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Pooled Finance: Brazil's Opportunity to Finance Subnational Sustainable Infrastructure

Climate Change Division

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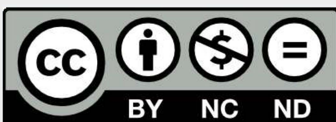

Pooled Finance: Brazil's opportunity to finance subnational sustainable infrastructure

Prepared by the Climate Bonds Initiative

Regulatory chapter written in partnership with Felsberg Advogados and Freitas Leite Advogados

Supported by Inter-American Development Bank

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About this Policy Brief

This Policy Brief provides an overview on how subnational governments can access pooled funding mechanisms to finance climate resilient municipal infrastructure. It highlights Brazil's consortia model, legal framework, international experiences and models, and provides alternatives for the execution of local infrastructure projects.

Brazilian municipalities face multiple challenges in financing infrastructure, such as their size, revenues and access to public debt and credit. Subnational consortia are one of the solutions to access funding for infrastructure projects and the use of innovative pooled finance mechanisms can be a catalyser for the effective execution of subnational infrastructure projects in Brazil.

Sustainable infrastructure projects can also contribute to a post-COVID green economic recovery. The post-pandemic scenario calls for economic stimulus that not only lead to employment generation but to a more resilient and sustainable future. Climate-related issues are urgent and could cause similar systemic economic shocks as the crisis caused by this pandemic. Thus, the implementation of climate-friendly infrastructure is central to build back better and avoid adverse climate-related impacts.

Green and sustainable labelled instruments can support this process as they may unlock funding for projects that mitigate the effects of climate change, improve adaptability and resilience to climate risks, and bring positive and environmental social benefits by providing access to new capital flows from investors looking for impact. Therefore, there is a significant opportunity for local authorities, which are part of subnational consortia, to mobilize sustainable capital to fund local infrastructure projects through innovative pooled finance mechanisms.

The Brazilian Government, led by the Ministry of Economy's Secretariat for Infrastructure Development, has commissioned a series of studies to understand the current challenges subnational consortia face to plan and execute infrastructure projects. This brief is part of this wider effort and a component under the "**InfraInvest: Sustainable Infrastructure for Brazil**" Program, funded by the Inter-American Development Bank (IDB) in partnership with the Ministry of Economy. It proposes innovative financial alternatives to improve the capacity of Brazil's municipal consortia to implement sustainable infrastructure projects. In parallel to this work, the Secretary of Infrastructure, also leads the **INTERGOV Project**, in partnership with the United Nations Development Programme (UNDP), to review and map regulatory and governance challenges, as well as propose public policy improvements for subnational consortia. These two pieces of work are complementary and aim to support Brazil's Government to advance with its sustainable development agenda.

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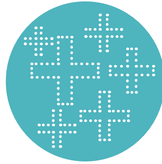
Introduction

Brazilian municipalities access to pooled finance structures



In Brazil, subnational authorities show overlapping responsibility in the delivery of urban infrastructure. There is a historical infrastructure gap,[1] and with more than half of the country's population living[2] in large municipalities, and a continuously growing urban population, the demand for public services and consequently investment is increasing.

Infrastructure projects in Brazilian cities are currently funded through a series of mainstream channels, which include: (i.) municipality's tax revenues; (ii.) transfers from federal and state governments; (iii.) bank loans from specific credit lines and debt issuance under certain circumstances; and (iv.) private sector, via Public-Private Partnerships (PPPs) and concessions.

Yet, Brazilian municipalities experience a series of regulatory and financial challenges to finance local infrastructure, which will be explored throughout this Policy Brief.

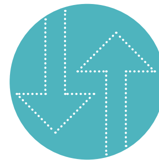
Municipal infrastructure could be funded via capital markets, however municipalities and states have been prevented from accessing this market[3] due to historical defaults and debt payment plans.[4,5] The Law for Fiscal Responsibility (Law 101/00[6]) has limited subnational government loans, as it requires authorization and guarantees from the federal government, who, in turn, also has restrictions to provide these guarantees.[7]

The size of Brazilian municipalities brings an additional challenge.[8] According to the IBGE (Brazilian Institute of Geography and Statistics), small-sized cities are more vulnerable to population decrease[9,10]—with 68.2% of Brazilian cities falling into this category—which may lead to further cuts in tax revenue streams from federal and state transfers. Smaller municipalities also face difficulties imposed by limited technical capacity for structuring and implementing infrastructure projects.

One solution to address these limitations are **subnational consortia structures**. These structures were authorized by Law 11.107/05 to provide better opportunities for municipalities and states to leverage infrastructure investments as they allow the shared management of public goods and reduction of service costs. This not only maximizes the quality of infrastructure and population well-being, but also facilitates regional integration, harmonization and development as it provides an alternative to cities with scarce resources.

