

STRENGTHENING URBAN RESILIENCE IN RIVERSIDE ASUNCION

PR-T1243

CERTIFICATION

I hereby certify that this operation was approved for financing under the **NDC Pipeline Accelerator Multi-Donor Trust Fund (ACL)**, through a communication dated March 26, 2018 and signed by Felipe Caicedo (ORP/GCM). Also, I certify that resources from said funds are available for up to **US\$450,000** in order to finance the activities described and budgeted in this document. This certification reserves resource for the referenced project for a period of four (4) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, represent a risk that will not be absorbed by the Fund.

Certified by:

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|-----------------------------------------------------------------------------------------|---------------|
| Original Signed | 04/27/2018 |
| _____ Sonia M. Rivera Chief Grants and Co-Financing Management Unit ORP/GCM | _____ Date |

Approved by:

| | |
|-----------------------------------------------------------------------|---------------|
| Original Signed | 04/30/2018 |
| _____ Amal Lee Amin Chief Climate Change Division CSD/CCS | _____ Date |

Technical Cooperation Document

I. Basic Information for TC

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|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ▪ Country/Region: | Paraguay/CSC |
| ▪ TC Name: | Strengthening Urban Resilience in Riverside Asuncion |
| ▪ TC Number: | PR-T1243 |
| ▪ Team Leader/Members: | Gloria Visconti (CSD/CCS) Team Leader, Roberto Cambor (CSD/HUD) Alternate Team Leader, Sandra López (CSD/CCS), Filippo Berardi (CSD/CCS), Jennifer Doherty-Bigara (CSD/CCS), Maricarmen Esquivel (CSD/CCS), Giovanni Frisari (CSD/CCS), Daniela Zuloaga (CSD/CCS), Margarita Cabrera (CSD/CCS), Juan Carlos Gómez (CSD/CCS), Gines Suarez (CSD/RND), Paloma Marcos (SCL/GDI), Maria Elena Castro-Munoz (VPS/ESG), Milagros Aime (VPS/ESG) Jose Francisco Manjarres (INE/WSA), Cristina Celeste (LEG/SGO), Fernando Glasman (VPC/FMP), Jorge Gonzalez (VPC/FMP), Carlos Güiza (CSD/CCS) |
| ▪ Taxonomy: | Client Support |
| ▪ Date of TC Abstract authorization: | March, 2018 |
| ▪ Beneficiary: | Republic of Paraguay - Technical and Planning Secretariat (STP) |
| ▪ Executing Agency: | Inter-American Development Bank |
| ▪ Donors providing funding: | NDC Pipeline Accelerator Multi-Donor Trust Fund (ACL) |
| ▪ IDB Funding Requested: | US\$450,000 |
| ▪ Local counterpart funding, if any: | N/A |
| ▪ Disbursement period (Execution): | 18 months (15 months execution period) |
| ▪ Required start date: | April 2018 |
| ▪ Types of consultants: | Firms and individual Consultants |
| ▪ Prepared by Unit: | Climate Change Division (CSD/CCS) |
| ▪ Unit of Disbursement Responsibility: | Country Office Paraguay (CSC/CPR) |
| ▪ TC Included in Country Strategy: | Yes |
| ▪ TC included in CPD: | No |
| ▪ Alignment to the Update to the Institutional Strategy 2010-2020: | Social Inclusion and equality, productivity and innovation, climate change and environmental sustainability, gender equality and diversity, and institutional capacity and the rule law. |

II. Objectives and Justification of the TC

- 2.1 The objective of this Technical Cooperation (TC) is to provide technical support to the Government of Paraguay to finalize the climate finance proposal: “Strengthening Urban

Resilience in Riverside Asuncion Program” to access resources from the Green Climate Fund (GCF) for its implementation.

