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Introducing Commercial Finance into the Water Sector in Developing Countries

FEBRUARY 2017

Kevin Bender

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Introducing Commercial Finance into the Water Sector in Developing Countries

Kevin Bender

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Overview

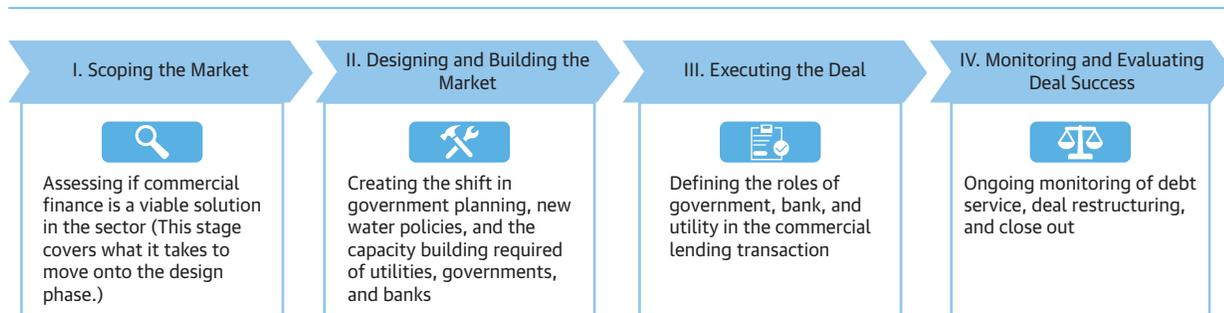
The Framework

This guidance note provides a step-by-step framework for building a market for commercial finance in the water sector. Readers of all levels of understanding of commercial finance will benefit from this framework, which is designed to help practitioners with not only executing a commercial finance deal but, more important, building a market for commercial finance in a developing market. Readers who are well versed in commercial finance may be able to skim through some

of the concepts and structures introduced. Many of the concepts are introduced from each of the three main stakeholders, perspectives, creating an opportunity to understand how each of these actors works with the others and what roles they play at each stage of building the market for commercial finance in water.

The framework is composed of the four phases described in figure O.1.

FIGURE O.1. Framework for Building a Commercial Finance Market in the Water Sector



 Phase I: **Scoping the Market**, provides guidance on how to assess whether commercial finance is a viable solution in the sector. This phase covers the requirements that need to be met before moving to the design phase. Many markets may not have the need, interest, or readiness to build a market for commercial finance. This section covers what is needed at the scoping stage to move forward with building a market.

 Phase II: **Designing and Building the Market**, focuses on the shift in government financial planning, new water policies, and the capacity building required of borrowers, government, and banks. Think of this section as a checklist of all of the elements needed to effectively enable commercial finance in the water sector before actual deals take place.

 Phase III: **Executing the Deal**, will be familiar to readers with experience in commercial finance, as it focuses on the transaction. This phase covers the roles and responsibilities of the government, bank, and utility in the transaction.

 Phase IV: **Monitoring and Evaluating Deal Success**, also focuses on the transaction and covers typical ongoing monitoring, enhanced monitoring, deal restructuring, and close out.



Abbreviations

DCA	Development Credit Authority (USAID)
DSCR	debt-service coverage ratio
DSRA	debt-service reserve account
IBNET	International Benchmarking Network for Water and Sanitation Utilities
IRR	internal rate of return
NPV	net present value
O&M	operations and maintenance
OBA	output-based aid
OECD	Organisation for Economic Co-operation and Development
PPP	public-private partnership
SME	small and medium enterprise
WSS	water and sanitation services

Introduction

I.1 Objective of the Guidance Note

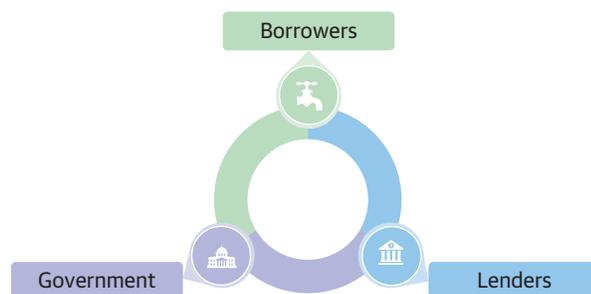
This guidance note provides an introduction to the role of commercial finance in the water and sanitation sector. Its aim is to help readers (development specialists) explore applications in their own countries. The note focuses primarily on commercial bank loans, and throughout the document the term *commercial finance* refers to commercial loans from domestic banks. However, much of the guidance could be applicable to debt capital market financing for water. While there is some research available on accessing international private finance for water infrastructure, the literature on facilitating *local domestic* finance (raised in local currency from local banks or lenders) is limited. This note aims to fill the gap and to present a process to readers who are not financial specialists and who may be unfamiliar with commercial banking. Readers will likely require some assistance from a financial specialist to implement this process. This note is related to two other publications focused on introducing private sector participation in the water sector: *Delivering Universal and Sustainable Water Services: Partnering with the Private Sector* and *Private Sector Provision of Water Supply and Sanitation Services in Rural Areas and Small Towns: The Role of the Public Sector*.

The target audience for this note is development specialists and local practitioners working in water and sanitation service delivery who want to explore the possibility of introducing access to commercial finance to service providers in their country. The note also provides guidance that may be helpful to other local stakeholders involved in or contemplating various phases of building a commercial finance market. The note provides valuable information for staff of all levels of understanding of commercial financing. Readers who are less familiar with lending and infrastructure finance may wish to start with the appendix B on commercial finance basics.

Structurally the note highlights the four phases of a framework to successfully introduce commercial bank financing into the water sector. The step-by-step approach walks the reader through key decision points and financing options, from scoping the market to evaluating and closing deals. Real-life examples are included to demonstrate how commercial finance can be applied in different country contexts and to point out challenges that may arise during project implementation. Many examples and support products come from Kenya, as the Water and Sanitation Program has worked on facilitating commercial finance for the Kenya water sector for several years.

The note takes a holistic sector approach to the introduction of commercial finance, targeting the three key stakeholders: borrowers, lenders, and government entities. As shown in figure I.1, each stakeholder is dependent on the others' involvement. While some stakeholders may require more prodding or capacity building or play more critical roles, all stakeholders' participation is critical at each stage.

FIGURE I.1. Commercial Finance for Water Stakeholders



- *Borrowers* are typically water utilities that provide water services to the public.
- *Lenders*, in the context of this note, are local banks and are critical to expanding participation of local financial markets, especially to expand financing opportunities in local currencies.
- *Government* entities can be local, regional, or national governing bodies and are critical to shaping the regulatory and legal environment in which water utilities and banks must operate. They also play an important role as co-financiers with banks.

The note's scope is limited to financing potentially commercially viable projects located in countries committed to enabling commercial financing in their water sector. The focus is on access to commercial finance directly by water service providers—the note does not cover other sources such as capital markets, project finance, public-private partnerships (PPPs), or microfinance institutions. It also does not cover sources of socially responsible financing such as corporate social responsibility financing or impact investors. In many markets, it may be a better, or legally binding, strategy to finance the water sector through municipal borrowing. The note does not address municipal borrowing.¹

This note covers a four-phase framework:

Phase I: Scoping the Market

Phase II: Designing and Building the Market

Phase III: Executing the Deal

Phase IV: Monitoring and Evaluating Deal Success

I.2 Financing in the Water Sector

WATER FINANCE FUNDAMENTALS

Investments of assets in the water sector tend to be large, lumpy, and front-loaded, whereas utility cash flows (revenues from tariffs) are continuous, predictable, and spread over a long period of time.

Successful infrastructure financing must match the size and timing of the cash flow created by the assets (revenues) with those used to cover the liabilities (debt service).

The Basics

In developing countries, infrastructure in the water sector is almost entirely financed with public funds. The sources of public finance are commonly known as the 3Ts: tariffs, taxes, and transfers (OECD 2010). Ideally, it is more efficient to have all sector costs, public and commercial, paid back directly by end users (beneficiaries) via water tariffs than to depend on taxes and transfers.

A key goal of financing is to provide up-front funding for

investments that can be repaid over the life of the asset. Long-term repayment has the added benefit of sharing the financing costs with users over the life of the asset, so that the customers benefiting from the infrastructure in 10 years' time help to pay for the initial cost of that infrastructure. As much as possible, tariffs should be used to finance infrastructure, not just the operating and maintenance (O&M) expenses. Ideally, only tariffs from the actual users of the assets should pay back investments; however, in reality, it is often difficult to isolate the costs solely to the actual users.

The Need

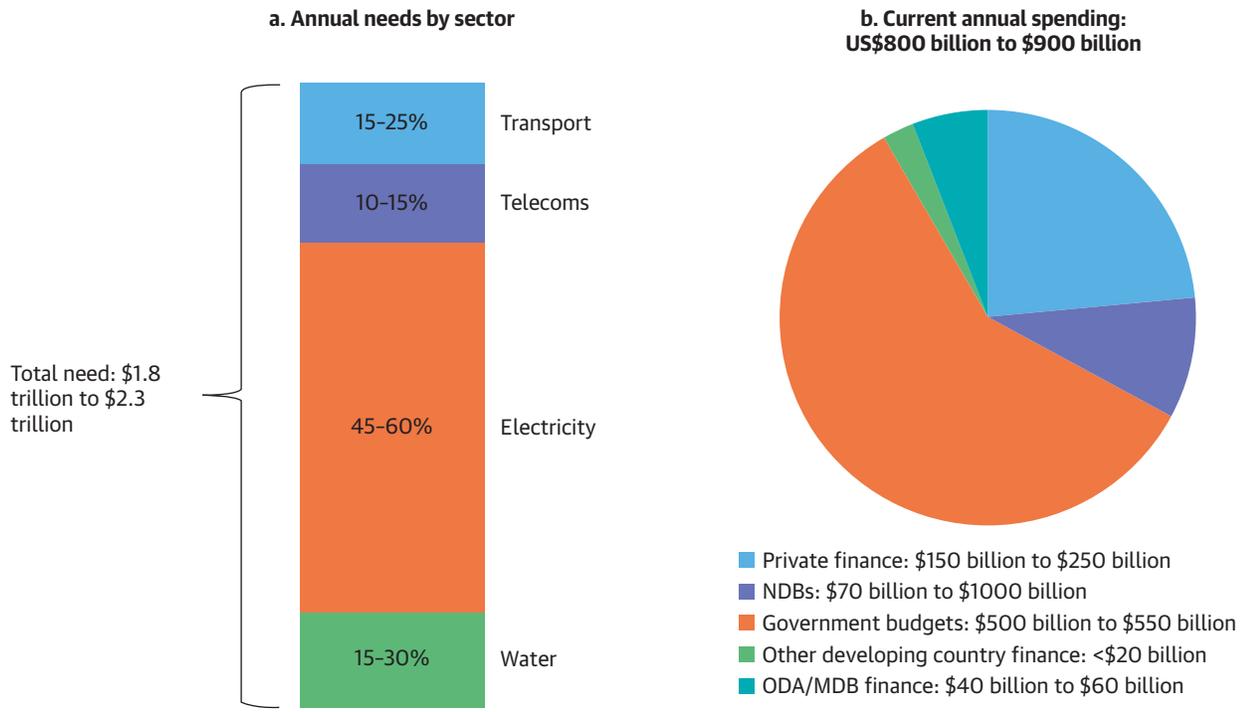
The need for infrastructure investment (not including O&M costs) across developing and emerging markets over the next decade is estimated at US\$2 trillion per year, roughly twice the amount of what is currently spent. Figure I.2 shows that 15-30 percent of the need is in the water sector. From 1990 to 2012, only US\$69 billion of private financing went to the water sector (Inderst and Stewart 2014). Most of this private finance is international finance or from municipal bond financing.

