metropolitan areas, which increases the consumption of natural resources and the absorption of wetlands and rural fertile lands. In fact, as urban governance in LAC increasingly entails more than just municipalities, this calls for a greater focus on metropolitan areas. Cities have come to constitute a region that includes many municipalities but one single economy, labor market, and cultural identity, with strong interdependence among local jurisdictions. And although no single governance model fits the broad spectrum of needs of LAC cities, some are gradually taking the lead in designing urban services with universal design standards, promoting participatory planning, and adopting inclusionary zoning.

Introduction

Population size and demographics are the two top characteristics that define a city's economic and social performance. There is empirical evidence of a scalar nonlinear relation between the number of people living in a city and the city's overall functioning –that is, cities of different sizes have very different properties (Montgomery, Stren, Cohen et al., 2013). Specifically, social outputs (such as wages or new inventions) increase per capita with city size, whereas the unit rate of urban infrastructure per capita (roads, cables, pipes) decreases (Bettencourt, 2013).

The third main characteristic of a city is form, as defined by the city's density, architectural diversity, and layout, which together constitute land use –for example, monocentric versus polycentric forms, centralized versus decentralized patterns, and continuous versus discontinuous development (Tsai, 2005). Urban form is also relevant for the city's environmental performance (Camagni, Gibelli, and Rigamonti, 2002), choice and use of transportation modality (Ewing and Cervero, 2010), housing typology, and dispersion of household incomes within neighborhoods (Byrne, 2005). The last main characteristic of a city is its governance model, which determines the level of autonomy and responsibilities of local governments.

Population Distribution in Latin American and Caribbean Cities

The distribution of the urban population in LAC is characterized by a high level of urban primacy, that is, for most countries in the region the urban population is overly concentrated in relatively few cities. Benchmarking urban primacy rates in LAC countries against those in comparator countries reveals that The Bahamas, Barbados, Costa Rica, Panama Argentina, Chile, Paraguay, Peru, Suriname, and Uruguay all have urban primacy rates higher than expected for their country

size. Also, about 40 percent of LAC's urban population resides in a conurbated municipality, compared with a third of the world's urban population (Ferreira and Roberts, 2018).

In terms of city size, LAC has six cities with 10 million or more residents: Mexico City with 22.9 million and São Paulo, Brazil with 20.8 million, which are considered megacities, followed by Buenos Aires, Argentina; Rio de Janeiro, Brazil; Lima, Peru and Bogota, Colombia. LAC also has three cities with populations ranging from 5 to 10 million: Santiago, Chile; Belo Horizonte, Brazil; and Guadalajara, Mexico. In all, these nine cities account for about 17 percent of the entire population of LAC and are home to one out of every four LAC urban households.

Medium-sized cities account for 20 percent of the region's population and are growing at a rate of 3 percent, exceeding the growth rate of the larger cities, which is less than 1.9 percent (Jedwab, Christiansen, and Gindelsky, 2015). Overall, LAC has 63 cities with populations ranging 1 million to 5 million residents, and 57 cities with populations ranging from 500,000 to 1 million residents. In total, there are 129 cities with more than 500,000 residents in LAC, including 22 in Brazil, 16 in Mexico, and the rest distributed quite evenly according to national population size (UNDESA, 2018).

The high concentration of urban population is a result of an historic urbanization process in LAC that occurred rapidly and was highly clustered in a few cities. In fact, LAC has had the fastest urbanization rates among the world's emerging regions, increasing from 49 percent in the 1960s to about 80 percent in 2015, and now largely consolidated (UNDESA, 2018). In recent decades, there has been much noticeable growth of midsize cities with 1 to 5 million residents. These cities have had higher rates of population growth than either small cities or metropolises (Figure 7 and Table 3). For example, the projected average annual rate of population growth for 2018–2030 for Mexico City is 0.9 percent, while the city of La Laguna, Mexico, is projected to grow at 2.5 percent. Likewise, for the same period, São Paulo's population growth projection is 0.8 percent, while that for Florianopolis, Brazil is 2.7 percent (UNDESA, 2018).

Demographic Changes in Cities

Population in cities changes due to three prevailing factors: changes in birth and mortality rates, migration, and reclassification of settlements. Birth rates in LAC are declining sharply; according to recent estimates, 18 LAC countries have total fertility rates below the replacement fertility level. This trend is even more pronounced in cities. In 1980, there was an average of four children per household, while since 2010 the average is less than two (Estevez, Lesthaeghe, and López-Gay, 2012). For example, in Lima, Peru, the mean household size in 2017 was 3.4 persons, shrinking from the 3.9 in 2010. In Mexico City, the average household size in 2015 was 3.2 persons, but there is a significant number of households with two members (Libertun, Gallego, and Osorio, 2019). Overall, LAC is following a pattern similar to that already experienced in early industrialized countries (UN DESA, 2018). However, unlike these countries, the reproductive calendar in LAC is polarized by income: delayed maternity among women with mid- and high-income levels, but early-age maternity among low-income women (Cabella and Nathan, 2018).

At the same time, the percentage of people older than 60 years of age continues to grow in all countries. In 2014, for the first time, this segment of the population accounted for a larger share of the total than the population segment under age 15, thus reversing the demographic growth pattern in the region. LAC mortality rates also present a polarized pattern in terms of age. Homicides and transport accidents are the first and the second causes of death for persons between ages 10 and 24, while heart disease and diabetes are the leading causes among persons older than 25.[41]

Average life expectancy in LAC has increased 14.6 years since 1965, reaching 73.5 years by 2010, but with important differences by gender and region. Women live longer than men, with the gender difference in 2005–2010 being 4.5 years. Life expectancy shows high variation by region: 71.8 years in the Caribbean, 58.9 years in Central America, and 61.4 years in South America (Andean and Southern Cone countries combined) (Hambleton, Howitt, Jeyaseelan et al., 2015). There is little data on longevity at the city level, but recent evidence shows that most of the variability was within cities rather than between cities. For example, average life expectancy for men at birth varied from 69.9 years in Mexico City to a high of 76.6 years in San José, Costa Rica. However, the longevity gap within cities is higher, with gaps of 9.8 years in Panama City, 10.9 years in Mexico City, and 8.9 years in Santiago, Chile (Bilal, Alazraqui, Caiaffa et al., 2019).

LAC migration flows are noteworthy and diverse, mostly due to internal migration, although in the Caribbean international emigration prevails. Rural-to-urban migration, particularly to large capital cities such as Buenos Aires, Bogota, and Lima characterized the flows from the 1940s to the 1970s (Libertun, 2020b). Since then, the contribution of rural-to-urban migration as a source of population growth in urban areas has significantly diminished in most countries, while urban-to-urban migration has been the dominant flow. Even in countries with a significant share of rural population, such as Paraguay and Panama, more than half of all migrants come from other cities. Also, migration to large cities has diminished, particularly in highly urbanized countries such as Brazil, Chile, and Mexico. The average age of migrants, a proxy for their education level, varies across the region. Peak migration age in Argentina, Costa Rica, and Chile is 27 years old, while migrants in Haiti, Dominican Republic, Honduras, Nicaragua, Bolivia, Colombia, and Peru peak at 20 years old (Bernard et al., 2017).

Lastly, some changes in urban population data are simply due to issues of definition. "Urban" may mean different things in different place. Population size, administrative unit boundaries, proportion of non-agricultural activities, and density are some of the many criteria used in LAC countries to define urban areas. Furthermore, some countries, such as Chile, Colombia, and Nicaragua, have modified their criteria from census to census, thus making it difficult to fully evaluate urbanization trends over time (Lattes, Rodríguez, and Villa, 2017) (Table 4). Lately, other approaches are being used to assess city size, such as using nightlight data (Dijkstra and Poelman, 2014) or commuting zone data (Kamal-Chaoui and Sanchez-Reaza, 2012). Another challenge is that definitions consider population either rural or urban, thus failing to capture the social and economic continuum among these two conditions (Champion and Hugo, 2004). Approximately a third of the 130 million rural residents in LAC settle close to urban localities and maintain intense interaction with cities.

In summary, recent years have seen a changing demographic profile in LAC cities, including fewer children, more elderly, and some indications of further social polarization. On the one hand, there is delayed maternity and increases in longevity, which correlate with smaller and older

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[41] See Pan American Health Organization, Health Information Platform for the Americas. Available at https://www.paho.org/plisa (accessed May 5, 2020).

households. On the other, early maternity among women and early or violent death among young men seem to be associated with low-income urban households. Also, there are significant differences in the life expectancy between low- and high-income urban households. In all regions, internal migration is intense and mostly an urban-to-urban phenomena, with midsize cities growing faster than smaller or larger ones, and an overall fluid landscape connecting urban and rural residents.

The Form of Latin American and Caribbean Cities

The density, architectural diversity, and layout of a city correlate with its environmental footprint, transport choices, and opportunities for social interaction. Most LAC cities are quite dense, as they occupy a relatively small area with respect to their total population.[42] The average density of LAC cities is 2,400 persons per square kilometer, with 80 percent of cities having densities above the world average of just over 1,500 persons per square kilometer. South American cities are the densest in the region, followed by cities in Central America and the Caribbean (Ferreira and Roberts, 2018). However, there is evidence that LAC cities are expanding with a lower density pattern (Angel, Parent, and Civco, 2010), which increases the consumption of natural resources and the absorption of wetlands and rural fertile lands (Hasse and Lathrop, 2003). Similarly, expansive cities tend to augment the reliance of residents on motorized transport (Zhang, 2004). Although the layout of many LAC cities still preserves a consolidated core with traditional architectural typologies, most recent growth is happening in the urban periphery. For example, in La Paz, Bolivia, Cordoba, Argentina, Santiago, Chile, and Brasilia, Brazil, the built area in periphery exceeds the preexisting built-up area. The built-up fringes of these cities are growing at an average 11 percent per year, whereas the core areas are growing at 2.9 percent per year, which leads to overall decreasing densities. Conversely, Bogota, Colombia, Lima, Peru, Asuncion, Paraguay, and Santa Cruz, Bolivia are still in a densification process. In Lima and Bogota, densification responds to land availability restrictions that prevent the city's footprint from expanding, while in Asuncion and Santa Cruz it responds to large inflows of new residents (Inosoztra, Baur, and Csaplovics, 2013).

It is worth noting that the overall density of LAC cities is just the average of a very disjointed sum of distinct and often disconnected urban typologies. The urban form of the typical LAC cities includes a fairly dense urban core with some valuable architecture, informally developed neighborhoods of very dense and irregular grids, gated private residential enclaves with very low-density single-family housing units, and repetitive streets of mid-density social housing units. As cities expand rapidly, conservation and continued use of heritage can provide crucially needed continuity and stability (Navarrete, Larrain de Andraca, and Trejo, 2019).

The expansion of cities in Latin America and the Caribbean has occurred alongside increased privatization of urban spaces, correlated with deteriorated safety, fragmented governance, and poor social interaction. Unlike the traditional architectural typologies of the urban core, characterized by densely built grids, land use that mixes commercial and residential buildings, and walkable sidewalks, urban peripheries are built with an increased reliance on private transportation and single-purpose land use, such as large retail buildings or low-density single-family housing (Libertun, 2006). Informal neighborhoods have extremely high densities in terms of floor occupation with low heights, revealing a lack of access to more expensive building technologies and a piecemeal construction process (Perlman, 2010).

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[42] "Cities" here refers to settlements with a population exceeding 100,000. Following this definition, there are 7,197 cities in LAC (Ferreira and Roberts, 2018).

Governance in Latin American and Caribbean Cities

A determining factor for urban governance in Latin America and the Caribbean is the level of autonomy cities have with respect to their national governments. Except for Argentina, Brazil, and Mexico, which are federal republics, all other countries in LAC have a centralized governance structure. By law, federal countries give a greater degree of autonomy to subnational governments, including their access to capital markets. However, an advantage of more centralized regimes is that large-scale territorial planning can be easier to implement. For example, planning in Costa Rica includes a strong stance on environmental protection that can be implemented across the entire country.

There are more than 17,600 municipal governments in LAC with immense differences in their capabilities among and within countries. A mere 11 percent of these municipalities account for more than two-thirds of the entire urban population, while roughly 50 percent have less than 10,000 inhabitants each (Eguino, Porto, Pineda et al., 2010). Municipal governments are responsible for critical services that facilitate private and public activity, such as keeping streets and open spaces clean by collecting garbage; maintaining parks and gardens; providing public transportation and lighting; issuing construction and operating licenses; and providing local police and fire services. In addition, municipal governments are key agents in the provision and maintenance of public cultural facilities such as libraries, theatres, museums, and public events. Some municipalities also share responsibility for the provision of health and education services, such as hospitals and primary schools.

Urban governance in LAC entails more than municipalities, which calls for a greater focus on metropolitan areas. The average metropolitan area in LAC has about 2 million residents and includes about 10 administrative units or municipalities, and almost half of the region's 75 largest metropolitan areas have a metropolitan-level governance body (Ferreira and Roberts, 2018). Metropolitan areas in LAC use different modalities for metropolitan coordination based on one-tier coordination (e.g., Buenos Aires); two-tier coordination (Quito); city-state organization (e.g., Mexico City); and voluntary cooperation (e.g., São Paulo and Bogota) (Slack, 2019). Again, the region has seen different degrees of success in implementing these models, without a single solution fitting the whole spectrum of needs of LAC cities (Gómez-Álvarez et al., 2017). In addition, cities are gradually taking the lead in designing urban services from the perspective of women with universal design standards, promoting participatory planning, and adopting inclusionary zoning (Libertun et al., 2019).

