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MULTILATERAL INVESTMENT FUND

REGIONAL

**SOURCE OF INNOVATION: A FACILITY FOR FOSTERING INNOVATION IN THE
WATER, SANITATION AND SOLID WASTE SECTOR IN LATIN AMERICA AND
THE CARIBBEAN**

FACILITY DOCUMENT

(RG-O1690)

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ABBREVIATIONS

FFP	Facility Focal Point
IDB Invest	Inter-American Investment Corporation
IDB Lab	Multilateral Investment Fund
IDB	Inter-American Development Bank
INE/WSA	Water and Sanitation Division – Infrastructure Department
LAC	Latin America and the Caribbean
R&D&I	Research, Development, and Innovation
SDG	United Nations Sustainable Development Goals
WSS	Water, Sanitation and Solid Waste

I. PURPOSE OF THIS DOCUMENT

- 1.1 The purpose of this document is to request that the MIF Donors Committee approve:
- i. The creation of a facility of US\$2.0 million by IDB Lab to enable the development and integration of innovative solutions in the Water, Sanitation, and Solid Waste sector by boosting the supply of innovative solutions, providing seed capital to early-stage innovation solutions, incubating and/or accelerating the most promising ones, and stimulating productive partnerships between startups and entrepreneurs, water utilities and investors. These resources will finance between 6 and 12 projects (IDB Lab's contribution per individual project is expected not to exceed US\$400,000).
 - ii. Delegation to the IDB Lab Manager the authority to approve individual projects when the resources of the facility are used to finance, in whole or part, IDB Lab projects. This delegation of approval authority will ensure alignment with delegation of the approval of non-reimbursable projects funded by the Bank or by donor resources under administration and will ensure expedited approval and deployment of resources.

II. BACKGROUND AND RATIONALE

- 2.1 **Water, Sanitation and Solid Waste Management (WSS)¹ Services in Latin America and the Caribbean (LAC).** According to the monitoring statistics associated with the Sustainable Development Goals (SDG), only 74.32 percent of the population in the LAC region have access to safely managed water services and 31.32 percent to safely managed sanitation,² which translates to 165 million people and more than 440 million respectively without access to safely managed water and sanitation services. This does not consider the issues related to solid waste, with major challenges associated with the management of waste at the household and municipal level, including recovery and final disposal, and with the management of non-municipal waste such as healthcare, construction, demolition, and industrial waste. Currently, about 69 percent of the municipal waste in LAC is disposed of in some form of a landfill, though many landfills could be considered open dumps and poorly controlled dumpsites. Only half of this waste disposed of by landfilling is receiving proper environmental controls. As for recovery, the region recycles only 4.5 percent of its waste.³
- 2.2 The investments needed to meet the SDG targets of safe water and sanitation (clean water and sanitation for all) are more than triple their current level, amounting to an estimated minimum of US\$14 billion per year up to 2030.⁴ For municipal solid waste, preliminary estimates indicate an amount required of US\$12 billion (20% CAPEX and 80% OPEX). This does not consider the resources needed to improve the management of water resources, urban drainage, and solid waste; and particularly for solid waste, this figure does not consider the resources needed for other streams such as hazardous waste, healthcare waste construction, and demolition waste. It is not

¹ Throughout all this document, water and sanitation services will include solid waste management as part of sanitation services, and the acronym WSS will represent water, sanitation, and solid waste services.

² Progress on household drinking water, sanitation, and hygiene 2000-2017. Unicef, JMP, WHO. 2019.

³ What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050. Urban Development. Washington, DC. Kaza, S. et al. World Bank. 2018.

⁴ The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene. Hutton and Varughese. Word Bank. 2016.

possible to achieve the SDG goals only by leveraging economic-financial resources in conventional programs and adapting traditional management models. The sector must adapt and incorporate innovative solutions and models at the technological, institutional, financial, and social levels that allow accelerating access to safe drinking water, sanitation, and solid waste services throughout LAC.

- 2.3 **The potential for innovation in Water, Sanitation, and Solid Waste.** Recent studies⁵ elaborated by the Bank have proved that innovation is already playing a key role in increasing and improving access to more efficient quality water, sanitation, and solid waste services in LAC. This sector has innovative dynamics that differ from other sectors such as those closely linked to information and communications technology (e.g., fintech, e-health, intelligent transport). In the WSS sector, the type of sectoral innovations is generally more incremental than disruptive, and innovation is often vested in the public sector, historically more conservative⁶ and slower⁷ when it comes to implementing a proactive culture of innovation. The innovative solutions that have had a larger impact in LAC are the result of creative combinations of social and organizational solutions with technological innovations.
- 2.4 The potential impact of adopting innovative solutions for service provision is substantial. In general, for utilities, the technological digital transformation of systems and processes can result in a reduction in operating expenses of up to 25 percent.⁸ The World Economic Forum frames the adoption of digital technologies in all industrial sectors in the concept of the Fourth Industrial Revolution and identifies the digital transformation of water management and services as part of this revolution. Advanced technologies can transform the business models necessary for the provision and maintenance of water, sanitation, and hygiene services and, in doing so, unlock a variety of new economic opportunities.⁹ The concept of the Internet of Water is being proposed as a priority to share integrated sectoral data openly, facilitate decision-making processes, and improve the transparency of the sector.¹⁰ The innovation of the water systems through data science and augmented intelligence techniques are enabling situational awareness or near-real-time flow and quality monitoring.¹¹ Within this framework, advanced digital technologies can become a fundamental agent of change in the modernization of WSS infrastructure at a global level.
- 2.5 Internationally, digitalization initiatives in the sector have already resulted in operating gains up to 25 percent, reduced water supply failures by around 30 percent, and the duration of pipe bursts repairs by 8 percent, also increasing the reliability of data to

⁵ Innovations you didn't know were from Latin America and the Caribbean. Mastrangelo, IDB. 2018; Innovation in Water, Sanitation, and Solid Waste Assessment, perspectives, and opportunities for Latin America and the Caribbean Minatta & Basani. Technical note DB-TN-01974. 2020.