- 2.2 As part of the technical support the IDB provides through the ATN/OC-15382-RG “Regional Support for the Green Climate Fund”; the Planning for Economic and Social Development Secretary (STP) of Paraguay, National Designated Authority (NDA) to the GCF, developed and submitted a Concept Note (CN) to the GCF Secretariat. In response to the CN the GCF establishes the need to develop specific studies to support the design of program interventions to complete the funding proposal according to the GCF criteria. In this context, the Government of Paraguay requested the IDB’s support to coordinate with different stakeholders the preparation of the studies and the drafting of the full Funding Proposal (FP) to be submitted.
- 2.3 Reaching almost 2.2 million inhabitants by 2018, the Metropolitan Area of Asuncion (AMA, for its Spanish acronym) hosts approximately 65% of the urban population of Paraguay.¹ The unplanned urbanization process has caused a carbon-intensive urban sprawl and placed urban poor communities in marginalized high-risk areas vulnerable to flood events along the Paraguay River. For the past half century, the lack of appropriate land use zoning has spread the riverine community to areas with limited access to potable water and no wastewater collection, rainwater drainage or waste collection systems. During floods, the affected families are relocated for periods up to 6 months at a time, creating job insecurity, food shortages, and social disturbances. The temporary relocations do not cover all the population, making the remnant suffer from health issues and incur in additional unexpected costs.
- 2.4 Flood risk and unplanned land use changes rank Paraguay 8th out of 33 in the list of Latin America and the Caribbean (LAC) most vulnerable countries² to climate change. The country’s Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) indicates that precipitation will increase between 3% to 6% by 2050,³ meaning that AMA will be suffering more flash flood events and river stage floods, affecting the most socially and economically vulnerable population of Asuncion (more than 10,000 people).⁴ On average, a flood event occurs every 5 years⁵ costing families a range between US\$1.2 to \$1.5 million in relocation and job losses.⁶ Costs related to the last major flood event in Asuncion in 2014 were estimated in US\$7 million,⁷ including humanitarian aid, food provisions, infrastructure arrangements, and opportunity costs. The affected families in Ricardo Brugada, a neighborhood of Asunción also known as La Chacarita, suffered material damages averaging US\$1,000 per family,³ a substantial loss given that these families’ monthly income is below US\$500.⁸ El Niño Southern Oscillation (ENSO) events make the average flood occurrence more frequent. By the end of 2015, only

¹ IDB Emerging and Sustainable Cities Initiative, Action Plan, Metropolitan Area of Asuncion, 2014.

² CAF, [Índice de vulnerabilidad y adaptación al cambio climático en la región de América Latina y el Caribe](#), 2014.

³ [Second National Communication of Paraguay to the UNFCCC](#), 2011.

⁴ IDB Emerging and Sustainable Cities Initiative (ESCI), Disaster Risk and Climate Change Vulnerability Study for the Metropolitan Area of Asuncion, 2014.

⁵ Flood return periods calculated in 2004 by Abt Associates indicate average 5-years flood events surpassing 60 meters above the mean sea level (mamsl) line. Most parts of the Ricardo Brugada neighborhood are below the 60 mamsl.

⁶ ABC Color. Newspaper article: “Approximate estimate of costs based on interviews and data gathered from governmental agencies”. July 13th, 2014.

⁷ Data from [PLAN CHA website](#)

⁸ Plan CHA, 2014.

a year after the biggest flood, an ENSO-driven flood event affected more than 88,000 people in one month.⁹