ANNEX II. FIGURES AND TABLES

Figure 1. Proportion of Urbanized Population in Latin America and the Caribbean, 2000 and 2017 (%)
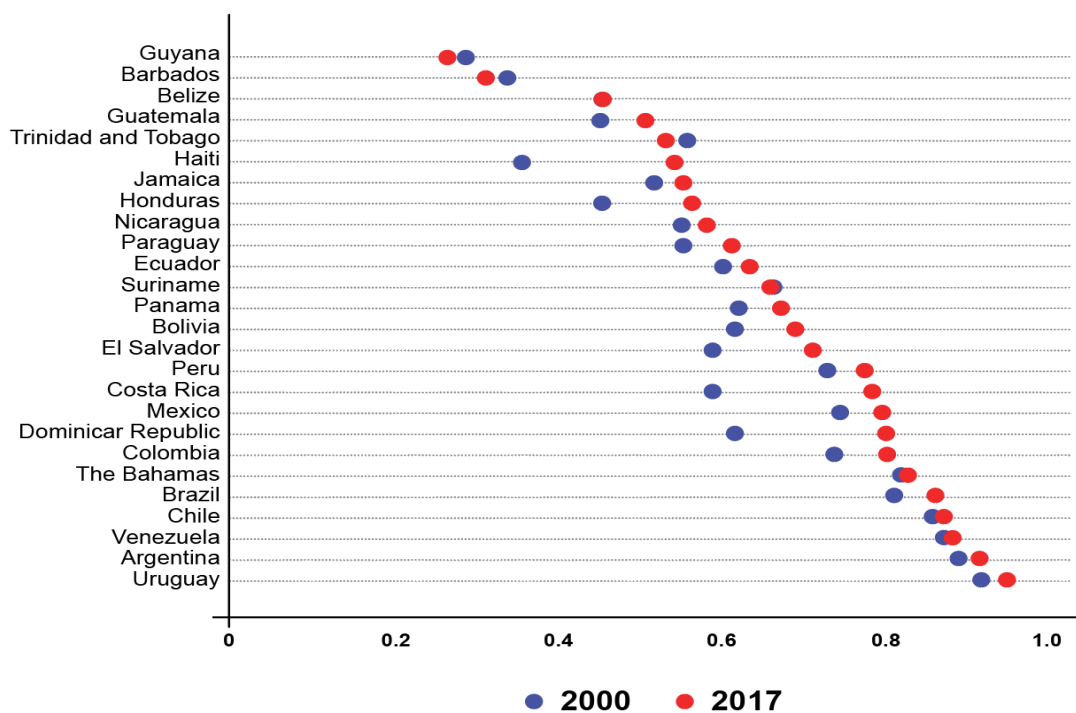
Source: IDB authors' calculations based on UN DESA (2018).

Figure 2. Frequency distribution of inequality in Cities, by region (circa 2005-2010)
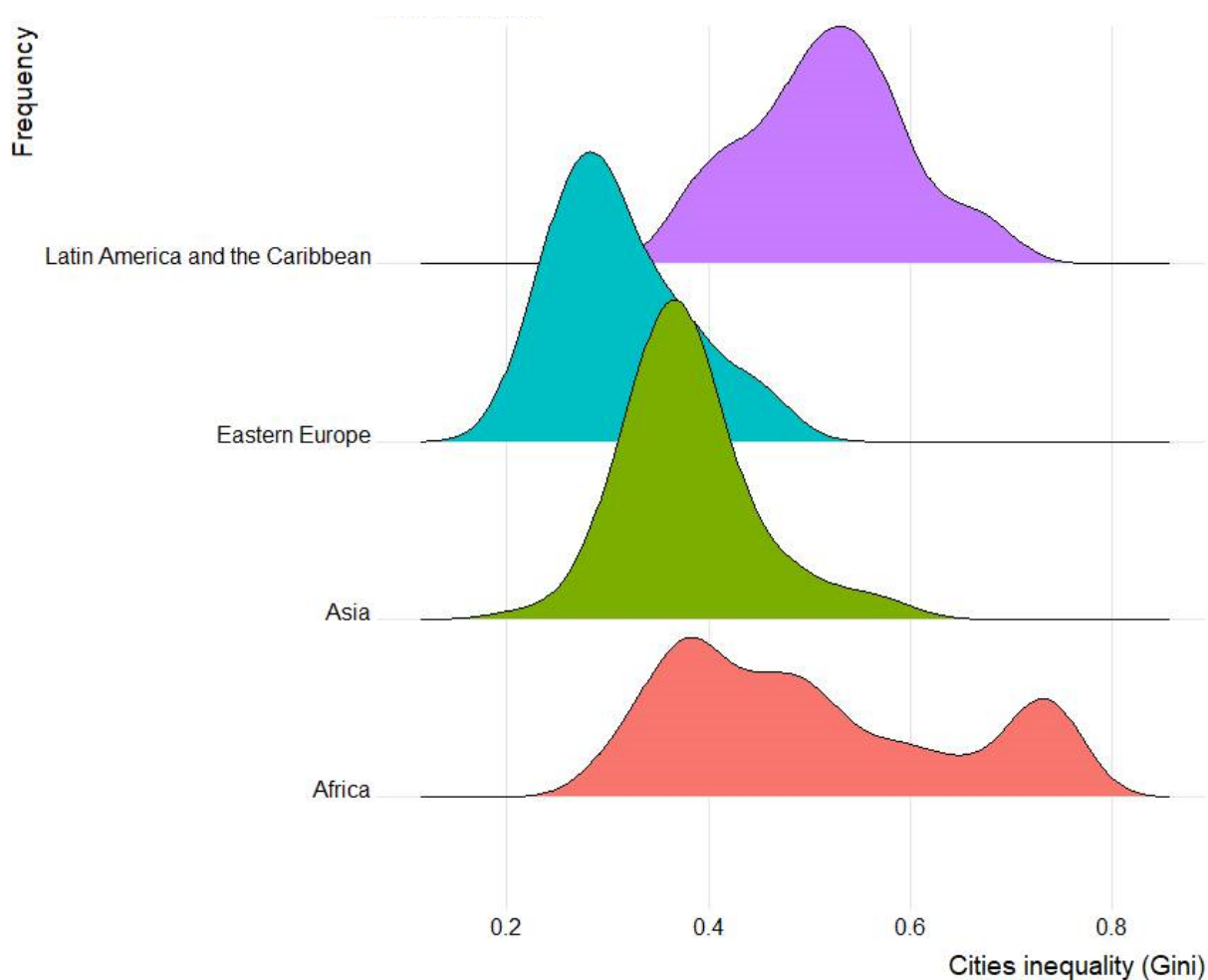
Source: IDB's elaboration. Based on UN Habitat World Cities Report 2016 data.

Notes: Data from cities in Asian countries (Bangladesh, Cambodia, Thailand, China, India, Indonesia, Jordan, Malaysia, Mongolia, Philippines, Sri Lanka and Vietnam); Africa countries (Burundi, Cameroon, Central African Republic, Congo, Cote d'Ivoire, DR Congo, Ethiopia, Gabon, Ghana, Guinea-Bissau, Kenya, Lesotho, Malawi, Morocco, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zimbabwe) Eastern European countries (Albania, Bulgaria, Hungary, Lithuania, Moldova, Poland, Romania, Serbia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhastan, Kyrgiz Republic, Russia, Tajikistan, Turkmenistan, Uzbekista); LAC countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Haiti, Panama, Paraguay, Peru, Uruguay and Venezuela).

Figure 3. Inequality in Latin America and the Caribbean: City Gini vs Country Gini

Inequality in Latin America and the Caribbean
Circa 2005-2010

City inequality - National inequality

country more unequal than city ◄ | ► city more unequal than country

Difference =
City gini - National gini

● City Gini   ◆ National Gini
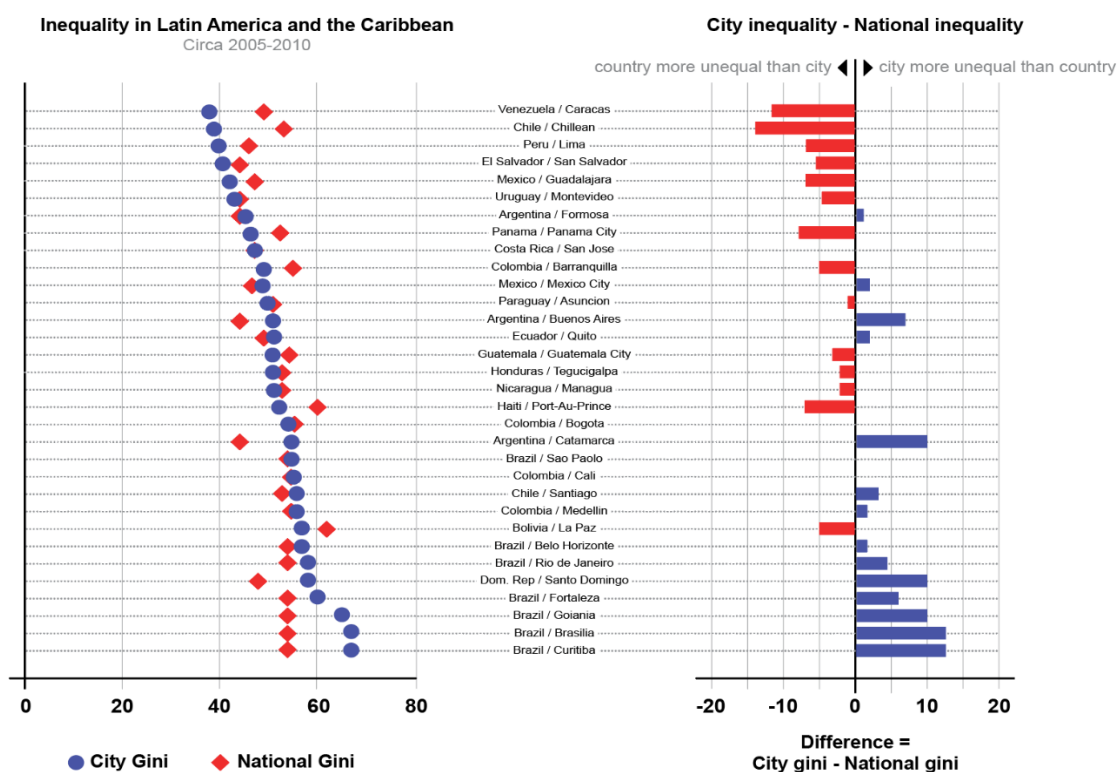
Source: IDB's elaboration based on UN Habitat World Cities 2016 data and World Bank Povcalnet database.

Figure 4. Inequalities in Life Expectancy at Birth in Six LAC Cities (years)
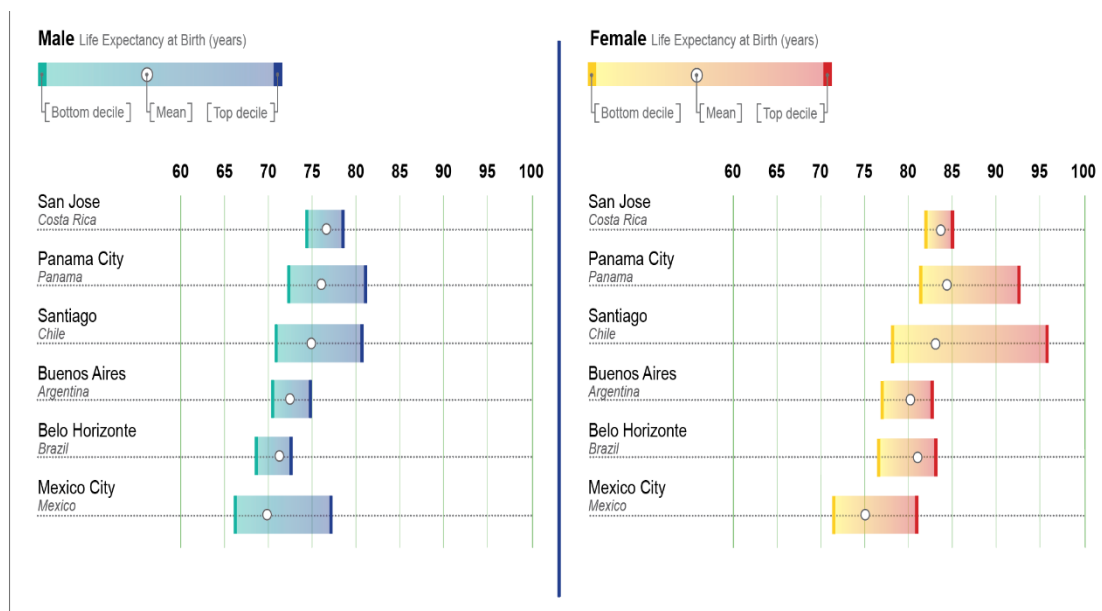
Source: Prepared by the authors based on data from Bilal et al. (2019, Table1).

Figure 5. Subnational Disparities in Access to Safe Sewage (percentage of urban households with safe sewage)
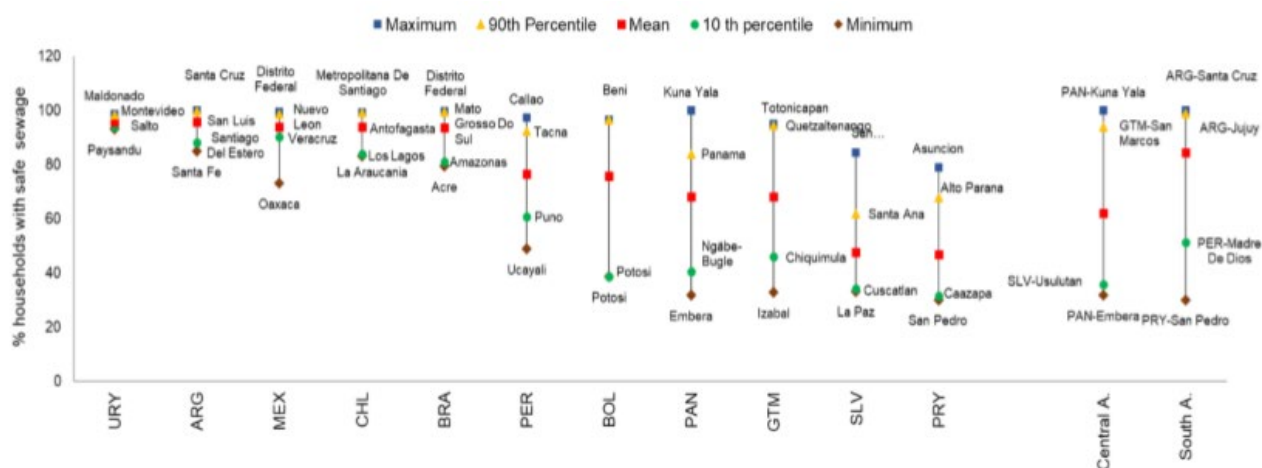
Source: Chauvin and Messina (2020

Figure 6. Cost Per Capita of High-quality Municipal Service Coverage by Urban Population Density, by Type of Service: Data from Brazil, Mexico, Ecuador, and Chile
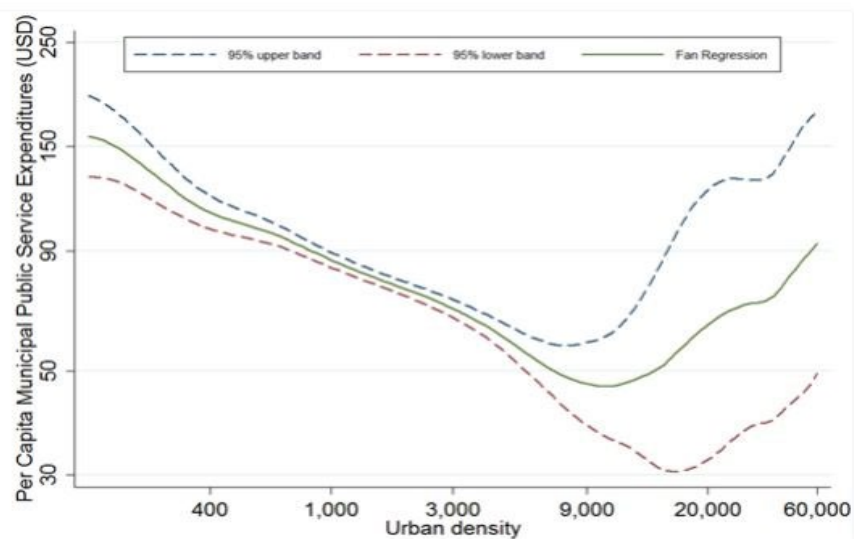
Source: Libertun and Guerrero (2016).