⁶ Barriers to Innovation in Urban Wastewater Utilities: Attitudes of Managers in California. Kiparsky et. al. Springer Science+Business Media NY. 2016.

⁷ The adoption of a water technology may require more than 10 years. O'Callaghan, P., Daigger, G., Adapa, L. & Buisman, C., Development and application of a model to study water technology adoption. Water Environmental Res. 90, 563–574. 2018.

⁸ The Digital Utility: New challenges, capabilities, and opportunities McKinsey & Company, 2018.

⁹ Harnessing the Fourth Industrial Revolution for Water. Fourth Industrial Revolution for the Earth Series. 2018

¹⁰ Internet of water revisited. Building an Internet of Water. The Aspen Institute, 2017.

¹¹ Improvements in event response times by 20 percent, increases in work reutilization by 25 percent, 15 percent reductions in energy use across the network and other benefits across the water value chain are possible, specifically in the area of asset management. IWA World Water. R. Eggers and other thought leaders at the International Congress. 2018.

almost 99 percent¹² thanks to the immediacy of precise sensor readings. Similar results have been confirmed by the Bank-financed pilots in Argentina and Brazil. New approaches of *Industry 4.0* are also being developed and implemented in the field of waste management (for processes related to collection and logistics, machines and waste treatment plants, business models, and data tools), with promising results, especially within the context of circular economy.¹³ Smart recycling or Artificial Intelligence (AI)-backed systems are supporting new mechanisms to finance water and solid waste infrastructure and management.¹⁴

- 2.6 Innovation through the combination of smart metering and the Internet of Things (IoT) is key to develop smart water management systems serving both consumers and water utility companies and fostering sustainability, strengthening processes such as water leak detection, river water quality real-time monitoring, water flow monitoring, short-term water consumption, and water demand forecasting.¹⁵ This has been confirmed by Bank-led initiatives and products, such as HydroBID.¹⁶
- 2.7 As seen in other sectors, the COVID-19 pandemic is likely to act as a catalyst in the transition to a more digitalized water sector. While digitalization is already present in the water management sector (especially in developed countries), both the extent and characteristics of its consolidation will be accelerated. An estimated 80 percent and 50 percent of the water utilities in developed and developing countries, respectively, are expected to undergo a digital transition by 2025.¹⁷
- 2.8 In LAC, WSS service coverage is high compared to other developing regions, but there are still gaps in access to services, with rural and peri-urban areas lagging. These areas present peculiarities that make service provision more challenging, such as population density – extremely high in some peri-urban areas or slums making it impossible to have grid services, or extremely low for hard-to-reach and dispersed rural spots where the only viable solutions are individual systems such as rainwater harvesting if the rainfall permits. In addition, most of the population in these areas are those most vulnerable, with high poverty rates. **Also, technical and social innovation** can play a key role in achieving universal access to safely managed services in LAC. All people must be reached, and for doing so, innovative technologies and business models are flourishing so that services can be provided in a safely managed and affordable manner. Technical innovations such as¹⁸, an off-grid solution that uses the power of the sun to extract a volume of water from the air that can be deployed in hard-to-reach communities in very dry areas, are being developed by innovators and piloted in LAC and globally. Also, innovative approaches such as business models designed for the base of the pyramid can make these services

¹² WaterWorld Digital twins for managing water infrastructure. <https://www.waterworld.com/water-utility-management/smart-water-utility/article/14173219/digital-twins-for-managing-water-infrastructure> January 4, 2020.

¹³ Digitalization and intelligent robotics in value chain of circular economy-oriented waste management. A review. Waste Management 95:476-492. Sarc et al. 2019.

¹⁴ For instance, in Barcelona there was an initiative before the COVID-19 pandemic to adapt environmental taxes (charged through the water bill) of urban districts according to their recycling rates. https://www.totbarcelona.cat/societat/barcelona-introdueix-cop-taxa-residus-225-425-euros-llar_2103848102.html

¹⁵ O'Callaghan, Paul. Journal of cleaner production Volume: 276. ISSN: 0959-6526. 2020.

¹⁶ Step by step guide. Hidro-BID Manual. Nalesso y Coli. 2018.

¹⁷ Smart Cities: Digital Solutions for a More Livable Woetzel J., Remes J., Boland B., Lv K., Sinha S., Strube G., Means J., Law J., Cadena A., Von der Tann V. McKinsey Global Institute. 2018.

¹⁸ <https://www.source.co/>

affordable for the most vulnerable¹⁹ social behavioral change programs can also ensure the appropriate use of services that are providing success in reaching those most vulnerable.

