

TC ABSTRACT

I. Basic Project Data

▪ Country/Region:	BRAZIL/CSC - Southern Cone
▪ TC Name:	Leverage the use of Big Data solutions for Brazilian Smart Cities
▪ TC Number:	BR-T1496
▪ Team Leader/Members:	Bouskela, Mauricio Simon (CSD/HUD) Team Leader; Zambrano-Barragan, Patricio Xavier (CSD/HUD) Alternate Team Leader; Villota Coral, Maria Alejandra (CSD/HUD); Avila, Franci Dianela (CSD/HUD); Silva Casseb, Marcia Maria (CSD/HUD); Zapparoli Zetina, Carmen Isabelle (CSD/HUD); Chona, Gilberto E. (CSD/HUD); Tribouillard, Clementine Claire Dominique (CSD/HUD); Alves, Dalve Alexandre Soria (CSD/HUD); Kim, Kida (CSD/HUD); Goette, Gabriel Hernan (ITE/ITO); Munte Kunigami, Arturo (IFD/ICS); Espinoza Colmenares, Luis Manuel (KIC/KLD); Verissimo Da Silva, Carolina (LEG/SGO); Piedrafita, Carolina Marcela (CSD/HUD); Richter Elias, Alessandra (CSD/HUD); Roberto Madera (CSD/HUD); Vazquez Brust, Hector Antonio (CSD/HUD); Hennessey, Michael P. (IFD/CTI); Valente Lins, Paula (CSC/CBR); De Freitas Severino, Ligia (CSC/CBR); Arcia, Diego Andres (CSD/HUD); and Silvia Perez (CSD/HUD)
▪ Taxonomy:	Client Support
▪ Number and name of operation supported by the TC:	N/A
▪ Date of TC Abstract:	02 Sep 2021
▪ Beneficiary:	Municipalities of Recife, São Luis and Vitória in Brazil
▪ Executing Agency:	Inter-American Development Bank
▪ IDB funding requested:	US\$200,000
▪ Local counterpart funding:	US\$0
▪ Disbursement period:	24 months
▪ Types of consultants:	Individuals; Firms
▪ Prepared by Unit:	CSD/HUD - Housing & Urban Development
▪ Unit of Disbursement Responsibility:	CSD/HUD - Housing & Urban Development
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Social inclusion and equality; Productivity and innovation

II. Objective and Justification

- 2.1 To support local governments in Brazil's smart cities in adopting data-driven solutions for urban planning. The specific objectives are: (i) to improve urban management and decision making through the design of innovative strategies and the implementation of pilot projects in the municipalities Recife, São Luis and Vitória to efficiently use Big Data solutions to respond to cities' challenges; and (ii) to strengthen the capacity of city officials through knowledge products and capacity building activities in using Big Data.
- 2.2 The Latin American and the Caribbean (LAC) region is undergoing an urbanization and digitalization transformation. The LAC cities' challenge is to harness the benefits from the "Fourth Technology Revolution" which has the potential to improve the quality of life for populations and address governance issues related to the usage of digital technology and data regulatory practices. A 2018 McKinsey report on the effect of smart technologies found that cities can use them to improve key quality-of-life indicators –in areas like healthcare, mobility, security, and utilities– by 10 to 30 percent.

- 2.3 According to the European Commission (EU), the value of the data market in Europe in 2017 was expected to rise from €300 billion in 2016 to €739 billion by 2020. This did not include the effects of the rapid adoption of digital technology during the pandemic and its effect on market value. The overall value of the impact of the data economy on EU GDP is 2%.
- 2.4 The rise of new technologies resulting from technological, institutional, social media, and business innovations brings an overwhelming increase in data flows that present exciting possibilities and new challenges for urban development. Data is the primary resource that powers our era's digital transformation and is a crucial tool in the construction of smart cities. Massive data collection and analysis, such as machine learning techniques and artificial intelligence, will impact economies and development practices. LAC smart cities generate critical data that can be used for resource management, knowledge generation, civic participation, urban planning, and policymaking, among others. Big Data plays an essential role in the construction of smart cities. The democratic generation, analysis, dissemination, and use of data processes and tools, are crucial to address current and future urban challenges, define public policies based on evidence, and ensure the transition of Brazilian cities to smarter cities.
- 2.5 Despite the enthusiasm for adopting digital and technological solutions and its massive generation and collection of data, there is still a lack of data-driven decision-making for improving governance, urban planning, and service provision in most cities. The institutional setup that can help Brazilian cities use technology and data still requires proper articulation.
- 2.6 While the adoption of digital and automation technologies has been identified as essential to counter the region's slow growth in recent decades, technology adoption in Brazil lags by more than 2 points (on a 7-point scale) global average.
- 2.7 The major constraints in using Big Data in the cities are: (i) underutilized high-volume, real-time data generated by technological devices, platforms, and administrative transactions, which requires specific information technologies (IT), infrastructure development and information management; and (ii) unequipped municipal teams with tools and skills to combine traditional urban planning methods with new digital competences. Data capture, preparation, and methodical analytics also require specialized knowledge and professional expertise. Therefore, there is a need to assist local authorities in creating the framework and facilitating Big Data solutions and strategies to improve the decision-making processes related to the challenges of growing urbanization.
- 2.8 The selected cities have level of evolution towards a smart city model; were prioritized by government; and are in alignment with Bank strategies and operational work.
- 2.9 **Strategic alignment.** This operation is aligned with the "Second Update to the Institutional Strategy UIS" (AB-3190-2) through the development challenges of: (i) Social Inclusion and Equality by including social needs and perceptions in urban operations; and (ii) Productivity and Innovation by promoting more efficient urban management systems using Big Data solutions and innovative tools. This Technical Cooperation (TC) is aligned with IDB Group Strategy with Brazil 2019-2022 on promoting e-government and digital solutions to foster transparency, accountability, and efficiency in delivering public services to citizens and enterprises. It is also consistent with the Housing and Urban Development (CSD/HUD) Sector Framework Document (GN-2732-11) in the dimension of the success of "Boosting Urban Productivity and Promoting Good Urban Governance. This TC contributes to IDB's Vision 2025 Reinvesting in the Americas, supporting strengthening good governance and digital institutions within the opportunity area of "digital economy" to deploy cross-cutting digital solutions to strengthen public management capacities and improve the delivery of citizen services.

