



KEYS TO SUCCESS

# BLENDED FINANCE IN THE WATER SECTOR

CHALLENGES AND ATTRIBUTES





The World Water Council is an international multi-stakeholder platform organization, the founder and co-organizer of the World Water Forum. The Council's mission is to mobilize action on critical water issues at all levels, including the highest decision-making level, by engaging people in debate and challenging conventional thinking. The World Water Council, headquartered in Marseille, France, was created in 1996. It brings together over 300 member organizations from more than 50 different countries.

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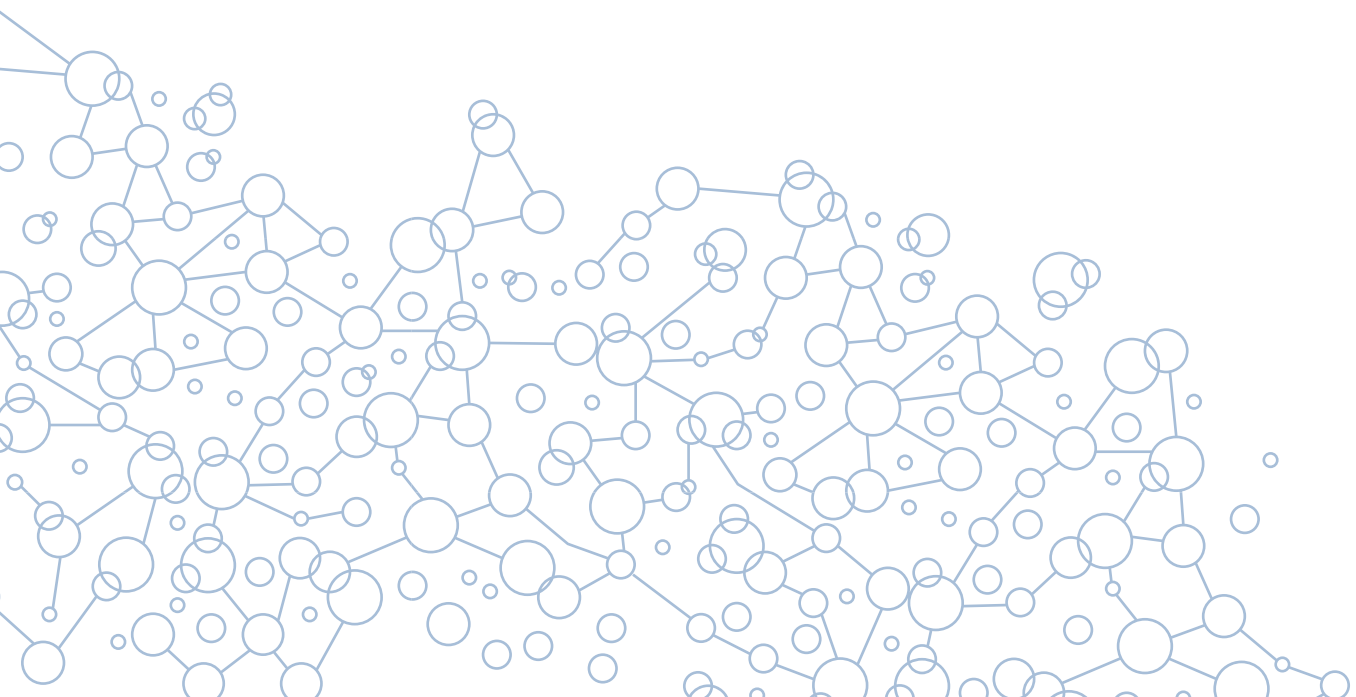
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# ACKNOWLEDGEMENTS

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# FOREWORD



The current pandemic has been a painful example of the terrible threats that millions of people had to suddenly face. Under these difficult circumstances, one the primary solution to fight this virus was hygiene, which implied water availability. What would have happened if water was not available?

For several years now, it has been clear that public money alone will not suffice to close the investment gap – between what is invested and what is required to achieve water security for all.

Now more than ever, it is important to improve the financial system effectiveness in mobilizing more capital from various sources towards investment in water and sanitation.

## “What would have happened if water was not available?”

Many barriers are still hindering investments: difficulties in designing bankable projects, perception of high risk notably in many developing countries, which are precisely the countries who would most need those investments, lack of guarantees, and inadequate enabling environment.

Attracting additional investors, including commercial and private investors, will require significant and fundamental changes in those areas.

Since its creation, the World Water Council has always considered the issues related to financing water as a high priority. The work of the current Task Force on Financing Water yielded this report that discusses blended finance as a mechanism to attract additional finance towards the water sector.

It presents the common features of successful blended finance projects and highlights some of the challenges that prevent blended finance to be used more widely.

We hope that this report will be useful, not only to the technical and financial projects designers, but also to the political decision-makers who must ignite and embrace the change. Business as usual is no longer an option.

A handwritten signature in black ink that reads "Loïc Fauchon".

**Loïc Fauchon**  
President  
World Water Council



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# PART 1

# CONTEXT



# PART I

## CONTEXT

### 1.1 Purpose of the Report

The sustainable provision of universal safe water and sanitation services, when coupled with effective water resources management, is a precondition for eradicating poverty and promoting economic growth. Water security underpins sustainable development and generates positive economic, environmental and social externalities. However, despite the strong economic case for investing in water security<sup>1</sup>, the level of public sector financing available for water related investments in developing countries has persistently lagged what is necessary to achieve the Sustainable Development Goals. At the Third International Conference for Financing for Development in 2015 in Addis Ababa, UN member countries reached consensus on the importance of deploying public funds to attract private investment. The potential for blended finance as a structuring approach to mobilise new sources of capital has since been widely recognised although to date, there has been limited use of blended finance structures at scale for water-related investments.

Blended finance is not an investment approach, product or instrument; but rather a structuring mechanism to achieve one or more of the following outcomes:

- i) the supply of capital on favourable terms (through grants, or loans at lower than market rates of interest, or with more flexible repayment terms) in order to lower the overall cost of capital for a project;
- ii) the provision of credit enhancements, such as guarantees, on concessional terms in order to lower the risk profile of a project;
- iii) the provision of technical assistance on a concessional basis in order to improve a project's risk-adjusted return profile; and
- iv) the use of concessional funds in the design or preparation of a proposed project transaction. In each case, the aim of the structure is to mobilise commercially oriented funds (from a range of sources, including development finance and the private sector).

COVID-19 has highlighted the vulnerability of society to low-probability, high-impact events. It will be years before the consequences of this pandemic are fully measured. It is however clear that the pandemic will have its most potent impact on marginalised communities, particularly in developing countries. Public debt in emerging markets is higher than at any time in the last 50 years. Many countries have been forced to borrow much more than they had previously planned to, and this comes at a cost.

**“Public debt in emerging markets is higher than at any time in the last 50 years.”**

<sup>1</sup> <https://www.gwp.org/globalassets/global/about-gwp/publications/the-global-dialogue/securing-water-sustaining-growth.pdf>

Achieving the global Sustainable Development Goals by 2030 was a stretching target well before COVID-19. The effect of the pandemic has been to push back some of the progress made in recent years. According to some estimates, COVID-19 will push more than 100 million people into extreme poverty<sup>2</sup>. In 2020, the global extreme poverty rate rose for the first time in over 20 years. The crisis has threatened the livelihoods of 1.6 billion workers in the formal and informal economy. At the same time, it has mobilised a global fiscal response at a scale that is unprecedented since the Second World War. Hundreds of billions of dollars have been committed to mitigating the effects of the pandemic, and with interest rates in the world's wealthiest countries as low as they have ever been, some governments have used their capacity to raise debt to finance these interventions.

From the perspective of blended finance and sustainable development, this creates at least the prospect for accelerated progress as the world slowly emerges from the pandemic. A step-change is possible in how critical basic services are delivered, financed, and maintained across many parts of the world. The pandemic has highlighted interdependencies between economic and social systems that transcend national borders. The reality that “no one is safe until everyone is safe” means that while economic recovery and support packages in the developed world have preserved livelihoods for many of their citizens, over the medium term a more structural transformation in global welfare systems will be necessary to provide long term resilience.

This presents an opportunity for the water sector, provided four conditions are met:

- 1 First**, there needs to be significant increase in financing that is both available and accessible to developing countries for investments in water, sanitation and hygiene (WASH); along with productive uses of water, such as irrigation, as well as initiatives that mitigate against the effects of climate variability and climate change. At COP 26 in Glasgow, the commitment to providing US\$ 100 billion per year of finance for climate change adaptation in developing countries was reaffirmed. The centrality of water security as an adaptive response to climate change could help to unlock climate finance for the water sector.
- 2 Second**, the enabling environment for financing water projects needs to be supportive at the sovereign and sub-sovereign level. This includes the presence of adequate policy, institutional and regulatory frameworks; a functional judicial system; public infrastructure that is fit for purpose; market-based mechanisms to facilitate capital transfers; and adherence to international rules of law. The dynamics of an effective enabling environment are also likely to be affected by the pandemic. With key personnel in many institutions working remotely in response to the pandemic, new procedures may be introduced that help lower the transaction costs of implementing blended finance arrangements.
- 3 Third**, there need to be viable projects that are suitable for investment. On the demand side, historically water has attracted less commercial finance than the energy, transport, or telecommunications sectors, reflecting differences in the historic capacity of water infrastructure projects to generate the financial flows that are necessary to repay the original investment, along with interest. Equally on the supply side, public development banks often do not have access to sufficiently comprehensive data on prospective projects in the water sector that is needed to evaluate credit risk and operational viability appropriately.
- 4 Fourth**, success depends on the capacity to execute projects effectively, and suitably experienced personnel are needed across the process chain to design, develop and successfully implement these projects. From the lending side, the challenge is often a lack of familiarity with credit enhancement instruments, or institutional conservatism and risk aversion. From the borrowing side, there may not be sufficient understanding of the process chain to identify where and how risks might be mitigated. It is in part to help address this latter challenge that this report has been commissioned.