Figure I.3 shows all of the costs of water infrastructure financing. The water service provider has to decide how investments (construction and major refurbishments) and O&M will be funded. O&M costs are typically covered by the 3Ts and the up-front capital investments are covered by public sector funding. With the financing gap partly covered by commercial loans, the water service provider has the added cost of interest payments. These decisions impact the viability of commercial finance solutions.

What Makes the Water Sector Different?

Water service providers often operate under structures similar to those of typical small and medium enterprises (SMEs). However, there are several conditions of the sector, the company, and the end product that make water service providers different from typical SMEs, particularly when viewed by a commercial bank.

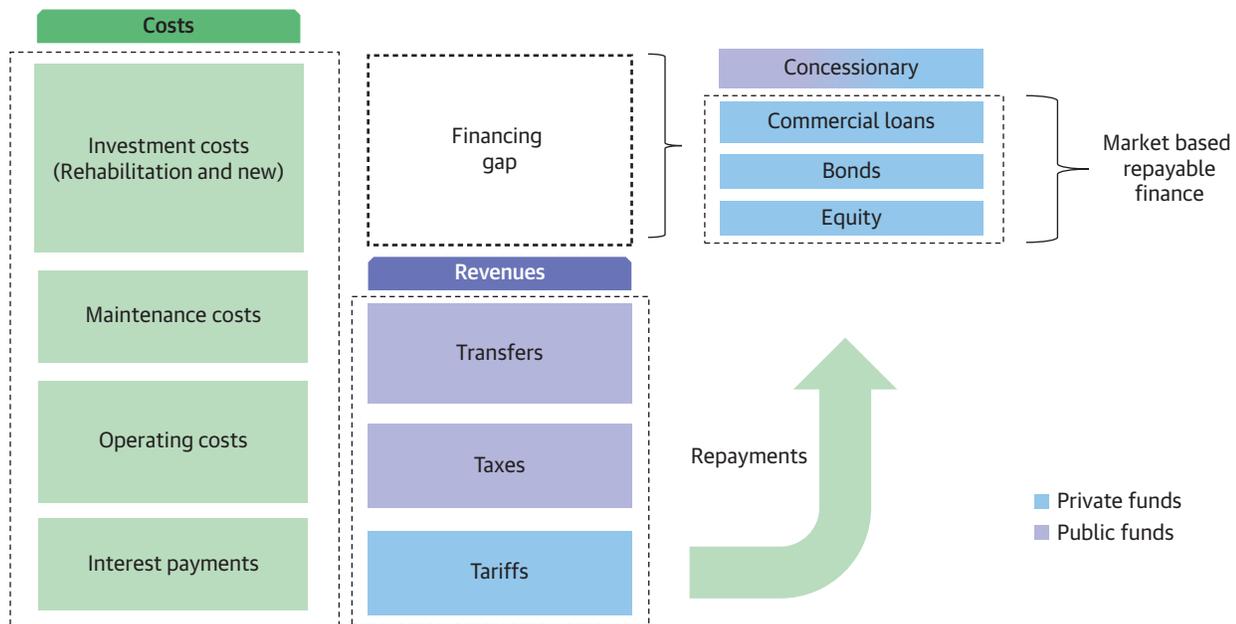
FIGURE I.2. Infrastructure Investment Needs in Developing Countries



Source: Inderst and Stewart 2014.

Note: NDBs = national development banks; MDB = multilateral development bank; ODA = official development assistance.

FIGURE I.3. Financing Gap for Water Service Providers



Source: OECD 2010.

WATER FINANCE FUNDAMENTALS

Commercial finance refers to market-based repayable finance, covering a wide spectrum of equity to debt, ranging in size from small individual microfinance loans to large international capital market bond issues. Other forms of finance, such as bond finance, project finance, or equity finance, have emerged as important ways to complement more traditional forms of finance but are not covered in this note. Blended finance is the complementary use of public funds (grant or concessional) with private investment to provide financing on terms that make projects financially viable.

WATER FINANCE FUNDAMENTALS

Leverage is defined as the ratio of a company's debt to equity. The more debt compared to equity, the more the company is leveraging its funds to grow the business. Banks leverage their equity in order to lend. There are typically standard practices for how much companies or banks should leverage their assets.

Public (political) nature of water. Utilities are often operated as public entities with capital investments predominantly financed from public funds. As a result,

Right of water access. The perception of water as a social good and a human right keeps downward pressure on water prices and hinders the ability of water service providers to grow their revenue base. In addition, regulatory practices that involve customers in the tariff-setting process often allow social institutions (representing the poor) and industry (representing the wealthy) to block needed increases in tariffs. Water is one of the few industries that suffers from rigidly fixed revenues yet is exposed to inflationary cost changes like rent, wages, and electricity.

Natural monopoly of water infrastructure. Constructing multiple networks of underground pipes to compete with each other is not economically feasible, thus water supply systems are natural monopolies. In the absence of competition, monopolies have little incentive to outperform. And unlike monopolies in other markets that are price makers, water prices are typically set only to recover costs. This does not motivate water service providers to function more efficiently, since it typically does not lead to profits.

utility operations and management are exposed to interference by national and local governments, and political entities are often overrepresented on the board of directors or other governance arrangement. Moreover, utilities do not often legally own the infrastructure assets and therefore cannot offer collateral for loans.

I.3 Commercial Finance for Water

Value Add of Commercial Finance in Water

Public finance is rarely sufficient to fulfill all the needs of the water and sanitation services (WSS) sector. To increase the funding available, the water sector can focus its public funds to leverage or “crowd-in” funding from the private sector, not only from the international markets but also from local domestic markets. Public funds can and should be leveraged to attract commercial finance to increase the pool of available financing. Commercial finance should aim to leverage public financing, not replace it.

The World Economic Forum and Organisation for Economic Co-operation and Development (OECD) also support *blended finance* approaches that seek to pull in private sector capital for development outcomes to help meet the Sustainable Development Goals (OECD and WEF 2015). This initiative recognizes that public sector actors cannot go it alone and need to create structures that bring in private capital as well as more efficient private sector management approaches to drive down costs. Blended finance is covered in more detail in section 2.5.

Leveraging public funds enables governments to scale the impact of each dollar spent for development by catalyzing many multiples in private sector capital toward those goals. Governments can create financial *levers* with public funds to make the water sector more attractive to private lenders and increase the funding to the sector. There are various types of levers to mitigate the risk for private capital such as, credit guarantees, output-based subsidies, credit ratings, blended

finance, and so forth. Risk analysis and mitigation tools are discussed in more detail later when we talk about building government capacity in phase II and appendix A.

The main benefits of introducing commercial finance include the following:

- *Increased sector funding.* If used strategically, public funds can leverage or crowd-in commercial financing to increase the funding available in the sector.
- *Quicker access to finance and shortened time to construction.* Once commercial financing is established in the sector, creditworthy service providers should be able to achieve financing relatively quickly for commercially viable projects and not depend on slow public finance approval.
- *Matched financing to asset life.* This entails spreading out the repayment of up-front capital investments with the business cash flows, allowing future beneficiaries to help pay for the initial costs of infrastructure.
- *Increased sector management capacity.* Commercial finance requires a certain level of operational and financial management in line with private companies and should incentivize the sector to increase the sophistication of the service provider management.

In addition to the main benefits outlined, potential advantages of building the marketplace for commercial finance for water include the following:

- Optimizing public funding toward infrastructure in the greatest need of subsidy
- Expanding access to WSS to new market segments not reached with existing limited public funding
- Creating more sustainable sources of capital for infrastructure financing
- Enabling the financial autonomy of service providers to implement their priorities
- Raising the overall standard of governance and financial performance of the service provider

Requirements to Facilitate Commercial Financing in the Water Sector

To facilitate commercial finance in the water sector, all three main groups of stakeholders must meet the following conditions:

Borrowers must be creditworthy (see box 1.1) and able to identify, design, and manage bankable projects. This often entails enhancing the operational and financial management capacity of the water utilities.

Banks and lenders must be able to assess the risks of water supply projects and have access to tools that can help mitigate unacceptable risks. This often entails creating market intelligence and sector risk tools, such as a creditworthiness index, and enhancing understanding and availability of risk mitigation products (WASREB and WSP 2015a).

Governments need to fill gaps with supportive legislation and targeted, allocated budget as well as create the appropriate levers. This often entails removing constraints of the enabling environment by strengthening policy and legal and regulatory frameworks and targeting public budgets into levers such as output-based subsidies or guarantees (Bender 2015).

The Constraints and Barriers to Commercial Finance in the Water Sector

Stakeholders face various constraints and barriers to accessing or facilitating commercial finance in the water sector.² The underlying issue for all three stakeholder groups is that since water is seen as a public

NOTE ON VIABILITY

This paper does not differentiate between water and sanitation or urban and rural. It should be noted that financing sanitation via commercial loans can be more difficult, as sanitation infrastructure is often more expensive to build, has more difficulty recovering costs via tariffs, and tends to lag behind water supply service. Moreover, rural projects, including both water and sanitation, are often less commercially viable than urban or peri-urban projects.