These subnational consortia arrangements can benefit from innovative **Pooled Finance Mechanisms (PFMs)**. PFMs can be applied by subnational consortia to facilitate local infrastructure financing through the access to external debt sources. Thus, PFMs can offer cost-effective financing solutions to fund local municipal projects with coordinated and integrated management. PFMs have been successfully implemented internationally and these experiences and their potential applicability in Brazil are explored in this Policy Brief.

Why fund sustainable local infrastructure through pooled finance?



Brazil has a USD1.3tn* green investment opportunity across different infrastructure sectors, such as climate-smart transportation, water and waste management, buildings, and energy efficiency.[11] This green pipeline can contribute to address the country's historical infrastructure gap[12] and to meet its Nationally Determined Contributions (NDCs).

Integrating climate mitigation, adaptation and resilience into project planning can maximize access to new pools of capital that look for positive environmental and social impact and that contribute to sustainable development.

This alternative capital may be accessed by infrastructure projects operators through the **issuance of Green, Social, Sustainable or Sustainability-Linked Bonds**. **Green Bonds**, for instance, support the transition to a low carbon economy by directing investments to mitigation and adaptation projects and assets.

More resilient infrastructure can also reduce the life-cycle costs of an asset and improve the resilience of infrastructure services and its users.[13] The use of better construction materials and maintenance methods can prevent losses and reduce the vulnerability of assets to natural and climate hazards.

Sustainable infrastructure also can tackle **future systemic economic shocks caused by the effects of climate change. Investing in sustainable infrastructure will be central for economic recovery** post-COVID-19 and to build back better. The market instability caused by the current crisis provides further opportunities for fixed income instruments, especially those with a green and sustainable label.

Brazilian subnational consortia can support the delivering of sustainable local infrastructure and can create PFM to leverage their fundraising potential by accessing capital markets. Consortium structures can help Brazilian municipalities, particularly medium and small-sized, to overcome lower incomes, creditworthiness and the lack of technical expertise and institutional capacity. Particularly, in a context where ~35% of Brazilian municipalities do not make enough revenues to maintain their administrative activities, and ~47% of local authorities only spend 3% of the municipality's total revenue in welfare investments, including infrastructure.[14]

While there are many ways of structuring PFMs (see page 5), these financial structures bring together local authorities, creating volume to access capital markets, as well as reducing cost and risk. **Brazil's consortia model can facilitate PFMs as it aggregates municipalities with common objectives.**

According to the National Municipalities Confederation (Confederação Nacional de Municípios - CNM), there are 491 subnational consortia in Brazil, covering 73% of Brazilian municipalities;[15] 98.6% of these are small and medium-sized. They can be multisector or sector-specific, delivering integrated solutions to a wide range of areas such as urban planning, mobility, water, waste, housing, security, tourism, health, agriculture, and education.[16]

An example from Brazil is the **Intermunicipal Consortium of the Greater ABC** (Consórcio Intermunicipal Grande ABC),[†, 17] the first multisector consortium established in the Brazil back in 2010. The Consortium can sign agreements, open bidding rounds, and receive federal/state resources, as well as resources from international organizations, to implement regional projects. During its early years, the Consortium focused on issues related to solid waste, health and education and over the years expanded its reach to other areas such as urban mobility, housing, social policy and security. It has a dedicated regional infrastructure working group, which aims to support improvements on transport, logistics, mobility, telecommunications, and access to basic services.

* Estimate based on 2015 's inflation, according to the International Finance Corporation- IFC analysis

† Industrial region in Greater São Paulo.

There is still a considerable potential to implement sustainable infrastructure projects through subnational consortia in Brazil. Only 24.2% of existing consortia,[18] both multisector and sector-specific, address general infrastructure projects, while more than half deliver some sort of public health service.[19,†]

Subnational consortia could benefit from labeled financial instruments to attract external private and foreign capital to invest in sustainable infrastructure projects by structuring **PFMs to facilitate their access to capital markets and provide guarantee options through improved and shared creditworthiness and risk management.**

The table below summarizes the most common PFMs structures implemented around the world and respective examples:

Pooled Finance Mechanisms

Type	Structure	Example of International experiences
Club deals	Municipalities issue a bond together and each participating authority is responsible for the payment of its share of borrowed capital with interests. No Special Purpose Vehicle (SPV) is created, and the issuance can be organized by the association that represents the group of issuers, who directly access the market.	In **France**, as of 2004, municipalities formed local 'urban communities' (*communautés urbaines*, in French) to issue bonds in a **Club Deal** format. Until 2012, the former association 'Association des communautés urbaines de France' was responsible for organizing the deals, six in total,[20] with the last one gathering 44 local authorities, who issued a EUR 610m, 15 years issuance at a 4.3% cupom.[21] French club deal structure evolved to the establishment of a more sophisticated structure of pooled finance: the aggregation platform Agence France Locale -AFL.[22] Created in 2013, AFL is completely owned by French local authorities and act as an intermediary credit institution that provides loans to urban communities by raising funds in the capital market through the aggregation of the local deals.
Aggregation Platforms	In this structure, a SPV is an intermediary between municipalities and capital markets. This independent entity can be owned/guaranteed by the central government, subnational authorities or even by a third party, such as a pension fund. It can aggregate portfolios/ deals, raise larger sums of capital and help public borrowers to diversify their funding sources and to access cheaper financing. SPVs can also be equipped with technical expertise and enhanced risk management and creditworthiness.	**Local Government Funding Agencies - LGFAs** are known to be the most efficient and advanced **aggregation platform** model. In **Denmark, Sweden, Norway**, and **Finland**,[23] where states and municipalities are largely responsible for the provision of public services and benefit from a high fiscal autonomy, LGFAs have been the main lender to the public sector.[24] All these Nordic LGFAs are **recurring green bond issuers** and have issued a total of 40 green bonds[25] in local and international markets to finance energy, transport and water and waste management projects, while also helping their countries to meet environmental and climate commitments. In **Mexico**, states and municipalities usually issue bonds via SPVs. In 2008, the country's first **PFM** emerged in the **State of Veracruz**. The deal, backed by vehicle tax revenues and by a State of Veracruz guarantee, brought together 199 municipalities to finance a number of projects in productive public infrastructure. The IADB has developed a similar pooling mechanism gathering municipalities in Mexico to finance sustainable infrastructure projects via an aggregating SPV. The structure is ready to be tested* and will involve credit enhancement in the form of a guarantee fund and a project preparation facility provided by the IDB and other climate concessional funds.
Bond Banks	Bond Banks are entities created/ owned by states or provincial authorities to finance municipal projects. These funding vehicles make pooled issuances for local authorities who will eventually pay back the interest and the borrowed capital to the Bank. Similar to LGFAs, Bond Banks can offer lending at lower costs, higher creditworthiness and diversification, risk reduction (for both borrowers and investors) and technical assistance.	**Bond Banks** are a particularly successful structure implemented in some states/ provinces of the **United States** and **Canada**. In the US, for example, Municipal Bond Banks are financially independent, and are not backed by a state guarantee, although they can be provided with credit enhancement by the local authority. The **Maine Municipal Bank** was one of the first bond banks. By the time it was created, the State authority provided a USD 50,000 loan,[26] which was paid back in three years. The Bank is rated as AA2, by Moody's, and can offer small sums of capital for smaller municipalities. Between 2012 and 2016, the average loan size was USD 854,000.[27]

* Capital Markets Solution for financing municipal urban sustainable infrastructure project in Mexico is ready to be tested however given COVID-19 most of the subnational budget has been prioritized for the sanitary emergency. IDB will begin to work with a new group of municipalities to develop a pipeline to finance a green recovery.

† Mainly due to Brazilian unified public health system – Sistema Único de Saúde –SUS, which is fully funded by tax revenues and government transfers.

The Brazilian experience

PFMs around the world propose financial solutions to subnational authorities, by bringing them together on a financial structure to access capital markets. Brazilian subnational consortia can make use of such mechanisms to attract external capital and leverage urban infrastructure. While this presents a significant opportunity for Brazil there are still a few challenges to overcome.

Most of the expenditure of Brazilian subnational consortia originate from public revenue streams. Only a small share of these consortia - approximately 7%[28] - have revenues coming from external sources, such as donations, private sponsorship, and international and national cooperation projects.

Similar to municipalities and states, resources from Brazilian subnational consortia include:

a. own revenue streams,

b. shared individual contributions of each of subnational member,

c. governments transfers - only if registered under the public law[29,30]

d. private initiatives (i.e. PPPs & concessions), and

e. since 2018,[31] bank credit lines (under the same conditions as municipalities, laid by Law 101/00).

Consequently, consortia share similar constraints as municipalities and states in the volume of revenue they can dedicate to infrastructure expenditure, as they largely rely on government transfers and tax revenues and have limited access to external credit and capital markets.

Incentivized private capital injection can unlock investments in subnational infrastructure. Associating Public-Private arrangements with innovative **PFMs** (explored further ahead) can help overcome the limited public revenues and bureaucracies' subnational authorities have to access funding.

Joining a subnational consortium is optional and there is no legal contractual obligation for life-long membership,[32] which make them exposed to **cyclical changes in local government mandates and institutional interest. This can potentially generate uncertainty for these structures**, thus a strong political regional cohesion and partnerships must be established to ensure long-term success.