<sup>2</sup> <https://blogs.worldbank.org/opendata/updated-estimates-impact-covid-19-global-poverty-looking-back-2020-and-outlook-2021>

The purpose of this report is to identify, through a review of case studies, some of the attributes that are commonly associated with successful blended finance projects in the water sector. It has been written to provide information to practitioners in the water sector who are not financial specialists and therefore includes a brief description of what blended finance is. The report consolidates the information presented in the case studies through an analysis of some common factors associated with successful blended finance projects in the water sector. It concludes by outlining some of the challenges to scaling up the use of blended finance, while proposing some tangible ways in which these challenges can be overcome.

## 1.2 Introduction to Blended Finance Report

Achieving the Sustainable Development Goals requires a significant injection of capital investment over the next decade. The gap between current SDG-focused funding, and what is required to achieve the SDGs is estimated at US\$ 2.5 trillion per year<sup>3</sup>. Most of this investment is required in developing countries. Official development flows and philanthropic commitments are insufficient to close this gap, and capital from the private sector has to be mobilised if the SDGs are to be achieved.

In many developing countries, it is difficult to access commercial capital due to real and perceived market risks. Forward-looking opinions of a country's ability to meet its obligations are provided by agencies such as Fitch and Moody's, and the credit ratings that they derive can heavily influence the ability of a country to borrow via the capital market. Many lower-income countries do not have an 'investment grade' credit rating, indicating that they are at higher risk of default. This typically puts such borrowers out of scope for many institutional lenders, reducing their access to capital. Projects that are perceived to be too risky for the expected return available will not receive commercial finance, even if they contribute to improving sustainable development outcomes.



3 OECD (2019) <https://www.oecd.org/newsroom/development-aid-drops-in-2018-especially-to-neediest-countries.htm>

Blended finance has evolved in response to this challenge. It is a structuring approach that involves using grants, concessional and non-concessional development finance to mobilise additional finance - from commercial (public and private) sources – into developing countries, to help meet sustainable development objectives<sup>4</sup>. Beyond offering concessional terms, development finance can also support improved outcomes by improving the credibility, capacity, knowledge, and networks of the transacting parties. The purpose of blended finance is to lower the market risk of an investment, relative to its expected return. Blended finance can therefore alter the financial structure of a project such that additional capital on commercial terms is ‘unlocked’, enabling an otherwise unfeasible project to move ahead. Investments in capacity development are often necessary to facilitate blended finance structures, and these costs are typically covered through grants and via technical assistance.

“... additional capital on commercial terms is ‘unlocked’, enabling an otherwise unfeasible project to move ahead.”

Blended finance is characterised by: leverage, i.e. using development finance to mobilise and engage commercial finance at scale; impact, i.e. investments that deliver measurable social, environmental and economic outcomes in addition to financial returns; and performance, i.e. market-based financial returns for commercial capital investors.

## 1.3 Blended Finance Structures

Convergence<sup>5</sup> a membership network that promotes the use of blended finance, identifies four common structures, which are summarised here:

- i) **Lower-cost capital:** public financiers or philanthropic investors provide funds on below-market terms, which when combined with funds from commercial investors within the capital structure, lowers the overall cost of capital to the borrower
- ii) **Credit enhancements:** development finance provides guarantees or insurance to commercial investors on below-market terms, lowering their risk in relation to the investment.
- iii) **Technical assistance:** public or philanthropic investors provide a grant that is used to provide technical capacity that either reduces the risk and/ or enhances the return on an investment, making it more attractive for commercial finance
- iv) **Design funding:** public or philanthropic investors provide a grant that is used to design or structure projects such that they can attract investment from commercial finance providers.

<sup>4</sup> Development actors can add value to commercial actors based on their experience in development issues.

<sup>5</sup> Convergence (2020) The State of Blended Finance  
<https://www.convergence.finance/resource/3902657f-693e-453a-ba75-ca3bf7d2448e/view>



## 1.4 Key Concepts

The blended finance literature typically references concepts that – although straightforward enough to understand – may be framed in unfamiliar language. These concepts typically involve the use of some industry-specific jargon, including:

- 1** **Additionality:** Added value in terms of enhancing existing financial and development capacity, rather than competing with what is already available.
- 2** **Bankability:** The capacity of a project to sustainably generate the cash flows necessary to repay the amount borrowed, including interest payments.
- 3** **Credit enhancement:** a risk mitigation tool, such as a guarantee, that provides investors with one or more layers of protection against non-payment by the borrower.
- 4** **Crowding-in:** using sufficient public or philanthropic funds to lower risk or improve returns such that commercial financial providers increase their service.
- 5** **Crowding-out:** where excessive use of public or philanthropic funds results in commercial financial providers becoming uncompetitive and reducing their service.
- 6** **Concessional capital:** Public or philanthropic funds, including grants, that are provided on more attractive terms than what is available in the market
- 7** **Commercial finance:** Funds that are typically provided at market rates by private or state-owned banks, microfinance, or through the capital market.
- 8** **Development finance:** Grants, philanthropic funds, concessional and non-concessional loans; provided with an explicit development purpose
- 9** **Development impact:** The result of interventions on the welfare of communities, typically measured through progress in achieving national SDG targets.
- 10** **Financing v funding:** Funding refers to the ultimate source of payment for a service, such as tariffs, taxes and transfers. It is non-payable. Financing refers to providing capital to enable that service, and is generally repayable.
- 11** **Leverage:** the level of commercial finance that is mobilised for a given level of public or philanthropic fund commitments.

## 1.5 Blended Finance and the Water Sector

A recent analysis<sup>6</sup> of blended finance transactions for the period between 2017 and 2019 shows that sub-Saharan Africa accounts for the largest share of activity by number of transactions (33%), followed by East Asia and the Pacific (21%), South Asia (15%) and Latin America (11%). By sector, energy accounted for 35% of recent transactions, followed by financial services (21%), agriculture (15%) and infrastructure (11%). Although interest from public and private actors has increased, **blended finance for water and sanitation accounts for just 5% of total transactions by volume** and less than 1.5% by value of commercial finance mobilised.

Why does the water sector attract so small a share of blended finance? The investment needs are significant. For example, an updated analysis<sup>7</sup> of the global costs of achieving the sanitation component of SDG Target 6.2 alone shows annual costs at close to US\$70 billion between 2017-30. Including the capital requirements for achieving SDG 6.1, the investment requirements are as much as three times the current levels of commitment<sup>8</sup>. Public and philanthropic finance will not be sufficient to bridge this gap.

Beyond SDG6, investment in the water sector is necessary for achieving wider sustainable development objectives. For example, transformation of the agricultural sector is necessary to improve food security, and this requires having the necessary resources available to improve traditional rainfed systems and upgrading **irrigation projects**. A recent study finds<sup>9</sup> that it would be feasible to deploy 154 million hectares of additional irrigated land by 2050 – corresponding to a 60% increase in irrigated areas in developing countries – at a cost of US\$ 50-60 billion per year. Other investments are necessary for adaptation to climate change, including flood control systems in urban areas, improved sewer drainage, and multi-purpose infrastructure that meets resource, productive use and amenity requirements.

**“... the investment requirements of the sector amount to over US\$ 200 billion per year.”**

Taking this broader perspective of water infrastructure in terms of meeting the SDGs, the investment requirements of the sector amount to over US\$ 200 billion per year. Water resource projects can be categorised in various ways, and this can help to illustrate their potential for accessing blended finance. The OECD distinguishes between utility-scale water and sanitation service providers; small scale (typically off-grid) providers of sanitation services and water supply; and multi-purpose water infrastructure projects that support agriculture, fisheries, energy production and tourism.

**Utility scale providers** generally require long-term financing to service the debt while keeping user tariffs affordable. In principle, blended finance structure can serve a catalytic role in helping utilities finance capital expenditure and improvements in scale and efficiency that result in cost recovery and financial sustainability in the medium term. In practice, utilities need to be able to set tariffs and ensure revenue collection that enables these objectives to be met.

**Small scale operators** are often not attractive to commercial investors because their capacity to absorb investment is limited, and so the share of transaction costs as a proportion of a single investment is often very high. The business models themselves are also often less well proven. As a result, these providers are currently highly reliant on philanthropic capital providers and social impact investors, rather than mobilising commercial capital.