III. Description of Activities and Outputs

3.1 Component I. Design Big Data Proofs-of-Concept and Action Plans (US\$130,000).

This includes: (i) implementing proofs-of-concept in Big Data to address a selected urban challenge; and (ii) designing action plans and strategies in Big Data for the selected cities. It will finance: (i) a diagnosis and analysis of existing data; (ii) the design of proofs-of-concept; and (iii) the design of Big Data action plans. A Big Data proof-of-concept refers to pilots for assessing data (format, structure, quality, sectors) gathered by digital devices for solving an urban problem.

3.2 Component II. Capacity Building and Dissemination (US\$70,000).

This seeks to develop capacity in municipal teams by: (i) providing training in the use of Big Data to address urban challenges; and (ii) generating and disseminating knowledge based on available literature and TC results for cities' officials. It will finance: (i) the development of a Big Data Knowledge Product Publication on leveraging the use of Big Data solutions to address urban challenges for supporting future Bank's operations; and (ii) capacity building to municipal teams.

IV. Budget

Indicative Budget (US\$)

Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
Component I. Design Big Data Proofs-of-Concept and Action Plans	130,000	0	130,000
Component II. Capacity Building and Dissemination	70,000	0	70,000
Total	200,000	0	200,000

V. Executing Agency and Execution Structure

5.1 The Bank will be the executing agency through the Housing and Urban Development Division (CSD/HUD) as requested by participant cities. The CSD/HUD has substantial and successful experience in providing technical assistance, particularly in housing, urban planning, sustainability, and areas related to the activities financed under this TC. Also, through the Smart City and Civic data thematic HUD's group has been providing services in support of the digital transformation of cities in LAC, by including digital components in the housing, urban planning, and management projects.

5.2 Given that Big Data is an emerging topic going hand-in-hand with the smart city approach, a Bank execution would facilitate knowledge sharing and lessons learned between multiple cities the TC is covering. Additionally, the Bank's execution will give a deeper insight into potential opportunities in incorporating data-driven solutions in current and future projects (in pipeline or dialogue is ongoing) in Brazil and LAC.

5.3 The Bank will contract individual consultants in accordance with the guidelines set out in AM-650. The procurement process for consulting firms of intellectual nature follows the Bank's new Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-4) and related Operational Guidelines (OP-1155-4). Non-consulting services will be in accordance with Bank's current procurement policies and procedures. Contracting of logistic services and procurement of goods will be done in accordance with policy GN-2303-20. All the activities in this TC will be included in the Procurement Plan.

5.4 This TC is classified by the Bank as client support. The management of the TC will require a centralized and internalized implementation from the Bank. The execution will be conducted by HUD in headquarter in close coordination with Brazil Country office.

The role of the HUD COF team in Brazil will be key for: (i) ensuring prioritized problems are within the framework of existing operations; (ii) coordinating dialog with municipal teams; and (iii) collaborating with the supervision of consultant work. Furthermore, the TC activities will be executed in collaboration with other Bank divisions supporting multi-sectoral operations. The Bank will apply Bank executed operations policies and guidelines to procurement procedures.

- 5.5 The Team Leader would be responsible for the TC project execution, monitoring and supervision. This includes monitoring all planned activities according to result matrix, ensuring cooperation with above-mentioned projects, and preparing annual and final reports according to requirements.

VI. Project Risks and Issues

- 6.1 The main risks are: (i) changes in the technical teams of the municipalities; (ii) the difficulty in accessing data sources from the participating cities and private partners; and (iii) possible delays in the TC implementation due to COVID-19 restrictions to face-to-face meetings. To mitigate these risks: (i) cities will be involved in the initial stage of project design and focal points will be formally designated; (ii) a team with broad experience in analyzing data availability and regulatory frameworks in different contexts will be hired and will work in collaboration with IDB's Cities Lab; and (iii) local consultant will be hired and will be in close coordination with cities to perform the tasks in addition to designing proofs-of-concept projects that can be remotely implemented.

VII. Environmental and Social Classification

- 7.1 The ESG classification for this operation is "C".