Legal and Regulatory Framework*

Brazilian legal framework has several instruments that enables joint financial structures of public and private nature and of cooperation among federated entities.

Sponsored and administrative concessions are possible through Common Concessions - authorized by Federal Law 8,987/1995 - and Public Private Partnerships – Federal Law 11,079/2004 also known as PPPs Law-, and can be applied to regional projects, as commonly occurs in the basic sanitation sector (regulated by Federal Law 11,445/2007).

Through these legal instruments, a Federal entity can hire a private company to execute and operate long-term projects. Contracted companies will have greater freedom to seek financing via alternative financial mechanisms, such as incentivized infrastructure and green debentures (respectively implemented by Federal Law 12,431/2011 and Decree 8,874/2016). For instance, in the Metropolitan Region of Maceió/AL, the Concession of Public Services for Water Supply and Sewage foresees a total of BRL 2.6 billion in investments that can be sought via debt instruments.

The cooperation between municipalities and their joint commitment to deliver public services can also take the legal personality of a Public Consortium under the Federal Law 11,107/2005- Law of Public Consortia. They can be constituted within a contract as a public association or a legal entity under private law. Law 11,107/2005 predicts the use of an apportionment contract, in which the consortium members yearly contributions are properly discriminated and formalized according to the budget appropriations approved by its members. **It is important to highlight that article 8, § 2 prohibits funds originating from apportionment contracts to meet generic expenses, including transfers or credit operations.**

With specific authorization public consortia may issue collection documents and carry out activities to gather tariffs and other public prices for the provision of services or for the use/ grant of use of public goods administered by them or by the consortium member.

Public consortia are authorized to grant concession, permission or authorization for public works/ services; promote expropriations and institute easements and even be hired by the direct or indirect administration of consortium members, without bidding. Consortia are allowed to sign agreements/contracts; receive social/economic aid, contributions and subsidies from other government entities. Therefore, preliminary, there would be no express prohibition for public consortia to fundraise for the purpose of its goals.

However, although the legal personality of public consortia allows them to autonomously assume rights and duties; their fundraising is limited, due to the Federal Law that does not discriminate how the access to other funding sources would be given. Thus, its capacity for autonomous fundraising is limited.

The Law of Public Consortia and its regulatory Decree 6.017/2007 do not expressly prohibit the fundraising from public consortia, however for credit operations to become effectively viable, they are subject to the Federal Senate's limits and conditions.†

* This section was developed in partnership with Freitas Leite Advogados and Felsberg Advogados. Authors: Fernanda Amaral – Freitas Leite Advogados; Amanda De Rolt and Rodrigo Bertoccelli – Felsberg Advogados, November 2020

† The article 9 of Law 11,107/2005 states that "the execution of the public consortium's revenues and expenses must obey the rules of financial law applicable to public entities". The Article 10 of Decree 6.017/2007 establishes that credit operations is subject to the limits and conditions imposed by the Federal Senate in accordance with Brazil's Federal Constitution article 52, item VII

Furthermore, public consortia must also comply with the **Law of Fiscal Responsibility** (Complementary Law 101/00) required from public entities. As such, they are subject to the Article 32, which determines conditions for contracting credit operations that can cast off the autonomous fundraising of financial resources.

To guarantee the effectiveness and applicability of decisions within public consortia criteria still need to be added to the rules for governanc such as specifying the weight and composition of votes, the minimum quorum required for decision making, among other fundamental factors, subject to Article 4 of Law 11,107/05.

Another instrument of regional cooperation predicted by Brazilian Law, is the Agreement signed between state entities of same nature.* Different from consortia contracts, which are signed by entities of different natures. These Agreements stipulate reciprocal obligations among parties based on the common goals defined and that can be achieved with external resources transferred by agencies or entities, through a disbursement schedule. **Although cooperation agreements are mentioned by Law 11,107/2005, there is still no specific regulation for its application**, except for highways and federal ports, regulated by Law 9,277/1996.

Solutions

Brazil has a robust regulatory framework that enables subnational authorities to come together for the joint delivery and management of urban infrastructure, however the legislation around these cooperation legal instruments must improve to diversify fundraising and strengthen governance structure.

These adjustments are opportune since Law 14,026/20, which revised the regulatory framework for the sanitation sector, now encourages the regionalization of services and the creation of consortia. With no adequate and transparent governance and inability to access capital markets, it is unlikely that the sector will reach the goals of universal services by 2033.

Law 11,107/2005 must be updated to better define the possibilities of autonomous fundraising of public consortia and the Law of Fiscal Responsibility must be loosened to increase the funding possibilities of public consortia.