6 Convergence (2020) The State of Blended Finance <https://www.convergence.finance/resource/3902657f-693e-453a-ba75-ca3bf7d2448e/view>

7 UNICEF (2020) Global and Regional Costs of Achieving Universal Access to Sanitation to Meet SDG Target 6.2

8 OECD (2019) Making Blended Finance Work for Water and Sanitation

9 World Bank (2019) Investment Needs for Irrigation Infrastructure along different socioeconomic pathways

For **multipurpose water infrastructure** where there are well-developed revenue streams (such as hydropower projects, agricultural schemes, leisure and tourism), there is long record of using blended finance structures. In recent years, the concept of ‘landscape’ infrastructure at the watershed scale has also evolved, using water funds and other ‘nature-based’ solutions.

To date, there has been limited use of blended finance structures at scale for (non-hydropower) water-related investments. In a recent report focused on the three sub-sectors (utilities, off-grid sanitation, and multi-purpose infrastructure), the OECD identified various factors to account for this.<sup>10</sup> The analysis highlights the significance of local context and the importance of mobilising domestic commercial investment as emphasised in the OECD DAC Blended Finance Principles.<sup>11</sup> This reflects the attributes of the sector, and services need to reflect that context.

## 1.6 Country-level challenges

At the country level, implementation challenges include the high cost of capital in developing countries, which makes it difficult to generate attractive returns. Also, projects typically serve local markets and generate revenues in local currency. When it comes to borrowing, local currency debt is often not available at sufficiently low interest rates, and/or sufficiently long repayment periods, that would allow for an effective matching of assets and liabilities. Access to information is asymmetric and emerging markets are often characterised by incomplete or limited information, at both the macroeconomic and the project levels, which may make accurate modelling difficult. Developing countries are often particularly susceptible to geopolitical or macroeconomic risks. Many governments face a high risk of debt distress and are constrained in their ability to assume more debt; the COVID-19 has highlighted this fragility. High debt levels and poor credit ratings can have an impact on a country’s ability to mobilise private finance.

## 1.7 Entity-level challenges

At the entity (e.g. water utility) level, a lack of financial resources is self-evidently a common challenge in undermining the sustainability of an investment proposition. Other potential barriers to the application of blended finance include a lack of political championship: frequently there are diverse and often conflicting internal interests within a public utility. Increased complexity in WSS loan or credit operations may delay project effectiveness and disbursements, and hence in practice, may constitute a counter incentive. A lack of demonstrable tangible results associated with financial returns – such as increasing revenues or reducing costs – or a poor record in investment decision-making, can also undermine lender confidence. In addition, a reticence within the entity to use innovative and accountability-driven approaches, such as results-based financing, can also be an impediment. Often, there is a revealed preference for the traditional procurement model of procuring input-based services.

## 1.8 Summary

Much more can be said about the challenges of implementing blended finance, and indeed there are several publications that explore this in detail. In this instance, the purpose was to provide some context for the case studies that follow in the next section. These case studies involve blended finance structures that have, to various extents, mitigated or overcome the implementation challenges described here.

10 <https://www.oecd-ilibrary.org/sites/5efc8950-en/index.html?itemId=/content/publication/5efc8950-en>

11 <https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended-Finance-Principles.pdf>

# PART 2

# CASE STUDIES



## PART 2

# CASE STUDIES

Ten programmes are reviewed across countries in sub-Saharan Africa (South Africa x 2, Rwanda), the Middle East and North Africa (Jordan), Latin America and the Caribbean (Mexico, Jamaica), South Asia (India, Bangladesh) and South-East Asia (Cambodia, Philippines), based on the information available from public sources: in particular, a series of summary case studies in blended finance for water and sanitation<sup>12,13</sup>. This section merely highlights some relevant attributes from each case study: comprehensive information is provided in the annexe of this paper.

The case studies frequently reference public-private partnerships, or PPPs, as part of a blended finance structure. PPPs are long-term contracts between the government and a private contractor to build public infrastructure and/ or provide infrastructure services. In these contracts, the contractor typically agrees at its own cost to build, operate, and maintain an asset that provides a service. In return, the government promises either to pay the contractor for the service, or to allow the contractor to collect fees from users. PPP's take various forms, but in most cases governments remain ultimately accountable for providing the infrastructure services. It is important to make clear that blended finance structures are not synonymous with PPPs, and – as per the archetypes described earlier – may not involve project financing at all.

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12 World Bank (2016) Case Studies in Blended Finance for Water and Sanitation.

<https://www.wsp.org/sites/wsp/files/publications/WSS-9-Case-Studies-Blended-Finance.pdf>

13 OECD (2019) Making Blended Finance Work for Water and Sanitation.

<https://www.oecd-ilibrary.org/sites/5efc8950-en/index.html?itemId=/content/publication/5efc8950-en>

## 2.1 Bulk Surface Water Supply, Rwanda

**OPERATIONAL: 2021**

The city of Kigali has a population of over 1 million people, with rapid growth. The civil war in 1994 destroyed much of the city's water production capacity, leaving the majority of the population reliant on communal stand posts, and dependent on intermittent supply.



This arrangement was possible partly because of Rwanda's unique circumstances. The civil war in 1994 had all but destroyed basic infrastructure, and significant greenfield investments were needed. Rapid urbanisation and growth since the end of the civil war had put the Kigali's infrastructure services under immense strain. After a US\$117m proposal in 2003 was rejected on cost grounds, a new arrangement was structured and financed, at a cost of US\$75m.

In 2010 the Rwandan government retained the International Finance Corporation (IFC) to develop and structure a bulk water supply PPP for the city. The IFC provided technical assistance – a key enabler in many blended finance transactions – in two phases. First, it supported due diligence around the most appropriate location for the project; as well as assessing customer demand, to ensure the project size was appropriate. Second, the IFC helped the government run a competitive selection process for parties to develop the project.

The Kigali Bulk Surface Water Supply (KBWS) reached financial closure in 2017. It is a PPP between the Government of Rwanda and a private partner that is a subsidiary of the Dubai-based Metito Group. The 40,000 m<sup>3</sup> of potable water per day produced is sold to the government-owned water utility, for distribution to end-users in Kigali. The structure adopted was a 27-year concession on a Build, Operate and Transfer (BOT) basis.

It is the first large-scale water treatment facility financed through a PPP in sub-Saharan Africa.

The preparation process resulted in a water concession that has more in common with a greenfield (i.e. new) independent power project (IPP), rather than the brownfield rehabilitation projects typically associated with the water sector. It is a greenfield project that builds and operates new infrastructure assets, which the private partner will continue to own, operate, and maintain over the contract period. Because it does not involve the rehabilitation of previously owned assets that may have fallen into disrepair, the risks to cash flows are lower. In addition, with the take-or-pay purchase agreement denominated in US dollars, lenders are not exposed to the risk of collecting end-user tariffs in local currency.

**“It is the first large-scale water treatment facility financed through a PPP in sub-Saharan Africa”**

Unlike traditional brownfield water concessions, the Kigali project does not directly address issues in relation to ongoing management of the utility, retail distribution or tariff setting. However, support for reform in those areas was made available as part of the technical assistance offered on this project.

## 2.2 As Samra Wastewater Treatment Plant, Jordan

### OPERATIONAL: 2015

The As-Samra Wastewater Treatment Plant was constructed in 2008 and is the primary facility for treating wastewater from Jordan's Amman and Zarqa Governorates (combined population of 6 million). The demands of a growing population had pushed the capacity of the existing plant to its limits, presenting safety risks.

The objectives of the As-Samra Expansion Project were to

- (i) increase the capacity to treat wastewater
- (ii) increase the volume of treated wastewater, and
- (iii) protect existing agriculture from untreated wastewater.

Under a project finance PPP, the plant was upgraded between 2012 and 2015, allowing the Government to treat 70% of the country's wastewater and meet the region's wastewater treatment needs through 2025. The expanded plant provides 133 million cubic meters of high-quality treated water per year – equivalent to over 10 percent of Jordan's entire annual water resources – for irrigation in the Jordan Valley. The As-Samra plant also provides bio-solids for potential reuse in fertilizer and fuel, and produces nearly 13 megawatts of energy, or 80 percent of its own energy needs, from biogas and hydropower, making it one of the most modern and energy efficient treatment plants in the Middle East.

The project was financed using a build-operate-transfer arrangement. In these arrangements, a government assigns responsibility to a private sector entity to finance, design, build, operate, and maintain the facility for a certain period. The As-Samra expansion was financed from the Millennium Challenge Corporation (MCC) – the US government's blended finance vehicle - in partnership with the Samra Wastewater Treatment Plant Company Limited (SPC), a private company that built the original plant and operates it under a concession from the Government of Jordan.

Under this arrangement, the MCC covered US\$93m, or half the cost of construction, while SPC facilitated debt and equity funding to cover the remaining construction costs, along with project development and design, project management, and interest costs, totalling US\$110m. This 'viability gap funding' was key to the



successful implementation of the project.

Due to the grant nature of MCC's investment, the project was more affordable for the Government of Jordan (who contributed US\$20m) and financially attractive for SPC and Jordanian banks. MCC's grant did not crowd out the private sector, as the private investors earn a return only on their investment. MCC's involvement also reduced the cost of capital, allowing lower water and wastewater tariffs to consumers than might otherwise had been necessary. Through this financing method, the private sector not only provided over 50% of the cost of construction, but it assured the Government that the facility will be operated and maintained at world class standards for 25 years. At the end of the concession period, in 2037, the agreement requires that the facility be transferred back to the Government of Jordan in good working order and at no additional cost.