- 2.9 Recognizing this potential, some utilities in recent years have invested in innovation and, in some cases, created new dedicated departments for research and innovation. This is the case of top-end service providers such as the *Companhia de Saneamento Básico do Estado de São Paulo* (SABESP, in San Paulo, Brazil), the *Empresa Pública Metropolitana de Agua Potable y Saneamiento* (EPMAPS-Agua de Quito, Ecuador) and *Agua y Saneamiento Argentinos SA* (AySA, in Buenos Aires, Argentina) which, following international examples,²⁰ fostered a new culture that encourages employees to identify emerging technologies, undertake scientific research, and ultimately make transformational change.

- 2.10 **Key challenges in the enabling innovation environment for facilitating the development and application of solutions towards universal access to efficient and sustainable WSS in LAC.** Even recognizing these exceptions and the potential for the adoption of innovative solutions and practices, the rate of innovation and technology uptake in the sector is relatively slow compared with other sectors due to the conservative nature of the industry.²¹ It is observed that, in general, the water, sanitation, and solid waste operators in the region do not yet have the tools to analyze the level of advance/predisposition towards innovation and to define clear strategic objectives on the subject, nor guidelines on how to foster a new culture of innovation. This is valid also for other actors in the ecosystem, including policymakers and regulators. Among the main obstacles that hinder the development and promotion of innovation, an IDB study²² identified the following:

- i. *A weak and fragmented demand-side:* the level of innovation among WSS service providers throughout the region is marginal in most cases, dropping even lower for those responsible for rural areas. An IDB study revealed that most utilities in the sector in LAC do not consider or manage innovation as a business process and admit they apply very few innovation practices.²³ As for the solid waste sector: notwithstanding the improvements and innovations that are being proposed, much must be done to scale up their impacts.²⁴ Service providers in the sector lack internal incentive mechanisms to promote research and development (R&D) activities such as budget allocation and recognition for staff engaging in R&D activities. Furthermore, joint innovation activities with other stakeholders (open innovation²⁵) such as suppliers, tech centers, and/or entrepreneurs are exceptional, although there are some signs of a higher predisposition to collaborate in pilot projects. All this is compounded by the low capacity of the

¹⁹ See the example, of SOIL, a startup providing sanitation services through a container-based sanitation system to poor populations in Haiti.

²⁰ International examples include like Singapore's National Water Agency (Singapore), DC Water – District of Columbia Water and Sewer Authority (USA), Mekorot (Israel) and Sydney Water (Australia).

²¹ The term 'water innovation' appeared for the first time in the published academic literature in 2004. *Exploring the dynamics of water innovation: Foundations for water innovation studies. When and Montalvo. Journal of Cleaner Production. 2018.*

²² Innovation in Water, Sanitation, and Solid Waste Assessment, perspectives, and opportunities for Latin America and the Caribbean Minatta & Basani (2020). Technical note DB-TN-01974.

²³ Innovation in Water, Sanitation, and Solid Waste Assessment, perspectives, and opportunities for Latin America and the Caribbean Minatta & Basani (2020). Technical note DB-TN-01974.

²⁴ What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050. Urban Development. Washington, DC: Kaza, S. et al. World Bank. 2018.

²⁵ The era of open innovation, MIT Sloan Management Review. Chesbrough. 2003.

service providers to assess the existing innovation solutions and products to ensure they result in better WSS services.

- ii. *A supply side with little incentives*: the little demand for Research, Development, and Innovation (R&D&I) services from institutions as well as innovative startups (the structural business fragmentation in the WSS), is compounded by the absence of activities that acknowledge, promote and foster innovation from the supply side. In general, WSS stakeholders in LAC lack access to financing mechanisms adapted to the specific needs and characteristics of each step in the R&D&I process. Examples of this include short repayment terms, lofty guarantees, and almost inexistent grace periods for tech centers seeking to purchase equipment. From the perspective of capital growth and acceleration, there is an absence of consolidated incubation and acceleration facilities, and in addition, Venture Capital Funds actively seeking to invest in startups in their initial stages are scarce. Also, the limited inclusion and integration of multiple disciplines (e.g., data management, statistics, sociology, industrial design, logistics, etc.) is due, in part, to the lack of common goals and shared language. This slows down technological development for innovation and constitutes a major barrier to efficient service provision in the R&D&I centers.²⁶
- iii. *Poor coordination between the demand and the supply of innovative solutions*: although the contribution of R&D&I to the sector may be very relevant²⁷, in the Region, there are very few service providers involved in the generation of R&D&I.²⁸ The multiplicity of national, regional, and/or municipal public agencies with different competencies and roles²⁹ hampers their ability to cooperate in the design, approval, and execution of strategies and policies, or to promote R&D&I. Over twenty-five tech centers³⁰, university departments, and think tanks have been identified as possible innovation *engines* for the sector in LAC,³¹ but the region lacks open mechanisms to articulate and promote the interaction among sectoral stakeholders and, in particular, between the demand and supply of innovation.³² In practice, service providers and innovators do not talk to each other. In addition, most of the programs supporting the integration of innovation rely only on pilots, but there is no further dialogue with potential investors to achieve economies of scale and a financing muscle that can allow successful innovative solutions to be deployed at scale.
- iv. *Poor innovation culture throughout the ecosystem*: the culture of innovation – as occurs with belief systems, habits, values, attitudes, and traditions that foster

²⁶ Modelos de gestión de centros tecnológicos sectoriales: elementos de un análisis comparado, Dini y Tassinari. CEPAL. 2017.