WATER FINANCE FUNDAMENTALS

Commercial viability means a company, or a project, is able to service its debts (repay the principal and interest) on the loan at market interest rates from the cash flows generated by the business or project.

service, beneficiaries do not always want to pay for it. Even when water is paid for through tariffs the rates are usually fixed and unchanged across markets. This can make it difficult for stakeholders to find market-based solutions for water services while covering the up-front investment costs and interest expenses.

Constraints and Barriers to Commercial Finance for Water Service Providers

Constraints and barriers that are specific to each stakeholder group include the following:

- *Commercial finance is often perceived as expensive and collateral based.* The water sector is usually fully funded by public funds and often perceives commercial borrowing as expensive, as borrowers must repay the borrowed funds (principal) at market costs (interest). Service providers and governments need to understand that commercial financing is, by definition, the market rate and that concessional or grant financing is a subsidized (cheaper) rate. Banks also have collateral or balance sheet requirements that service providers often cannot meet. Service providers should pursue a commercial loan only when the return on the project is higher than the interest on the loan.
- *Service providers do not see incentives to borrow and have limited internal funds.* Tariffs are commonly set to cover O&M costs. Many of the societal and economic benefits of WSS infrastructure are not reflected in the price of the service (tariff). Small equity capitalizations combined with low retained earnings result in minimal cash available for infrastructure project implementation.
- *WSS projects have high up-front project development costs.* WSS projects have a high proportion of

“soft costs,” such as project evaluation, project development, and contract negotiation costs, that service providers cannot afford to cover and lenders are reluctant to finance. For smaller projects, up-front transaction costs can be especially prohibitive.

- *Service providers often lack capacity to communicate with commercial banks.* Service providers often are unaware of the project packaging and presentation requirements of the financial community. They lack the business, project, and risk management skills needed to develop bankable projects that can be presented to and understood by loan officers.
- *Commercial financing may be limited or unavailable in some markets.* Local banks do not often lend long term; they limit their financing to projects with shorter asset life such as last-leg infrastructure and household connections. Last-leg infrastructure is often best suited for commercial financing since it is covered by the utility and produces revenues (tariffs).
- *Obtaining approval can be difficult.* Service providers are also often tied to the public funding cycle and decision making and can struggle to obtain approval for commercial borrowing through the company board of directors, local government, or local council.

Constraints and Barriers to Commercial Finance for Banks

- *Lenders (often incorrectly) perceive WSS projects as riskier than conventional projects.* As public monopolies, water companies depend on regulatory systems to drive performance. These systems are often politically influenced and are an unstable yet rigid operating environment.
- *Water infrastructure assets are difficult to use as collateral.* Assets used by water utilities are often owned by the government and are not on the balance sheet of the water service provider. Even if owned by the water service provider, these assets

(pipes on the ground, treatment works, and so forth) cannot usually be used for loan collateral due to their specific use. Assets, once built, have low resale market value.

- *Project size leads to high transaction costs.* Smaller projects are less attractive for conventional bank financing and international financial institutions (donors) who want scale, because arranging fees can be costly. Larger projects amortize over a period of time that is too long for commercial bank loans.
- *Lenders lack knowledge of WSS projects.* Many banks are unfamiliar with sector technologies and technical, economic, and financial characteristics. Loan officers and risk managers do not have approaches and techniques for project appraisal and risk assessment, and are therefore reluctant to lend to WSS service providers. They are often unaware of innovative financial products and risk-management techniques.

Constraints and Barriers to Commercial Finance for Governments

- *Government lacks knowledge on how to shape an enabling regulatory environment.* Ministries and regulatory bodies are unsure how to use their governing role to encourage the sector to move toward commercial financing. They may not recognize that by introducing commercial finance in the water sector they will be able to direct public financing to the least commercially viable projects to increase access to those at the bottom of the pyramid or to those investments that deliver large externalities, such as sanitation.
- *Governments lack the ability to incorporate commercial finance into sector planning.* Governments often do not have the skills required to identify commercially viable water projects and therefore cannot create sector investment and financing plans that incorporate commercial finance. Most often

FIGURE I.4. Summary of Common Constraints and Potential Solutions for Key Stakeholders

Constraints affect three critical water stakeholders			
Stakeholder	Government	Lenders	Utilities/Borrowers
			
What is the critical constraint?	Local and national laws and policies hinder rather than catalyze loans to water projects	Lenders perceive too much risk and lack the market intelligence to assess the technical viability of projects	Borrowers face capacity constraints, especially around loan management and internal controls
What will help overcome these constraints?	Focused policy reforms that encourage lending; technical assistance to governments	Partial credit guarantees, direct lending, subsidies, technical assistance, credit assessments	Technical assistance from governments, donors, and other utilities

Source: Bender 2015.

governments view water tariffs as public revenues and simply use the water sector to finance the overall public budget. However, ring-fencing all or part of the water budget to service debt payment would go a long way to support commercial finance.

- *Governments lack political understanding of the benefit.* Governments may not be particularly supportive to commercial lending in the sector. Officials often try to keep tariffs below commercially viable rates in order to placate constituents.

Potential Solutions

While there are many challenges to incorporating commercial finance into the water sector, there are

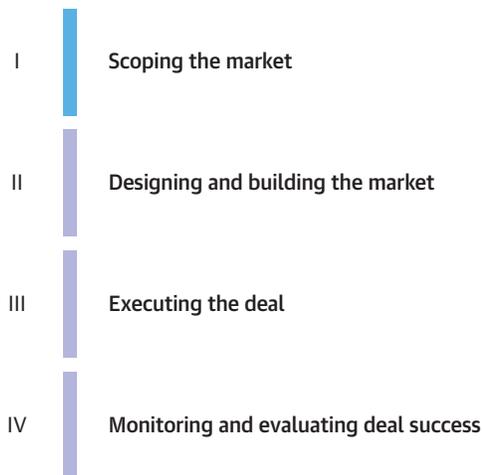
conditions in which the return on the project enables repayment of a commercial loan. Figure I.4 outlines both the common constraints and some potential solutions for key stakeholders. This note will elaborate on these solutions and provide steps and a framework for readers to consider in their own countries. Phases I and II of the framework will delve into these topics by talking about the market conditions that increase project viability and the success of commercial financing.

Notes

1. There are many knowledge products available on municipal finance. See, for example, Farvacque-Vitkovic and Kopanyi 2014.
2. This section is adapted in part from Wang et al. 2013.

1. Phase I

Scoping the Market



Chapter Objectives

- To assess if a market is ready for commercial financing based on the level of support, flexibility, and existing capacity
- To learn how to determine if space exists in the market for commercial financing based on the needs of the key stakeholders: government, service providers, and banks
- To introduce the concept of commercial viability, what it is, why it is important, how it is measured, and what you need in order to measure it

During this initial phase, it is imperative to involve all three key stakeholder groups equally. This section covers the tasks of determining whether there is space in the market and confirming market readiness.

1.1 Step One: Determining Whether There Is Space in the Market

For Government

Government is obligated to secure sustainable water access for the country. Most developing countries suffer from inadequate water budgets coupled with steady population growth and a constant need for infrastructure maintenance and rehabilitation; new options for additional funding are needed. Estimating the sector financing gap helps to determine whether, and how much, commercial finance can help governments cover the budget shortfall. A market assessment, verifying the current status of commercial financing and support and interest of the key stakeholders, is needed to determine whether commercial finance is a viable option to increase funding.

Government also needs to optimize its funds for public benefit in order to create space for commercial finance. If government is financing commercially viable projects with public funds, it will be difficult to open up opportunity for a sustainable commercial finance market. Local governments must be open to new ways of prioritizing and planning funding streams. Without effective coordination by government funding channels, there is a high risk public funds will crowd out any private sector financing.

After demonstrating the need, it is necessary to confirm the existence of sufficient support and interest (demand) by the key government stakeholders. Discussions with key government stakeholders should also include what it takes to enable commercial finance, such as potential water tariff reform. If government is not prepared to effectively enable local private sector financing, it may be difficult to move forward to create a new market.

Regulatory support is essential to the introduction of commercial finance to the sector. However, many

countries do not have independent water sector regulators or have weak regulatory bodies. Often the regulatory functions are embodied in the water ministry or local government. Understanding the regulatory role and level of support is key to facilitating commercial lending. Creating an independent regulator should be the long-term goal of capacity building.

For Borrowers

Commercial loans require both commercially viable projects and creditworthy borrowers. A commercially viable project produces cash flow (revenues) sufficient to cover the repayment of principal and cost of borrowing

(interest) of the loan used to finance the project. Borrowers are considered creditworthy when their company revenues are sufficient to service their debt obligations. There are multiple levels of creditworthiness. A pipeline of creditworthy service providers with commercially viable projects, under a supportive enabling environment, is a prerequisite for the market to work. As is discussed in phase II, water policy reform might be necessary to strengthen the opportunity for commercially viable projects.

WATER FINANCE FUNDAMENTALS

Creditworthiness is a measure of a borrower's, usually a company, ability and willingness to service its debt obligations. The measure of creditworthiness results from a valuation performed by lenders or independent parties (such as credit-rating agencies) to determine the possibility a borrower may default on his or her debt obligations. For more on creditworthiness see WASREB and WSP 2015a.

In order to assess a project's commercial viability, separate financial models of both the water project and company cash flows must be created. For the initial assessment, most service providers' finance departments should be able to create these basic models and demonstrate commercial viability. To stress test internal rate of return (IRR) or net present value (NPV) for future rises in interest rate and other costs, water project or company cash flow models should run base case, best case, and worst case scenarios. Some simple sample models are available.¹ Assistance from local

accounting consultants will likely be required to create more sophisticated models. In nascent markets, getting service providers to do financial planning and financial modeling may require significant technical assistance.

A project's commercial viability will also depend on end users' willingness and ability to pay. Some water projects, particularly household connection projects in poor areas, often result in a reduced water cost for the end client. Better projects would have a combination of commercially viable areas (such as high net-worth neighborhoods or institutional clients) and poor areas that receive some level of subsidy. Water companies and/or local governments should have clear policies on the strategy to finance projects in poor areas.