The project represented MCC's first major participation in a build-operate-transfer agreement, and its role in providing 'viability gap funding' was critical to expanding As-Samra. MCC also provided grant funding for the Jordanian government to hire transaction advisors to assist the Ministry of Water and Irrigation in the project's commercial negotiation.

## 2.3 Pooled Municipal Bond Issuance, Tamil Nadu, India

**OPERATIONAL: 2003**

In the 1990s and early 2000s, reforms in India included facilitating private sector investment and increasing the capacity of municipal authorities, known as Urban Local Bodies (ULBs), in India. In parallel, growth in the local debt markets meant that local debt became an attractive tool for reducing the financing gap in the sector, particularly for ULBs. In 1996, the State of Tamil Nadu (population 70 million), the World Bank, and USAID set up the Tamil Nadu Urban Development Fund (TNUDF) as a PPP, attracting private domestic financing primarily for large ULBs, that were generating reliable cash flows.

High transaction costs associated with issuance fees, legal charges and the lack of a credit rating meant that many small and medium-sized municipalities ULBs tended to be excluded from accessing financing via the TNUDF. In response the state government of Tamil Nadu created a special purpose vehicle - the Water and Sanitation Pooled Fund (WSPF). An early WSPF pooled bond issuance took place in 2002, to facilitate access to domestic capital markets for 13 small and medium ULBs, none of which could issue a municipal bond on their own. The bonds were issued by WSPF, and the proceeds were then lent back to the 13 municipalities as sub-loans to finance their infrastructure projects. The pooled bond took the form of a structured debt obligation for US\$6.2 million. The bond was AA rated, with multi-layered guarantees, and had a coupon of 9.2 percent per annum and a maturity of 15 years, with put and call options after ten years. These options acted as a safeguard for investors by offering them the opportunity to take their money out prior to the end of the bond lifespan.

**“The Tamil Nadu pooled fund was able to attract repayable finance to small- and medium sized water and sanitation service providers.”**

The ULBs paid back their WSPF debt obligations from project and municipal revenues, including water tariffs and from interest earned on the money deposited from connection fees. WSPF bonds were unsecured, but a multi-layered credit enhancement mechanism was put in place, involving an escrow account and financial guarantees underwritten by the state government and local municipal government.

The state government of Tamil Nadu capitalized a debt service reserve fund with nearly 150% of the expected annual principal and interest payments, helping to create investor confidence that the fund could pay creditors if the municipal borrowers were unable to meet scheduled repayments. Further credit enhancement was provided by establishing escrow accounts where the 13 participating local governments would make advance payments on their debt service obligations. In addition, the arrangement was structured such that the WSPF could intercept State revenue transfer payments if obligations were not being met. Finally, USAID provided a partial guarantee – underwritten by the government of Tamil Nadu - on the principal in the event of a default.

The Tamil Nadu pooled fund was able to attract repayable finance to small- and medium sized water and sanitation service providers. However, setting it up took significant time and resources, particularly in establishing the multi-layered credit enhancement mechanism. Domestic investors were unfamiliar with the pooled instrument and the bond needed to be carefully explained. After the first US\$ 6.2m issue in 2003 the WSPF did not issue another bond for several years, affecting liquidity. This was partly due to the departure of key staff, reflecting the importance of maintaining institutional memory.





## 2.4 Municipal Bond Issuance, Tlalnepantla de Baz, Mexico

### OPERATIONAL: 2003

Following institutional and regulatory changes in Mexico in the late 1990s there was a boom in domestic municipal bond market issuance. All followed a similar structure, with federal backing through a master trust mechanism established by the Mexican government. This mechanism provided investors with the assurance that payments would be received as scheduled. However, the cost of bond issuance was high, due to complexity and transaction costs, encouraging municipalities to look for more cost-effective options.



In June 2003, the city of Tlalnepantla de Baz (population 1 million) successfully issued a ten-year US\$ 9 million bond to fund its water and sanitation investments program, using the municipal water company's own revenues to service the debt, along with enhancements to achieve the credit quality required to access domestic capital market at competitive rates. Significantly, the bond was issued without any recourse to federal transfers. The proceeds were used to build the first wastewater treatment and recycling plant in Mexico City.

To secure the loan, the municipality pledged property tax revenues in favour of the trust and the municipal water utility pledged revenues from water tariff collections. Debt service payment were supported by a letter of credit issued by Dexia Credit Local – a development bank subsidiary of the European group - for 90% of the principal and interest outstanding. In turn, Dexia was supported by a partial credit guarantee from the IFC, through their Municipal Fund. These external credit enhancements were administered in Mexican Pesos for issuance if funding was insufficient. Additional enhancement was provided through a second municipal revenue pledge, underwritten by municipal tax revenues from the parent municipality.

The Tlalnepantla de Baz bond was the first municipal bond offering in Mexico to finance infrastructure investments relying on the strength of the project's own revenues and not directly using federal transfers. With the partial credit guarantee, both Standard and Poor's and Moody's rated the bonds AAA (local) – two notches higher than the municipality's rating. By mitigating the credit risk, it was possible to attract local currency financing – including from domestic pension funds - that would not have been available without the guarantee. By using local currency debt, it was possible to reduce foreign exchange risk by matching with local revenues. The issue was fully subscribed, with 8 domestic institutional investors taking up the offering.

**“The Tlalnepantla de Baz bond was the first municipal bond offering in Mexico to finance infrastructure ...”**

The successful placing of this bond provided evidence that municipalities in Mexico could broaden their funding options by accessing the domestic capital market, extend the maturity of their debt to better match the long-term nature of the capital investment programmes, and reduce its borrowing costs. Moreover, the municipality was able to design a financing structure that was attractive to long-term institutional investors. However, the placing involved partial credit guarantees that are generally only available to larger and financially stable municipal governments.

## 2.5 Municipal Project Finance, Rustenburg, South Africa

### OPERATIONAL: 2003

The Rustenburg economy (population 500 000) is heavily dependent on the mining industry, and the expansion of operations in the 1990s spurred population growth, increased water demand for domestic and industrial uses, and put pressure on existing wastewater treatment facilities. By the start of the new millennium, infrastructure upgrades were necessary, including refurbishment and expansion of the wastewater treatment plant, restoration and modifications of the water treatment plant, and repair of the pipeline infrastructure to improve the reliability of water service provision.

Rustenburg Municipality faced constraints in terms of institutional and financial capacity, which limited its ability to finance and upgrade infrastructure. Its poor credit rating made it unable to raise finance on its own behalf. Meanwhile, the mining sector was economically motivated to support the municipality in addressing its infrastructure needs. In 2003, the Rustenburg Water Services Trust (RWST) was created as a special purpose vehicle (SPV) thereby ring-fencing its finances from the Municipality. The RWST signed a 25-year concession contract with the Municipality to finance, upgrade, and operate water infrastructure. In addition to the revenues generated from municipal bulk water sales, the initiative was supported by two major platinum mines (Anglo Plat and Impala Plat), who agreed, via an off-take arrangement, to purchase the non-potable treated wastewater produced. Bulk water sales accounted for 50% of the Trust's revenues, while the off-take arrangement accounted for the other 50%.

Revenues provided by the two mines for the purchase of effluent created a strong cashflow stream for the Trust and helped secure a commercial loan from ABSA bank. Lender confidence was bolstered by the ring-fenced arrangement of the SPV, and the buy-in of the public sector (including the Department of Water Affairs and Rustenburg Municipality) in the arrangement. Financial close for the deal was achieved in December 2003. A Board of Trustees was set up for RWST, with representatives from the Municipality and the funding consortium. While the structure of the project ensured that the Municipality maintained full control over the Trust, in accordance with national law, the Trust's constitution regulates the transfer of funds, reducing the risk of municipal interference.

During the transaction design stage, which was supported by technical assistance grants, the institutional and technical capacity at the SPV level provided comfort to the commercial lenders. A contractual provision for automatic review and re-bidding of the operator after a specified period was also included in the overall structure, to ensure that strong performance would be maintained over time. The infrastructure has been successfully operated since, and all debt commitments and obligations have been met. A financially sustainable bulk water and sewerage system was established with cash reserves of US\$12 million after seven years of operation.

**“The infrastructure has been successfully operated since, and all debt commitments and obligations have been met.”**

This case shows how small and financially weak municipalities can raise significant funding through well-structured projects, where there are strong revenue streams available. Public funds were used mainly to help structure the transaction. There is potential for replication in areas where industry has the capacity and motivation to engage. Private sector companies can provide reliable revenue streams and can pledge such revenues in exchange for increased security of supply. A prerequisite for reproducing this model would be to identify private companies that have a high demand for water and steady revenue streams.

## 2.6 Hybrid Finance, Tshwane Metro, South Africa

### OPERATIONAL: WORK IN PROGRESS

The City of Tshwane Metro (population 3 million) loses 25% to 40% of the water in its network due to leaks. Water meters are frequently non-functional. Combined with poor service levels that contribute to users' unwillingness to pay, cost recovery is inadequate. However, the capital requirements to implement a turnaround programme cannot be met using conventional financing instruments, given the municipality's inability to service the implicit level of debt. The proportion of non-functional water meters is growing rapidly, and this has a direct impact on billing and cost recovery. Inadequate management systems, lack of capacity, poor credit control, consumer resistance to pay more for services due to poor service levels as well as corrupted databases are all contributing factors to poor cost recovery. However, significant capital is required to implement a holistic municipal Water Conservation and Water Demand Management Programme (WCWDM). Thus, funding for such a programme will often not fit within standard balance sheet financing instruments given debt sustainability issues and requires an alternative financing approach.