Regarding the governance structure of consortia, **the regulation must contain a well-defined participation structure, weight of votes, the establishment of a minimum quorum meetings initiation, the prevail of majority vote and the compulsory nature of decisions taken.**

Furthermore, there is a proposal to amend Law 11.107/2005 pending before the Brazilian Chamber of Deputies, Bill 4,679/2020, which proposes less rigid rules for the establishment and development of public consortia under private law. It determines that public consortia, regardless of legal personality, may collect taxpayer fees for police power or for the use of public services. The Bill also allows public consortia under public law to set up a guarantee fund to enable public-private partnerships (PPPs). These funds are a mechanism created by the PPPs Law to ensure compliance by the public authorities with the obligations taken with the private sector.

Despite what has been proposed by the Bill, **paragraph 2 of article 6 of Law 11,107/2005 must change so that private law consortia have greater freedom under the private law regime**. To encourage the use of public consortia under private law, it is necessary to **change in article 39 of Decree No. 6,017/2017**, which restricts the celebration of agreements by the Union "with public consortia formed in the form of public association or who have converted to that form".

* Article 241 of the Federal Constitution and Article 116 of Federal Law 8,666/1993.

International experiences and Lessons for Brazil

Standard international PFM structures such as "Club deals", Aggregation Platforms and small distributed loans via Bonds Banks, may be harder to be implemented in Brazil, given the above-mentioned regulatory and mostly financial hurdles. However, modifications to these standard PFMs are possible and could be an alternative for Brazilian subnational consortia to benefit from Pooled Finance and access capital markets.

Bridging international, public and private capital to mechanisms with reduced public participation can help leverage PFMs in the country. The coming examples, employed in India and the Philippines, can help subnational consortia in Brazil to set the implementation of its sustainable infrastructure projects in the right direction.

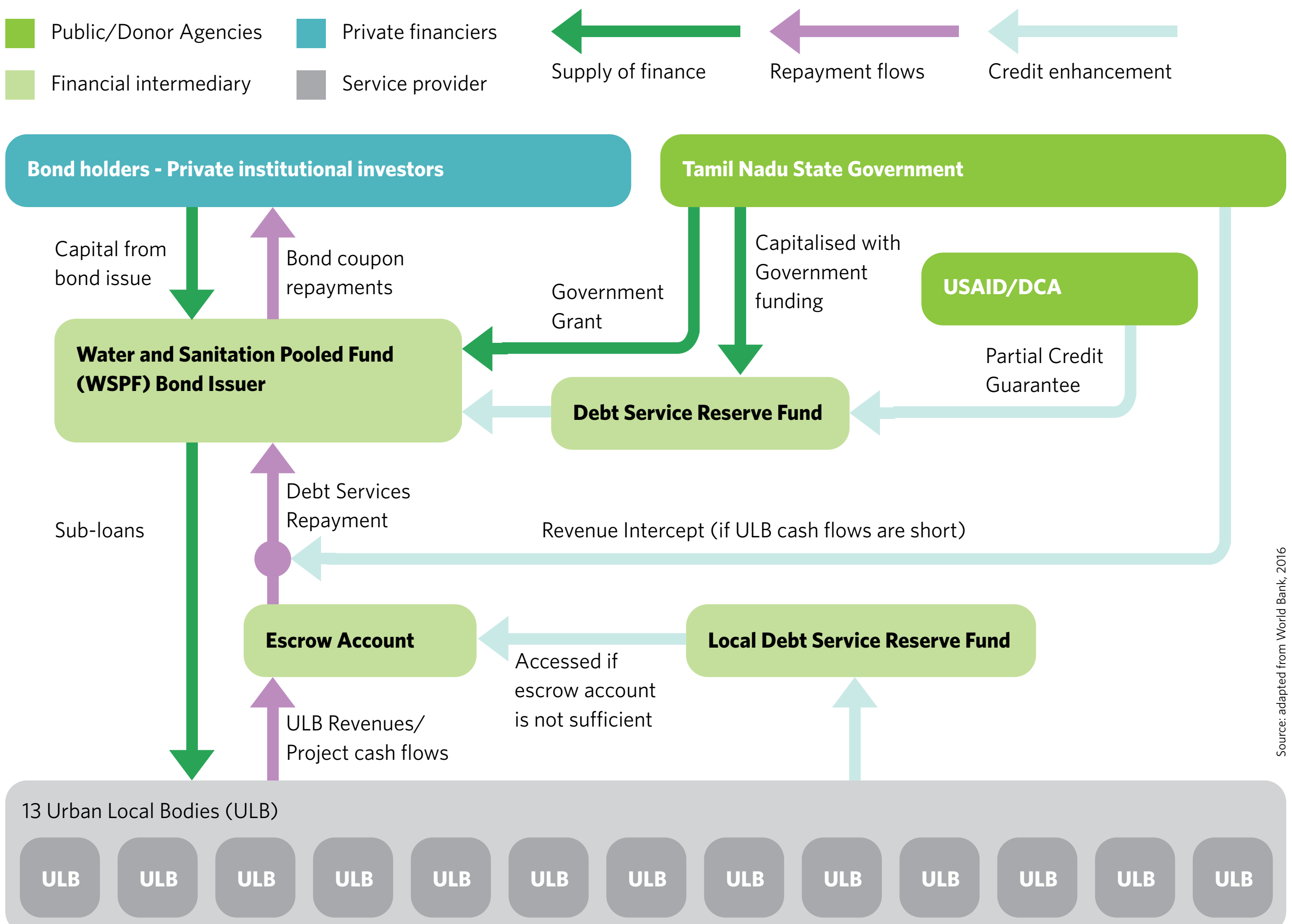
India's Public-Private Fund[33]