Figure 7. Changes in Household Sizes in Lima and Mexico City

Source: IDB's authors own elaboration based on Peru National Institute of Statistics INEI and Mexico INEGI.

Table 1. Percentage and number of households in housing deficit, by type and year

	HOUSEHOLDS IN DEFICIT, PER TYPE, COUNTRY, AND YEAR						CHANGE		
	QUANTITATIVE	QUALITATIVE	TOTAL	QUANTITATIVE	QUALITATIVE	TOTAL	QUANTITATIVE	QUALITATIVE	TOTAL
ARGENTINA			2011			2018			From 2011 to 2018
Percentage	5	27	32	4	22	26	-1	-5	-6
Number	421,568	2,276,468	2,698,036	389,359	2,141,476	2,530,835	-32,209	-134,992	-167,201
BRAZIL			2010			2015			From 2010 to 2015
Percentage	6	25	31	5	26	31	-1	1	-0.4
Number	2,382,205	9,925,856	12,308,061	1,870,952	10,290,233	12,161,185	-511,253	364,377	-146,876
BOLIVIA			2007			2015			From 2010 to 2015
Percentage	30	34	64	33	43	76	3	9	12
Number	373,010	422,745	795,755	405,930	535,828	941,758	32,920	113,083	146,003
CHILE			2012			2017			From 2012 to 2017
Percentage	4	14	18	5	9	14	1	-5	-4
Number	201,425	704,989	906,414	247,615	445,707	693,322	46,190	-259,282	-213,092
COLOMBIA			2010			2017			From 2012 to 2017
Percentage	9	19	28	1	15	17	-8	-4	-11
Number	832,056	1,756,563	2,588,619	128,215	1,410,367	1,538,582	-703,841	-346,196	-1,050,037
MEXICO			2010			2015			From 2010 to 2015
Percentage	2	26	28	1	24	25	-1	-2	-3
Number	572,151	7,437,968	8,010,119	309,840	6,816,476	7,126,316	-262,311	-621,492	-883,803
NICARAGUA			2009			2014			From 2009 to 2014
Percentage	12	58	70	13	71	84	1	13	14
Number	62,198	300,624	362,822	64,991	370,449	435,440	2,793	69,825	72,618
PERU			2012			2017			From 2012 to 2017
Percentage	14	46	60	2	47	50	-12	1	-10
Number	593,938	1,951,510	2,545,448	105,632	2,007,016	2,112,648	-488,306	55,506	-432,800

Total housing deficit is the sum of households in either qualitative or quantitative housing deficit (note that one household can suffer more than one kind of qualitative deficit but would be counted only once).
Quantitative housing deficit: households living in dwellings built with inadequate building materials, lack of access to basic services, overcrowding and inadequate property title.
Quantitative housing deficit: improvised dwellings or cohabitation.
Source: Own elaboration based on Bouillon 2012 and national intercensal households' surveys.

Table 2. Total Population in Latin America and the Caribbean by size class of urban settlement, in thousands

Year	Settlement size class						Population Total
	10 million or more	5 to 10 million	1 to 5 million	500 000 to 1 million	300 000 to 500 000	Less than 300 000	
1950	-	5,166	13,467	2,539	4,368	44,219	69,759
1960	-	12,241	18,577	7,143	7,601	63,719	109,281
1970	-	31,658	22,868	13,719	8,322	88,489	165,056
1980	25,117	18,704	45,374	18,639	12,585	114,742	235,161
1990	41,566	15,534	68,938	27,610	17,333	144,361	315,342
2000	59,282	19,281	86,974	36,845	18,247	176,432	397,061
2010	66,416	29,016	109,288	40,805	25,548	198,509	469,582
2020	94,135	18,031	136,555	42,023	32,017	216,667	539,428
2030	103,409	30,589	158,197	40,917	38,730	228,638	600,480

Source: United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, Online Edition. IDB's own elaboration.

Table 3. Definitions of Urban Settlements in Latin America and the Caribbean

| Country | How is the Urban Settlement Defined? | | | Has the Definition Changed since 1950? |
	Population Threshold	Administrative Definition	Other	
Argentina	2,000	-		
Belize	-	-	not provided	
Bolivia	2,000	-		
Brazil	-	Yes	Capital of State	
Chile	2,000 (1,000 possible)		density	Yes
Colombia	1,500	-		Yes
Costa Rica	-	Yes	Capital of State	
Dominican Republic	-	Yes	Capital of State	
Ecuador	-	Yes	Capital of State	
El Salvador	-	Yes		
Guatemala	-	State defines	Capital of State	Yes
Haiti	-	Yes	Capital of State	
Honduras	2,000	-	Infrastructure	Yes
Jamaica	-	-	Selected towns	
Mexico	2,500	-		
Nicaragua	-	Yes	Infrastructure	Yes
Panama	1,500	-	-	
Paraguay	-	Yes (districts)	-	Yes
Peru	-	Yes (administrative)	Capital of State	Yes
Suriname	-	-	Greater Paramaribo	
Trinidad and Tobago	-	-	Selected towns	
Uruguay	-	-	Capital of State	
Venezuela	2,500	-		
Uruguay	-	Yes	Capital of State	

Source: IDB's own elaboration based on Lattes, Rodríguez, and Villa (2017).

ANNEX III. OPERATIONS ANALYZED[43]

1.   SOVEREIGN GUARANTEED LOANS

SOVEREIGN GUARANTEED LOANS				
Name	Number	PCR	PMR	Interview with specialist
Programa de Desarrollo de Áreas Metropolitanas del Interior II	AR-L1243 (3780/OC-AR)		X	X
Programa de Integración Urbana e Inclusión Social y Educativa de la Ciudad de Buenos Aires	AR-L1260 (4303/OC-AR)		X	X
Programa de Políticas de Desarrollo Sostenible	BA-L1048 (4987/OC-BA)		X	X
Programa de Requalificação Urbana com Inclusão Social – PREURBIS	BR-L1078 2221/OC-BR)	X	X	X
Programa de Desenvolvimento Urbano e Inclusão Socioambiental de Aracaju	BR-L1084 (2258/OC-BR)	X	X	X
Programa de Desenvolvimento Urbano e Inclusão Socioambiental de Manaus	BR-L1088 (2267/OC-BR)	X	X	X
Programa de Desenvolvimento Integrado do Município de Passo Fu–do - PRODIN	BR-L1163 (2320/OC-BR)	X	X	X
Programa de recalificación urbana de la región oeste de Aracaju – construyendo para el futuro	BR-L1411	X	X	X
Programa de Movilidad Urbana Sostenible de Curitiba	BR-L1532		X	X
Programa de Desarrollo Urbano Integrado y Sostenible del Municipio de Joao Pessoa	BR-L1421		X	X
Programa de Fortalecimiento Fiscal y del Gasto en Inversión Pública Para Entidades Territoriales y sus Empresas de Servicios Públicos	CO-L1165		X	X
Programa Integral de Desarrollo Turístico y Urbano de la Ciudad Colonial de Santo Domingo	DR-L1035	X		X
Programa de protección y recuperación del patrimonio cultural en Ecuador	EC-L1097 (2907/OC-EC)	X	X	X
Programa Nacional de Vivienda Social	EC-L1113 (2797/OC-EC)	X		
Programa de Vivienda y Mejoramiento Integral de Asentamientos Urbanos Precarios	ES-L1022 (2373/OC-ES)	X	X	
Low Income Settlement 2	GY-L1019 (2102/BL-GY)	X	X	
Programa de Vivienda adecuada y accesibilidad urbana	GY-L1031		X	
Programa de Vivienda de Interés Social	HO-L1007 (1786/SF-HO)	X	X	
Programa Integral de Atención a la Pobreza Urbana	ME-L1098 (2569/OC-ME)	X	X	
Programa de Vivienda y Mejoramiento Integral del Hábitat	NI-L1053 (2565/BL-NI)	X	X	
Mejoramiento de Barrios	UR-L1009 (2052/OC-UR)	X	X	X
Second Low Income Shelter	SU-L1015 (2259/OC-SU)	X	X	

[43] These analyzed operations responded to the following criteria: (i) Loans that had an approved PCR; (ii) loans that are still in execution phase but close to completion and hence, allowing for retrieving lessons; and (iii) loans that interviewed specialists deemed to be of notice.

INVESTMENT GRANTS				
Name	**Number**	**PCR**	**PMR**	**Interview with specialist**
Proyecto de Eficiencia Energética y Energía Renovable en la Vivienda Social Argentina	AR-G1002 (GRT/FM-15083-AR)		X	X
Programa de Integración Socio-urbana de Migrantes en Ciudades Colombianas	CO-G1015 (GRT/ER-17925-CO)		X	X
Programa de Infraestructura Productiva	HA-X1036 (GRT/HR-15509-HA)	X	X	X

2. **NON-SOVEREIGN GUARANTEED LOANS**

NON SOVEREIGN GUARANTEES LOANS	
IDB LAB PROJECTS	
Name of the Program	**Operation Number**
Promoción de la Economía Creativa en Paraguay	PR-T1232
Iniciativa Regional para la inclusion Economica y Social de los Recicladores	RG-M1179
Economía Circular y Adaptación al Cambio Climático en São Paulo: Reciclaje de Aceite de Cocina Usado	BR-T1343
Programa de Desarrollo de un Modelo de Negocios para revitalizacion de las Organizaciones de Recicladores	CO-M1052
Innovación Disruptiva: Movilidad Sostenible en la Ciudad de México	ME-T1322
Cuatro Puntos en la Cadena de Valor para Mejorar la Vivienda Urbana	ME-T1323
Fomento del Financiamiento Verde y la Vivienda Asequible en México	ME-L1260
Vouchers de Innovacion en las Industrias Creativas en Uruguay	UR-T1150
Maceió más Inclusiva con Modelos de Economía Circular	BR-T1342
IDB INVEST PROJECTS	
Vinte IV – Revolving Credit Line and Partial Credit Guarantee (1)	Mexico (11307-04)
Vinte IV – Revolving Credit Line and Partial Credit Guarantee (2)	Mexico (11307-5)
Davivienda –	Colombia (12114-01)
and CTH Warehousing Line –	Ecuador (12283-01)

3. **OVE EVALUATIONS**

OVE Evaluations
Evaluación de la Iniciativa de Ciudades Emergentes y Sostenibles del BID (OVE, 2016)
Evaluación comparativa de los proyectos del BID en apoyo de Programas de Vivienda Social en Cuatro Países del Caribe (OVE, 2017)

ANNEX IV. DEFINITIONS OF CONCEPTS USED IN THIS SFD

CONCEPT	DEFINITION
5G	A revolutionary mobile communication technology that will usher in the 4th Industrial Revolution and drastically change the society and economy of the future. Many countries around the world are in a hurry to adopt 5G to quickly secure the significant economic and social benefits that it brings (Garcia Zaballos, Iglesias Rodríguez, Woo Kim et al., 2020).
Adaptation [to climate change]	The process of adjustment to actual or expected climate change and its effects. Adaptation cannot be instantaneous, so it is implemented in phases, starting with the opportunities for adaptation (IPCC 2014b). By its nature, adaptation must be a continuous, repetitive, and inclusive process and must actively involve various levels of government.
Adaptive Urban Planning (AUP)	A planning process that underscores a need for a paradigm shift to move from the dominant focus on the adjustment of physical structures towards the improvement of planning systems, tools and governance processes themselves (Birkmann et al., 2012).
Agglomeration Economies	A localized economy in which a large number of companies, services, and industries exist in close proximity to one another and benefit from the cost reductions and gains in efficiency that result from this proximity. The existence of agglomeration economies can imply different things for local and national policymakers (Glaeser, 2010).
Basic municipal services	Services that municipalities are responsible to provide to all households. These include water, sanitation, electricity, and trash collection services, among others. Typically, these services are funded via taxes, service fees, and other sources (Eguino et al., 2010)
Big Data	The term "big data" refers to data that is so large, fast, or complex that it's difficult or impossible to process using traditional methods. The act of accessing and storing large amounts of information for analytics has been around a long time. But the concept of big data gained momentum in the early 2000s when industry analyst Doug Laney articulated the now-mainstream definition of big data as the three V's: Volumes, Velocity and Variety (www.SAS.com)
Business improvement districts	These are self-assessment tax districts initiated and managed by private owners to provide specific rules and improvements to commercial neighborhoods (Ellen et al., 2007).
Building Information Modeling (BIM)	This is an intelligent three-dimensional model-based process that gives architecture, engineering, and construction professionals the insight and tools to plan more efficiently, design, construct, and manage buildings and infrastructure (www.autodesk.com).
Blockchain	Shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. An asset can be tangible (a house, a car, cash, land) or intangible (intellectual property, patents, copyrights, branding). Virtually, anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved (www.ibm.com).
Bus Rapid Transit (BRT)	An improved bus service that offers faster speeds, shorter travel times and better customer services. BRT performance is facilitated by operational and physical elements such as the use of exclusive lanes (Hidalgo and Graftieaux, 2008).
Carbon Sequestration	It is he long-term storage of carbon in plants, soils, geologic formations, and the ocean. Carbon sequestration occurs both naturally and as a result of anthropogenic activities and typically refers to the storage of carbon that has the immediate potential to become CO_2 gas. In response to growing concerns about climate change resulting from increased CO_2 concentrations in the atmosphere, considerable interest has been drawn to the possibility of increasing the rate of carbon sequestration through changes in land use and forestry and also through geoengineering techniques such as carbon capture and storage (Encyclopedia Britannica https://www.britannica.com/technology/carbon-sequestration).