In response, the approach under development consists of several sub-projects that will cover a district metering area [DMA]. Each DMA will be able to be managed and monitored on a continuous basis, including monthly rolling annual water balance estimates, active leak detection, and financial performance measurement.

In terms of financing, the structure is a hybrid between conventional balance sheet finance and project finance. By generating new cash flows through interventions at the sub-project level, the municipality will be able to build its credit rating and receive financing for future sub-projects in tranches. This financing would be contingent on the KPIs for existing sub-projects being met and sustained. The programme is currently under development.

**“... the structure is a hybrid between conventional balance sheet finance and project finance.”**

For the pre-close stage, the Development Bank of South Africa provided a modest level (US\$ 16k) of grant funding and technical assistance to support a pre-feasibility study. Subsequently the Infrastructure Investment Programme of South Africa (IIPSA) provided



grant funding of US\$ 8.6 million to identify feasible sub-projects and to determine the sequencing. The feasibility study will contain recommendations on the technical, institutional, legal and financial risks of the sub-projects. The next phase of the programme relates to post-financial close. Achieving this depends on the recommendations from the feasibility study, which will impact the final terms of reference for the programme and needs to be approved by the municipal council. This will form the basis of the future credit evaluation and approval process for the financing and implementation of the identified sub-projects in the programme. Assuming financial close is achieved, it implies total disbursements of US\$ 270 million in capital expenditure. This will be financed by a combination of development finance, commercial finance and grants.

## 2.7 Credit Enhancement Facility, Jamaica

### OPERATIONAL: 2015

Development finance for this project was sourced from the Caribbean Regional Fund For Wastewater Management (CRew), a USD 20 million fund which aims to reduce the negative impacts of untreated wastewater on the environment and human health in the Wider Caribbean Region.

Active between 2011 and 2017, it focused on three areas:

- i) bridging the funding gap for investments in wastewater collection and treatment;
- ii) supporting reforms in legislative, regulatory, and policy frameworks to facilitate greater investment in wastewater management; and
- iii) fostering peer learning among key stakeholders in the Wider Caribbean Region.

Just 18% of Jamaica's 3 million population had a sewerage connection in 2010, compared to 80% with access to piped water; with around 7% of effluent being treated. The Jamaica Credit Enhancement Facility was established by NWC, the national utility, in 2012. Using catalytic funding of US\$3m from CRew to unlock private capital, the NWC was able to leverage this investment to obtain US\$12m of commercial finance from domestic financial institutions, with an initial mandate of rebuilding, rehabilitating or replacing 8 wastewater facilities. Raising this funding was possible because the NWC had already established monthly customer surcharges where the income generated was held separately in an account established to invest in water and wastewater facilities.

These so-called K-Factor surcharges provided a source of collateral and a basis for loan repayment, reducing default risk and giving NWC greater access to commercial capital. The K-Factor revenues were higher than the annual debt service, and by over-collateralising the loan, it was possible to build local banks' confidence in a mechanism that had not previously been used in Jamaica.

Of the 8 facilities selected to participate in the initial phase, two were being rebuilt; three were to be decommissioned, with new conveyance systems constructed that would connect to the central sewer

Activities were organised across five components areas:

- 1) Investment & Sustainable Financing;
- 2) Reforms for Wastewater Management;
- 3) Communication, Outreach & Training;
- 4) Monitoring & Evaluation;
- 5) Project Management.

system; and three plants were to be rehabilitated. Following successful completion, the aim is to extend the programme of decommissioning, rehabilitation and reconstruction to further facilities. To facilitate this, the NWC issued a new bond for US\$ 125m in 2018, which was underwritten by K-Factor revenues.

Although there have been implementation challenges, the Credit Enhancement Facility has been effective in mobilising commercial finance through the use of catalytic capital. Moreover it has established some institutional memory among domestic financial institutions regarding a new and innovative model of financing. Further information is available in the Annexe.

**“... it was possible to build local banks' confidence in a mechanism that had not previously been used in Jamaica”**



## 2.8 Water Revolving Fund, Philippines

**OPERATIONAL: 2008**

In the Philippines (population 108 million), traditional sources of finance for the water sector included international development funds, domestic public funds, and revenues from tariffs. In the 1990s, the income generated from these sources was not enough to cover infrastructure investment costs. The focus shifted to mobilising private sector financing, with legal and regulatory reforms introduced to facilitate this. Legislative reforms in the early 2000s to mobilise commercial finance established a system whereby water service providers were categorised according to their levels of creditworthiness. The most creditworthy were expected to replace public funding with market-based alternatives. However, domestic commercial banks did not have experience of lending to water utilities, nor did they have confidence in their ability to repay. As a result, private sector finance did not flow into the sector.

In 2008, the Philippines government established the Philippines Water Revolving Fund (PWRF) in partnership with USAID and the Japan Bank for International Cooperation. It was set up as a co-financing facility to facilitate private institutional financing and to support innovative financing, operational strengthening and regulatory reform. In addition to the revolving fund mechanism, the programme featured a credit rating system to help inform investors; and a water project appraisal training program to build the capacity of lenders.

creditworthy utilities would not easily be able to borrow for periods longer than 10 years. Typically, utilities need 15 to 20 years to amortise capital costs. With the PWRF providing liquidity and enhancements through standby credit lines and guarantees, lending risk was sufficiently reduced to enable loans to be offered with tenors of 15 years and longer.

**“An estimated six million people have benefited from the new or improved access to piped water.”**

The PWRF mobilised over US\$200m million in loans to more than 20 water and sanitation projects with the majority of finance being provided by private commercial banks, attracted by the returns and guarantees provided. Around 6 million people have benefitted from new or improved services, and to date there have been no defaults. 60 percent came from private banks. An estimated six million people have benefited from the new or improved access to piped water. To date there have been no defaults on loan repayment. Moreover, domestic banks are now lending to water districts even where concessional finance is not in place. This crowding-in of private finance is a core objective of blended finance and can be attributed not just to the mechanism developed, but to the capacity created for appraising and rating projects.



The PWRF provides concessional funding that is blended with funds from domestic private commercial banks, offering loans over a longer repayment period and at lower financing costs than what is available on the market. Prior to the establishment of this facility, even

## 2.9 Household Investment in Sanitation, Bangladesh

**OPERATIONAL: 2017**

Bangladesh (population 163 million) has a strong tradition of using microfinance in various economic sectors. In 2009 a pilot initiative was developed via a partnership between the World Bank and the government of Bangladesh initiative to leverage private sector resources and help households adopt improved sanitation. Most households need to purchase and install their own latrines, and the programme was developed to offer poor households the option of paying in instalments, and of spreading the purchase cost over time.



The programme was scaled up in 2011, and in 2016 an output-based aid (OBA) component was added to provide loans to the two leading microfinance institutions (MFIs) in Bangladesh; the Association for Social Advancement (ASA, the second largest microcredit lending institution worldwide) and the Palli Karma-Sahayak Foundation (PKSF, the Government of Bangladesh's wholesale microfinance facility). The World Bank provided a US\$3m OBA subsidy which was blended with commercial financing and the MFIs

own funds to finance household sanitation loans. PKSF provides wholesale loan financing to retail MFIs (partner organizations) to finance household sanitation loans and ASA provides sanitation loans directly to households, who use the subsidised loans to pay certified local firms to construct the latrines. The subsidy is capped to help target the poorest households.

**“Many households are willing and able to invest in improved sanitation solutions ...”**

The OBA subsidy is paid once an independent agent has verified that the latrine has been constructed per specification. According to World Bank data, the subsidy amounts to between US\$5-16 per household, and effectively reduces households' weekly repayments by 11%. Loans can be repaid over a period of up to 55 weeks. This subsidy and extended repayment period for a relatively small loan increases the access and affordability of better-constructed latrines for even the poorest households, while reducing the lending risk for the MFIs. Many households are willing and able to invest in improved sanitation solutions, but they are not able to mobilize sufficient funding to invest. Support that enables households to spread the costs of such investment over time is transformative to the facilities that households can procure. The blending of OBA with MFI loans targets reduces the affordability constraint both by lowering the latrine cost; and also through spreading repayments out in weekly instalments over the course of a year, making them more manageable.

## 2.10 Facilitated Access to Finance, Cambodia

**OPERATIONAL: 2014**

In 2015 just one in five Cambodians (total population 16 million) had access to piped water supply; a much lower figure than in most Southeast Asian countries. Meanwhile, only 7% of rural households had access to piped water services, compared to 75% of urban households. While small-scale private sector operators were providing services in urban and peri-urban areas in the country, their ability to serve rural areas was constrained by several factors. These include a lack of sector knowledge amongst lenders, including domestic commercial banks; along with relatively low-quality business plans being prepared by the operators. And while some lenders were extending loans, they required collateral typically amounting to more than double the loan size. Lenders were highly selective on what could be offered as collateral, requiring liquid or easily tradeable assets such as land and buildings. With only short tenors (5 years or less) being offered, these loans were only a realistic option for highly solvent large-scale water operators.