²⁷ Research '...can make irreplaceable contributions to ensuring the water supply for our population, to the conservation of our ecosystems and the prosperity of our biodiversity, and to the sustainability of our productive and exportation matrix...'. R&D&I National Strategy for the Sustainability of Water Resources. Chile. 2016.

²⁸ Innovation in Water, Sanitation, and Solid Waste Assessment, perspectives, and opportunities for Latin America and the Caribbean Minatta & Basani (2020) Technical note DB-TN-01974.

²⁹ Water Governability in Latin America and the Caribbean: A multilevel point of view. OECD. 2012.

³⁰ Regarding waste, none are specific; there are no outstanding developments with the exception of some specific case supported by the National Agency for Investigation and Innovation (UCU – Unilever) in Uruguay. 2017.

³¹ Innovation in Water, Sanitation, and Solid Waste Assessment, perspectives, and opportunities for Latin America and the Caribbean Minatta & Basani (2020) Technical note DB-TN-01974.

³² The Future of Water and Sanitation Services in Latin America. The challenge of urban area operators. IDB- CAF. 2015.

innovation – is crucial to the development of WSS service providers.³³ However, the culture of innovation among service providers in LAC represents less than one-fifth of the international reference threshold value for the sector.³⁴ Also, most countries do not have or have not completely implemented a legal and institutional sectoral framework that favors innovation.³⁵ Additionally, the nature of the WSS sector, essential for protecting public health, the environment, and local economies,³⁶ has historically resulted in a strong regulatory environment not necessarily open to engaging in the risks inherent in innovation and change. That said, public policy on innovation³⁷ tends to be a relatively new field, and its formulation, development, and assessment are still incipient in many LAC countries.

- 2.11 These obstacles are aggravated by intrinsic gender and inclusion sectoral gaps. Firstly, women are underrepresented in key positions within Water and Sanitation utilities, despite being essential users and main decision-makers on water use in the home³⁸. Also, it is well known that a lack of access to water, sanitation and hygiene affects women, minorities, or marginalized groups disproportionately, due both to biological and cultural factors exacerbated by facets such as ethnicity, social status, sexual orientation, or disability status.³⁹ Finally, the representation of women in the innovation ecosystem is still incipient. Even though Latin America and the Caribbean is the region with the highest percentage of female entrepreneurship, men-owned businesses are still more prominent⁴⁰ and statistically, companies led by women receive less financial support.⁴¹
- 2.12 Additionally, evidence presented by the latest Intergovernmental Panel on Climate Change reports indicates that climate change is altering the seasonality of local and regional hydrology and causing greater variance in the probability distribution of precipitation and temperature. In some areas, climate change is also increasing the intensity and frequency of extreme events affecting infrastructure, local communities and key ecosystem services. Furthermore, climate change is believed to be affecting the trends and characteristics of El Niño and La Niña, potentially altering historical patterns of regional climate systems connected to this cyclical interdecadal event. At the same time, slow onset impacts of climate change such as sea level rise or the

³³ The New Imperative of Innovation Policy Perspectives for Latin America and the Caribbean. Navarro, Crespi & Benavente. IDB. 2016; Three of the five main innovation inhibitors for W&S suppliers are linked to organizational culture. Fostering Innovation Within Water Utilities Water Research Foundation & Water Environment and Reuse Foundation Project #4642. 2017; La importancia de la cultura de la innovación. Factor clave para la competitividad de las empresas. Community of Madrid. 2010.

³⁴ Innovation in Water, Sanitation, and Solid Waste Assessment, perspectives, and opportunities for Latin America and the Caribbean Minatta & Basani. Technical note DB-TN-01974. 2020.

³⁵ El marco legal e institucional y la organización industrial. El futuro de los servicios de agua y saneamiento de ALC, desafíos de los operadores de áreas urbanas de más de 300.000 habitantes". Discussion paper. IDB-CAF. 2015.

³⁶ Innovation in the water industry: barriers and opportunities for US and UK utilities. WIREs Water published by Wiley Periodicals, Inc. 2015.

³⁷ Innovation Policies for Latin America and the Caribbean. Nuevos Caminos. Navarro, Olivari et al. IDB. 2016.

³⁸ World Bank. 2019. Women in Water Utilities: Breaking Barriers. World Bank, Washington, D.C.

³⁹ Understanding empowerment in water, sanitation, and hygiene (WASH): a scoping review. Dery et al., (2020), Journal of Water, Sanitation and Hygiene for Development 10.1, 2020; A guidance note for leaving no one behind. UNICEF 2021; Including Persons with Disabilities in Water Sector Operations: A Guidance. World Bank. 2017.

⁴⁰ Avolio Alecchi, B. (2020). Toward Realizing the Potential of Latin America's Women Entrepreneurs: An Analysis of Barriers and Challenges. *Latin American Research Review*, 55(3), 496–514

⁴¹ Inversión con un enfoque de género: Cómo las finanzas pueden acelerar la igualdad de género para América Latina y el Caribe, Buckland et al., (2019), BID Invest 2019

steady increase of mean temperature are becoming multipliers of on-going environmental degradation effects, affecting herewith water resources quality. Other impacts in the region include the rapid retreat of tropical glaciers affecting water availability in the Andean region. Altogether, these physical impacts directly affect the reliable provision of water and sanitation services.⁴²