Circular Economy	It seeks to decouple economic development from the consumption of limited resources using three principles: (i) preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows; (ii) optimize resource yields by circulating products, components, and materials at the highest utility at all times in both technical and biological cycles; and (iii) foster system effectiveness by revealing and designing out negative externalities. By avoiding waste, making businesses more efficient, and creating new employment opportunities, the circular economy could be worth US$4.5 trillion through 2030 (Ellen MacArthur Foundation, 2015).
City-region	An area becomes what is called a when cities extend beyond their administrative boundaries into rural hinterlands (e.g., the Metropolitan São Paulo region in Brazil) (UN Habitat, 2011).
Climate Change (CC)	A change in the average state of the climate or its variability that persists over an extended period (normally decades or longer) that can be identified by statistical methods. Climate change may be due to natural internal processes, external forces, or persistent anthropogenic changes in the composition of the atmosphere or in land use (IPCC, 2014b).
COP 21 (2015 Paris Agreement)	In 2015, COP 21, also known as the 2015 Paris Climate Conference, achieved a legally binding and universal agreement on climate, with the aim of keeping global warming below 2°C —and as close to 1.5°C as possible—above pre-industrial levels. The international political response to climate change began at the Rio Earth Summit in 1992, where the 'Rio Convention' included the adoption of the UN Framework on Climate Change (UNFCCC). This convention set out a framework for action aimed at stabilizing atmospheric concentrations GHGs to avoid "dangerous anthropogenic interference with the climate system." The UNFCCC which entered into force on 21 March 1994, now has a near-universal membership of 195 parties. The main objective of the annual Conference of Parties (COP) is to review the Convention's implementation. The first COP took place in Berlin in 1995 and significant meetings since then have included COP3 where the Kyoto Protocol was adopted, COP11 where the Montreal Action Plan was produced, COP15 in Copenhagen where an agreement to success Kyoto Protocol was unfortunately not realized and COP17 in Durban where the Green Climate Fund was created. (http://www.cop21paris.org/about/cop21).
Creative industries	A range of economic activities which are concerned with the generation or exploitation of knowledge and information. It compromises economic activities such as advertising, architecture, art, crafts, design, fashion, film, music, performing arts, publishing, research and development, software, toys and games, TV and radio, and video games. The creative industries have been seen to become increasingly important to economic well-being, especially in cities (Florida, 2002)
Cultural industries	It includes six main cultural domains: Natural Heritage, Performance and Celebration, Visual Arts and Crafts, Books and Press, Audio-visual and Interactive Media, and Design and Creative Services; as well as two related domains: Tourism, and Sports and Recreation. Thus, cultural industries are more concerned about delivering other kinds of value—including cultural wealth and social wealth—rather than primarily providing monetary value (UNDP, 2013).
Crime prevention through environmental design (CPTED)	An integral approach to prevent violence based on the notion that the 'physical environment can be changed to impact on criminal behavior in a way that will reduce the incidence and fear of crime and improve the quality of life. In practices, offers recommendations for the planning, design, and management of the physical environment, with a view to reducing urban crime (Cooke, 2003).
Congestion Pricing	Is the practice of relieving congestion by charging tolls, or requiring the purchase of supplementary licenses, to drive in a city's central areas (Gomez-Ibanez and Small, 1994).
Energy Efficient Homes	These are homes that reduce the amount of energy required to provide products and services. For example, insulation allows a home to use less heating and cooling energy to achieve and maintain a comfortable temperature. Installing LED lighting, fluorescent lighting, or natural skylight windows reduces the amount of energy required to attain the

	same level of illumination compared to using traditional incandescent light bulbs. Improvements in energy efficiency are generally achieved by adopting a more efficient technology or production process or by application of commonly accepted methods to reduce energy losses (Krishan, 2001).
Gentrification	The transformation of neighborhoods from low value to high value. This change has the potential to cause displacement of long-time residents and businesses ... when long-time or original neighborhood residents move from a gentrified area because of higher rents, mortgages, and property taxes. Gentrification is a housing, economic, and health issue that affects a community's history and culture and reduces social capital. It often shifts a neighborhood's characteristics, e.g., racial-ethnic composition and household income, by adding new stores and resources in previously run-down neighborhoods (CDC, 2015).
Gini coefficient	The most common measure of inequality is the Gini coefficient. It is based on the Lorenz curve, a cumulative frequency curve that compares the distribution of a specific variable (for example, income) with the uniform distribution that represents equality. To construct the Gini coefficient, graph the cumulative percentage of households (from poor to rich) on the horizontal axis and the cumulative percentage of income (or expenditure) on the vertical axis. The Gini coefficient is defined as A/(A + B), please see the figure below for reference. If A=0, the Gini coefficient becomes 0, which means perfect equality, whereas if B=0, the Gini coefficient becomes 1, which means complete inequality (World Bank, 2020c).
Green infraestructure	This is the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspiration stormwater and reduce flows to sewer systems or to surface waters (US, Clean Water Act, https://www.epa.gov/green-infrastructure/what-green-infrastructure).
Green Roofs	Also known as 'vegetated roofs' or 'living roofs', are ballasted roofs consisting of a waterproofing membrane, growing medium (soil) and vegetation (plants) overlying a traditional roof. Well-designed, engineered and maintained green roofs provide multiple environmental, social, economic and aesthetic benefits. (https://www.gsa.gov/governmentwide-initiatives/federal-highperformance-buildings/resource-library/integrative-strategies/green-roofs).
Green House Gases (GHG)	Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of thermal infrared radiation that is emitted by the Earth's surface, by the atmosphere, and by clouds. This property causes the greenhouse effect (IPCC, 2007).
Housing Deficits	The sum of qualitative and quantitative housing deficit (Bouillon, 2012).
Adequate housing (as a right)	The concept of adequate housing as a right and its link to sustainable urban development has evolved substantially over the last four decades. Between 1976 and 2016, there has been a significant progress in the way in which governments have addressed housing as a central component of inclusive urbanization processes and as a driving force for sustainable development. The right to adequate housing stands as a fundamental part of the right to an adequate standard of living, according to the Universal Declaration of Human Rights of 1948 and the International Covenant on Economic, Social and Cultural Rights of 1966 (ONU Habitat https://unhabitat.org/sites/default/files/documents/2019-05/housing_sdgs_in_mexico.pdf).
Human Development Index (HDI)	a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions (hdr.undp.org/en/content/human-development-index-hdi).
Income inequality	It measures a significant disparity in the distribution of income between individuals, groups, populations, social classes, cities, or countries. Income inequality is a major dimension of social stratification. It affects and is affected by many other forms of inequality, such as

	inequalities in wealth, political power, and social status (Carter and Howard, Encyclopedia Britannica, https://www.britannica.com/topic/income-inequality/Reducing-inequality).
Informal neighborhoods (or settlements)	Unplanned, unauthorized, or unstructured housing developments. Typically, these neighborhoods lack basic sanitation infrastructure, water, and electricity services. Often, they are developed in areas highly vulnerable to pollution or climatic events. It is estimated that 30% of the worlds' urban population lives in an informal neighborhood. Other names used for these settlements are slums, favelas, villas miserias, invasiones, among others (World Bank, 2020a).
Land value capture	A policy approach that enables communities to recover and reinvest land value increases that result from public investment and other government actions. Also known as "value sharing," it is rooted in the notion that public action should generate public benefit (Lincoln Land Institute www.lincolninst.edu/key-issues/value-capture-property-tax).
License plate–based driving restrictions	License plate–based driving restrictions aim to reduce air pollution and traffic congestion by prohibiting drivers from using their vehicles one or more days a week based on the last digit of the license plate (Blackman et al., 2018).
Mega-region/in urbanism	An economic area that links metropolitan areas (e.g., the Nagoya-Osaka-Kyoto-Kobe area in Japan) (UN Habitat, 2011).
Metropolis/metropolitan areas	Metropolitan area, also called Metropolis, a major city together with its suburbs and nearby cities, towns, and environs over which the major city exercises a commanding economic and social influence. Literally construed, metropolis from the Greek means "mother city," and by implication there are progeny or dependents scattered about the core area. (Encyclopedia Britannica. https://www.britannica.com/topic/metropolitan-area).
Mitigation [of climate change]	"A human intervention to reduce the sources or enhance the sinks of greenhouse gases" (IPCC, 2014a).
Nature Based Solutions (NBS)	They include a variety of ecosystem-related approaches that combine natural, green, and traditional (gray) infrastructure to develop climate-resilient infrastructure. For example, while the standard approach to managing floods would rely on gray infrastructure to improve a city's drainage system, nature-based solutions would work with urban gardens, roofs, and green spaces, and restore and manage the vegetation of wetlands and rivers –a more environmentally friendly solution that is also resilient to future climate events and changes (Kabisch, Korn, Stadler, et al., 2017; IDB, 2020d).
Neighborhood upgrading program	These are multisectorial programs that upgrade the public services and housing conditions of informal neighborhoods. Objectives of these programs are to increase improving living conditions in the neighborhoods as well as connecting the neighborhood to the rest of the city (UN Habitat, 2016).
Nightlight data	A hallmark of contemporary urban settlements is the artificial illumination of buildings, transportation infrastructure (such as roads, airplane runways and railway lines), parking lots, and other components of the built environment. Research has suggested that night-time light (NTL) available from meteorological satellites can be used as a proxy for several variables, including urbanization, density, and economic growth (Mellander, Stolarick, Matheson et al., 2013).
Overcrowding (in housing)	It is defined as two or more people per room, and is currently one of the most prevalent types of qualitative housing deficits in LAC cities (Bouillon, 2012).
Primacy	Is the demographic preponderance of a country's largest city with respect to that country's national urban network. This ratio (Pr) is calculated as $Pr = Pi/r$, where Pi is the number of inhabitants in the country's largest city and r is its size range. A country has high primacy if the population of its most populous city is double the population of its second-largest city.
Qualitative housing deficit	It is measured as the sum of dwellings that have at least one of these deficiencies: built with inadequate construction materials, lack access to basic municipal services (potable

	water, sanitation and electricity), are overcrowded (two or more people per room), or lack adequate property titles (Bouillon, 2012).
Quantitative housing deficit	It is measured by the need of new constructions owing to the number of families sharing the same space (co-habitation), rustic and improvised housing, excessive rent burden, and replacement deficit (Bouillon, 2012).
Replacement fertility	the level of fertility that, if maintained over time, will produce zero-population growth under the assumption of constant mortality and absence of migration. It corresponds to a total fertility rate of 2.1 children per woman, the rate that ensures the replacement of the number of women of reproductive age.
Resilience [to climate change]	"The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change." In the specific case of climate change, this refers to the extent to which a system can recover from the impact of a climatic event (IPCC 2007).
Smart city	Is a city that places people at the center of development, incorporates Information and Communication Technologies into urban management, and uses these elements as tools to stimulate the design of an effective government that includes collaborative planning and citizen participation (Bouskela et al., 2016).
Structural social exclusion	It consists of dynamic, multi-dimensional processes driven by unequal power relationships interacting across four main dimensions –economic, political, social, and cultural– and at different levels including individual, household, group, community, country, and global levels. It results in a continuum of inclusion/exclusion characterized by unequal access to resources, capabilities and rights which leads to inequalities. The relational processes that lead to the exclusion of groups of people from engaging fully in community/social life. These processes operate at: the macro-level (e.g. access to affordable housing, education, equal employment opportunity legislation, cultural and gender norms), and/or the micro-levels (income, occupational status, social network –around race, gender, religion). (https://www.who.int/social_determinants/themes/socialexclusion/en/).
Sustainable Development Goals (SDG)	The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace, and justice. The 17 Goals are all interconnected, and to leave no one behind, it is important that we achieve them all by 2030 (https://www.un.org/sustainabledevelopment/sustainable-development-goals/).
Tax Increment Finance (TIF)	It is a way to capture appreciation in the value of urban land. (TIFs) underwrites the issuance of public bonds to fund new infrastructure. The bond prices are calculated according to expected future increases in property values after the new public infrastructure gets built (Blanco et al., 2016).
Transit-oriented development (TOD)	TOD is a type of urban development that maximizes the amount of residential, business and leisure space within walking distance of public transport. It promotes a symbiotic relationship between dense, compact urban form and public transport use. In doing so, TOD aims to increase public transport ridership by reducing the use of private cars and by promoting sustainable urban growth (Cervero et al., 2002).
Underserved neighborhoods	Neighborhoods that lack access to basic municipal services, regardless of the legal status of the land subdivision, or housing stock (UN Habitat, 2016).
UNESCO World Heritage Sites	A World Heritage Site is a landmark or area, selected by the United Nations Educational, Scientific and Cultural Organization (UNESCO) for having cultural, historical, scientific, or other form of significance, which is legally protected by international treaties. The sites are judged to be important for the collective and preservative interests of humanity (https://whc.unesco.org).
Urban Corridor	An area that links several cities into a single productive cluster (e.g., the Mumbai-Delhi industrial corridor in India) (UN Habitat, 2011).

Urban heat island (UHI)	An urban area or metropolitan area that is significantly warmer than its surrounding rural areas due to human activities. The temperature difference is usually larger at night than during the day and is most apparent when winds are weak. UHI is most noticeable during the summer and winter. The main cause of the urban heat island effect is from the modification of land surfaces. Waste heat generated by energy usage is a secondary contributor. As a population center grows, it tends to expand its area and increase its average temperature. The term heat island is also used; the term can be used to refer to any area that is relatively hotter than the surrounding, but generally refers to human-disturbed areas (https://www.nationalgeographic.org/encyclopedia/urban-heat-island).
Urban Heritage	The concept of urban heritage has two meanings. First, urban heritage can refer to the list of heritage elements located in urban areas: archaeological vestiges, historical buildings, vernacular architecture, historical gardens, social practices, rituals, and festive events, among others. Second, urban heritage can refer to the city as heritage, a special type of cultural property that is mainly associated with neighborhoods, urban centers, and historic cities (UNESCO, 2010).
Vulnerability [to climate change]	The degree to which a system (natural, human, or material capital) is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is dynamic and is a function of the exposure to a threat, the sensitivity, and capacity to adapt (IPCC, 2014b).

ANNEX V. THE UN SDG 11 AND THE NEW URBAN AGENDA

UN SDG 11: Make cities inclusive, safe, resilient and sustainable
https://www.un.org/sustainabledevelopment/cities/

11.1   By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

11.2   By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

11.3   By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

11.4   Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

11.5   By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.

11.6   By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

11.7   By 2030, provide universal access to safe, inclusive, and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.

11.A   Support positive economic, social, and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

11.B   By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

11.C   Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

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UN SDG 11: LAC Progress indicators
http://datatopics.worldbank.org/sdgs/index.html

11.1.   The proportion of population living in slum dwellers as a percentage of urban population was reduced from 25.46 percent in 2005 to 25.46 percent in 2014.

11.6.   The proportion of population exposed to levels of air pollution exceeding WHO guidelines was reduced from 96 percent in 2005 to 87.21 percent in 2017.

The UN New Urban Agenda
https://www.un.org/sustainabledevelopment/blog/2016/10/newurbanagenda/

It is a roadmap for building cities that can serve as engines of prosperity and centers of cultural and social well-being while protecting the environment. The Agenda also provides guidance for achieving the SGDs and provides the underpinning for actions to address climate change. Now it is up to national governments and local authorities to implement the Agenda, with technical and financial partnerships and assistance from the international community.