One of the main indicators that customers have the willingness and capacity to pay for the service is to verify the existence of informal water service providers. These providers can be as much as 10 times more expensive than regulated services offered by formal water providers. The water supplied by informal providers is often of poor quality and service is irregular. Therefore, customers would be willing to switch to a formal option of higher quality and service.

Beyond assessing customer willingness to pay, this scoping phase will identify which borrowers require technical assistance to enhance their creditworthiness capacity and which need assistance to identify and structure commercially viable projects.² The assessment should create and stress test financial models of both the projects and the companies. Outputs should include financial models, company credit assessment, and recommendations to make the projects commercially viable (reducing loss, increasing tariffs, required subsidies, and so forth) and increase company creditworthiness.

There will likely be a wide spectrum of skills levels within the sector. Most often, large utilities servicing primary cities have some measure of high operational and financial management capacity and are more

likely than small utilities to move quickly to commercial lending (even via capital markets). Therefore, the strategy to get very large urban utilities to borrow commercially may be considerably different from the strategy for small, medium, and even some larger city utilities. Due to their level of sophistication and stronger cash flow, it may be best to focus initially on the large utilities to establish the concept of commercial lending before assisting smaller utilities with greater capacity challenges.

For Banks

From the banks' perspective, the creditworthiness of the borrower is as important as—or even more important than—the project's commercial viability. Once the project is deemed commercially viable, the banks will likely lend on the full faith and credit of the entire water service provider's business—that is, corporate finance. Most local banks will not understand infrastructure financing or provide “project finance” (see appendix B.5), in which debt service is legally paid solely on the cash flows created by the project, as this can increase the risk of default. More information on project finance can be found in the commercial finance basics section in appendix B. Banks will review not only the risk of the project but also the overall risk of the company itself (its creditworthiness).

Banks should be the easiest stakeholder group to assess as banks regularly lend to new customers and businesses. However, banks have many other borrowers to lend to, and creating acceptably creditworthy utilities may require a long utility reform process. In most countries, water service providers are public or quasi-public entities and are not incentivized to operate as a private sector company would. However, to qualify for commercial loans, service providers will need to achieve financial, operational, and technical management capacity levels similar to those found in private sector companies. This is discussed in more detail in phase II.

1.2 Step Two: Confirming Market Readiness and Commitment

Awareness and Support of Private Sector Financing among All Stakeholders

The aim of step two is to obtain a commitment of interest and demonstrated support from the three key stakeholders. Getting stakeholders to document their support is a challenge; nevertheless, it is important to solidify support in order to save significant time in the following stages of building the market. The most common demonstration of support are letters of commitment or support from the ministry or ministries involved, regulator, utilities, and commercial banks. Requesting official letters of support will motivate stakeholders to fully review the concepts and risks of commercial finance. This dialogue facilitates deeper commitment to understanding commercial financing and begins the process of changing the enabling environment.

Government Support for Engagement

The foundation stakeholder at this stage is the government. National and local governments need to understand the benefits *and* downsides of commercial finance in the sector. The economic benefits of improving water and sanitation services are well documented and well

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A project is considered commercially viable when the IRR of the expected cash flows (revenues minus costs) generated by the project is greater than the expected interest rate charged by the bank to finance the project. To estimate commercial viability, the local banks' base interest rate(s) and the estimated *spread* (the additional interest charged by a bank based on a borrower's risk of repayment) for a water service provider are needed. Be aware that banks will likely offer floating rate interest loans where the interest rate adjusts regularly (every quarter or semiannually), making it difficult to forecast future interest rates accurately. Economies with historically high or volatile interest rates or ones with high expected inflation are subject to high risk of spikes in interest rates. Despite NPV being a more accurate measure of viability, in the early phase of the assessment process, estimating IRR is sufficient to justify potentially viable projects. See appendix B for more on interest rates and pricing.

understood by water ministries and regulators. As well, most governments believe private sector activities, such as commercial borrowing, will have an additional benefit of increasing capacity and efficiency in the sector. However, the government role and inherent risk in commercial finance is likely less understood. The research brief *Governments Don't Have to Go It Alone* (Bender 2015) can help government officials better understand what role government can play to facilitate commercial lending and what other countries have done with commercial finance in the sector.

However, even at this early stage, governments should understand the basic commitments required of them to effectively build a commercial finance market for water. These potential policies and actions include the following:

- Potential financial commitment (co-financing) or risk-sharing obligations (partial guarantee)
- Increasing tariffs to cover financing costs (interest and principal payments) and inclusion of financing costs in cost-recovery tariff setting
- Legal ring-fencing of utility cash flows from government
- Transferring asset ownership to utilities, if currently owned by government
- Extension of water provider service license time to match life of commercial loan

Best practice is to hold an introductory training session with the ministry of water, the regulator, and, if applicable, local governments and request an official letter of support from each entity. As borrowing by water service providers could result in implicit or even explicit liability for the government, the ministry of finance should be included in the trainings and requested to supply documented support. As lending to the sector will affect the risk of local banks, a letter from the bank regulator—the central bank—may be considered. However, central banks will be reluctant to

state support of lending to one client, as this is not its role and risk in the banking sector is managed via wider policy risk measures. It is unlikely the central bank will have concerns unless there is a history of public sector defaults. Any required regulatory approval will be covered by the local banks who offer loans.

Water Service Provider Awareness and Interest

Often, the main attraction of commercial finance for utility managers is control of project selection and timing. Under commercial financing, the service provider, not requiring public funding, should have autonomy to prioritize projects. However, while commercial financing should greatly reduce the financing time of infrastructure projects once it is established, initial pilot transactions may take several years to close. The appeal of quicker financing will come only when the practice of lending to the sector is well established.

Commercial lending is more expensive and often more difficult to obtain and service than typical public sources of financing that offer low-interest-rate concessional loans and sometimes free grants. Often, water service providers are not involved with the sourcing of funds and may have an aversion to taking on the increased risk and obligations required in commercial financing. The decision maker, usually the chief executive officer (CEO) or finance manager of the service provider, will need to fully understand the process, conditions, and commitments involved in commercial borrowing. It is not advisable to ask borrowers to commit to borrowing in writing, as many factors beyond their control (such as high interest rates, economic shocks, public lack of support of tariff increase, and so forth) may make commercial financing unviable. At this stage a verbal commitment of interest by the CEO *and* the board of directors is a sufficient level of comfort. Box 1.1 provides guidance on assessing the need and interest of water service providers in commercial finance.

BOX 1.1. Assessing Service Providers on Commercial Finance Knowledge

When assessing your water service providers, the regulator, or whatever body oversees the regulatory role, may be a good source of information. However, most likely assessments will need to be done via surveys and interviews with senior management.

Also consider the following survey topics to establish need, interest, and support validation for banks:

- History of borrowing: Has the company borrowed in the past (for overdraft, asset finance, and so forth)?
- Knowledge of borrowing: Does the water provider senior management (CEO, finance manager, and so forth) have an understanding and basic knowledge of the process and obligations of commercial borrowing?
- Corporate governance: What is the structure and independence of the board of directors? Is there political interference? Is there appropriate ownership or shareholder structure?

Bank Interest in Entering the Sector

To gain interest and support from banks, the best approach is to show banks a pipeline of commercially viable projects and creditworthy borrowers. If a pipeline does not exist, the results of the assessment of borrowers can be distributed to local banks. This should help them understand the level of sophistication and challenges in the water sector to determine if they have short- or long-term interest in providing commercial financing.

Historically, in more developed markets, the water sector represents an ideal banking client due to the sector's low-risk profile of steady and predictable cash flows. Banks are often interested in utility clients due to their potential need of other banking services. Utilities are cash-based businesses that offer banks large deposits (which banks use to make money), often finance large fleets of vehicles and equipment (which banks can finance), and have large cash management as well as investment needs. Infrastructure development is not often a core business of local banks, but these other business lines can entice banks to lend to water utilities at competitive rates.

Lenders will need to have a sufficient interest in obtaining new clients in order to consider the water sector.

In most developing countries, commercial lenders are not familiar with the water sector and view water utilities as not creditworthy. In addition, most developing economies suffer from low liquidity: in this environment, banks are reluctant to look for a new customer source, much less a difficult new customer group such as the water service providers. Quantifying the liquidity of a market (for example, by using macroeconomic indicators) is not easy or very informative. The best sources to determine bank interest are development professionals working with the commercial banking sector and the banks themselves. Box 1.2 provides additional sources of information.

A survey of the banks most likely to lend (see box 1.2) will clarify the lending market's view of water sector risk and basic understanding of the sector. The survey should focus on the underlying rationale of how banks view water utilities and the sector, not just the overall view. If possible, survey both relationship managers, who are responsible for bringing in the new clients and achieving loan approval, as well as risk managers, who will approve the lending. It is better to survey heads of departments—for example, head of corporate lending or head of public institutional lending—as opposed to lower level relationship managers, as the opinions of