III. THE INNOVATION PROPOSAL

- 3.1 The **general objective** of the facility is to enable the development and integration of innovative solutions in the water, sanitation, and solid waste sector that contribute to safely managed water, sanitation, and solid waste management services for all.⁴³ Specifically, **this facility aims to boost the supply of innovation and the matchmaking between startups, entrepreneurs, utilities, and investors** by financing individual projects (non-reimbursable and contingent recovery technical cooperation or investment grants) aligned with the components described in paragraph 3.3 and the following.
- 3.2 This facility will be complemented by WSA's facility RG-O1693 (approved separately by the IDB Board of Executive Directors) which, though approved separately, complements the activities by supporting activities that strengthen the demand of innovative solutions and products and promote an enabling environment of innovation in the water and sanitation sector.
- 3.3 To ensure a holistic approach to innovation, the facility will support: (i) Technology Innovation, including digital transformation, which brings a wide possibility of improvements in the service provision; (ii) Service Innovation, which addresses how services can be delivered, incorporating users' insights and addressing people's needs; (iii) Financing Innovation, which opens new opportunities for funding.
- 3.4 **Component 1: Boosting the supply of innovative solutions in the WSS sector (US\$1,233,000).** The goal of this component is to identify and support, dynamically and interactively, the supply of innovative solutions and products developed by the private market and the innovation ecosystem.
- 3.5 The following activities could be financed under this component: (i) organization of open challenges to identify innovative solutions; (ii) incubation of promising solutions; (iii) acceleration of proven solutions; (iv) seed grants for start-ups financing pilots and prototypes, to test on a small scale and in a controlled environment new solutions coming from start-ups to facilitate the identification of obstacles, measurement of results, and understanding of how they can be scaled up; and (vii) capacity-building activities for entrepreneurs to forge ties with the WSS sector.
- 3.6 **Component 2: Stimulating productive partnerships between startups, entrepreneurs, service providers and investors (US\$682,000).** The goal of this component is to strengthen the regional innovation ecosystem, its key actors and create and strengthen spaces for dialogue. The following activities could be financed under this component: (i) capacity building and dialogue events with services

⁴² Various authors cited in Servicios de agua potable y saneamiento resilientes en América Latina y el Caribe. Paltan et al. (2020). Técnica note IDB-TN-01988. 2020

⁴³ Projects will include indicators corresponding to the definitions of safely managed. More information about the definition of safely managed can be found in the following documents https://www.who.int/water_sanitation_health/monitoring/coverage/indicator-6-1-1-safely-managed-drinking-water.pdf and https://www.who.int/water_sanitation_health/monitoring/coverage/explanatorynote-sdg-621-safelymanagedsanitationsServices161027.pdf Solid waste safely managed

providers, innovators, and investors; (ii) regional and international events to showcase innovative solutions; (iii) technology surveillance and technical advisory services as a service provided to end-users of innovation; (iv) mechanisms and tools to facilitate access for utilities to innovative financing; (v) open innovation calls to match the needs of service providers with existing solutions or innovators that can provide solutions that are not yet available on the market but which could be developed within a reasonable time frame; and (vi) strengthening the regional innovation community of practice.

- 3.7 A key aspect is to ensure innovation solutions and products can be deployed at scale; therefore, a strong effort will be directed to engage investors (equity, angel investors, and other existing innovation funds) so that innovators can access the needed financing at scale.
- 3.8 The geographic focus is regional and fair regional geographical representation will be sought, but 45% of resources provided by IDB LAB will be directed to C&D countries. The resources of the facility will not supplement the budget of IDB Lab for routine and customary activities.

IV. BUDGET

- 4.1 The facility or financial container RG-O1690 will be funded by a contribution of US\$2,000,000 by IDB Lab, which will finance non-reimbursable and contingent recovery technical cooperations and investment grants. The selection of financial instruments will be based on the financial needs of each project approved under this facility.⁴⁴

Indicative Budget⁴⁵

Activity/Component	IDB Lab - RG-O1690	WSA - RG-O1693
Component 1: Boosting of the supply of innovative solutions	1,233,000	537,000
Component 2: Stimulating productive partnerships between the WSS sector, the innovation ecosystem and financing actors	682,000	586,000
Evaluations and contingencies	85,000	-
TOTAL	2,000,000	1,123,000

- 4.2 This facility will be complemented by WSA's facility RG-O1693 (approved separately by the IDB Board of Executive Directors) which, though approved separately, complements the activities and shares the same scope of this facility. WSA's facility RG-O1693 will complement the facility by supporting activities that strengthen the demand of innovative solutions and product and promote an enabling environment of innovation in the water and sanitation sector. Additionally, individual projects to be financed by the facility RG-O1690 will mobilize co-financing resources from the facility RG-O1693.
- 4.3 INE/WSA will also contribute to the objective of this facility through parallel, independent but complementary technical cooperation projects, such as (i) "IDB-Israel

⁴⁴ Contingent recovery clauses on technical cooperation projects and investment grants will be offered to organizations with a clear revenue-generating model that provide highly innovative/disruptive solutions in proof-of-concept stages and with still-uncertain market uptake. In those cases, there should be a reasonable expectation of success as indicated by prior tests or market studies and the solution must be part of the organization's core business in order to ensure alignment of interests.

⁴⁵ If needed, resources will be reallocated through components to meet the projects real demand.