In the New Urban Agenda, world leaders have committed to:
Provide basic services for all citizens. These services include:

- ✓ Access to housing, safe drinking water and sanitation, nutritious food, healthcare and family planning, education, culture, and access to communication technologies.
- ✓ Ensure that all citizens have access to equal opportunities and face no discrimination
- ✓ Everyone has the right to benefit from what their cities offer. The New Urban Agenda calls on city authorities to consider the needs of women, youth and children, people with disabilities, marginalized groups, older persons, Indigenous people, among other groups.
- ✓ Promote measures that support cleaner cities
- ✓ Tackling air pollution in cities is good both for people's health and for the planet. In the Agenda, leaders have committed to increase their use of renewable energy, provide better and greener public transport, and sustainably manage their natural resources.
- ✓ Strengthen resilience in cities to reduce the risk and the impact of disasters
- ✓ Many cities have felt the impact of natural disasters and leaders have now committed to implement mitigation and adaptation measures to minimize these impacts. Some of these measures include better urban planning, quality infrastructure and improving local responses.
- ✓ Take action to address climate change by reducing their greenhouse gas emissions
- ✓ Leaders have committed to involve not just the local government but all actors of society to take climate action taking into account the Paris Agreement on climate change which seeks to limit the increase in global temperature to well below 2 degrees Celsius. Sustainable cities that reduce emissions from energy and build resilience can play a lead role.
- ✓ Fully respect the rights of refugees, migrants, and internally displaced persons regardless of their migration status.
- ✓ Leaders have recognized that migration poses challenges, but it also brings significant contributions to urban life. Because of this, they have committed to establish measures that help migrants, refugees and IDPs make positive contributions to societies.
- ✓ Improve connectivity and support innovative and green initiatives.
- ✓ This includes establishing partnerships with businesses and civil society to find sustainable solutions to urban challenges.
- ✓ Promote safe, accessible, and green public spaces.
- ✓ Human interaction should be facilitated by urban planning, which is why the Agenda calls for an increase in public spaces such as sidewalks, cycling lanes, gardens, squares, and parks. Sustainable urban design plays a key role in ensuring the liveability and prosperity of a city.

REFERENCES

Acemoglu, D., and J.A. Robinson. 2005. *Economic Origins of Dictatorship and Democracy*. Cambridge, UK: Cambridge University Press.

Acevedo, P., J. Hobbs, and S. Martinez. 2017. The Impact of Upgrading Municipal Infrastructure on Property Prices: Evidence from Brazil (No. IDB-TN-1277). Washington, DC: Inter-American Development Bank.

Ahrend, R., and A. Schumann. 2014. Approaches to Metropolitan Area Governance: A Country Overview. OECD Regional Development Working Papers. Paris, France: Organisation for Economic Co-operation and Development.

Akbar, P. A., and G. Duranton. 2017. Measuring the Cost of Congestion in Highly Congested City: Bogotá. Working Paper 2017/04. Caracas, Venezuela: CAF Development Bank of Latin America.

Anacker, K.B. 2020. Inclusionary Zoning and Inclusionary Housing in the United States: Measuring Inputs and Outcomes. In: R. Phillips, E. Trevan, and P. Kraeger (eds.), *Research Handbook on Community Development* (Chapter 11). Cheltenham, UK: Edward Elgar Publishing.

Altamirano, A., O. Azuara, and S. Gonzalez. 2020. Políticas Sociales en Respuesta al Coronavirus. ¿Como impactara COVID 19 al empleo? Posibles escenarios para America Latina y el Caribe. Washington, DC: IDB.

Andersson, K., and F. Van Laerhoven. 2007. Participatory Municipal Governance in Latin America. *Comparative Political Studies*, 40:1085–111.

Angel, S., J. Parent, and D. Civco. 2010. The Fragmentation of Urban Footprints: Global Evidence of Urban Sprawl 1990–2000. Lincoln Institute of Land Policy Working Paper, p.104. Cambridge, MA: Lincoln Institute of Land Policy.

Arias-Ortiz, E., G. Crespi, G. Rasteletti, and F. Vargas. 2014. Productivity in Services in Latin America and the Caribbean. Washington, DC: IDB.

Arku, G. 2006. The Housing and Economic Development Debate Revisited: Economic Significance of Housing in Developing Countries. *The Journal of Housing and the Built Environment* 21:377–95.

Atkinson-Palombo, C., and M. J. Kuby. 2011. The Geography of Advance Transit-Oriented Development in Metropolitan Phoenix, Arizona, 2000–2007. *Journal of Transport Geography* 19(2):189–99.

Atuesta, L., and Y. Soares. 2016. Urban Upgrading in Rio de Janeiro: Evidence from the Favela Bairro Programme. *Urban Studies* 55(1). DOI: 10.1177/0042098016669290.

Audoly, R., A. Vogt-Schilb, C. Guivarch, and A. Pfeiffer. 2017. Pathways toward Zero-Carbon Electricity Required for Climate Stabilization. IDB Working Paper No. 827 (IDB-WP-827). Washington, DC: IDB.

Banks, N., M. Lombard, and D. Mitlin. 2020. Urban Informality as a Site of Critical Analysis. *The Journal of Development Studies* 56(2):223–38.

Bason, C. 2017. Leading Public Design: Discovering Human-Centered Governance. Bristol: Policy Press. DOI: 10.2307/j.ctt1t88xq5.

Bass, B., E.S. Krayenhoff, A. Martilli, R.B. Stull, and H. Auld. 2003. The Impact of Green Roofs on Toronto's Urban Heat Island. Proc. First North American Green Roof Conference: Greening Rooftops for Sustainable Communities, Chicago, IL, Toronto (Canada) Cardinal Group, 292–304.

Bates, B.C., Z.W. Kundzewicz, S. Wu, and J.P. Palutikof (eds). 2008. Climate Change and Water. IPCC Technical Paper VI (IPCC-XXVIII/DOC 13). Geneva: IPCC Secretariat.

Belsky, E, Goodman, J and Drew R. 2005. Measuring the Nation's Rental Housing Affordability Problems. Joint Center for Housing Studies, Graduate School of Design and John F. Kennedy School of Government, Harvard University.

Benavente, J.M., and M. Grazzi. 2017. Public Policies for Creativity and Innovation: Promoting the Orange Economy in Latin America and the Caribbean. Washington, DC: IDB.

Bernard, A., F. Rowe, M. Bell, P. Ueffing, and E. Charles-Edwards. 2017. Comparing Internal Migration across the Countries of Latin America: A Multidimensional Approach. PLOS ONE 12(3).

Bertaud, A. 2015. Converting Land into Affordable Housing Floor Space. In: E. Glaeser and A. Joshi-Ghani (eds), *The Urban Imperative: Towards Competitive Cities*. New Delhi, India: Oxford University Press.

Bettencourt, L.M. 2013. The Origins of Scaling in Cities. *Science* 340(6139):1438–441.

Bilal, U., M. Alazraqui, W.T. Caiaffa, N. Lopez-Olmedo, K. Martinez-Folgar, J.J. Miranda, and A.V. Diez-Roux. 2019. Inequalities in Life Expectancy in Six Large Latin American Cities from the SALURBAL study: An Ecological Analysis. *The Lancet Planetary Health* 3(12):e503–10.

Birkmann, J., M. Garschagen, V. Van Tuan, and N.T. Binh. 2012. Vulnerability, Coping and Adaptation to Water Related Hazards in the Vietnamese Mekong Delta. In: F. Renaud and C. Kuenzer (eds), *The Mekong Delta System*. Dordrecht: Springer Environmental Science and Engineering.

Blackman, A., R. Epanchin-Niell, J. Siikamäki, and D. Velez-Lopez. 2014. *Biodiversity Conservation in Latin America and the Caribbean: Prioritizing Policies* (Environment for Development). Oxon, UK: Taylor and Francis.

Blackman, A., A.M. Ibáñez, A. Izquierdo, P. Keefer, M. Mesquita Moreira, N. Schady, and T. Serebrisky. 2020. La política pública frente al COVID-19: Recomendaciones para América Latina y el Caribe. Washington, DC: IDB.

Blackman, A., L. Li, and A. Liu. 2018. Efficacy of Command-and-Control and Market-Based Environmental Regulation in Developing Countries. *Annual Review of Resource Economics* 10:20.1–20.24.

Blanco, A.G., Fretes Cibils, and A.F. Muñoz. 2014. Rental Housing Wanted: Policy Options for Latin America and the Caribbean. Washington, DC: IDB.

Blanco, A., A. Muñoz, and V. Fretes Cibils. 2016. Usando La Valorización Del Suelo para Financiar Grandes Operaciones Urbanas: La Captura de Plusvalías en América Latina Y El Caribe. Banco Interamericano de Desaarrollo

Boisjoly, G., Moreno-Monroy, A.I. and El-Geneidy, A., 2017. Informality and accessibility to jobs by public transit: Evidence from the São Paulo Metropolitan Region. *Journal of Transport Geography*, 64, pp.89-96.

Boix, R., and V. Soler. 2017. Creative Service Industries and Regional Productivity. *Papers in Regional Science* 96(2):261–79.

Boix-Domènech, R., and P. Rausell-Köster. 2018. The Economic Impact of the Creative Industry in the European Union. In: V. Santamarina-Campos and M. Segarra-Oña (eds), *Drones and the Creative Industry* (pp. 19-36). Cham, Switzerland: Springer.

Bonet, J., A. Muñoz, and C. Pineda (eds). 2014. El potencial oculto – Factores determinantes y oportunidades del impuesto a la propiedad inmobiliaria en América Latina. Washington, DC: IDB.

Bonilla, M.E., and I. Zapparoli. 2017. The Challenge of Financing Urban Infrastructure for Sustainable Cities. Washington, DC: IDB.

Bouillon, C. (ed.) 2012. *Room for Development: Housing Markets in Latin America and the Caribbean*. Washington, DC: IDB.

Bouskela, M., M. Casseb, S. Bassi, C. De Luca, and M. Facchina. 2016. The Road toward Smart Cities. Washington, DC: IDB.

Bueno, P., and J.M. Vasallo. 2019. Transport Challenges in Latin American Cities: Lessons Learnt from Policy Experiences. Washington, DC: IDB.

Brain, I., and F. Sabatini. 2006. Los precios del suelo en alza carcomen el subsidio habitacional, contribuyendo al deterioro en la calidad y localización de la vivienda social. Relación entre mercados de suelo y política de vivienda social basada en subsidios a la demanda: estudio en la Región Metropolitana de Santiago. *ProUrbana* 4(Mayo): 2–13.

Brenner, N. 2004. *New State Spaces: Urban Governance and the Rescaling of Statehood*. Oxford: Oxford University Press.

Bruhn, M. 2011. License to Sell: The Effect of Business Registration Reform on entrepreNeurial Activity in Mexico. *Review of Economics and Statistics* 93(1):382–86.

Brussels. 2020. Be Circular. Brussels: Brussels Regional Program for a Circular Economy. Accessed on April 17, 2020, from: https://www.circulareconomy.brussels/a-propos/?lang=en.

Bucchianeri, G.W. 2009. The American Dream? The Private and External Benefits of Homeownership. Working Paper. Philadelphia, PA: Wharton School of Business, University of Pennsylvania.

Byrne, D. 2005. *Social Exclusion*. New York, NY: Open University Press, McGraw-Hill Education.

C40. 2018. Case Studies and Best Practice Examples: Mayor of London's Transport Strategy. New York, NY: C40 Knowledge. Available from: https://www.c40knowledgehub.org/s/article/Mayor-of-London-s-Transport-Strategy?language=en_US.

Cabella, W., and M. Nathan. 2018. Challenges Posed by Low Fertility in Latin America and the Caribbean. New York, NY: United Nations Population Fund, Latin America and the Caribbean.

CAF. 2016. Perfil logístico de América Latina 2015. Caracas, Venezuela: Corporación Andina de Fomento.

CAF. 2018. *Urban Growth and Access to Opportunities: A Challenge for Latin America*. Caracas, Venezuela: Corporacion Andina de Fomento.

Calderón, J. 2004. The Formalization of Property in Peru, 2001–2002: The Case of Lima. *Habitat International* 28(2):289–300.

Calderón, J. 2015. Programas de vivienda social nueva y mercados de suelo urbano en el Perú [New social housing programs and urban land markets in Peru]. *EURE* 41(122):27–47.

Camagni, R., M.C. Gibelli, and R. Rigamonti. 2002. Urban Mobility and Urban Form: The Social and Environmental Costs of Different Patterns of Urban Expansion. *Ecological Economics* 40(2):199–216.

Canning, D., and E. Bennathan. 2000. The Social Rate of Return on Infrastructure Investments. Development Research Group, Public Economics and Private Sector Development and Infrastructure Group. Washington, DC: The World Bank.

Caprirolo, D., R. Granguillhome Ochoa, P. Keefer, T. Leggett, J.A. Lewis, J.A. Mejía-Guerra, and I. Torre. 2017. The Costs of Crime and Violence: New Evidence and Insights in Latin America and the Caribbean. L. Jaitman (Ed.). Washington, DC: Inter-American Development Bank.

Cárdenas, M., and S. Rozo. 2009. La informalidad empresarial y sus consecuencias: ¿Son los CAE una solucion? Documento de Trabajo 38. Bogota, Colombia: Fedesarrollo.

Castro, L., and C. Scartascini. 2015. Tax Compliance and Enforcement in the Pampas: Evidence from a Field Experiment. *Journal of Economic Behavior and Organization* 116:65–82.

Cattaneo, M.D., S. Galiani, P.J. Gertler, S. Martinez, and R. Titiunik. 2009. Housing, Health, and Happiness. *American Economic Journal: Economic Policy* 1(1):75–105. DOI:10.1257/pol.1.1.75.

Cavallo, E.A., Powell, A. and Serebrisky, T., 2020. From Structures to Services: The Path to Better Infrastructure in Latin America and the Caribbean. IDB Publications

CDC. 2015. Health Effects of Gentrification. Atlanta, GA: Centers for Disease Control. https://www.cdc.gov/healthyplaces/healthtopics/gentrification.htm

Cerón-Palma, I., E. Sanyé-Mengual, J. Oliver-Solà, J.I. Montero, C. Ponce-Caballero, and J. Rieradevall. 2013. Towards a Green Sustainable Strategy for Social Neighborhoods in Latin America: Case from Social Housing in Merida, Yucatan, Mexico. *Habitat International* 38:47–56.

Cervero, R., C. Ferrell, and S. Murphy. 2002. Transit-Oriented Development and Joint Development in the United States: A Literature Review. *TCRP Research Results Digest* 52.

Champion, A.G., and G. Hugo. 2004. New Forms of Urbanization: Beyond the Urban-Rural Dichotomy. *Population Space and Place* 10(6): 495–6.