In 2014, the French development agency AFD provided FTB, a local private bank, with a US\$10 million concessional credit line and a US\$5m partial credit guarantee, to help underwrite loans by the bank to small water operators. The credit line facilitated loans being offered at lower interest rates and over longer tenors, typically up to 10 years. Meanwhile, the guarantee provided the bank with the security it needed to significantly reduce the collateral it required. Meanwhile, technical assistance was provided by the World Bank and the European Union to support operators seeking loans, and to strengthen FTB's capacity to evaluate projects.

**“... over 60,000 households benefitting from water service improvements.”**

By July 2016, loans totalling US\$8.7m had been extended across 32 projects, with over 60,000 households benefitting from water service improvements. Since 2019, when the concessional



arrangement was wound down, FTB has continued to extend loans, demonstrating the catalytic capability of blended finance to reduce risk and stimulate activities that contribute to improved development outcomes over the longer term. It also indicates the importance of a well-developed and concerted programme, where credit lines were augmented with guarantees as well as technical assistance, in order to drive structural change.



# PART 3

# COMMON FACTORS ASSOCIATED WITH SUCCESSFUL BLENDED FINANCE PROJECTS

## PART 3

# COMMON FACTORS ASSOCIATED WITH SUCCESSFUL BLENDED FINANCE PROJECTS

In the figure below, ten distinct attributes relating to blended finance are listed with reference to the case studies described in this paper. Where an attribute is considered prominent within a specific case study, this is highlighted in the figure. The attributes are subsequently described in brief, and in the context of the case studies. While this table does not capture the nuances of these cases, it does show that certain attributes are consistently evident in successful blended finance structures.

	<b>2.1 Rwanda</b> (Kigali Bulk)	<b>2.2 Jordan</b> (AS-Samra WWTP)	<b>2.3 India</b> (Tamil Nadu UDF)	<b>2.4 Mexico</b> (Tlalneplanta de Baz)	<b>2.5 South Africa</b> (Rusternberg)	<b>2.6 South Africa</b> (Tshwane Metro)	<b>2.7 Jamaica</b> (CEFacility)	<b>2.8 Philippines</b> (Revolving Fund)	<b>2.9 Bangladesh</b> (Household Saving)	<b>2.10 Cambodia</b> (Water Operators)
<b>3.1 Domestic Liquidity</b>		●	●	●	●		●	●		●
<b>3.2 International Liquidity</b>	●	●				●	●			
<b>3.3 Project Development</b>	●	●	●		●	●	●	●		●
<b>3.4 Capacity Development</b>	●	●	●	●	●	●	●	●	●	●
<b>3.5 Revenue Diversification</b>			●		●		●			
<b>3.6 Sovereign Underwriting</b>	●		●	●				●		
<b>3.7 Multi-tier Protections</b>			●	●				●	●	
<b>3.8 Industry Engagement</b>	●	●			●				●	
<b>3.9 Project Divisibility</b>			●			●	●	●		
<b>3.10 DFI Cooperation</b>	●			●		●		●		●

Figure 1: Common Factors in Successful Blended Finance Water Projects



### 3.1 Domestic Liquidity

One of the most commonly observable attributes across the case studies is the mobilisation of domestic capital. Typically, this is achieved by stimulating domestic commercial banks to lend. This requires a range of credit enhancements, guarantees and protections that blended finance structures are characteristically able to introduce. Catalytic interventions may include direct funding from government, such as the US\$ 20m provided for the As Samra plant in Jordan, or activities supported by DFIs and other parties that change the actual and perceived risk balance for lenders. These interventions include credit enhancements, project design, capacity development and other technical assistance that helps to stimulate capital flows from domestic institutions such as pension funds and long-term lenders, as evidenced in Tamil Nadu, Tlalnepantla de Baz, Jamaica and the Philippines. Similarly, activities that contribute to enhanced return – creating additional revenue streams, or accessing capital at discounted rates, for example – have mobilised domestic lending in Rustenburg, South Africa. Meeting borrower demand through domestic capital pools also often has the benefit of matching assets with liabilities without requiring currency devaluation risk to be incorporated into the lending decision. And the programme in Cambodia exemplifies the catalytic role that blended finance can play in stimulating changes in a sector that can thereafter be sustained.

### 3.2 International Liquidity

For some projects, there may not be sufficient domestic capital available or accessible, or the cost of capital may be cheaper from non-domestic sources. However, when revenues are in a different currency to repayments, there is a risk of mismatch due to exchange rate movements. This risk was negated in the case of the Kigali bulk water project, with the take-or-pay purchase agreement denominated in US dollars, avoiding lenders being exposed to the risk of collecting end-user tariffs in local currency. For the As Samra project in Jordan, the scale of the investment required was an important factor in sourcing international capital, and involvement of the Millennium Challenge Corporation was key to crowding in private finance. Regional funds can also be significant: the Caribbean Regional Fund for Wastewater Management (CReW) was funded by the Global Environment Facility and works with 13 countries across the Caribbean to provide sustainable financing, support policy reform and foster dialogue and knowledge exchange. The Jamaica Credit Enhancement Facility was set up under the CReW, providing hard currency funds which could be used as collateral by local banks to extend loans for wastewater projects. In the case of Tshwane Metro in South Africa, projects are in an advanced feasibility study stage, but it is anticipated that concessional capital from non-domestic sources will be part of the financing mix.

### 3.3 Project Development

Many blended finance arrangements involve assistance in project development, prior to execution. This is usually to improve a project's bankability, i.e. the ability to attract commercial finance in addition to concessional investments. A good example of project development comes from Kigali, where the preparation process resulted in a water concession that is similar to a 'greenfield' (i.e. new infrastructure) IPP electricity project. This arrangement is still quite unusual for the water sector, and much less common than 'brownfield' contracts, where the emphasis is on maintenance and rehabilitation of existing infrastructure. Familiarising relevant stakeholders in the water sector about how such contracts work was a core contribution of the Private Infrastructure Development Group (PIDG), one of the key actors in this transaction. Project development assistance can also unlock access to finance for borrowers who would otherwise be too marginal to justify the transaction costs associated with these structures. Examples include Tamil Nadu's small and medium-sized municipalities, and the feasibility studies funded by the WPPF. Assistance can highlight where the biggest incremental returns are, helping to

prioritise projects for investment, as the case studies in Jamaica and Tshwane Metro show; and they can support new models of cooperation, as per the As Samra project and the Philippines Water Revolving Fund. In all these examples, the availability of project development assistance was critical to creating the conditions necessary to catalyse commercial finance.

### 3.4 Capacity Development

Capacity development is a salient attribute in every case study reviewed in this paper. Support is provided to borrowers (in terms of achieving investment readiness), to lenders (in terms of evaluating investment readiness) and to regulators (in terms of improving the enabling environment). Beyond conventional assistance such as education on how various PPP structures can work (Rwanda, Jordan) support for project developers and borrowers has included building demand-creation, marketing and promotion capability (India, Bangladesh). For lenders, capacity development has involved project appraisal training programmes (Philippines, Jamaica), enhanced local governance through regulatory vehicles (Rustenberg), and improving confidence and trust through transparent market-based instruments (Mexico, Colombia). For projects that are at an earlier stage (e.g. Tshwane Metro) capacity development can be critical across all actors, i.e. borrowers, lenders, enabling organisations, regulators etc.

### 3.5 Revenue Diversification

As described previously, blended finance structures are associated with reducing risk and/ or enhancing return. Revenue diversification can contribute to both. In the case of pooled fund instruments as used in Tamil Nadu, risk is spread across multiple projects, which – along with the protections provided through credit enhancements – helps insulate lenders from a single point of failure, i.e. one project. Similar benefits of diversification apply to the structure used in Jamaica, where of the 44 wastewater facilities scheduled for upgrade, a total of eight were eventually selected, across three different loan packages. In terms of return enhancement from revenue diversification, Rustenberg is an instructive case study. The sale of treated effluent to two local platinum mines constituted 50% of project revenues; creating a reliable stream of cash flows and bolstering investor confidence as it was sourced from the private sector. The remaining 50% of project revenues come from the municipality, in return for the supply of bulk water and provision of sewerage services, funded through the collection of water and sewerage tariffs at the household level. The Rustenberg case is interesting not least because it demonstrates how revenue diversification can involve both the public and private sector as sources of income.

### 3.6 Sovereign Underwriting

One of the most effective ways to reduce actual and perceived risk is through the borrower's obligations being underwritten by a solvent and credible guarantor. In many cases, this function can be provided by central government through sovereign underwriting of the exposure. In the Kigali project, cashflows are backed by a take-or-pay agreement with the state-owned utility, meaning that project income is guaranteed by the Rwandan government irrespective of whether end-users pay on time or in full. Elements of sovereign underwriting feature in several of the case studies, including India, Mexico and the Philippines. Underwriting of this nature provides lenders with confidence in contexts where the sovereign has a strong track record of meeting its obligations. Where that track record is being re-built, blended finance can help to improve investor confidence over time, contributing to an enhanced enabling environment.