Collaboration: Improving Capacities in Water Resource Technologies” ([RG-T3298](#)), co-financed by the Government of Israel (US\$702,000) and the Strategic Program for Infrastructure Development Financed with Ordinary Capital (US\$500,000), which has been financing innovative WSS pilots throughout the region; and (ii) “Promoting Innovation in the Water, Sanitation and Solid Waste Sector in Latin America and the Caribbean” ([RG-T3843](#)), financed by the Strategic Program for Infrastructure Development financed with Ordinary Capital (US\$500,000), which includes activities to strengthen the demand and to facilitate intelligence and coordination between demand and supply for innovation.

- 4.4 It is expected that the blending of resources from these different sources will accelerate the development and piloting of new business models, tools, and methodologies to assist clients in planning and sustainably deploying the innovation agenda.
- 4.5 The facility is open for additional contributions from external donors as long as these donors accept the conditions outlined in this facility document or any other conditions established by the IDB. These additional donor contributions to the facility will be updated in IDB systems as co-financing agreements are signed. The Result Matrix will be updated in case additional funds are received.

V. USE OF RESOURCES

- 5.1 **Origination and identification of individual projects to be financed by the facility:** It is expected that the project ideas or proposals that will be presented for possible funding will be received through a variety of channels, including open calls.
- 5.2 Each of the individual projects to be funded by RG-O1690 will obtain its own no objection from the corresponding beneficiary country, following the procedures required by the governments of each country.
- 5.3 **Eligibility criteria.** All projects to be financed by the facility will have to meet the eligibility criteria established in this document. The processing, approval, and implementation of each project will be subject to IDB Lab policies and procedures.
- 5.4 To select the most merited projects, the criteria will include:
 - i. Alignment to the objective of the facility by its contribution to the results matrix.
 - ii. Impact IDB Lab target groups, i.e. poor and vulnerable population segments, and emerging economic units, including startups with innovative business models. The potential impact of individual projects will be assessed following IDB Lab's typical impact analysis, the iDelta, with the support of the Development Effectiveness Division (DSP/DVF).
 - iii. Sustainability: each project that will be financed will be analyzed and designed with a sustainability strategy that is specific to the individual project, with the intention that the activities and outcomes of each project become sustainable in the medium term as is currently done with all other IDB Lab projects.
 - iv. Scalability: the solution must present a clear path to be scaled to affect the lives of more people and attract additional investors interested in joining forces with IDB Lab to deploy resources.

- v. Innovative Approach: this is a new technology, a new application of technology, a new business model, or a new process for solving an important problem of the region, and the team identifies its competitive advantages.
 - vi. Other guiding principles for the evaluation of potential projects include knowledge generation, demonstration effect, and mobilization of resources.
 - vii. Geographical distribution: at least 45% of resources provided by IDB Lab will be directed to C&D countries.
 - viii. Counterpart contributions by executing agencies or other external investors towards the total costs of the individual projects. The exact amount of local counterpart resources for each project will depend on the conditions and characteristics of each project and will be determined during its design phase.
 - ix. Gender and diversity considerations. With equal conditions and merit with respect to the rest of the established criteria, projects that incorporate specific gender and diversity actions and goals will be given priority for eligibility.
- 5.5 With equal conditions and merit with respect to the established criteria, projects that incorporate knowledge products based on products, results and lessons learned will be given priority.
- 5.6 **Individual project design, review, and approval:** Once selected, individual projects funded by RG-O1690 will be designed and approved using the existing policies, procedures, and formats for IDB Lab related to risk management, procurement and contracting, application of the DICl, financial management, and supervision. As is currently done with individual IDB Lab projects, each project in the Facility will prepare a document that will include a social and environmental impact section and will be reviewed during its QRR.
- 5.7 The facility will function most effectively with an efficient and accelerated project preparation and approval process and timely execution, for which authority is requested for delegation of the approval of individual projects in this IDB Lab facility to the IDB Lab Manager. Similar authority delegation in the IDB for its complementary facility will help ensure alignment of timing via procedures for the approval of non-reimbursable projects funded by the Bank or resources of donors under administration and optimizing expedited approval and deployment of resources.
- 5.8 **Execution and supervision of individual projects:** each project will report through IDB Lab's semi-annual Project Status Report System (PSR) and/or the Bank's Technical Cooperation Monitoring and Reporting System (TCM). Annual reports will be presented to the Donors Committee on the approvals and performance of the individual projects under this facility.
- 5.9 **Results.** The promotion of innovation within the WSS community and its adoption will make it possible to upgrade the services that are provided. In particular, the project is expected to improve coordination between solutions providers and end-users, open incubation and acceleration opportunities, and reduce market uncertainty for the innovative private sector.
- 5.10 It is expected that this Facility in combination with the efforts supported by WSA's facility RG-O1693 will support and influence at least 15% of INE/WSA's yearly operations through the solutions boosted, promoted, or supported by the Facility. This will be monitored annually, assessing the inclusion in the annual pipeline of activities

that follow-up on, use or escalate products, processes, methodologies, and/or any innovative solutions promoted through the facility.