Chauvin, J.P. and J. Messina. 2020. The Geography of Inequality in Latin America. In: M. Busso and J. Messina (eds), *Inequality Report*. Unpublished Work.

Chetty, R., and N. Hendren. 2018. The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects. *The Quarterly Journal of Economics* 133(3):1107–62. Chiesura, A. 2004. The Role of Urban Parks for the Sustainable City. *Landscape and Urban Planning* 68(1):129–38.

Chomitz, K,M., P. Buys, and T.S. Thomas. 2005. Quantifying the Rural-Urban Gradient in Latin America and the Caribbean. Policy Research Working Paper No. 3634. Washington, DC: The World Bank.

CISEM. 2020. Presentation. Madrid, Spain: Centro Integrado de Seguridad y Emergencias de Madrid. Available at: https://www.madrid.es/UnidadesDescentralizadas/Policia/2013PMM/03_OrganizacionPolicia/Tecnologia/ficheros/3_CaracteristicasyresultadosCISEM.pdf

City of Baltimore. 2020. How Does Safe Street Work? Baltimore: Mayor's Office of Criminal Justice. Available at: https://mocj.baltimorecity.gov/safe-streets.

Collier, P., and A.J. Venables. 2016. Urban Infrastructure for Development. *Oxford Review of Economic Policy* 32(3):391–409.

Collier, P., P. Jones, and D. Spijkerman. 2018. Cities as Engines of Growth: Evidence from a New Global Sample of Cities. Washington, DC: The World Bank. Available at:

https://blogs.worldbank.org/impactevaluations/what-s-latest-development-economics-research-microsummaries-150-papers-neudc-2018.

Combs, T.S. 2017. Examining Changes in Travel Patterns among Lower Wealth Households after BRT Investment in Bogotá, Colombia. *Journal of Transport Geography* 60:11–20.

Cooke, G.R. 2003. CPTED Makes a Comeback. Ventura, CA: Security Design Sciences. Available from: http://www.crimewise.com/library/cpted_gc.html.

Corburn, J., and A. Sverdlik. 2017. Slum Upgrading and Health Equity. *International Journal of Environmental Research and Public Health* 14(4):342.

Corburn, J., D. Vlahov, B. Mberu, …, and H. Ayad. 2020. Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements. *Journal of Urban Health* 97(3):348–57.

Crespi, G., E. Tacsir, and F. Vargas. 2016. Innovation Dynamics and Productivity: Evidence for Latin America. In: *Firm Innovation and Productivity in Latin America and the Caribbean* (pp. 37-71). New York, NY: Palgrave Macmillan.

Crotte, A., I. Granada, P. Ortiz, J. Leano, J. Armijos, N. Sanz, C. Glen, C. Navas, R. Cortés, and C. Benítez. 2019. Participación femenina en el mercado laboral de transporte. Washington, DC: IDB.

Cubeddu, L., C. Tovar, and E. Tsounta. 2012. Finance: Latin America's Mortgage Market. *Americas Quarterly* (November 14).

Cuesta, A., A. Reyes, and B. Roseth. 2019. The Importance of Clarity: Impacts of Colombia's Lenguaje Claro Program on Reducing Administrative Burdens. IDB Working Paper No. 983 (IDB-WP-983). Washington, DC: IDB.

Damm, A., and C. Dustmann. 2014. Does Growing Up in a High Crime Neighborhood Affect Youth Criminal Behavior? *American Economic Review* 104(6):1806–32.

Davis, L.W., S. Martinez, and B. Taboada. 2020. How Effective Is Energy-Efficient Housing? Evidence from a Field Trial in Mexico. *Journal of Development Economics* 143

Danielis, R., L. Rotaris, E. Marcucci, and J. Massiani. 2012. A Medium Term Evaluation of the ECOPASS ROAD PRICING SCHEME in Milan: Economic, Environmental And Transport Impacts. *Economics and Policy of Energy and the Environment*, (2):49–83.

Dasgupta, S., Hettige, H. and Wheeler, D., 2000. What improves environmental compliance? Evidence from Mexican industry. Journal of Environmental Economics and Management, 39(1), pp.39-66.

de la Roca, J,. J. Navarrete, and I. Larraín. 2017. Urban Revitalization: Assessment Methodologies and Expected Impacts. Technical Note No. 1498 (IDB-TN-1498). Washington, DC: IDB.

Dijkstra, L., and H. Poelman. 2014. A Harmonised Definition of Cities and Rural Areas: The New Degree of Urbanization. Regional Working Paper, Directorate-General for Regional and Urban Policy. Brussels: European Commission.

Djalante, R., R. Shaw, and A. DeWit. 2020. Building Resilience Against Biological Hazards and Pandemics: COVID-19 and its Implications for the Sendai Framework. *Progress in Disaster Science*, 100080.

Donaldson, D. 2018. Railroads of the Raj: Estimating the Impact of Transportation Infrastructure. *American Economic Review* 108(4–5):899–934.

Duflo, E., Greenstone, M., Pande, R. and Ryan, N., 2013. Truth-telling by third-party auditors and the response of polluting firms: Experimental evidence from India. *The Quarterly Journal of Economics,* 128(4), pp.1499-1545.

EIU. 2020. Estimated Impact of Climate Change on GDP in Latin America and Caribbean Countries. London, UK: Economist Intelligence Unit.

Eguino H., A. Porto, C. Pineda, M. Garriga, and W. Rosales. 2010. Estudio de las características estructurales del sector municipal en América Latina. IDB Discussion Paper No. 145 (IDB-DP-145). Washington, DC: IDB.

Elias, A., Granada, I., Pombo, C., Chatruc, M., Tres, J. 2020. Politicas Sociales en Respuesta al Coronavirus. La migracion en America Latina y el Caribe ante el impacto del Coronavirus. Banco Interamericano de Desarrollo

Eliasson, J. 2008. Lessons from the Stockholm Congestion Charging Trial. *Transport Policy*, 15(6):395–404.

Eliasson, J., 2017. Congestion Pricing. In: J. Cowie and S. Ison (eds), *Handbook of Transport Economics* (Chapter 13). London: Routledge

Ellen MacArthur Foundation. 2015. Towards a Circular Economy: Business Rationale for an Accelerated Transition. Cowes, UK: Ellen MacArthur Foundation.

Ellen, I.G., A.E. Schwartz, I. Voicu, L. Brooks, and L. Hoyt. 2007. The Impact of Business Improvement Districts on Property Values: Evidence from New York City [with comments]. *Brookings-Wharton Papers on Urban Affairs*, 1-39.

Esteve, A., R. Lesthaeghe, and A. López-Gay. 2012. The Latin American Cohabitation Boom, 1970–2007. *Population and Development Review* 38(1):55–81.

Ernst & Young. 2015. Cultural Times: The First Global Map of Cultural and Creative Industries. London, UK: Ernst & Young.

Ewing, R., and R. Cervero. 2010. Travel and the Built Environment: A Meta-Analysis. *Journal of the American Planning Association* 76(3):265–94.

ExTax. 2020. The Ex'tax Project. Tax Reform Manifesto for the Circular Building Economy. Available from: https://ex-tax.com/circulairebouw/.

Fay, M., S. Hallegatte, A. Vogt-Schilb, J. Rozenberg, U. Narloch, and T. Kerr. 2015. Decarbonizing Development: Three Steps to a Zero-Carbon Future. Washington, DC: The World Bank.

Ferreira, M.M., and M. Roberts (eds). 2018. Raising the Bar for Productive Cities in Latin America and the Caribbean. Washington, DC: The World Bank.

Field, E. 2005. Property Rights and Investment in Urban Slums. *Journal of the European Economic Association Papers and Proceedings* 3(2–3):279–90.

Field, E.M., and M. Kremer. 2006. Impact Evaluation for Slum Upgrading Interventions. Poverty Reduction and Economic Management, Thematic Group on Poverty Analysis, Monitoring and Impact Evaluation. Washington, DC: The World Bank.

Florida, R. 2002. *The Rise of the Creative Class*. New York, NY: Basic Books.

Fretes Cibils, V., and T. Ter-Minassian (eds.). 2015. Decentralizing Revenue in Latin America: Why and How. Washington, DC: IDB.

Fujita, M., P. Krugman, and A. Venables. 1999. The Spatial Economy: Cities, Regions and International Trade. Cambridge, MA: The MIT Press.

Fuller, R. and Lain, J., 2018. Resilience in Zambia: Impact evaluation of the'Citizen Participation in Adaptation to Climate Change'project. Effectiveness Review series 2016/17 OXFAM. www.oxfam.org.uk/effectiveness

Galiani, S., and E. Schargrodsky. 2010. Property Rights for the Poor: Effects of Land Titling. *Journal of Public Economics* 94(9–10):700–29.

Galiani, S., P.J. Gertler, R. Undurraga, R. Cooper, S. Martínez, and A. Ross. 2017. Shelter from the Storm: Upgrading Housing Infrastructure in Latin American Slums. *Journal of Urban Economics* 98:187–213.

García Zaballos, A., E. Iglesias Rodríguez, K. Woo Kim, and S. Park. 2020. 5G: The Driver for the Next-Generation Digital Society in Latin America and the Caribbean. Washington, DC: IDB.

Guerrero, R. 2018. Seven Things You Need to Know About Disasters in Latin America and the Caribbean. Let's Talk About Sustainability and Climate Change. Blog post. Washington, DC: IDB.

Gevaert, C.M., R. Sliuzas, C. Persello, and G. Vosselman. 2017. Evaluating the Societal Impact of Using Drones to Support Urban Upgrading Projects. *ISPRS International Journal of Geo-information* 7(3):91.

Gilbert, A. 2016. Rental Housing: The International Experience. *Habitat International* 54:173–81.

GIZ. 2020. GIZ in Mexico (México) Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH. Available from: https://www.giz.de/en/worldwide/38300.html.

GLA. 2019. Central London Ultra Low Emission Zone. London, UK: Great London Authority. Available at: https://www.london.gov.uk/sites/default/files/ulez_six_month_evaluation_report_final_oct.pdf.

Glaeser, E. (ed.). 2010. *Agglomeration Economics*. Chicago, IL: The University of Chicago Press.

Glaeser, E. 2011. *The Triumph of the City*. New York, NY: Penguin Books.

Gómez-Álvarez, D., R.M. Rajack, E. López-Moreno, and G. Lanfranchi (editors). 2017. Steering the Metropolis: Metropolitan Governance for Sustainable Urban Development. Washington, DC: IDB.

Gomez-Ibanez, J.A., and K.A. Small. 1994. Road Pricing for Congestion Management: A Survey of International Practice. Technical Report. Washington, DC: National Cooperative Highway Research Program.

Gonzalez-Navarro, M., and C. Quintana-Domeque. 2016. Paving Streets for the Poor: Experimental Analysis of Infrastructure Effects. *Review of Economics and Statistics* 98(2):254–67.

Hagan, J.E., P. Moraga, F. Costa, N. Capian, G.S. Ribeiro, E.A. Wunder Jr,... and D. Fraga. 2016. Spatiotemporal Determinants of Urban Leptospirosis Transmission: Four-Year Prospective Cohort Study of Slum Residents in Brazil. *PLoS Neglected Tropical Diseases* 10(1).

Hallegatte, S., C. Green, R.J. Nicholls, and J. Corfee-Morlot. 2013. Future Flood Losses in Major Coastal Cities. *Nature Climate Change* 3:802–06. doi:10.1038/nclimate1979.

Hambleton, I.R., C. Howitt, S. Jeyaseelan, M.M. Murphy, A.J. Hennis, R. Wilks, et al. 2015. Trends in Longevity in the Americas: Disparities in Life Expectancy in Women and Men, 1965-2010. *PLOS ONE* 10(6).

Harari, M., and M. Wong. 2016. Long-Term Impacts of Slum Upgrading: Evidence from the Kampung Improvement Program in Indonesia. NBER Working Paper. Cambridge, MA: National Bureau of Economic Research.

Hardoy, J., and P.R. Lankao. 2011. Latin American Cities and Climate Change: Challenges and Options to Mitigation and Adaptation Responses. *Current Opinion in Environmental Sustainability* 3(3):158–63.

Hasse, J.E., and R.G. Lathrop. 2003. Land Resource Impact Indicators of Urban Sprawl. *Applied Geography* 23(2–3):159–75.

Herbert, C.E., and E.S. Belsky. 2008. The Homeownership Experience of Low-Income and Minority Households: A Review and Synthesis of the Literature. *Cityscape* 10(2):5–59.

Herd, P., and D.P. Moynihan. 2019. Administrative Burden: Policymaking by Other Means. New York, NY: Russell Sage Foundation.

Hettiarachchi, H., S. Ryu, S. Caucci, and R. Silva. 2018. Municipal Solid Waste Management in Latin America and the Caribbean: Issues and Potential Solutions from the Governance Perspective. *Recycling* 3(2):19.

Henderson, J., A. Storeygard, and D. Weil. 2012. Measuring Economic Growth from Outer Space. *The American Economic Review* 102(2):994–1028.

Hidalgo, D., and P. Graftieaux. 2008. Bus Rapid Transit Systems in Latin America and Asia: Results and Difficulties in 11 Cities. *Transportation Research Record* 2072(1):77–88.

Hiramatsu, A. 2018. Nagarayema. Municipal Planning that Promotes the Participation of Women's in Creating a Family Friendly City and Strengthening the Workforce. In: N. Libertun de Duren (ed.), *Inclusive Cities: Urban Productivity Based on Gender Equality*. Washington, DC: IDB.

Hughes, K., M.A. Bellis, L. Jones, S. Wood, G. Bates, L. Eckley, E. McCoy, C. Mikton, T. Shakespeare, and A. Officer. 2012. Prevalence and Risk of Violence Against Adults with Disabilities: A Systematic Review and Meta-analysis of Observational Studies. *Lancet* DOI:10.1016/S0410-6736(11)61851-5.

IDB. 2015. ICES análisis de espacio verde por habitante. Washington, DC: IDB.

IDB. 2016a. Health and Nutrition Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2016b. Labor Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2016c. International Case Studies of Smart Cities: Namyangju, Republic of Korea. Washington, DC: IDB

IDB. 2017a. Social Protection and Poverty Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2017b. Citizen Security and Justice Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2017c. Gender and Diversity Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2017d. Water and Sanitation Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2017e. Tourism Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-frameworkdocuments.

IDB. 2017f. Innovation, Science, and Technology Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-frameworkdocuments.

IDB. 2017g. Support to SMEs and Financial Access/Supervision Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-andsector-framework-documents.

IDB. 2018a. Environment and Biodiversity Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2018b. Climate Change Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2018c. Energy Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/es/acerca-del-bid/documentos-de-marco-sectorial.