- 2.5 The simultaneous occurrence of floods, irregular settlements, lack of proper infrastructure, and an ineffective risk prevention program puts the intervention area at high risk, but costs are not only affecting people. Asuncion has been cited amongst urban areas with the highest biodiversity with 49% of the bird species of the country calculated in about 353 native species.¹⁰ The Asuncion bay, part of the Banco San Miguel and Bahia de Asuncion Ecological Reserve, hosts five species of globally significant congregations bringing 1% of their global population each season.¹¹ Although the extension of green areas remain relatively constant, the global value of this biodiversity endowment is also being eroded by habitat reconversion and degradation leading to fragmentation that reduces flora and fauna populations. A dramatic example of threats to these global benefits is the drop in migratory species noted following the construction of phase one of the Costanera, a waterfront parkway that cuts through a section of the bay. The construction materials extracted from sand banks damaged foraging and roosting habitat critical for migratory birds. Migrant populations monitored since year 2000, show a marked decrease in species diversity and quantity, dropping almost by half.
- 2.6 Another issue affecting the intervention area is that Paraguay is dependent solely on one source of electricity: hydroelectric electricity from Paraguay's major dams (Itaipu, Yacyreta and Acaray). This source of energy though plentiful now, is projected to become scarce by 2030.¹² By 2025 the supply of electrical energy is expected to be below the required ideal reserve of 20%.
- 2.7 In this context, The Strengthening Urban Resilience in Riverside Asuncion Program comprises a holistic urban resilient intervention on Asuncion's riverine district that hosts highly vulnerable population and an ecosystem at risk of increasing flood events caused by expected climate variability. Urgent action is needed to strengthen resilience in the riverine community before the occurrence of more extreme flood events in Asuncion. This program, which is supported by this TC, will focus in the conjunction of four major areas: (i) the Ricardo Brugada Neighborhood, with about 4,000 highly vulnerable inhabitants; (ii) the San Miguel Sand Banks, a natural reserve of 300 hectares; (iii) the Historical Downtown District, comprised by cultural buildings, and public offices; and (iv) the old Port of Asuncion which is under a redevelopment proposal.
- 2.8 This TC will develop the studies and designs required by the program to implement an integrated package of structural and non-structural measures focused on: (i) the reduction of flood risk, including the enhancement of the drainage system, the rehabilitation of public spaces, and the creation of linear parks that can also serve as flood retention areas; (ii) the restoration of the riverine ecosystem, including the natural floodplains and wetlands, the rehabilitation of flora and fauna in the riverside,

⁹ Ministerio de Salud Pública y Bienestar Social. Reporte: Evento de Inundación por Fenómeno del Niño Paraguay 2015/2016", 2016.

¹⁰ In the 2008 inventory carried out by Guyra Paraguay/Birdlife International, it qualified under criterion A4i (>1% of global population for one species) and under criterion A4iii (>20,000 water birds). See Annex 1 for additional information.

¹¹ Buff-breasted Sandpiper (*Tryngites subruficollis*); American Golden Plover (*Pluvialis dominica*), Lesser Yellowleg (*Tringa flavipes*), White-rumped Sandpiper (*Calidris fuscicollis*) and Pectoral Sandpiper (*Calidris melanotos*).

¹² National Electricity Administration (ANDE, in its Spanish acronym) Energy Generation and Transmission Master Plan, 2014 - 2023.

and the clean-up of streams; (iii) the improvement of the social housing offer with new low-carbon and climate-resilient standards; (iv) the connection of the Historical Downtown District with its riverside communities to improve livelihoods, creating appropriate social and fiscal conditions to incentivize public and private low-carbon and climate-resilient investments; and (v) building capacities and community awareness to environmental management and adaptive capacity for vulnerable areas of the riverside.

- 2.9 The TC is consistent with the Update to the Institutional Strategy 2010-2020 (AB-3008) and is aligned with the development challenges of: (i) social inclusion and equality as the studies will provide the basis for inclusive infrastructure and infrastructure services based on urban planning with climate-resilient standards and disaster risk management; (ii) productivity and innovation, by developing quality human capital through the provision of the designs for social housing in the flood risk zone where marginalized populations are informally settled. The TC is also aligned with the crosscutting themes of: (i) climate change and environmental sustainability, as the studies produced will contribute to the creation of strategies to reduce climate change vulnerability for poor riverine communities as well as deteriorated ecosystems; (ii) gender equality and diversity, by developing a study on specific gender considerations for the proposed interventions; and (iii) institutional capacity and rule of law, as the TC will suggest a governance scheme that requires multi-sectoral coordination for the implementation of the program. According to the [joint MDB approach](#) on climate finance tracking, the total IDB funding for this TC will result in climate change mitigation and adaptation activities, contributing to the IDBG's climate finance goal of 30% of combined IDB and IIC operational approvals by year's end 2020. In addition, the TC will contribute to the Corporate Results Framework 2016-2019 (GN-2727-6), by providing the studies that will support the country development results indicators of "beneficiaries of improved management and sustainable use of natural capital", "households benefitting from housing solutions" and "households with new or upgraded access to sanitation".
- 2.10 The TC is aligned with the Bank's Country Strategy with Paraguay 2014-2018 (GN-2769), as it prioritizes water and sanitation, energy, productive development, and public management aiming at reducing extreme poverty and including gender considerations. The TC also contributes to Paraguay's Nationally Determined Contribution (NDC), the National Climate Change Adaptation Plan (2016) and the National Development Plan (2030) as these prioritize adaptation actions in land use planning, health and sanitation, risk management, and resilient infrastructure to reduce vulnerability and poverty. This operation is part of NDC Invest, which aims at providing LAC countries with the support they need to transform their NDCs presented under the Paris Agreement on Climate Change, into effective investments. Additionally, it is aligned with the NDC Pipeline Accelerator (ACL) as it will provide inputs to prepare a sustainable infrastructure program supporting Paraguay's efforts on climate change adaptation delivering mitigation and development co-benefits. Furthermore, this program supported by this TC will contribute to the development of a model that could be replicated by other resilient infrastructure programs managed by the IDB,¹³ demonstrating leverage of GCF resources, signaling how the ACL supports a multidisciplinary approach, and demonstrating that smaller countries are also accessing the ACL.