BOX 1.2. Assessing Banks in the Local Market

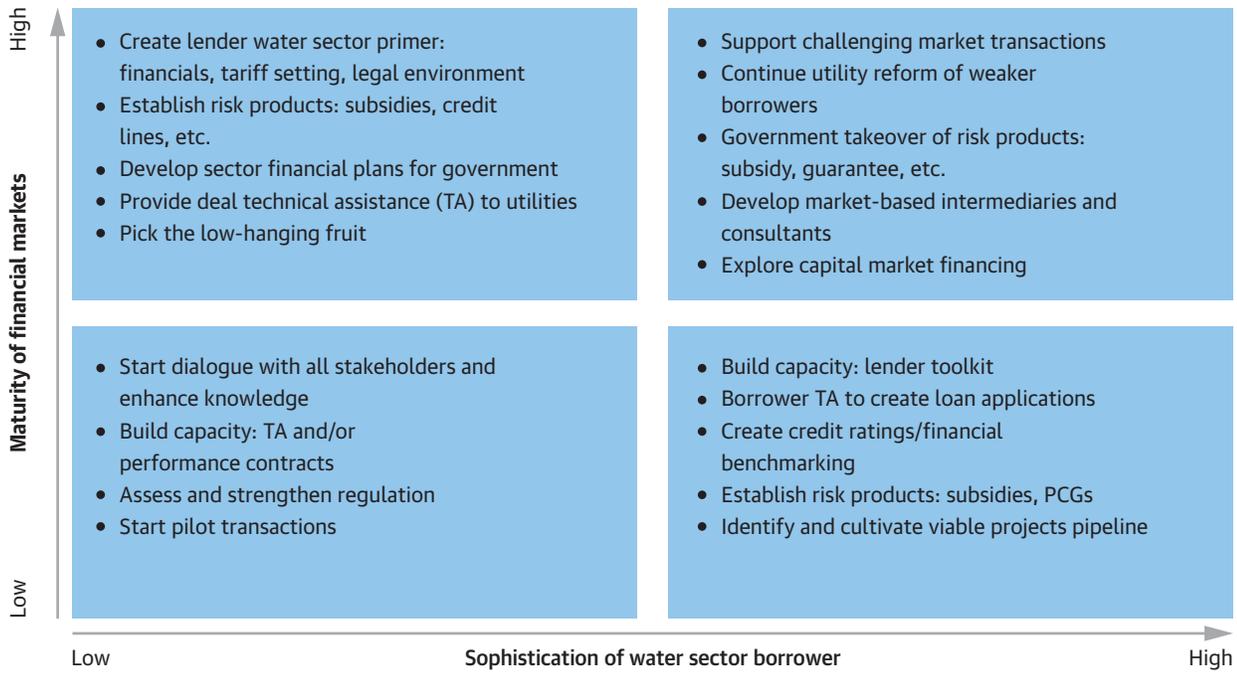
When assessing the local lending market, consult these possible sources of information:

- *Development institutions* often provide technical assistance and perform research on the local banking market. The World Bank Financial Institutions team, or equivalent teams in the International Monetary Fund, KfW, U.S. Agency for International Development (USAID), U.K. Department for International Development, and many others, may have research available on lending in a local banking market or have dedicated locally or globally based staff who can offer information on the need and interest of banks to lend to new clients such as water utilities.
- *Private-sector-focused development institutions*, such as the International Finance Corporation (IFC), Deutsche Investitions und Entwicklungsgesellschaft (DEG), and Proparco, often lend to commercial banks and have a deep understanding of what banks can and will do. A conversation with an IFC Financial Markets Group investment officer is an excellent source of information.
- *Banking associations* (often called *bankers associations*) help guide and speak for the local bank market and can provide insight on market interest and current lending to the water sector as well as guidance on which banks would most likely be interested in the water sector.
- *Regulatory bodies* for the water and financial sectors can also be helpful. A central bank's bank supervision department is responsible for creation and enforcement of laws, regulations, and guidelines that govern the banking sector, the inspection of bank operations, and the introduction of new initiatives to promote financial inclusion.

Also consider the following survey questions to establish need, interest, and support validation for banks:

- Does the bank currently lend to water utilities? If not, ask about any possible overdraft facilities or asset finance lending; these types of short-term loans could lead to longer term, higher risk loans.
- What is the bank's view of credit risk in the water sector? Why?
- What is the bank's understanding of how the water sector is structured?
- Has the bank financed other public infrastructure projects (roads, power, telephony, and so forth)?
- What is the longest tenor of the bank's loans? Can the bank make loans long enough to match the infrastructure life (likely 5-10 years at minimum)? Are any guarantee products available to extend tenor?
- Is there any policy (in-house or governmental) preventing the bank from lending to water utilities?
- What would be the estimated interest rate for water utilities? This is composed of the base rate plus the client spread. Be sure to get the breakdown.
- Does the bank have any loans backed by subsidies or credit guarantees?
- Does the bank have any loans that are not backed by collateral and are based on cash flows and other structures?
- Do regulations or the in-house policy of the bank allow it to lend to the sector? What is the bank's knowledge of risk mitigation products and does it use them?

FIGURE 1.1. Water Sector Lending Development Matrix



Source: Adapted from Virjee 2008.
 Note: PCGs = partial credit guarantees.

group heads are a better representation of the interests of the bank. It is often difficult to get access to risk and credit committee members. However, they are responsible for approving counterparty risk and will provide a better view of the bank’s opinion.

Capacity to Do a Deal

The capacity of all three stakeholder groups will need to be assessed to identify whether the sector and market are ready to begin commercial financing or, if not, to identify what capacity gaps need resolving prior to commencing commercial finance. Figure 1.1 is a matrix of possibilities for the two non-government stakeholders. The ideal market would be in the top right quadrant, with sophisticated

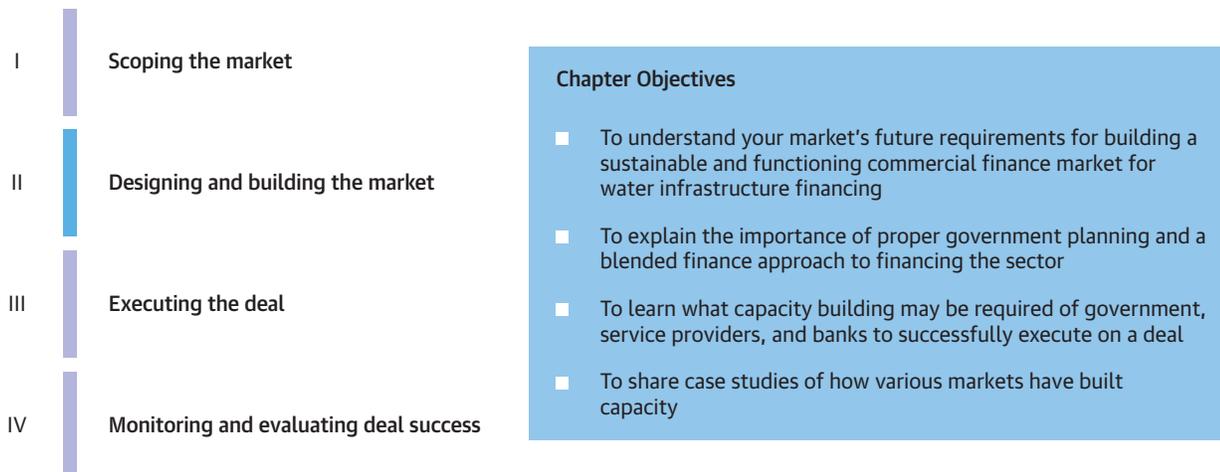
water service providers and a mature financial sector. This is the destination local markets should aim toward. Increasing the maturity of the financial markets is beyond the scope of this guidance note. However, most countries have sufficiently mature banks that, if interested, only need to understand the workings of the water sector and cash collateral lending in order to lend.

Notes

1. For a sample water utility financial model from the Kenya regulator, see WASREB 2015. <http://www.wasreb.go.ke/images/Downloads/Financing%20Model%20for%20WSPs.xlsm>.
2. For more information on creditworthiness, ratings, and criteria, see USAID n.d.

2. Phase II

Designing and Building the Market



This chapter provides guidance on the establishment of the foundation of the market environment required to facilitate commercial finance in the water sector. As discussed in the introduction, the key market requirements for commercial lending are (1) creditworthy borrowers with commercially viable projects, (2) knowledgeable and willing lenders, and (3) a supportive public sector with a supportive legal framework. Comparing the initial market assessment resulting from the previous phase with the market requirements for commercial lending in this chapter will result in identification of the gaps in the market. Filling these gaps will be the strategy to create access to commercial finance in the water sector. Figure 2.1 shows the role of each stakeholder.

The chapter begins with the caveat that building capacity may take time and some stakeholders will likely require more capacity enhancement than others. The first section provides stakeholder-by-stakeholder guidance on understanding whether commercially viable projects exist in the market. This is followed by an assessment of the legal and regulatory foundation to establish whether local banks can lend

to the sector borrowers and that service providers can borrow. This section also addresses solutions to building capacity (toolkits, financial models, and so forth) and risks that stakeholders will not and/or cannot take. Unacceptable risks, and risk mitigation products, for lenders must be identified. The chapter ends with a look at the difference between commercial finance and blended finance.

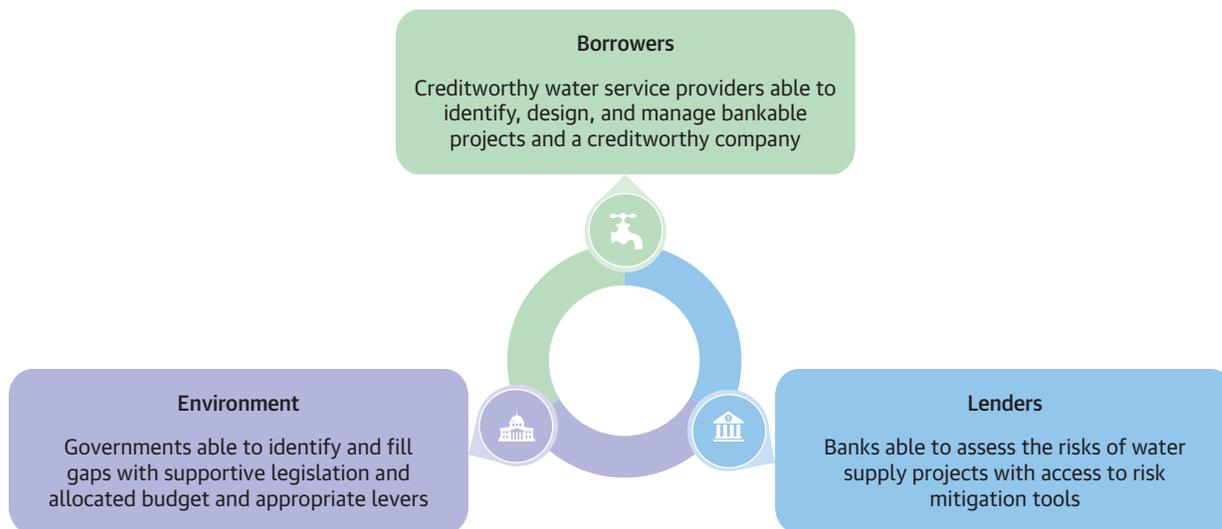
2.1 Understanding the Building Blocks Needed to Facilitate a Deal

Building a Market Takes Time, Capacity, and a Proper Enabling Environment

Even when the market has signaled there is a need and support for commercial financing in water, extensive market building is required to create a sustainable financing market for water infrastructure as opposed to obtaining a one-off commercial loan.