In the region of Tamil Nadu, in India, public budgetary constraints and the need to attract private investment to finance local infrastructure especially in smaller urban local bodies (ULBs), led to the creation of the **Tamil Nadu Urban Development Fund (TNUDF)**;[34] with support from World Bank and United States Agency for International Development – USAID. **TNUDF** incorporated both Tamil Nadu Government (GoTN) assets and liabilities – originated from a (now extinct) Municipal Development Fund – and equity participation of three private Indian financial entities, namely ICICI Bank (Industrial Credit and Investment Corporation of India), IL&FS (Infrastructure Leasing and Financial Services Ltd.) and HDFC (Housing Development and Housing Corporation). **The Fund became a public-private mechanism that provides long-term debt to ULBs and private institutions with no need of guarantees.**

The Fund is managed by **Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)**, a public-private partnership established by the same the same three local financial institutions and the GoTN to provide financial services such advisory and consultancy and to carry the management of trust funds.

The establishment of TNUDF did not prevent shortcomings to smaller projects from weaker UBLs in Tamil Nadu that were still financially unattended due to their inability to afford debt transaction costs and to get credit rating. In 2002, aiming to assist water and sanitation infrastructure needs of 13 small and medium ULBs, the GoTN structured the **Water and Sanitation Pooled Fund- WSPF** pooled entity, **an SPV managed by TNUIFSL that provides on-lending to these 13 ULBs at lower interest rates**. The WSPF aggregates the portfolio of these ULBs and issue structured debt obligations with multi-layered credit enhancement though subordinated tranches originated from development agencies concessional loans. The diagram below demonstrates the blended finance structure and credit enhancement mechanisms employed by the WSPF.

Pooled municipal bond issuance in Tamil Nadu, India: financial structure



Philippine Water Revolving Fund (PWRF)'s Blended Finance Mechanism[35]

To address financing issues and access public, international and private funds, in 2008, the Philippine Government came together with USAID and the Japan Bank for International Cooperation (JBIC) to launch the **PWRF, a Pooled Finance Mechanism aimed at facilitating private financing and in providing loans for local water and wastewater projects**, where the repayment for these loans are used to finance other projects.