IDB. 2018d. Decentralization and Subnational Governments Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/es/acerca-del-bid/documentos-de-marco-sectorial.

IDB. 2018e. Fiscal Policy and Management Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/es/acerca-del-bid/documentos-de-marco-sectorial.

IDB. 2019a. Agriculture and Natural Resources Management. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2019b. IoT IN LAC 2019: Taking the Pulse of the Internet of Things in Latin America and the Caribbean. Washington, DC: IDB.

IDB. 2019c. Solid Waste Management in Latin Ameircan and the Caribbean. Washington, DC: IDB. Available at: https://publications.iadb.org/publicatio11ccesseish/document/Solid-Waste-Management-in-Latin-America-and-the-Caribbean.pdf.

IDB. 2019d. Ecuador EC-L1113 2797/OC-EC - Programa Nacional de Vivienda Social, Etapa II MIDUVI II Programa Nacional de Vivienda Social—Etapa II Evaluación de Impacto. Washington, DC: IDB.

IDB. 2020a. Transportation Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents.

IDB. 2020b. Transparency and Anticorruption Sector Framework Document. Washington, DC: IDB. Retrieved from https://www.iadb.org/es/acerca-del-bid/documentos-de-marco-sectorial.

IDB. 2020c. Development in the Americas. Infrastructure (forthcoming). Washington, DC: IDB.

IDB. 2020d. Increasing Infrastructure Resilience with Nature-Based Solutions. Washington, DC: IDB.

IDB. 2020e. Marco de Transformación Digital. Washington, DC: IDB.

IDB and DDPLAC. 2019. Getting to Net-Zero Emissions: Lessons from Latin America and the Caribbean. Washington, DC: IDB and Deep Decarbonisation Pathways – Latin-America and the Caribbean.

IDB LAB. 2019. Documento Temático Ciudades inclusivas. Washington, DC: IDB.

Inostroza, L., R. Baur, and E. Csaplovics. 2013. Urban Sprawl and Fragmentation in Latin America: A Dynamic Quantification and Characterization of Spatial Patterns. *Journal of Environmental Management* 115:87–97.

IPCC. 2007. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: IPCC. [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)].

IPCC. 2014a. Climate Change Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the IPCC. Geneva, Switzerland: IPCC.

IPCC. 2014b. Climate Change: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge and New York: Cambridge University Press, 1132. [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.)].

Jaitman, L. 2015. Urban Infrastructure in Latin America and the Caribbean: Public Policy Priorities. *Latin American Economic Review* 24(1):13.

Jariwala, H.J., H.S. Syed, M.J. Pandya, and Y.M. Gajera. 2017. Noise Pollution & Human Health: A Review. *Noise and Air Pollutions: Challenges and Opportunities*. Ahmedabad: LD College of Engineering.

Jedwab, R., L. Christiansen, and M. Gindelsky. 2015. Demography, Urbanization and Development: Rural Push, Urban Pull and…Urban Push? *Journal of Urban Economics* 98(C):6–16.

Jensen, J.O., T.H. Christensen, and K. Gram-Hanssen. 2011. Sustainable Urban Development–Compact Cities or Consumer Practices? *Tidsskrift for Kortlægning Og Arealforvaltning* 119(46):15.

Kabisch,N., H. Korn, J. Stadler, and A. Bonn. 2017. Nature-Based Solutions to Climate Change Adaptation in Urban Areas: Linkages Between Science, Policy and Practice. In: N. Kabisch, H. Korn, J. Stadler, and A. Bonn (eds), *Nature-Based Solutions to Climate Change Adaptation in Urban Areas. Theory and Practice of Urban Sustainability Transitions*. Cham, Switzerland: Springer.

Kaltmeier, O., and M. Breuer. 2020. Social Inequality. In: O. Kaltmeier, A. Tittor, D. Hawkins, and E. Rohland (eds), *The Routledge Handbook to the Political Economy and Governance of the Americas*, pp. 205–20. New York, NY: Routledge.

Kamal-Chaoui, L., and J. Sanchez-Reaza. 2012. "rban Trends and Policies in OECD Countries. OECD Regional Development Working Paper No. 2012/01. Paris, France: OECD.

Kaza, S., L. Yao, P. Bhada-Tata, and F. Van Woerden. 2018. What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050. Urban Development Series. Washington, DC: The World Bank.

King, E.A., E.P. Bourdeau, X.Y.K. Zheng, and F. Pilla. 2016. A Combined Assessment of Air and Noise Pollution on the High Line, New York City. *Transportation Research Part D: Transport and Environment* 42:91–103.

Kreindler, G.E. 2018. The Welfare Effect of Road Congestion Pricing: Experimental Evidence and Equilibrium Implications. Mimeo. Cambridge, MA: Harvard University. Available at: https://sites.google.com/site/gabrielkreindler/research?authuser=0.

Krishan, A. (ed.). 2001. Climate Responsive Architecture: A Design Handbook for Energy Efficient Buildings. New York, NY: Tata McGraw-Hill Education.

Krugman, P., and A. J. Venables. 1995. Globalization and the Inequality of Nations. *Quarterly Journal of Economics* 110(4):857–80.

La Porta, R., and A. Shleifer. 2014. Informality and Development. *The Journal of Economic Perspectives* 28(3):109–26.

Lattes, A.E., J. Rodríguez, and M. Villa. 2017. Population Dynamics and Urbanization in Latin America: Concepts and Data Limitations. In: G. Hugo and T. Champion (eds), *New Forms of Urbanization*. New York, NY: Routledge.

Leal Filho, W. 2018. Climate Change in Latin America: An Overview of Current and Future Trends. In: W. Leal Filho and L. Esteves Freitas (eds), *Climate Change Adaptation in Latin America* (pp. 529-537). Cham, Switzerland: Springer.

Lemay, M., J. Cotta, and C. Del Rio Paracolls. 2016. Coastal Resilience in the Caribbean. Washington, DC: IDB.

Lester, T.W. 2014. Does Chicago's Tax Increment Financing (TIF) Programme Pass the 'But-For' Test? Job Creation and Economic Development Impacts Using Time-Series Data. *Urban Studies* 51(4):655–74.

Libertun de Duren, N. 2006. Planning à la Carte: The Location Patterns of Gated Communities around Buenos Aires in a Decentralized Planning Context. *International Journal of Urban and Regional Research* 30(2):308–27.

Libertun de Duren, N. 2017. The Social Housing Burden: Comparing Households at the Periphery and the Centre of Cities in Brazil, Colombia, and Mexico. *International Journal of Housing Policy* 18(2):177-203.

Libertun de Duren, N. 2018. Why There? Developers' Rationale for Building Social Housing in the Urban Periphery in Latin America. *Cities* 72:411–20.

Libertun de Duren, N. 2020a. Investigating the Links between Violence in Public and Private Spaces: A Qualitative Study of Neighborhood Upgrading Programs and Domestic Violence in La Paz, Bolivia. *World Development Perspective Journal* .

Libertun de Duren, N. 2020b. "The Third Wave of Sprawl: the dynamics of peripheral growth in Buenos Aires", in *The Routledge Handbook of Planning Megacities in the Global South*, Ed Rukmana, D, Willey and Sons.

Libertun de Duren, N., Gallego, and R. Osorio. 2019. Latin America in Cities. RDB publication. ADB, AfDB, EBRD, IDB.

Libertun de Duren, N., and R. Guerrero Compeán. 2016. Growing Resources for Growing Cities: Density and the Cost of Municipal Public Services in Latin America. *Urban Studies* 53(14):3082–107.

Libertun de Duren, N., C. Mastellaro, P. Brassiolo, E. Cardona-Papiol, E. Lara, A. Palacios, X. Ma, and M. Sven Hallin. 2020. Gender Inequalities in Cities. Washington, DC: IDB; Caracas, Venezuela: CAF; and Nairobi, Kenya: UN Habitat.

Libertun de Duren, N., and R. Osorio. 2020a. *Favela Bairro II Ten Year After*. Washington, DC: IDB.

Libertun de Duren, N., and R. Osorio. 2020b. The Effect of Public Expenditure on the Housing Deficit in Peru at the Municipal Level. *Housing Policy Debate* DOI:10.1080/10511482.2020.1739107.

Medina, M., 2007. Waste picker cooperatives in developing countries. Membership-Based Organizations of the Poor, 105, p.21.

McIntosh, C., T. Alegría, G. Ordóñez, and R. Zenteno. 2018. The Neighborhood Impacts of Local 3 Infrastructure Investment: Evidence from Urban Mexico. *American Economic Journal: Applied Economics* 10(3):263–86.

Magalhães, F., P. Acosta Restrepo, F. Lonardoni, and R. Moris. 2016. *Slum Upgrading and Housing in Latin America*. Washington, DC: IDB.

Mandic, S. 2010. The Changing Role of Housing Assets in Post-socialist Countries. *Journal of Housing and Built Environment* 25(2):213–26.

Marco, F., P. Rausell, and R. Abeledo. 2014. Economic Development and the Creative Industries: A Mediterranean Tale of Causality. *Creative Industries Journal* 7(2):81–91.

Martinez, D.F., O.A. Mitnik, E. Salgado, L. Scholl, and P. Yañez-Pagans. 2020. Connecting to Economic Opportunity: The Role of Public Transport in Promoting Women's Employment in Lima. *Journal of Economics, Race, and Policy* 3(1):1–23.

Mastellaro, C. 2020. Building an Inclusive City Though Play: Inclusive Public Spaces and Recreational Parks in Campinas, Brazil, in Inclusive Cities for All. Washington, DC: IDB. (Forthcoming In press)

Medina, S., and J. Veloz. 2013. Desarrollo Orientado al Transporte. Regenerar las ciudades mexicanas para mejorar la movilidad. Ciudad de México: ITDP.

Mellander, C., K. Stolarick, Z. Matheson, and J. Lobo. 2013. Night-Time Light Data: A Good Proxy Measure for Economic Activity? Toronto, Canada: University of Toronto. REF. 2013-MPIWP-006.

MGI. 2017. *Reinventing Construction: A Route to Higher Productivity*. McKinsey Global Institute.

Mogensen, M. 2000. Urban Tourism Impact on Colonial Areas of Latin American Cities: The Case of Salvador, Brazil. Trade Environmental Database Case Studies. Washington, DC: American University.

Monkkonen, P. 2014. The Role of Housing in Mexico's Vacancy Crisis. UCLA Ziman Center Working Paper Series. Los Angeles, CA: University of California, Los Angeles.

Monkkonen, P. 2018. Do We Need Innovation in Housing Policy? Mass Production, Community-Based Upgrading, and the Politics of Urban Land in the Global South. *International Journal of Housing Policy* 18(2):167–76.

Montgomery, M. R., R. Stren, B. Cohen, and H.E. Reed. 2013. *Cities Transformed: Demographic Change and Its Implications in the Developing World*. Washington, DC: The National Academies Press.

Moretti, E. 2004. Human Capital Externalities in Cities. In: J. V. Henderson and J.-F. Thisse (eds), *Handbook of Regional and Urban Economics, Volume 4: Cities and Geography*, pp.2243-91. Amsterdam: Elsevier.

Moretti, E. 2013. Are Cities the New Growth Escalator? Washington, DC: The World Bank.

MOP. 2016a. Guía de Diseño Arquitectónico Aymara. Santiago, Chile: Dirección de Arquitectura, Ministerio de Obras Públicas del Gobierno de Chile.

MOP. 2016b. Guía de Diseño Arquitectónico Mapuche. Santiago, Chile: Dirección de Arquitectura, Ministerio de Obras Públicas del Gobierno de Chile.

Moser, C.O. 2017. Gender Transformation in a New Global Urban Agenda: Challenges for Habitat III and Beyond. *Environment and Urbanization* 29(1):221–36.

Moser, C.O., and C. McIlwaine. 2006. Latin American Urban Violence as a Development Concern: Towards a Framework for Violence Reduction. *World Development* 34(1):89–112.

Moya, R. 2012. The Rental Market in Argentina: An Assessment Study. Washington, DC: IDB.

Muchomba, F.M. 2017. Women's Land Tenure Security and Household Human Capital: Evidence from Ethiopia's Land Certification. *World development* 98:310–24.

Murray, C., and D. Clapham. 2015. Housing Policies in Latin America: Overview of the Four Largest Economies. *International Journal of Housing Policy* 15(3):347–64.

Mycoo, M. 2006. Sustainable Tourism Using Regulations, Market Mechanisms and Green Certification: A Case Study of Barbados. *Journal of Sustainable Tourism* 14(5):489–511.

Mycoo, M., and M. Donovan. 2017. A Blue Urban Agenda: Adapting to Climate Change in the Coastal Cities of Caribbean and Pacific Small Island Developing States. Washington, DC: IDB.

Navarrete, J., I. Larrain de Andraca, and H.F. Trejo (eds). 2019. *Creative and Cultural Industries in Urban Revitalization: A Practice Based Handbook*. BOP Consulting with the Korean Research Institute on Human Settlements for Washington, DC: IDB.

Nelles, J., and F. Durand. 2014. Political Rescaling and Metropolitan Governance in Cross-border Regions: Comparing the Cross-border Metropolitan Areas of Lille and Luxembourg. *European Urban and Regional Studies* 21(1):104–22.

Nelson, A. C., and K.A. Foster. 2002. Metropolitan Governance Structure and Income Growth. *Journal of Urban Affairs* 21(3):309–24.

Nesshöver, C., Assmuth, T., Irvine, K.N., Rusch, G.M., Waylen, K.A., Delbaere, B., Haase, D., Jones-Walters, L., Keune, H., Kovacs, E. and Krauze, K., 2017. The science, policy and practice of nature-based solutions: An interdisciplinary perspective. Science of the Total Environment, 579, pp.1215-1227.

Nickson, A. 2016. Where Is Local Government Going in Latin America? A Comparative Perspective. Working Paper 6. Gotland, Sweden: ICLD Swedish International Centre for Local Democracy.

NYC DPR. 2010. High Performance Landscape Guidelines: 21st Century Parks for NYC. New York, NY: New York City Department of Parks and Recreation. Accessed on May 22, 2020, from: https://www.nycgovparks.org/sub_about/go_greener/design_guidelines.pdf.

OECD. 2013. Latin American Economic Outlook. New SME Policies Needed to Boost Latin America's Growth. Paris, France: OECD.

OECD. 2014. Cities and Climate Change, National Governments Enabling Local Action. Paris, France: OECD.

OECD. 2016. Promoting Productivity for Inclusive Growth in Latin America. Paris, France: OECD. Available at: http://www.oecd.org/economy/promoting-productivity-for-inclusive-growth-in-latin-america.pdf.

OECD. 2018. Divided Cities: Understanding Intra-urban Inequalities. Paris, France: OECD Publishing.