### 3.7 Multi-tier Protections

Self-evidently, the more credit enhancement that can be provided, the less risky and more attractive an investment looks. Many of the projects described in this paper have multi-tier protections, meaning that even where one source of enhancement becomes depleted or is otherwise non-operational, other protections can be deployed. For example, the case of Tamil Nadu featured three levels of enhancement. First, the state government of Tamil Nadu capitalised a debt service reserve fund that could cover 1.5 times the annual principal and interest payments in the event municipal borrowers were unable to. A second level of enhancement was created by requiring municipalities to deposit tax revenues in an escrow account, while a partial credit guarantee provided a third layer of protection. In the case of Tlalnepantla, the bond issue was backed by a revenue pledge from the water utility. However, a second municipal revenue pledge was provided – underwritten by tax revenues - if the water revenues proved insufficient. Similar structures are sometimes used from municipal bond issuance in the US market. In the case of the Philippines Revolving Fund, in addition to the sovereign guarantee, a private third-party guarantor was also established that could assign central government revenues being paid to local government units in the event of default. A similar arrangement was in place in the case of Colombia, where commercial banks can intercept intergovernmental revenue transfers if loan repayments are not made.

### 3.8 Industry Engagement

Blended finance involves the use of concessional capital to mobilise commercial investment and so definitionally involves the private sector on the financing side of the transaction. Increasingly, blended finance involves engaging the private sector in the operational side too, either as customers (e.g. Rustenberg), under a PPP (e.g. Kigali, As Samra), or in project execution (e.g. Bangladesh). In the case of Rustenberg, the two platinum mines provided a valuable source of revenue diversification, as described previously. The expansion of mining operations had put pressure on the mining sector to help the municipality address urgent water and sewage treatment needs.

In the case of Kigali, the private partner is Metito Group, a Dubai-based international water management company that is active in emerging markets. The As Samra project was financed using a build-operate-transfer arrangement in partnership with the Samra Wastewater Treatment Plant Company, a private company that built the original plant and operates it under a concession from the Jordanian government. In Bangladesh, households use microfinance loans to pay local construction firms to build latrines, whose quality is then verified by an independent agent. The arrangement stimulates the economic conditions for these firms to operate, creating a positive multiplier.

### 3.9 Project Divisibility

A complement to revenue diversification, project divisibility supports the management of risk through financing projects incrementally and subject to meeting the requisite performance standards. In the case of Tshwane, it is envisaged that sub-projects will be rolled out sequentially, with the aim of strengthening the financial position of the municipality over time. Funding will be advanced in tranches against criteria for the achievement and maintenance of key performance indicators of the sub-projects already implemented. As the programme is rolled out, the expectation is that less debt will be required to finance the new sub-projects as the municipality will be able to fund a larger portion through own funds generated from the savings and improved revenues stemming from already implemented sub-projects. In the case of Tamil Nadu, Jamaica and the Philippines where various formats of pooled fund arrangements are in use, project divisibility provides the benefit of reduced transaction costs. This helps in making finance arrangements and guarantees more cost-effective, while simultaneously providing some protection at the project allocation level.

### 3.10 Cooperation with Development Finance Institutions

One of the realities of financial services provision is the presence of competition. This applies to development finance as it does to commercial finance. Development finance institutions (DFIs) often compete to offer loans to the most creditworthy borrowers. As a result, some segments of the market are very well serviced (or even overserved, crowding out commercial lenders, who cannot compete with terms being offered by DFIs) while other segments – where credit quality is lower, for example – may be perennially underserved. While competition is generally a good thing in the provision of services, given the wider development objectives that are also at play, this dynamic may not always be conducive.

However, where DFIs work in cooperation there is often the potential for leveraging a more impactful outcome. Blended finance is a good exemplar of where this cooperation can achieve tangible results. In the case of Kigali, the African Development Bank (AfDB), PIDG and the IFC worked together to create a different form of concession agreement, as described earlier, than what was historically used in the water sector. In the case of Tlalnepantla, the IFC and Dexia – a large European financial group – acted as co-guarantors. In Tshwane, the pre-feasibility and feasibility studies have been funded by the Development Bank of Southern Africa and the Infrastructure Investment Programme of South Africa, respectively. And in the case of the Philippines, perhaps the most storied example of effective DFI cooperation in blended finance, both USAID and the Japanese Bank for International Cooperation (JBIC/ JICA) provided guarantees.

A promising area for further DFI cooperation is in knowledge sharing.

- The **Water Project Preparation Facility (WPPF)** was approved by Corporación Andina de Fomento (CAF – Latin American Development Bank). in December 2018, to accelerate investments in Latin America and the Caribbean by improving the quality of project feasibility and design studies. CAF finances the WPPF with USD 5 million per year, with USD 20 million committed to date. International agencies are invited to participate in the WPPF to co-finance studies, as well as the corresponding investment projects should they materialise. Currently, AFD has partnered with CAF in co-financing the final design of a wastewater treatment plant in Ecuador. Other conversations with IFIs are ongoing.
- Meanwhile, the **African Water Facility (AWF)** which has many features in common with the WPPF, is an initiative of the African Ministers Council on Water (AMCOW). It is hosted and managed by the African Development Bank (AfDB). The overall purpose of the Facility is to assist African countries to mobilize and apply resources for the water and sanitation sector. The AWF began its operations in 2006, and the current volume of the fund is EUR 130 million.
- And in Asia, the **Water Financing Partnership Facility (WFPPF)**, also established in 2006, aims to mobilise additional financial and knowledge resources from development partners for the implementation of the Asian Development Bank's (ADB) water financing program for ADB developing member countries. Its initial focus was to support achievement of targeted outcomes set for 2006-2010 and was subsequently adjusted and extended. It will continue to support ADB's water operations, guided by the Water Sector Framework 2021-2030: Water-Secure and Resilient Asia Pacific that articulates how water operations contribute to ADB's Strategy 2030.

As these facilities across 3 continents demonstrate, DFIs can play a unique, important and very successful role in mobilising investment. To the extent that they can operate in partnership, sharing experiences and promoting knowledge exchange and transfer, the prospects for accelerating innovative practices around blended finance remain attractive.

# PART 4

# CONCLUDING

# REFLECTIONS



## PART 4

# CONCLUDING REFLECTIONS

The liquidity and functionality of the global financial system has emerged broadly intact from the pandemic, and both concessional and commercial providers of capital have remained active. This is important for the preservation of blended finance activity. In this report, a series of case studies involving the use of blended finance in the water sector were reviewed, with the aim of identifying some factors that are commonly associated with successful arrangements. The purpose was to highlight to water practitioners – particularly whose primary focus is not on finance – some project attributes that appear to be consistently present. As in any case-based study, the approach has limitations. The cases span a period of nearly 20 years and there are important nuances associated with the specific project. Those interested are encouraged to refer to the source material, using the links in the next section.

Investment in the water sector continues to lag what is required to meet SDG 6 and water-related SDGs by 2030. The relative lack of more recent case studies attests to the reality that water remains a relatively marginal part of the blended finance landscape, both in the value and volume of transactional activity. Indeed, the case studies suggest that blended finance is often used opportunistically, based on specific local circumstances, rather than as an expected outcome from a systematic and strategic process. This matters, because if the enabling environment for scaling up is to be optimised, a high level of engagement and cooperation is needed across a range of stakeholders that are exposed to different risks and rewards. Understanding the interests/motivations of key actors is a sine-qua-non for embedding the incentives that are necessary to influence behaviours. Under the current status quo, even where motivations are well understood, the necessary incentives are not in place. This report concludes by highlighting four challenges that, if better addressed, will support appropriate incentives to be more effectively embedded into the enabling environment framework.

# 1 Allocation Challenge

Excessive or inappropriate use of concessional capital can distort market incentives (crowding-out). If a creditworthy borrower can access financing at very low or zero cost, it is entirely rational to do so, even if that borrower can afford to pay more. This can create a misallocation of public resources, where perceived ‘free money’ is directed towards a few entities who are already creditworthy, leaving less for entities who need this capital to move forward. This can create a spiral where a small group of entities appear to become progressively more creditworthy (as they avail of concessional capital) while others struggle to access funding and become less effective. Under these conditions, there is limited scope for blended finance to scale up, and the model is unlikely to meet its development objectives. Part of the solution would appear to be for an informed market assessment of creditworthiness, with appropriate sanctions and incentives provided to both concessional and commercial lenders. However, market forces determine capital allocation, and the availability of concessional capital inevitably creates some distortion. Evidence of blended finance in other sectors (such as agriculture, energy and financial services) suggest this can be overcome, particularly where the development benefit of doing so is clear. However, within the water sector, where creditworthiness is perhaps a more widespread challenge, the risk of distortion through the allocation of concessional capital is more acute than is generally acknowledged.

# 2 Incentive Challenge

The business of providing loans is competitive. This holds equally true whether the lender is a development bank or a private sector operator. Loan officers are judged by their employers against a range of indicators – how many loans they made, in what sectors, of what value, and so on. A key indicator is, of course, loan performance. If two prospective borrowers approach a lender it is rational for the loan officer to prioritise the more creditworthy applicant. However, a problem emerges when there are relatively few entities that are perceived to be sufficiently creditworthy to extend loans to. Loan officers are often effectively competing with each other - to make loans to the most attractive customer. As a result, the borrowers that arguably need it least are offered the most favourable terms, amplifying the allocation challenge, described above. And prospective borrowers who are considered higher risk are either not offered loans at all or may be offered loans on financing terms that are not viable. This nuance is occasionally lost in narratives that use the healthy balance sheets of some private banks to make the argument that ‘ample’ funding is available, and the problem is a lack of bankable projects. However these narratives are usefully evolving to define eligible projects in terms of sustainability also, i.e. including social as well as economic returns.