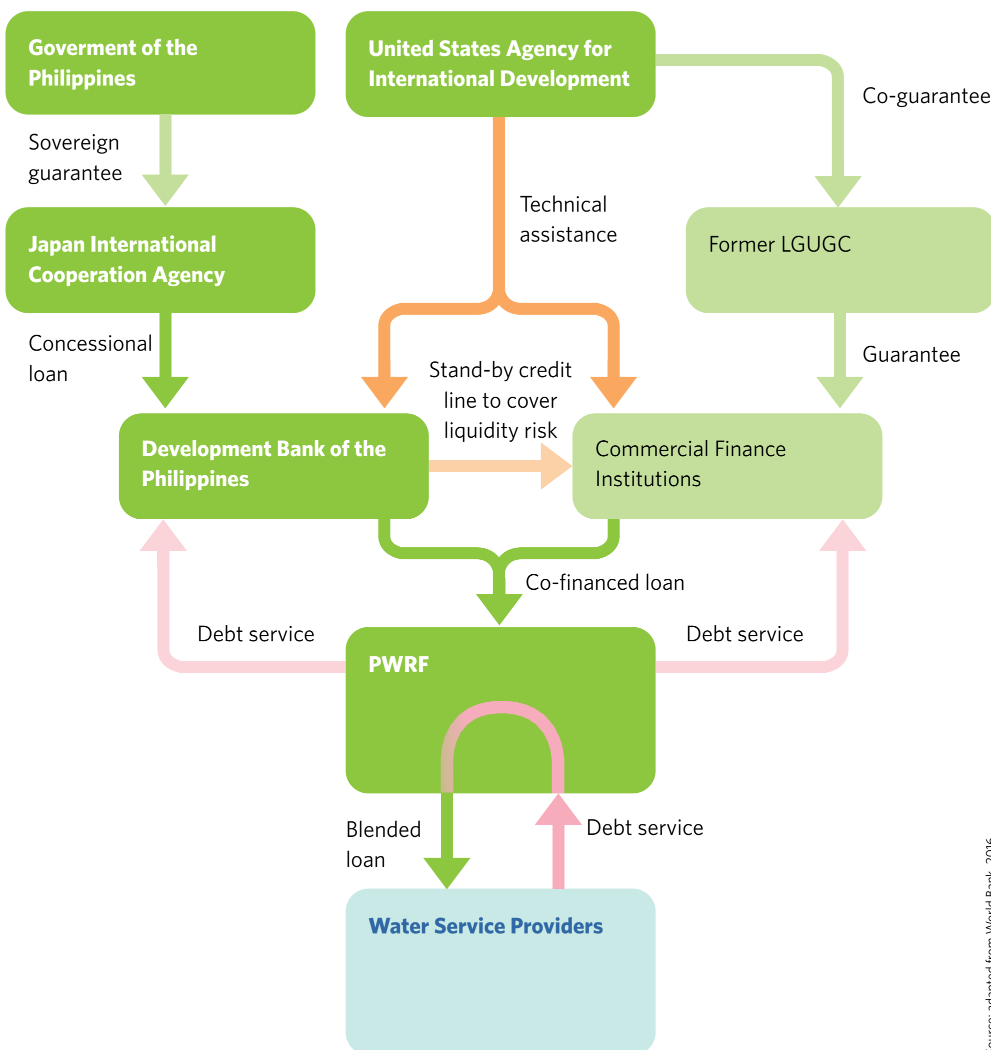
The implementation of the Revolving Fund came along with regulatory reforms to mobilize commercial domestic financing and efforts to support the development of bankable projects, and to increase capacity for investors and lenders.

The financial structure of the PWRF makes financing projects, implemented by the local government units (LGUs) and water districts (WDs), more affordable (at lower interest rates and with longer maturity) through a **blended finance mechanism**.

The JBIC issues concessional loans to the Development Bank of the Philippines (DBP) backed by a sovereign guarantee from the Philippine National Government. In order to boost investor confidence and to offer protection in case of LGUs default, a second guarantee option for credit risk can be used. The (now dissolved) LGU Guarantee Corporation (LGUGC), was a third-party guarantor backed by a USAID guarantee that used to transfer tax revenue from the National Government to LGUs and reduced the risk exposure of commercial banks. Since LGUGC'S extinction, the government-owned corporation, Philguarantee[36] - established in 2018 - could potentially be an option for LGUs seeking for credit enhancement.[37]

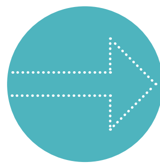
Through blended finance, the PWRF encourages the participation of commercial financial institutions who co-finance the water services providers and can benefit of a third-party partial guarantee, such as from the former LGUCG. The PWRF blends funds coming from the DBP and local private finance entities in a mix that varies from 75%-25% to 50%-50%.

The Philippine Water Revolving Fund financing structure



Source: adapted from World Bank, 2016

Going Forward



There is an opportunity to leverage Brazilian subnational consortia to implement local infrastructure. Centralizing capability, resources and expertise enables the planning and development of projects. **Associating the existing consortia structures (Federal Law 11,107/05) with innovative financial mechanisms such as pooled finance can provide an alternative source of private capital, bring efficiency to borrowing costs, credit worthiness and robust risk management.**

To deliver this, consortia must be strengthened. The success of delivering a shared management of local infrastructure is strongly connected with long-term planning and an effective articulation of subnational authorities within the consortium.

Local associations or initiatives can help coordinate and encourage cooperation among local governments. For instance, the Federation of Municipalities from the State of Santa Catarina (FECAM), in southern Brazil, congregates leaders from smaller municipal associations within its Board, bringing a higher political cohesion at a micro level. The Association also helps municipalities to form consortiums, by strengthening municipal administrations, advocating for public policies coordination and building capacity for the implementation of projects.[38]

Brazil's National Network of Public Consortia (Rede Nacional de Consórcios Públicos - RNCP)[39] aims to improve the coordination of public policy in favour of public consortia.[40] In August 2020, RNCP established a partnership with InvestSP,[41] the state of São Paulo's promotion agency, to provide training to local consortia to attract investments in infrastructure sectors such as waste, sanitation and public lighting.[42]

Promotion Agencies can be established by Brazilian states and the Federal District to foster improved credit ratings, enhance articulation with development entities, while also providing credit lines to local authorities, offering guarantee options and technical assistance for projects.[43] These agencies can drive higher political cohesion through their emphasis on regional development. With their expertise, they can help structure projects and deals, including PFMs, attract investments and improve the articulation between the public and private sector.