OECD. 2020. City Policy Responses to COVID 19. Paris, France: OECD. Available at: https://read.oecd-ilibrary.org/view/?ref=126_126769-yen45847kf&title=Coronavirus-COVID-19-Cities-Policy-Responses.

Ostro, B., J.V. Spadaro, S. Gumy, P. Mudu, Y. Awe, F. Forastiere, and A. Peters. 2018. Assessing the Recent Estimates of the Global Burden of Disease for Ambient Air Pollution: Methodological Changes and Implications for Low- and Middle-Income Countries. *Environmental Research* 166:713–25.

Otto, I.M., D. Reckien, C.P.O. Reyer, et al. 2017. Social Vulnerability to Climate Change: A Review of Concepts and Evidence. *Regional Environmental Change* 17(6):1651–62.

OVE. 2016. Evaluación de la Iniciativa de Ciudades Emergentes y Sostenibles del BID. Washington, DC: Office of Evaluation and Oversight, IDB.

OVE. 2017. Evaluación comparativa de los proyectos del BID en apoyo de Programas de Vivienda Social en Cuatro Países del Caribe. Washington, DC: Office of Evaluation and Oversight, IDB.

Pereira, A., A. Peterman, and K. Yount. 2017. Exploring Women's Empowerment Through Asset Ownership and Experience of Intimate Partner Violence. New York, NY: United Nations Children's Fund.

Perlman, J. 2010. Favela: Four Decades of Living on the Edge in Rio de Janeiro. Oxford: Oxford University Press.

Pinzón, D.F.D.B., and F.T. de Souza. 2016. A Data Based Model as a Metropolitan Management Tool: The Bogotá-Sabana Region Case Study in Colombia. *Land Use Policy* 54:253–63.

Quiñones, A. 2011. Informe Final de Investigación: Análisis y Estudio de Experiencias de Accountability Social en América Latina. Centro de Estudios Interdisciplinarios Sobre el Desarrollo. Bogotá: Universidad de Los Andes.

Rees, W.E. 2017. Ecological Footprints and Appropriated Carrying Capacity: What Urban Economics Leaves Out. *Urbanisation* 2(1):66–77.

RENABAP. 2020. Registro Nacional de Barrios Populares de Argentina. Buenos Aires: Government of Argentina. Accessed on June 10, 2020, from: https://www.argentina.gob.ar/habitat/renabap.

Rigolon, A. 2016. A Complex Landscape of Inequity in Access to Urban Parks: A Literature Review. *Landscape and Urban Planning* 153:160–69.

Riojas-Rodríguez, H., A.S. da Silva, J.L. Texcalac-Sangrador, and G.L. Moreno-Banda. 2016. Air Pollution Management and Control in Latin America and the Caribbean: Implications for Climate Change. *Revista Panamericana de Salud Pública* 40:150–9.

Rivas, M., A. Alemans Suarez, and T. Serebrisky. 2019. Stylized Urban Transportation Facts in Latin America and the Caribbean. Washington, DC: IDB.

Rodriguez, D.A., and C.E. Vergel-Tovar. 2018. Urban Development Around Bus Rapid Transit Stops in Seven Cities in Latin-America. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 11(2):175-201.

Rodriguez-Barraquer, I., F. Costa, E.J. Nascimento, N. Nery, P.M. Castanha, G.A. Sacramento,... and H. Adhikarla. 2019. Impact of Preexisting Dengue Immunity on Zika Virus Emergence in a Dengue Endemic Region. *Science* 363(6427):607–10.

Rojas, F., and Vera, L (eds). 2019. The Institutional Construction of Metropolitan Governance. Washington, DC: IDB.

Romero-Lankao, P., O. Wilhelmi, and M. Chester. 2018. Live with Risk While Reducing Vulnerability. *The Urban Planet: Knowledge Towards Sustainable Cities* 92.

Rosenzweig, C., W.D. Solecki, L. Parshall, B. Lynn, J. Cox, R. Goldberg,... and F. Dunstan. 2009. Mitigating New York City's Heat Island: Integrating Stakeholder Perspectives and Scientific Evaluation. *Bulletin of the American Meteorological Society* 90(9):1297–312.

Roseth, B., A. Reyes, P. Farias, M. Porrúa, H. Villalba, S. Acevedo, ... and P. Fillotrani. 2018. *El fin del trámite eterno: Ciudadanos, burocracia y gobierno digital*. Washington, DC: IDB.

Ruiz, F. and Vallejo, G., 2010. Using land registration as a tool to generate municipal revenue: Lessons from Bogotá. World Bank, Washington, DC.

Sacco, P.L., and G. Segre. 2006. Creativity, Cultural Investment and Local Development: A New Theoretical Framework for Endogenous Growth. In: U. Fratessi and L. Senn (eds), *Growth and Innovation in Competitive Regions: The Role of Internal and External Connections,* pp.281–94. Berlin: Springer.

Schoen, D. (author) and N. Libertun de Duren (ed.). 2020. Urban Parks New York City. Washington, DC: IDB.

Scholl, L., D. Martínez, O.A. Mitnik, E. Salgado, and P. Yáñez-Pagans. 2020. The Impacts of a Urban Transport Investments on Low Income Areas Employment. IDB mimeo. Washington, DC: IDB.

Serebrisky, T., A. Suárez-Alemán, C. Pastor, and A. Wohlhueter. 2018. Lifting the veil on Infrastructure Investment Data in Latin America and the Caribbean. IDB Technical Note No. 1366 (IDB-TN-1366). Washington, DC: IDB.

Singh, N., and S.C. Davar. 2004. Noise Pollution: Sources, Effects and Control. *Journal of Human Ecology* 16(3):181–7.

Slack, E. 2019. Metropolitan Governance Principles and Practices. IDB Discussion Paper No. 659 (IDB-DP-659). Washington, DC: IDB.

Stelzner, A. 2015. Cape Town's Digital Strategy. Presentation. Available at: http://acceleratecapetown.co.za/wp/wp-content/uploads/2015/10/Digital-Strategy-City-of-Cape-Town-Andre-Stelzner.pdf

Suarez Vazquez, G., S. Bartels, and R. Guerrero Compean. 2020 (forthcoming). Gestión de riesgo de desastres y Resiliencia Comunitaria en barrios vulnerables de El Salvador, Guatemala y Honduras. Washington, DC: IDB.

Suzuki, H., R. Cervero, and K. Iuchi. 2014. Transformando las ciudades con el transporte publico: integracion del transporte publico y el uso del. Washington, DC: The World Bank.

Taha, H. 1997. Urban Climates and Heat Islands: Albedo, Evapotranspiration and Anthropogenic Heat. *Energy and Buildings* 25(2):99–103.

Tsai, Y.H. 2005. Quantifying Urban Form: Compactness versus Sprawl. *Urban Studies* 42(1):141–61.

Turner, T.M., and H. Luea. 2009. Homeownership, Wealth Accumulation and Income Status. *Journal of Housing Economics* 18(2):104–14.

UK Aid. 2012. Sustainable Transport in Colombia: Bogotá and the Transmilenio. Tackling Poverty in a Changing Climate Learning Cycle of the Learning Hub. Case 05. Brighton, UK: Institute of Development Studies. Available from: https://www.ids.ac.uk/download.php?file=files/dmfile/LHcasestudy05-BogotaBRT.pdf

UN Habitat 2011. State of the World's Cities 2010/2011: Bridging the Urban Divide. https://mirror.unhabitat.org/documents/SOWC10/R3.pdfUN 2016. The New Urban Agenda. https://www.un.org/sustainabledevelopment/blog/2016/10/newurbanagenda/.

UN. 2018. World Urbanization Prospects. New York, NY: United Nations. Accessed on May 6, 2020, from: http://data.worldbank.org/data-catalog/world-development-indicators.

UN. 2019. Secretary-General's Climate Action Summit. Track #6: Nature-Based Solutions. New York, NY: United Nations. Available at: https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/05/WP-Nature-Based-Solutions.pdf.

UN DESA, _(United Nations Department for Economic and Social Affiars). 2018. World urbanization prospects 2018.

UN Habitat. 2015. Green Building Interventions for Social Housing. Nairobi, Kenya: UN Habitat.

UN Habitat. 2016. Housing at the Centre of the New Urban Agenda, UN Habitat Policy Paper. Nairobi, Kenya: UN Habitat.

UN Habitat. 2017. Habitat III Regional Report Latin America and the Caribbean. Sustainable Cities with Equality. Nairobi, Kenya: UN Habitat.

UNEP and CCAC. 2016. Improving Air Quality While Contributing to CC Mitigation. Nairobi, Kenya: UN Environment Programme and Paris, France: Climate and Clean Air Coalition.

UNDP. 2013. *Creative Economy Report: Widening Local Development Pathways*. New York, NY: United Nations Development Programme.

UNESCO World Heritage Centre. 2010. Managing Historic Cities. Gérer les villes historiques. World Heritage Papers no. 27. Paris, France: UNESCO World Heritage Centre.

UNICEF and WHO. 2019. Progress on Household Drinking Water, Sanitation and Hygiene 2000-2017. Special Focus on Inequalities. New York, NY: United Nations Children's Fund and World Health Organization.

Venables, A.J. 2007. Evaluating Urban Transport Improvements: Cost-Benefit Analysis in the Presence of Agglomeration and Income Taxation. *Journal of Transport Economics and Policy* 41(2):173–88.

Vergara, W; Gallardo Lomeli, L; Rios, A; Isbell, P; Praeger S, De Camino, R. 2016. The Economic Case for Landscape Restoration in Latin America. World Resources Institute. https://www.wri.org/publication/economic-case-for-restoration-20x20

Vicino, T., B. Hanlon, and J. Short. 2007. Megalopolis 50 Years On: The Transformation of a City Region. *International Journal of Urban and Regional Research* 31:344–67.

Vilalta, C.J., J. Castillo, and J. Torres. 2016. Violent Crime in Latin American Cities. Washington, DC: IDB.

Ward Thompson, C., J. Roe, P. Aspinall, R. Mitchell, A. Clow, and D. Miller. 2012. More Green Space Is Linked to Less Stress in Deprived Communities: Evidence from Salivary Cortisol Patterns. *Landscape and Urban Planning* 105(3):221–29.

Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Belesova, K., Boykoff, M., Byass, P., Cai, W., Campbell-Lendrum, D., Capstick, S. and Chambers, J., 2019. The 2019 report of The Lancet Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate. The Lancet, 394(10211), pp.1836-1878.

Waugaman, A. 2016. From Principle to Practice: Implementing the Principles for Digital Development. Washington, DC: The Principles for Digital Development Working Group.

Webster, D., J. Mendel Whitehill, J. Vernick, and F. Curriero. 2012. Effects of Baltimore's Safe Streets Program on Gun Violence: A Replication of Chicago's CeaseFire Program. *Journal of Urban Health* 90(1):27–40. DOI:10.1007/s11524-012-9731-5.

WHO. 2003. International Workshop, Intensified Control of Neglected Diseases, Summary Report. Geneva, Switzerland: World Health Organization.

WHO. 2016. Ambient Air Pollution: A Global Assessment of Exposure and Burden Of Disease. Geneva, Switzerland: WHO. Available at: DOI:9789241511353 and https://apps.who.int/iris/rest/bitstreams/1061179/retrieve.

WHO. 2018. Housing and Health Guidelines. Geneva, Switzerland: WHO. Available at: https://apps.who.int/iris/bitstream/handle/10665/276001/9789241550376-eng.pdf.

WHO. 2020. Global Ambient Air Quality Database. Geneva, Switzerland: WHO. Accessed on May 20, 2020, from: https://www.who.int/airpollution/data/cities/en/.

World Bank. 2010. Economics of Coastal Zone Adaptation to Climate Change. Washington, DC: The World Bank.

World Bank. 2018. Connecting to Compete: Trade Logistics in the Global Economy. Washington, DC: The World Bank.

World Bank. 2019. Wastewater: From Waste to Resource—The Case of Nagpur, India. Washington, DC: The World Bank.

World Bank. 2019a. Doing Business: 2019 Report. Washington, DC: The World Bank. Available from: https://www.doingbusiness.org/en/data/exploretopics/registering-property.

World Bank. 2020a. Population Living in Slums, per Region. Washington, DC: The World Bank. Accessed on June 12, 2020, from: https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS?locations=ZJ.

World Bank. 2020b. Financing Sustainable Cities: How We're Helping Africa's Cities Raise Their Credit Ratings. Washington, DC: The World Bank. Accessed on April 18, 2020, from: https://www.worldbank.org/en/news/feature/2013/10/24/financing-sustainable-cities-africa-creditworthy.

World Bank. 2020c. LAC Equity Lab: Poverty—Poverty Rate. Washington, DC: The World Bank. Accessed on May 5, 2020, from: https://www.worldbank.org/en/topic/poverty/lac-equity-lab1/poverty/head-count.

World Bank and IHME. 2016. The Cost of Air Pollution: Strengthening the Economic Case for Action. Washington, DC: The World Bank and Seattle, Washington: Institute for Health Metrics and Evaluation.

WEF. 2017. Women own less than 20 percent of the worlds land: its time to give them equal property rights. https://www.weforum.org/agenda/2017/01/women-own-less-than-20-of-the-worlds-land-its-time-to-give-them-equal-property-rights

WEF. 2019. Cape Town Almost Ran Out of Water. Here's How It Averted the Crisis. Cologny, Switzerland: World Economic Forum. Available from: https://www.weforum.org/agenda/2019/08/cape-town-was-90-days-away-from-running-out-of-water-heres-how-it-averted-the-crisis/.

WRI_World Resources Institute. 2020. World Resources Report. https://www.wri.org/our-work/project/world-resources-report/wrr

Xiao, Q., McPherson, E.G., Zhang, Q., Ge, X. and Dahlgren, R., 2017. Performance of two bioswales on urban runoff management. Infrastructures, 2(4), p.12.

Zandiatashbar, A., S. Hamidi, N. Foster, and K. Park. 2019. The Missing Link Between Place and Sales Volume? The Impact of Transit-Oriented Development on the Knowledge and Creative Economy. *Journal of Planning Education and Research* 39(4):429–41.

Zárate, R.D. 2019. Factor Allocation, Informality and Transit Improvements: Evidence from Mexico City. Job Market Paper. Berkeley, CA: University of Berkeley.

Zavisca, J.R., and T.P. Gerber. 2016. The Socioeconomic, Demographic, and Political Effects of Housing in Comparative Perspective. *Annual Review of Sociology* 42:347–67.

Zhang, M. 2004. The Role of Land Use in Travel Mode Choice: Evidence from Boston and Hong Kong. *Journal of the American Zhang Planning Association* 70(3):344–60.

Zhu, X., M.M. Linham, and R.J. Nicholls. 2010. Technologies for Climate Change Adaptation: Coastal Erosion and Flooding. Roskilde: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi. (TNA Guidebook Series).