Solutions for the incentive challenge are not easily tractable. No lender wishes to lose money, and simply advocating for lower creditworthiness thresholds is unlikely to change anything. However, there is a case for widening the performance indicators that lenders can use – for example, incorporating social impact or ESG outcomes into the scoring framework – such that loan officers have some incentive to identify and engage with higher-risk borrowers. Or to put another way, this is an argument for less conservatism and more imagination to help address the incentive challenge.

## 3 Specification Challenge

Water infrastructure projects are often complex, requiring millions of dollars in finance, involving many thousands of users, and dozens of policy, institutional and regulatory stakeholders. Projects can take many years or even decades to proceed from conception to implementation as economic, financial and political hurdles are negotiated. A wide variety of actors are typically involved in developing project specifications and preparing engagement terms for different contractors. While considerations of blended finance may feature from an early stage in this process, some evidence suggests that they are rarely mandated within project specifications. This also helps to explain why blended finance often appears to be used opportunistically, i.e. as a result of local enabling circumstances, rather than something more strategic. One solution would be to embed a requirement to use blended finance within the project specifications, from the outset. However, it is not obvious who would advocate for this. Financing decisions are typically made based on market conditions, and the most appropriate financing arrangement will often change based on current local circumstances. Proscribing blended finance at the start of a multi-year project could constrain the options for both borrowers and lenders. But if left to be deployed opportunistically, then the momentum needed to create and maintain an optimised enabling environment for blended finance may never materialise. An improved process to embed blended finance structures within project specifications from the outset – perhaps with redress mechanisms to reflect local market conditions at the time of implementation – may help to address the specification challenge.

## 4 Accountability Challenge

As the case studies show, blended finance arrangements often involve multiple tiers of guarantees and other lender safeguards. Some guarantees may be provided by the lender directly, but in other cases the guarantors include local and national governments. When projects run to plan, these guarantees are not called on. But on the occasions where they do not, guarantors will rationally seek to protect their interests to the extent that they can. This can result in disagreements as to how much each guarantor is required to compensate the lender, even where this has ostensibly been specified in the loan agreements. Complex projects may not run to plan for a host of reasons and any scope for equivocal determination may trigger a lengthy legal dispute resolution process. Awareness of this risk may deter lenders from engaging with blended finance arrangements in the first place, particularly where the option exists to extend a conventional bilateral loan. While the obvious solution is to prepare agreements that offer little room for subjective interpretation, this process adds to the transaction costs and may render the arrangement uneconomic, particularly if the deal is small. Alternative arrangements that involve a single guarantor, for example, may be more viable from a transaction cost perspective – although this would likely change the risk profile. In short, there are trade-offs to navigate when addressing the accountability challenge. These would benefit from greater visibility and discussion, as they can present a significant impediment to scaling up blended finance.



## CONCLUSION

While the case studies serve to highlight some common attributes of successful blended finance structures within the water sector, there is still limited evidence of scale-up. This has often been attributed to the lack of bankable projects, or weaknesses in the enabling environment. This report attempts a more granular framing, highlighting the challenges of allocation, incentives, specification and accountability. While none of these challenges can be addressed by a simple universal solution, accelerated innovation in financial services is a prospect, in part as a consequence of the pandemic. The reality of global interdependence has been reinforced as each variant of the virus emerges. With that has come a rising awareness in richer countries that investment in development brings benefits to donors and recipients alike. There are therefore reasons to be optimistic that fund flows to the water sector will accelerate this decade, underpinned by climate adaptation finance. Blended finance remains an important pathway to achieving SDG 6, provided the sector can unlock the shackle of conservatism and path dependency to access financing that is consistent with the scale of the opportunity.



**PART 5**

**LINKS TO**

**CASE STUDIES**

# PART 5

## LINKS TO CASE STUDIES

More information on each case study is accessible via the links, below.

### **Kigali Bulk Water project, Rwanda**

[Private Infrastructure Development Group \(PIDG\)](#)

<https://www.pidg.org/2020/03/world-water-day-the-kigali-bulk-water-concession-meeting-the-challenges-of-private-investment-in-water-infrastructure/>

[International Finance Corporation \(IFC\)](#)

[https://www.ifc.org/wps/wcm/connect/e9bc9b20-38bd-4513-ae76-9947f6a2c7d3/PPPStories\\_Rwanda\\_KigaliBulkWater.pdf?MOD=AJPERES&CVID=IHJaYtM](https://www.ifc.org/wps/wcm/connect/e9bc9b20-38bd-4513-ae76-9947f6a2c7d3/PPPStories_Rwanda_KigaliBulkWater.pdf?MOD=AJPERES&CVID=IHJaYtM)

### **As Samra Wastewater Treatment Plant, Jordan**

[Millennium Challenge Corporation \(MCC\)](#)

<https://www.mcc.gov/resources/story/section-jor-ccr-as-samra-project>

[World Bank Case Study \(Blended Finance\)](#)

<https://documents1.worldbank.org/curated/en/959621472041167619/pdf/107976-Jordan.pdf>

### **Pooled Municipal Bond Issuance, Tamil Nadu, India**

[Development Studies Institute \(DESTIN\)](#)

<https://www.files.ethz.ch/isn/137908/WP68.pdf>

[World Bank Case Study \(Blended Finance\)](#)

<https://documents1.worldbank.org/curated/en/702211472040099035/pdf/107974-BRI-P159188-BlendedFinanceCasesIndia-PUBLIC.pdf>

### **Municipal Bond Issuance, Tlalnepantla de Baz, Mexico**

[International Finance Corporation \(IFC\)](#)

<https://ifcext.ifc.org/IFCExt/Pressroom/IFCPressRoom.nsf/0/C28834B69E7E5F0185256CD400599431?OpenDocument>

[World Bank Case Study \(Blended Finance\)](#)

<https://documents1.worldbank.org/curated/en/156721472042044468/pdf/107978-Mexico.pdf>

## **Municipal Project Finance, Rustenburg, South Africa**

### [2030 Water Resources Group](#)

<https://www.waterscarcitysolutions.org/wp-content/uploads/2016/02/A-Innovative-Financing-Arrangements.pdf>

### [World Bank Case Study \(Blended Finance\)](#)

<https://documents1.worldbank.org/curated/en/959781472033563640/pdf/107980-South-Africa.pdf>

## **Hybrid Finance, Tshwane Metro, South Africa**

### [UN Habitat \(contextual document\)](#)

[https://unhabitat.org/sites/default/files/2020/02/the\\_frugs\\_city\\_study\\_report\\_on\\_tshwane\\_south\\_africa.pdf](https://unhabitat.org/sites/default/files/2020/02/the_frugs_city_study_report_on_tshwane_south_africa.pdf)

### [OECD Case Study](#)

<https://www.oecd-ilibrary.org/sites/a0ecb034-en/index.html?itemId=/content/component/a0ecb034-en>

## **Credit Enhancement Facility, Jamaica**

### [Caribbean Regional Fund for Wastewater Management](#)

<https://www.gefcrow.org/index.php/pilot-projects/credit-enhancement-facility-in-jamaica-cefj>

### [OECD Case Study](#)

[https://www.oecd-ilibrary.org/sites/5efc8950-en/1/3/2/index.html?itemId=/content/publication/5efc8950-en&\\_csp\\_=6f524d6f7dc250ba913c88ad8727c82b&itemI1GO=oecd&itemContentType=book#section-d1e7447](https://www.oecd-ilibrary.org/sites/5efc8950-en/1/3/2/index.html?itemId=/content/publication/5efc8950-en&_csp_=6f524d6f7dc250ba913c88ad8727c82b&itemI1GO=oecd&itemContentType=book#section-d1e7447)

## **Water Revolving Fund, Philippines**

### [Design Framework \(USAID\)](#)

<https://www.rmaconsult.com/files/123419625.pdf>

### [World Bank Case Study \(Blended Finance\)](#)

<https://documents1.worldbank.org/curated/en/651521472032148001/pdf/107979-BRI-P159188-BlendedFinanceCasesPhilippines-PUBLIC.pdf>

## **Household Investment in Sanitation, Bangladesh**

### [Global Partnership for Results-based Approaches \(GPRBA\)](#)

<https://www.gprba.org/sites/gpoba/files/publication/downloads/2020-09/Bangladesh-sanitation-GPRBA-case-study.pdf>

### [World Bank Case Study \(Blended Finance\)](#)

<https://documents1.worldbank.org/curated/en/455191472040719961/pdf/107975-BRI-P159188-BlendedFinanceCasesBangladesh-PUBLIC.pdf>

## **Facilitated Access to Finance, Cambodia**

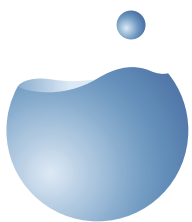
### [World Bank Case Study \(Blended Finance\)](#)

<https://documents1.worldbank.org/curated/en/680211472030707975/pdf/107972-BRI-P159188-BlendedFinanceCasesCambodia-PUBLIC.pdf>

### [World Water Week 2021 Blog \(AFD\)](#)

<https://www.afd.fr/en/actualites/tapping-global-finance-expand-access-clean-water>





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