- 5.11 The projects financed under this facility and facility RG-O1693 will lead to, among others, the following measurable benefits: (i) adoption of innovative solutions by WSS service providers; (ii) increase in investment in innovative solutions; (iii) development of partnerships among startups, utilities, and investors; and (iv) the strengthening of ecosystems of innovation at sectoral level ([Results Matrix](#)).
- 5.12 As a result of the financed projects by this facility, the following outcomes will be achieved: (i) 15 new innovative solutions that increase sector efficiency; (ii) 10 startups signing partnership contracts with utilities and/or investors for the scaling up of their solutions. For the startup prioritization, the initiative will work closely with LAB/INV.
- 5.13 All projects under the facility RG-O1690 will use IDB Lab's KPIs (for example, # of households with better access to services in terms of quality and affordability, with 50% of those households headed by women).
- 5.14 The facility will especially benefit adult women and young girls who bear the physical and economic costs of poor water quality and access issues. In 64% of households with limited or no access to water, women shoulder the responsibility for supplying the home with water (compared to 24% for men).⁴⁶ Additionally, quality issues and constraints on expanding proper WSS coverage have adverse impacts on health, education,⁴⁷ and employment, especially among women due to their responsibilities in caring for their households and families.
- 5.15 Similarly, traditionally marginalized groups such as ethnic minorities or indigenous groups will benefit from improved access to and quality of water, sanitation and solid waste services. The beneficiaries will be both from urban and rural areas, having a special focus on working with utilities and models for intermediate cities and low-income neighborhoods.

VI. ALIGNMENT WITH IDB GROUP, SCALABILITY, AND RISKS

- 6.1 **Strategic Alignment.** The facility is consistent with the **Second Update to the Institutional Strategy** (AB-3190-2) and is aligned with the development challenges of: (i) Productivity and Innovation by having a focus on aiding in the provision of infrastructure services and adequate, safe, reliable, and affordable public services through the integration of innovative solutions that will improve service efficiency and therefore contribute to economic growth. The facility will strengthen innovation ecosystems in the region and develop human capital and capacities for service providers and innovators; and (ii) Social Inclusion and Equality by supporting interventions that promote universal and sustainable access to quality and affordable WSS services. The facility is also aligned with the cross-cutting areas of: (i) Climate

⁴⁶ The following infographic summarizes the gender implications of water issues:

<https://publications.iadb.org/publications/spanish/document/%C2%BFTiene-g%C3%A9nero-el-agua.pdf>.

⁴⁷ Barde, Julia Alexa, and Juliana Walkiewicz (2013). The Impact of Access to Piped Drinking Water on Human Capital Formation - Evidence from Brazilian Primary Schools, Beiträge zur Jahrestagung des Vereins für Socialpolitik 2013: Wettbewerbspolitik und Regulierung in einer globalen Wirtschaftsordnung, ZBW - Deutsche Zentralbibliothek für Wirtschaftswissenschaften, Leibniz-Informationszentrum Wirtschaft, Kiel und Hamburg. The authors of this study, conducted in Brazil, focus on whether a child (in the fourth grade, with an average age of 10.8) had access to running water at home when Brazilian standardized tests were administered between 1999 and 2005. The authors found a significant relationship between access to tap water at home and academic test scores (it explains 11% of the standard deviation in test scores). Available at: <http://hdl.handle.net/10419/79808>.

Change and Environmental Sustainability by financing innovation solutions that will result in more resilient services, better data management, and new mechanisms to ensure the quality and availability of water while contributing with the goals and priorities on mitigation and adaptation of National Determined Contribution (NDC) and Long-term climate Strategies (LTs); and (ii) Gender Equality and Diversity, by promoting women and marginalized groups engagement in innovation by promoting startups and innovative solutions led and developed by women and guaranteeing inclusive services. The facility is also aligned with the **Corporate Results Framework 2020-2023** (GN-2727-12) and will contribute towards the indicators “Agencies with strengthened digital technology and managerial capacity” and “Households with improved access to water or sanitation”.

- 6.2 The facility is also consistent with: (i) the **Sustainable infrastructure for competitiveness and inclusive growth strategy** (GN-2710-5), in the priority areas for action to: "Promote access to infrastructure services", "Promote continuous improvements in infrastructure governance" and "Support the construction and maintenance of environmentally and socially sustainable infrastructure"; and (ii) the **Water and Sanitation Sector Framework Document** (GN-2781-8), specifically with the dimensions of success and lines of action related to universal access and improvement of the quality of services, enhanced and more efficient utilities, and of social and environmental sustainability through the adoption of innovative solutions.
- 6.3 The facility justification finds further strength in the [Development in the Americas - DIA 2020](#). The flagship document confirms that digitalization and technological advances, in addition to growing social demands and environmental concerns, will drive dramatic changes for infrastructure services in the coming years. In the WSS sector technological change can help change the paradigm for organizing and operating sectoral services, promoting better monitoring, loss reduction, costumers service practices, among others. For all this, the facility aligns with the [IDB Group Vision 2025](#). With a focus on achieving sustainable and inclusive economic growth, the IDB vision emphasizes the need to mobilize greater financing to move towards digital economies, by facilitating access and creating the capacity to embrace digital technologies and foster innovation, strengthening the existing innovation and entrepreneurial ecosystems with the conviction that investments in technology, entrepreneurship, and venture capital, as well as in a more vibrant innovation ecosystem, will result in effective growth.
- 6.4 The Facility falls under **IDB Lab's Inclusive Cities thematic area** (MIF/GN-238-1) since it is consistent with the objective of improving the quality and affordability of uninterrupted (resilient) essential urban services, incorporating technologies and new business models.
- 6.5 It is expected that the adoption of innovative WSS solutions will contribute to supporting the efforts of the countries of the region to achieve the sectoral SDGs.⁴⁸
- 6.6 **Scalability.** A short-term scalability factor is the potential attraction of additional donors interested in joining forces with the IDB Group to deploy resources to innovative and impact-oriented projects. The medium-term scalability factor is connected to the scaling up of the models and the adoption of the solutions by IDB Group clients (public and private).