An example is the agency Fomento Paraná,[44] who partnered with Brazil's South Region Development Bank (Banco de Desenvolvimento do Extremo Sul -BRDE)[45] to bring policy alignment among local municipalities articulating local associations in the state of Paraná.[46]

> "Promotion agencies can help structure projects and deals, including PFMs, attract investments and improve the articulation between the public and private sector."

Regional Development Banks overarching ability to provide solutions to the public sector can also be an important ally for subnational consortia. Besides participating in initiatives of regional proximity, as per the example above, these local finance entities offer financing programmes and technical support for the public sector.

Minas Gerais Development Bank (Banco de Desenvolvimento de Minas Gerais- BDMG)[47] offers municipalities and municipal consortia financing options and technical assistance to structure PPPs and concession [48].

Brazilian National Economic and Social Development Bank, (Banco Nacional de Desenvolvimento Econômico e Social -BNDES)[49] has credit lines for infrastructure projects with environmental or social benefits. BNDES also has specific programmes for (i.) infrastructure, which includes financing credit lines and technical support for governments to structure concession deals; and (ii.) regional and territorial development, which aims to facilitate project development and further articulation with financial instruments and government economic agents.

Leveraging domestic capital

There is an opportunity to foster innovative mechanisms to attract external capital. **Partnerships between subnational consortiums and the private sector via PPPs & Concessions** can enable more efficient access to funding via capital markets. Private companies can issue debt and secure funding to implement infrastructure projects. Furthermore, the integration with sustainable and resilient credentials can maximize the attractiveness for private and international investors, as **there is a higher demand for green products than what is currently available**.[50]

Blended finance structures, which channels a combination of public and private investments flows, can provide adjusted risks, project guarantees and improved bankability of projects. The examples above from India's Public-Private Fund and the Philippine Water Revolving Fund explored how integrating blended finance and public-private structures can lead to successful Pooled Finance Mechanism and how these were used to deliver urban infrastructure in smaller and financially weaker municipalities.

Financial structures of **Land Value Capture** can support the payment for initial costs of the projects through revolving the surplus generated by assets' appreciation. For example, in Hong Kong the Mass Transit Railway Corporation (MTRC), operates the local rail transport system though its real estate business value capture, and most importantly, without a government subsidy.[51]

In Brazil, this model has not yet been officially used, however, similar examples can be found, such as in the case of the Florianópolis Airport. The concession company that won the bid, Zurich Airports, structured its project finance through a BNDES (Brazilian National Development Bank) loan, to finance the construction of the new terminal, which also included a large commercial area and parking lot. Although, no information has been disclosed regarding the revenues of the latter structures, these could be potentially converted into project repayment.

Final Recommendations

Internationally, PFMs have proved to be an efficient model for subnational authorities to diversify revenue streams to finance sustainable infrastructure projects.

Investments in sustainable infrastructure, such as urban mobility, water and waste, are already below optimal levels in Brazil. It is expected that post-COVID-19 Pandemic government funds will be further challenged by revenues decrease and large emergency spending needs. As the pandemic scenario comes under control, recovery packages will need to generate social benefits and stimulate low-carbon, resilient, environmental-friendly, and inclusive growth.

The implementation of sustainable infrastructure projects will be key for attracting flows of capital, investments and incentives aligned with sustainable development objectives.

Finally, measures to leverage innovative mechanisms, such as Pooled Finance Mechanisms, land value capture and blended finance are key to assist smaller and weaker municipalities and attract external capital. Optimal results can be achieved through fostering the roles development entities. MDBs, promotion agencies and regional development banks can support with project's finance and structuring, issuances in the capital markets, as well as with the provision of de-risking mechanisms.

Recommendations to leverage pooled finance schemes to scale up sustainable urban infrastructure.

Key measures to leverage sustainable infrastructure:

1. Climate risk assessment and integration of climate resilience into project preparation and planning;

2. At a Federal level, promote methodologies and tools for the implementation, planning and risk disclosure of sustainable projects;

3. Adjust regulation to prioritize the debt financing of green/social/sustainable projects

4. Encourage subnational consortia to define sustainable infrastructure as a priority area under the consortia as it may open access to new sources of funding.

Key measures to leverage PFMs within subnational consortia:

5. Adjust regulatory framework

- Discriminate fundraising options for public consortia and facilitate their credit operations; and
- Define clear rules of governance for public consortia.

6. Promote the role of development entities and promotions agencies, this will:

- Improve regional cooperation and policy coordination among municipalities under consortia;
- Foster project structuring, innovative project finance structures (such as PMFs) and partnerships with the private sector.

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