¹³ TC products will provide inputs for the preparation of the operation "Rehabilitation and Housing Program of the Bañado Sur in Asuncion" (PR-L1152).

III. Description of activities/components and budget

3.1 Component 1. Elaboration of studies to design the interventions under the Strengthening Urban Resilience in Riverside Asuncion Program (US\$300,000).

This component will develop the studies needed to design the interventions of the program. The expected outputs under this component include:

- a. A **disaster risk and climate change analysis** to study flood risk through the evaluation of hazard, exposure and vulnerability of both the inhabitants and the infrastructure of the Ricardo Brugada neighborhood, the San Miguel Sand Banks, the Historical Downtown District, the Port of Asuncion, and the Bañado Tacumbú neighborhood to understand the potential economic, social and environmental costs of the no-action option under a new climate regime. This activity will provide inputs and, suggestions and prepare guidelines that would reduce vulnerability and manage disaster risks within the area, leading to the design of the proposed interventions under the Master Plan development.¹⁴
- b. A **population and gender study** to consolidate, analyze and report the demographics of the residents of the Ricardo Brugada Neighborhood and the San Miguel Sand Banks ecological reserve with special attention to gender issues. The output will also identify the population affected and benefited by the program, disaggregated by gender, age, and economic status. It will specifically focus on the identification of the number of social housing solutions needed in the Ricardo Brugada neighborhood and the population to be relocated outside the San Miguel Sand Banks ecological reserve.
- c. **Low-carbon and climate-resilient alternatives** provided as part of the preliminary designs and strategies for housing, public spaces, public and private buildings, and urban infrastructure in the intervention area. The output will include options to reduce energy dependency from one source of electricity, increase grid resilience to electric outages, and reduce flood risks. The alternatives will also consider designs, requirements and technologies to be incorporated into social housing and public spaces of the Ricardo Brugada neighborhood, the existing public buildings and public spaces in the Historical Downtown District, the infrastructure of the park in the San Miguel Sand Banks, and the buildings, infrastructure and public spaces in the Port of Asuncion.
- d. **Governance scheme design.** The proposed program plans interventions that involve a large area including multi-sectoral issues, multi-jurisdictional responsibilities, and numerous stakeholders. During the conceptualization of this program, the Resiliency Working Group¹⁵ proposed a preliminary governance

¹⁴ The Master Plan, the Environmental and Social Impact Assessment, and the Resettlement Plan will possibly be funded by the GCF Project Preparation Facility (PPF). The Government of Paraguay through the IDB requested US\$500,000 to the GCF PPF to complement efforts to complete the FP. Submissions were made in November 2017. A first set of comments were responded in early February 2018.