When developing markets, it is important to avoid *market asymmetry*. Increasing stakeholder capacity and introducing new products, including laws, regulations and risk mitigation products, is time consuming

FIGURE 2.1. Water Sector Stakeholder Capacity Needed to Enable Commercial Finance



and could result in advantageous market knowledge asymmetry (greater capacity or knowledge of one stakeholder over the others), which could result in inefficient market pricing. Technical assistance for addressing introduced concepts should be made available for all stakeholders, not just the stakeholder directly benefiting, and should be, at least eventually, targeted toward multiple players or the entire sector.

The guidance in this section aims to help decode and operationalize changes in the market. This includes covering key action items each stakeholder should take to effectively enable commercial financing for water. Successful implementation of these actions to build capacity will make executing deals in phase III much more likely.

2.2 Government: Designing Policies and Programs to Enable Deals

Governments cannot fully guarantee commercial borrowing, as this would simply result in more public financing and neither increase sector financing nor increase sector capacity by passing risk on to service

providers and investors. Basically, government liability for directly borrowed funds (for example, concessional loans or treasury bonds) and guarantees given for other borrowers is the same. A loan for a separate entity (such as a water service provider) fully guaranteed by the government is a liability and therefore simply additional public debt. However, when introducing commercial borrowing into the sector, a common first step often utilizes full guarantees (increased public financing) and then gradually reducing the government guarantee as lenders become more familiar with the sector risk.

Improving the viability of projects and creditworthiness of borrowers lowers the risk of default but creates a risk of donors, and sometimes governments, crowding out local banks. Donors are attracted to low-risk projects and may attempt to finance the pilot projects, crowding out commercial financing. Sponsors of the pilot projects, despite their interest in advancing the sector, prefer to take donor concessional financing due to its lower cost (interest) and better terms (for example, longer tenor and payment grace period).

Capacity of Government

Public sector stakeholders, the ministries, the regulator, and local governments must be clear on their involvement in commercially financing the sector. The finance ministry, if required, will likely have sufficient capacity to understand and play whatever role is necessary. The key issue is to identify any potential contingent liability of the finance ministry and obtain official documentation and agreement on any role and obligation as early as possible. The finance ministry will clearly understand the benefits and risks of new sources of finance and is often supportive of the concept of commercial finance.

The water ministry and local government should officially confirm their buy-in and support of commercial finance in the sector. These government entities are likely responsible for setting the investment and financing framework in the sector with the ministry of finance and will likely play a key role in any guarantees and facilitate any required legal changes. Commercial finance should be seen as additional funding for the sector and not as a replacement for sector funding. In order to make significant changes in the available funding in the sector, commercial financing should be a component of a blended finance approach to leverage public funds.

The regulator, or regulatory arrangements, can play a key role in building capacity for the management of the water service providers, mainly via trainings and reporting via comparative indices. Creating comparison and competition in the sector via benchmarking can incentivize the sector to increase capacity and efficiency. There are many local and global benchmarking tools focusing on operational performance.¹ Regulators often provide technical and operational management benchmarking analysis and publication. However, to be well-run service providers, utilities also need to focus on improving their financial management skills, particularly when seeking commercial finance.

Regulatory and Institutional Reform

This subsection provides guidance on the legal, political, and regulatory considerations required to enable the adoption of commercial finance for water service providers.

Review laws, acts, and regulations to identify the legality of borrowing. The legal framework may not be conducive or even be unfavorable to commercial lending in the sector. Assessment and analysis of the legal framework will require analysis and opinion of a legal advisor or local attorney. The outputs should include confirmation of the legality to borrow or identification of barriers to borrowing and solutions to overcoming these barriers. In the event that major changes are needed to laws, acts, or regulations, the ministry and regulator should be involved in the hiring of the legal consultant. Public-private partnership (PPP) frameworks and related laws often address similar challenges concerning commercial finance in infrastructure. Legal reform for commercial finance might be supported by previously enacted PPP laws.

Create formal separations of the water company and its revenues from that of the government (as owner). The political environment may be a challenge, as governments may see water tariffs as public revenues and use the water sector to finance the public budget. Technical assistance may be required to achieve buy-in from government to legally *ring-fence* the water sector in order to ensure all revenues from the sector remain in the sector or even in the utility. Ring-fencing of the utility may already be in place. If not, it may take considerable time to achieve. However, without ring-fencing, lenders will not trust the independence or reliability of cash flows of the water service provider. Moreover, if there is no clear legal separation of the service provider from the government, then the borrowing by the service provider would be considered additional public finance.

Ensure proper regulatory oversight arrangements of the water company and pricing. The regulator's capacity (whether a formal regulator or the

oversight arrangements in the government) is essential to commercial financing. As utilities are often public or quasi-public entities that are neither profit seeking nor driven by shareholder returns, lenders need to lend to well-regulated companies. Being a public good run by monopolistic companies, the water sector service delivery must depend heavily on regulation. Both performance and price (tariffs) must be regulated. The sector regulator must provide ample oversight of service provision as well as approve commercially viable tariff applications in a timely manner. The regulator must have clearly developed transparent guidelines for setting tariffs. The tariff should be able to provide adequate income to the utilities to meet performance obligations, including operating and maintenance (O&M) expenses and financing cost of infrastructure. For utilities that borrow commercially, tariffs must be set to recover O&M costs plus full amortization (interest payments and repayment of principal) of

WATER FINANCE FUNDAMENTALS

Understanding risk classifications helps identify risks as well as identify the actor best suited to mitigate the risk. Risks are distinguished as being either endogenous or exogenous. All stakeholders should understand that exogenous risks such as political, policy, and social risks are better mitigated by the public sector and that endogenous risks, such as technical and physical risks, are better managed by the private sector. Some risks, such as market and commercial and outcome risks, can be best mitigated by pooling and sharing risk between private and public actors.

the capital costs. See box 3.1 “Setting a Cost Recovery Tariff” in phase III.

A strong regulatory watch dog can help ensure the required performance level of the water companies. A good regulator should transparently report on sector specific operating and management indicators. (See box 2.1).

Key Approvals Needed by Government to Enable Commercial Finance

Governments and regulators must have a clear plan on what approvals they are required to make and are willing to make and the procedure for obtaining such approvals. Most of

these approvals will be obtained by the water service provider. However, lenders should understand these approvals as well as how the approvals are processed and documented. Common approvals required from the public sector are summarized in table 2.1. Usually, any exemptions or limitations created to support commercial financing need to last only for the life of the loan.

Management and Mitigation of Risks to Enable Commercial Finance

All stakeholders must have a solid understanding of the risks involved in financing water projects with commercial financing. Due to the unfamiliarity of lenders with the sector, the creditworthiness of the borrowers, and the political interference in the sector, many risks involved in lending to the water sector cannot be hedged via the market. Understanding this and having risk mitigation tools available is essential.

There are many tools available to remove specific risks. However, these products take time to set up and often require technical assistance and training. Banks and governments may be familiar with risk mitigation tools available in other sectors (for example, health and agriculture). The USAID Development Credit Authority’s partial credit guarantees, for example, which have been used for commercial borrowing in the water sector, are used by banks in many countries for many other sectors.² Banks may be familiar with the product but not with how guarantees work in the water sector.

At this stage, it is essential to assess what, if any, risk mitigation tools are needed; what are available; and how much banks, service providers, and government entities understand such tools. It is then necessary to create a strategy and timeline for introducing any new products.

Identifying and Developing Risk Mitigation Tools

Successfully introducing commercial lending to a new sector that is unable to use the common collateral-based lending structure (where loan default is

BOX 2.1. Regulatory Benchmarking for Commercial Finance

There are global benchmarking sites, such as the **International Benchmarking Network for Water and Sanitation Utilities** (IBNET), and some good quality local benchmarking instruments, such as the **Kenya Water Services Regulatory Board's impact reports**. Most benchmarking and indexation in the water sector focus on operational and technical indicators. These are important for lender due diligence, but lenders require financial and credit analysis as well. Lenders, borrowers, and regulators can greatly benefit from financial and creditworthiness indexation. However, this reporting is not often provided by regulators. Regulators are often unfamiliar with financial benchmarking and require technical assistance to establish credit indexing.

There are multiple levels of assessing credit, from creditworthiness indexing to shadow ratings to credit ratings.

Governments (usually regulators) can develop a uniform set of creditworthiness standards for water utilities by facilitating partnerships with credit rating organizations. For example, the government of the Philippines established a water district credit rating system, which classifies districts as creditworthy, semi-creditworthy, pre-creditworthy, or not creditworthy. Creditworthy water districts are ready for investment, whereas less creditworthy districts are seen as opportunities for technical assistance targeted to address their weaknesses.

In 2015, the Kenya Water Services Regulatory Board (WASREB), with technical assistance from the World Bank, created the **Creditworthiness Index** report covering the top 40 water service providers (WASREB and WSP 2015a). The **Creditworthiness Index** evolved out of a sector-wide Kenya water utility shadow rating report, *Financing Urban Water Services In Kenya: Utility Shadow Credit Ratings* created by WASREB and the World Bank in 2011 (Kimani et al. 2011). Shadow rating reports are difficult for regulators to sustain as they are expensive, require significant expertise, and must be maintained on an annual basis. Normally, credit ratings and shadow ratings report costs are incurred by the borrower. An initial shadow ratings report can increase interest from all three stakeholders and establish a market interest in creditworthiness reporting. However, a self-reported and automated creditworthiness index managed by the regulator is more affordable and therefore more sustainable.

TABLE 2.1. Approvals by Government to Enhance Commercial Viability of Water Infrastructure Projects

Extension of license	The license to provide water and sanitation service delivery (if there is one) must be extended to match the life of the loan.
Ability to borrow	If required, service providers will need legal approval to take on debt.
Ring-fencing of companies	Lenders will not allow cash flows to leave the company unless predetermined in a legal agreement. Mandatory payments, such as regulator fee, asset lease fee, and even O&M costs can be paid but must be agreed to in advance. If dividends are paid, which is uncommon in non-private companies, all debt-service and debt-service coverage requirements must be completed prior to payment (see "Waterfall" under 3.2 Step Two phase III).
Legal ownership of cash flows	Many governments retain ownership of all assets. Note that the most important asset in borrowing is cash. In order to receive borrowed funds, repay debt, and establish debt-service reserve accounts, water companies must have legal control over the cash in the company.
Ownership or retention of assets	If the water company does not own assets, an exemption may be required to allow the company (or the lender) to retain ownership of the assets purchased for the project being financed.
Allow increase in tariff	Often service providers may require a rise in the tariff to service debt payments. The approval to raise tariffs, immediately or in the future, must be obtained prior to lending.

supported by a pledge of other assets, such as land, as collateral) depends on using multiple types of enhancement products. A number of mechanisms designed to overcome these stakeholder constraints and obstacles are available. The most common risk management mechanisms include output-based aid subsidies, partial credit guarantees, dedicated credit lines, credit ratings, legal and regulatory policy, and technical assistance.³

Risk mitigation tools, if used correctly, can greatly help with making the structure of debt commercially viable and make lending possible. The main benefits resulting from these products are reduction of counterparty risk, extension of tenor, reducing the size of the amount borrowed, and potential rearrangement of the payback structure.