⁴⁸ The facility will support the following SDGs: SDG6 (Clean Water and Sanitation); SDG9 (Industry, Innovation and Infrastructure); SDG11 (Sustainable Cities and Communities); SDG17 (Partnerships for the Goals).

6.7 **Risk.** The following risks have been identified:

- i. **delays in project implementation due to the COVID-19 pandemic**, especially if there were no change in current conditions brought by COVID-19. To mitigate this risk, virtual meetings will be promoted and facilitated; feedback from beneficiaries will be constantly required to verify the need for changes and actions in the implementation phase; projects' activities less likely to require physical exposure to social contacts will be prioritized during social distancing periods; and projects' activities that result in social contacting will follow IDB's guidance on health safety and will receive the necessary precautions. In addition, INE/WSA and IDB Lab will keep close communication with IDB departments, governments and the private sector for measures that may be put in place to mitigate the impact of the health crisis on the programming and implementation of this facility;
- ii. **Service providers do not scale up piloted solutions because a lack of resources.** To mitigate this risk, the team will seek regular communication with IDB specialists to make sure that innovative solutions are included in loans and parallel operations
- iii. **Resistance of the WSS sector to open their business models for open innovation rounds.** To mitigate this risk, the team will seek regular ongoing communication with IDB specialists to make sure that innovative solutions are included in loans and parallel operations

VII. EXECUTION ARRANGEMENTS AND GOVERNANCE STRUCTURE

- 7.1 **Implementing agency:** IDB Lab will be the implementing agency of this facility and will coordinate actions with IDB's Water and Sanitation Division (INE/WSA) (especially considering the synergies with IDB's proposed facility RG-O1693) through the establishment of a Technical Committee, which will include technical representatives from INE/WSA and IDB Lab. This committee will have the responsibility to review the projects proposed and will make recommendations to IDB Lab management for project eligibility and approval. IDB Lab will name a Facility Focal Point (FFP) who will coordinate with the INE/WSA team.
- 7.2 The Technical Committee will regularly interact with representatives from IDB Invest, the Knowledge, Innovation and Communication Sector (KIC) and the Competitiveness, Technology and Innovation Division (CTI), and other departments, to ensure coordination with existing projects and strategically coordinate future actions.
- 7.3 INE/WSA and IDB Lab specialists in the beneficiaries' countries will be directly involved in the design and supervision of individual projects.
- 7.4 **Executing agencies:** Upon the respective due diligence, legally established entities may receive and administer resources under this facility to execute projects. These executing agencies could be one of the following: (i) private companies (including startups) eligible to receive non-reimbursable and reimbursable financing from the Bank; or (ii) entities that support entrepreneurship and/or innovation, such as innovation agencies, accelerators, financial intermediaries, producer associations, knowledge institutions, and others that can demonstrate alignment with the project objectives. Coordination with the institutions responsible for WSS service provision will be sought.

- 7.5 **Execution period:** The execution period of the facility is estimated as up to two years (24 months) after the facility is officially approved by both IDB and IDB Lab. The facility may be extended by IDB Lab in coordination with IDB's facility and relevant policies and procedures.
- 7.6 **Monitoring:** The FFP will liaise with projects team leaders to obtain information necessary to track projects, verify the portfolio's sustainable impacts, monitor the expected results, support problem solving, and prepare portfolio management reviews and reporting documents. Reporting for projects will follow the same rules that apply to other IDB Lab projects in terms of financial management and operational guidelines (disbursement by results) which include semester progress reports, continuous monitoring of outputs and outcomes achieved, and knowledge management requirements. During the execution period, IDB Lab will submit to the Donors Committee, by no later than June 30 of every year, an annual report of the Facility, describing the progress during the preceding year; and within six months after the completion of the Facility, a Final Project Report.
- 7.7 **Evaluation:** Evaluations of all projects financed by this Facility will be contracted following the evaluation arrangements established included in each project legal agreement. The following question will be included in the evaluation of the facility: Has the Facility contributed significantly to the IDB Group's Vision 2025, institutional strategy and other strategic frameworks?; Has the Facility succeeded in introducing new technologies that have dramatically changed the level of access, quality and equity in a cost-efficient and sustainable way to water, sanitation and solid waste management services?; Has the Facility succeeded in fostering the use of technology and innovations in utilities in a systematic, sustainable and permanent capacity building of these actors?; Has the Facility succeeded in changing the culture of innovation and the forms of technology adoption among water, sanitation and solid waste management utilities?; Has the Facility succeeded in developing partnerships between traditional actors in the sector (water, sanitation and solid waste management utilities) and non-traditional actors (startups, research centers)?; Has the Facility succeeded in creating new service provision models based on innovation in management or through new forms of financing or alliances with the private sector?; Has the Facility succeeded in innovatively including groups traditionally excluded from service provision, particularly prioritized groups such as women, indigenous people, afro-descendants, people with disabilities or migrants, among others?

VIII. EXCEPTIONS TO BANK POLICY

- 8.1 None.

IX. ENVIRONMENTAL AND SOCIAL STRATEGY

- 9.1 This facility itself will not have any specific social or environmental impacts therefore it is classified as C. As is currently done with individual projects, each project in this Facility will be reviewed by DSP/SEG following the guidelines of the Policy Environment and Safeguards Compliance Policy (OP-703). Project classified as Category "A" under IDB's Environmental and Social Safeguards Policy will not be financed.