¹⁵ Through the conceptualization of the Concept Note, an Ad Hoc Resiliency Working Group was created led and coordinated by the STP with members from the public sector and NGOs, involving the Municipality of Asuncion, the Ministry of Public Works, the Housing Secretary, the Environment Secretary, the Ministry of

scheme. However, there is a need for an in-depth study of the legal and political implications of such design, to be compared with other possible schemes and developing protocols and responsibilities for an efficient program implementation. The output will include a design of the organizational chart, definition of roles and responsibilities of the program's stakeholders and a proposal for procedures and functions to transfer funds and implement the Program.

- 3.2 **Component 2. Elaboration of the GCF Funding Proposal (US\$114,000).** This component will lead the coordination between different national and municipal governmental stakeholders, the community, service providers and the activities of the studies being developed in Asuncion. It will establish a line of communication between different governmental institutions and new agencies in the program, providing technical support and guidance. It will guide the exchange of information between consultancies defined in Component 1 and other studies being financed by the GCF Project Preparation Facility (GCF PPF).¹⁵ The output is the elaboration of the GCF Funding Proposal responding to the Fund's criteria, to be submitted to the GCF.

Indicative Budget (US\$)

| Components | IDB | Counterpart | Total |
|----------------------------------------------|----------------|--------------------|----------------|
| Component 1. Elaboration of Studies | 300,000 | 0 | 300,000 |
| Component 2. Elaboration of Funding Proposal | 114,000 | 0 | 114,000 |
| Administration and Execution ¹⁶ | 36,000 | 0 | 36,000 |
| Total | 450,000 | 0 | 450,000 |

IV. Executing agency and execution structure

- 4.1 Considering the multi-sectoral and multi-jurisdictional nature of the program and the need for an impartial hiring process, the Planning for Economic and Social Development Secretary (STP) has requested that the IDB executes this operation. The Bank's execution will ensure independence to produce the expected results within the proposed schedule to meet GCF's criteria, and to complete and submit the Funding Proposal to the GCF in time. As indicated in the context of this TC, the IDB has provided technical support to conceptualize and prepare the Concept Note, its support to the completion of the GCF project cycle until the submission of the Funding Proposal will be in continuity of this process, which also involves the channeling of GCF resources to the subsequent implementation of the program.
- 4.2 The consulting services and services other than consulting to be hired under this operation have been included in the Procurement Plan (Annex IV) and will be executed in accordance with the established IDB procurement methods, namely: (i) hiring of individual consultants, as established in AM-650 standards; (ii) contracting of consulting firms for services of an intellectual nature according to GN-2765-1 and

Culture, Sobrevivencia, AVINA, Guyra Paraguay and representatives of the ASU LAB who are promoting the Historical Downtown District Master Plan.

¹⁶ Consultancies and services strictly related to the coordination, implementation and monitoring of the TC and projected in the procurement plan.

its associated operational guides (OP-1155-4); and (iii) contracting of logistic services and purchase of goods in accordance with policy GN-2303-20.

- 4.3 The monitoring of each specific task will be done through a direct and regular supervision of the team leader. The consulting firms and individual consultants will deliver reports according to an agreed timeline under each task.

V. Project Risks and issues

- 5.1 The main risk of this TC is that the Program Funding Proposal submitted to the GCF is not approved. TC activities seek to mitigate that risk by ensuring the inputs generated by this TC are fully incorporated into the Program's Funding Proposal to comply with the GCF criteria. The TC will also contribute to the design of the Program interventions taking advantage of the multi-sectoral expertise of the IDB's operational divisions contributing to this Program.

VI. Exceptions to Bank policy

- 6.1 No exceptions to Bank policy are envisioned.

VII. Environmental and Social Strategy

- 7.1 It is not anticipated that TC activities will have a negative direct or indirect social or environmental impact, as it will not finance direct investments, but instead it will finance feasibility studies in the sector. Per the Environment and Safeguards Compliance Policy of the IDB (OP-703), the operation has been classified as 'Category C' (see the [Safeguards Screening Form](#) and the [Safeguards Policy Filter](#)).

VIII. Required Annexes:

Annex I: [Client Request](#).

Annex II: [Results Matrix](#).

Annex III: [Terms of Reference](#).

Annex IV: [Procurement Plan](#).