Risk mitigation products are most helpful in structuring debt when the parties involved fully understand and can identify the different risk components. The better the identification, and if possible quantification, of the risk, the easier it is to find the right mitigation tool and to price the benefit of the risk mitigation. All risk products come at a cost. Someone—borrower,

lender, or government—has to incur this cost. Effort should be made to ensure all three stakeholders fully understand the following:

1. The cost of the mitigation tool
2. Who is paying for this cost (It may initially be one party and passed to another party.)
3. How the cost and benefit of the risk mitigation affects the cost of borrowing (interest rate)

Banks in developing economies often have some knowledge of or experience with risk mitigation tools. It is important to ensure that borrowers also understand these products in order to avoid an asymmetrical knowledge between lender and borrower. Arrangers of risk mitigation tools—donors, governments, or financial institutions—often charge for these products. It is important to ensure that lenders who pass on the cost of the risk mitigation to the borrower also incorporate the lower risk into a lower corporate spread and overall interest rate. The key risk mitigation tools are illustrated in figure 2.2. Risk mitigation tools and strategies are covered in more detail in phase III.

FIGURE 2.2. Key Risk Mitigation Tools

Government tools can expand access to commercial finance					
Tool	Output-based aid	Credit guarantees	Credit assessment	Technical assistance	Dedicated lending
					
How does this tool expand access to commercial finance?	Gives lenders greater confidence in the cash-flow potential of borrowers	Makes risk of default more tolerable to lenders and can reduce risk of default in some cases	Helps lenders understand borrower risk and borrowers establish credit histories	Helps service providers overcome capacity constraints that can be barriers to borrowing	Encourages financial institutions to lend or increase lending, especially for SMEs

Source: Bender, 2015.

Note: SME = small and medium-size enterprises.

2.3 Banks: Building Capacity to Do Deals

Banks are capable of assessing the creditworthiness of corporate borrowers and projects and will likely understand the legality and regulatory restrictions of lending to new clients. However, even in reasonably sophisticated markets, lenders will often need technical assistance to understand the water sector structure, related risks, and business models. Banks will likely be unfamiliar with the industry and water and sanitation projects and lack the knowledge to assess the technical merits of a project proposal. It is important to focus on what makes water service providers different from their existing SMEs/corporate clients.

Differences of Water Service Providers from Other Banking Clients

The key difference of the water sector for lenders stems from the fact that water service providers may not have assets with collateral value. The assets used in service delivery are often not owned by the company and have low resale value. For example, pipes buried in the ground would cost more to remove and sell than they are worth. Therefore in lending to the water sector, banks will need to commit to lending on cash flow collateral, as opposed to fixed asset collateral, and rely more heavily on:

1. Due diligence on the creditworthiness of the water service provider
2. Legal control over the cash flows of the company
3. Risk mitigation products to reduce lending risk

Technical Assistance can help water service providers identify bankable projects, design and implement internal controls to be considered creditworthy, apply for loans, and manage projects once funded. Likewise, technical assistance may also be needed to help lenders to understand household willingness to pay, particularly for poor households. Banks do not often realize that the poor often pay dramatically more for water from informal private vendors than the prevailing tariff rate. Understanding willingness to pay will give commercial lenders greater confidence in the revenue-generating potential of a project, and encourage reduced collateral requirements, extend tenor and/or lower cost of borrowing. See link to the toolkit for commercial banks in box 2.2 for an example of a toolkit for banks lending to the water sector.

How technical assistance helped various stakeholders overcome constraints in commercial finance for the water sector is illustrated in box 2.3.

BOX 2.2. Commercial Finance in Action: Kenya

Community Loans to Utility Commercial Loans

The Water and Sanitation Program of the World Bank began to work with a local microfinance institution, K-Rep Bank, to explore structures under which a commercial financier would be interested in providing loan finance to small community-based water providers. The work evolved into a similar program facilitating commercial bank loans to urban water utilities.

box continues next page

BOX 2.2. continued

In 2006, K-Rep Bank introduced the Maji ni Maisha community loan program for communities with high willingness and ability to pay for clean water access. The program offered a blend of commercial finance and an output-based subsidy that was developed specifically to finance water infrastructure in rural areas. The average size of K-Rep's loans was US\$110,000, with an equity requirement of 20 percent of project costs contributed by the community. Once the infrastructure was successfully completed, an output-based aid (OBA) subsidy of up to 40 percent of the total project cost (often 50 percent of the borrowed funds) was provided to the community by the Global Partnership for Output Based Aid (GPOBA). Additionally, the bank offered technical assistance to make the projects more viable and provided a small grant of US\$9,000 to help communities cover the cost of consultants hired for the development of a feasible project proposal. Once the project received approval, K-Rep provided a subsequent grant of US\$12,600 to pay for consulting, oversight of project construction, and management systems set up. In addition, K-Rep bank obtained a 50 percent Development Credit Authority (DCA) guarantee from USAID on the loans. From 2006 to 2014, K-Rep Bank and the Water and Sanitation Program worked together to make 35 loans valued at over US\$3 million for water projects across Kenya's rural communities, providing water services to over 190,000 people (WSP 2011).

In 2015, the Water and Sanitation Program established a GPOBA \$9.5 million OBA subsidy for urban water utilities, financing water and sanitation projects in poor areas with funding from commercial banks. The subsidy is implemented by the Water Services Trust Fund of Kenya and included US\$1.3 million in technical assistance to help borrowers hire local consultants to assist in loan application, technical design, and business modeling. The lending is supported by a DCA guarantee from USAID to three local banks covering 50 percent of the default risk. So far, the subsidy has supported US\$2.6 million in loans from banks for water projects in poor areas. The Water and Sanitation Program also collaborated with the regulator, Water Services Regulatory Board, to create water sector commercial borrowing toolkits for each stakeholder group:

Water service providers: <http://wsp.org/sites/wsp.org/files/publications/WSP-Toolkit-Commercial-Financing-Water-Sanitation-Kenya.pdf>.

Commercial banks: <https://www.wsp.org/sites/wsp.org/files/publications/WSP-Lenders-Toolkit-Commercial-Financing-Water-Sanitation-Kenya.pdf>.

Local governments: <http://wsp.org/sites/wsp.org/files/publications/WSP-Manual-Commercial-Financing-Water-Sanitation-Sector-Kenya.pdf>.

The success of these programs has demonstrated that a combination of technical assistance, output-based grants, and partial-loan guarantees can mitigate credit risk and improve water projects' access to commercial finance.

Lessons learned

- A combination of technical assistance and other credit enhancements can mitigate credit risk and increase interest of commercial investors.
- Output-based subsidies can be leveraged to secure co-financing from the private microfinance and banking sector.
- Investing in community water projects can be viable for commercial banks.

BOX 2.3. Commercial Finance In Action: Uganda

Confirming Market Readiness: Commercial Bank Loan

In Uganda, the government relies on private service providers to assist in getting access to clean water to the local population. However, public funds to support these service providers is limited, and small to medium-sized private operators are often unable to get financing from local banks to maintain and/or grow their operations.

To increase the flow of funds available for water infrastructure projects, the government collaborated with Public-Private Infrastructure Advisory Facility and the IFC. Together they reviewed the financing opportunities and challenges faced by service providers, and developed alternative financing models to appeal to both lenders and borrowers. In addition, the IFC implemented training sessions, which introduced the Uganda Small-Scale Infrastructure Provider (SSIP) Water Program to local banks. The training explained the operation of private water projects and addressed the weaknesses in the area of contract administration.

As a result of these efforts, 70 representatives from local authorities participated in training programs for public sector stakeholders and two commercial lenders expressed interest in funding prequalified bidders for a tender in Busembatia, one of the small towns in the SSIP Water Program (World Bank 2011). The loans also included an OBA component provided by GPOBA. In 2010, the first five-year management contract was awarded to a private operator, Transit Limited, which was able to receive a loan from DFCU Bank, a Ugandan commercial bank, for US\$100,000, alongside a US\$270,000 required subsidy (IFC 2012, 20).

Lessons learned

- Governments can help commercial banks assess market readiness and overcome reluctance to lend to the sector.
- Government incentives offset perceived lending risk of private service providers.
- The IFC's relationship with local banks can be used as a model for developing risk-sharing products.

2.4 Borrowers: Building Capacity to Take on Commercial Finance

The main capacity challenge for borrowers will likely stem from utilities' lack of familiarity with commercial borrowing and commercial management techniques. However, overcoming commercial management challenges will also be one of the greatest gains to the sector. Service providers will need to have a basic understanding of the commitments, liabilities, and benefits of commercial

finance and have an interest in pursuing commercial finance. Technical assistance can help water service providers identify bankable projects, design and implement internal controls to be considered creditworthy, apply for loans, and manage projects once funded.

In order to borrow, service providers need to operate and manage their businesses in a sound manner with good governance and financial performance—similar to what might be expected from the private sector.

Box 2.4 is a checklist of things to look at when evaluating a utility's capacity to borrow. The first step is to verify whether service providers are making a profit or at least breaking even (covering costs). If a utility cannot meet its costs, it cannot service debt and therefore cannot borrow. A loss-making institution, however, could result from poor management or

strategy or simply from an insufficiently low tariff. It is important to understand the reasons for the loss. Poor billing and/or collection rates are key concerns, as these ratios directly affect revenues. Operating cost coverage ratio (revenues divided by total O&M costs) is a good indicator of the company's strength and ability to cover costs.

BOX 2.4. Commercial Finance Toolkit: Checklist to Assess Water Service Provider Capacity to Borrow

- **Corporate governance.** The company has structure and independence of the board of directors (to limit unwarranted political interference), and appropriate ownership and shareholder structure.
- **Business planning.** Borrowers can create basic financial plans and model to analyze and stress test IRR of cash flows (including revenue projections and needed tariff hikes), cost projections including fees, staff costs, electricity and chemical costs, tax analysis and benefits, and coverage ratios (O&M coverage, current ratio, collection ratio, and so forth).
- **Ratio and operating analysis.** The company can show the volume of water produced, billing and collection ratios, nonrevenue water, coverage or metering ratio, bad debt provision, and staff per 1,000 connections, and ratios can be checked against global or similar markets at IBNET.
- **Tax payment status and benefit.** The company includes a tax benefit and a cash and cash flow benefit of depreciation in financial models since many service providers do not make a profit and do not incur tax liabilities.
- **Technical reports on projects.** The borrower has the finalized technical designs stating the total cost of the project and these are approved by the technical team with the necessary statutory approvals.
- **Legal status.** The service provider is a corporate body that has borrowing powers stipulated in the memorandum and articles of association, the license to provide service should be valid over the life of the borrowing period (or extended), the tariff rate should be approved (likely by the regulator), and the service provider should have valid abstraction permits.
- **Tender of awards.** The service provider should have made a decision on whether it is to implement the project or not. The service provider should have tendered and awarded the project to a competent and capable contractor.
- **Approved business plan and tariff.** The service provider should have an approved business plan that is in line with the strategy of the organization. As well, any required increase in tariff should be approved.
- **Analysis of banking needs.** The service provider should carry an internal assessment on its funding needs for the project period so that they do not create a strain.

Developing a Strong Business Plan

The service provider must prepare an up-to-date business plan clarifying how the specific project fits within the overall business plan of the utility. A business plan is simply a comprehensive document

describing a company's business goals and description of the process to achieve those goals. The business plan should include how the project fits in the plan to achieve these goals. The components of a business plan are listed in box 2.5.

BOX 2.5. Commercial Finance Toolkit: Components of Water Company Business Plan

The business plan typically contains six components (Sauvant et al. 2002):

1. Mission and vision of the company and the objectives to achieve
2. Targeted markets and clients and/or services to provide
3. Qualitative and quantitative results expected to achieve
4. Human resources, infrastructure, equipment, and raw material resources needed
5. Technical, organizational, and administrative processes to be followed:
 - a. Description and concept of project, with justification and viability of project
 - b. Maps of areas and infrastructure, including pro-poor areas specifically if subsidized
 - c. Technical plans and proposed implementation plan
 - d. Bill of quantities cost review
 - e. Social and political soundness, including poor area identification and analysis of customer willingness and ability to pay
 - f. Environmental factors and assessment
6. A financial model of cash flows and how those cash flows will service debt—including stress-tested scenarios of rising interest rates and any subsidy shortfall:
 - a. Revenue and cost analysis
 - b. Support mechanisms, such as government financing, guarantees or subsidies
 - c. Financial model demonstrating financial sustainability (positive net present value discounted at likely market rates and payback and breakeven periods) covering the following parameters:
 - Total estimated cost of the project, including financing costs and therefore interest rates
 - Financing of the project in terms of its capital structure and debt-equity ratio
 - Tariff adjustment schedule
 - Projected cash flow or profitability, including sensitivity analysis of the company's repayment capability in the event of time delays, reduction of sales, cost overruns, impact on the overall tariffs, and financial viability, including debt service

The business plan should be based on historical data and describe the present status of the company. However, the end purpose of the business plan is to present a picture of the future goal and the pathway to get there. The plan usually looks ahead three to five years. The components and strategy of the company business plan should link with the local (and national where applicable) government strategy and needs.

The business plan created for a bank to review for financing should be a relatively detailed report covering the services rendered, production capacity, market and clients, human resources, organizational structure, requirements in respect of infrastructure, financing requirements, and sources and uses of funds.

Quite often a cash shortage results from a mispriced tariff or a fixed tariff that cannot adjust to cover increasing costs that rise with inflation. As loans will be repaid, usually exclusively, by the revenues of the company, management must be willing and able to increase tariffs. Banks might demand initial tariff increases, future preapproved scheduled tariff increases, or automatically adjusted tariff increases. Even if an initial tariff hike is not required, the borrower must demonstrate its ability to raise tariffs in the event it cannot meet its debt service. As noted earlier, government entities and service providers are often reluctant to raise tariffs. However, tariff increases are usually the only recourse available for fixing a cash shortage in the company and require government approval.

Corporate governance practices will be required by banks and can be a good indicator of the soundness of a company. Utilities should have vision and mission statements and create and adhere to a multiyear business strategy with time-bound goals. A diversified board of directors with the power to oversee the management and with a reasonable level of independence from political interference is ideal. Other indicators to look for are the presence and use of

human resources and standard operating procedure manuals.

Finally, it is important to identify the “sponsor” of the borrowing. A sponsor is the person who will drive the borrowing process and ensure the debt is serviced on time. Often the sponsor is either the CEO or the finance manager of the company but could be the chairman or even someone from local government.

Using Financial Models in Decision Making

A financial model⁴ is a spreadsheet tool (such as Excel) that projects and forecasts future cash flow outcomes of a project or company based on a defined set of assumptions. Models are standardized to allow all users (lenders, borrowers, and regulators) to benefit from the decision-making tool. Models verify the viability of a project and identify shortfalls that make a project unviable and are helpful in demonstrating the benefit of risk mitigation products in the financial structure.

Financial models are a valuable management tool and are used for a variety of reasons during the financing lifecycle, including the following:

- Determining the effect of different assumptions (interest rate, inflation, costs, and so forth) on the return of a project—models are often stress tested under certain negative scenarios to show a project or company can survive a reasonable downturn (increased inflation, rising interest rates, shortfall of product to sell, and so forth)
- Analyzing the structure of financing, including cost of capital and use of risk mitigation products
- Demonstrating the project’s ability to increase cash flow at given costs
- Analyzing key accounting ratios of performance: quick ratio, current ratio, debt-service coverage ratio (DSCR), and so forth

- Demonstrating borrowing capacity of the company or project and identifying the required tariff increases

Financial models benefit all key stakeholders, albeit at varying stages of the financing lifecycle. Figure 2.3 summarizes the key benefits of developing a solid financial model with transparent and dynamic scenarios to each stakeholder.

Due to the importance of the business plan and financial model in appraising the financial viability of a project, companies often hire a financial and technical consultant to assist in developing a business plan and model that may be used in the loan application process. The challenge for consultants creating financial models for companies is to make the financial model sophisticated enough to provide useful analysis and guidance while keeping the model simple

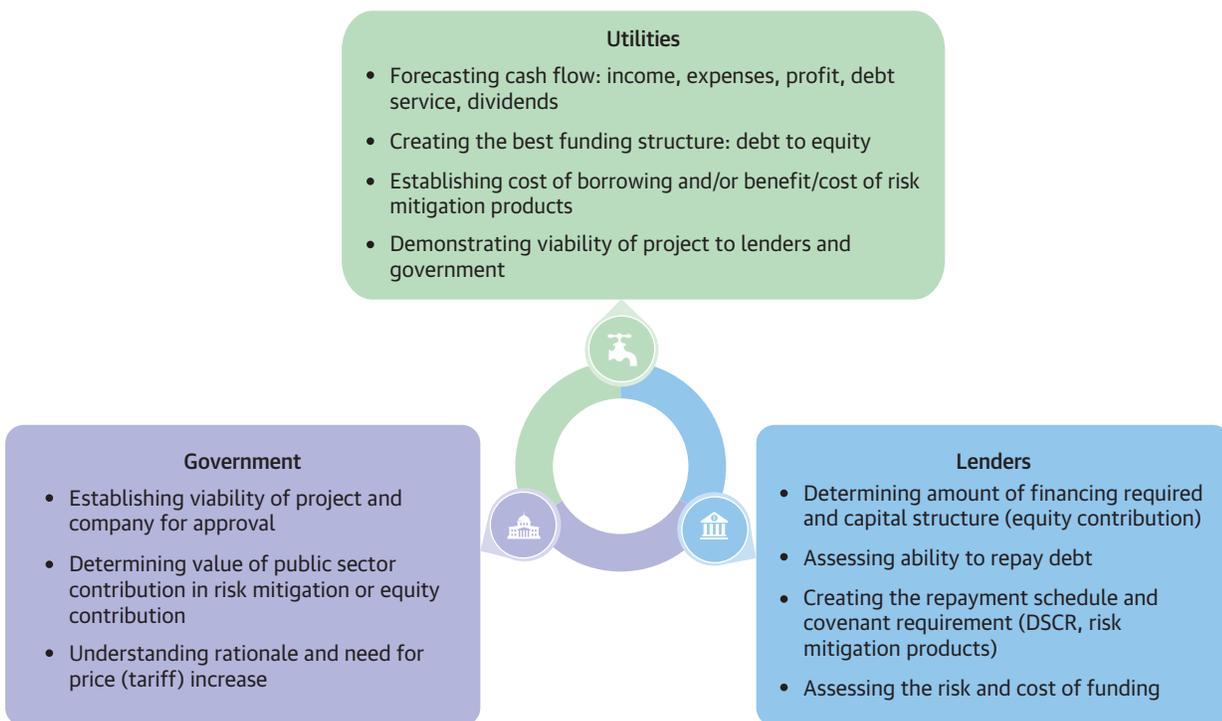
enough for nonfinancial specialist managers and bankers to use.

2.5 Blended Finance Compared to Commercial Finance

Blended Financing Is a Coordination of Public and Private Capital

Blended finance refers to public budget funds (loans, guarantees, or grants) invested alongside private sector capital (including commercial financing). Blending public or donor funds can catalyze commercial investments that would not otherwise happen. Box 2.6 gives an example of this from the Philippines. Blending is done to accelerate development impact. Governments can source concessional funds from the public budget or donor facilities. These funds are different from a subsidy in that they are directed to overcome a specific *market* barrier, often to make projects commercially viable for

FIGURE 2.3. Benefits of a Financial Model for Stakeholders



BOX 2.6. Commercial Finance In Action: Philippines

Bridging the Funding Gap with Blended Finance

Water utilities in the Philippines traditionally relied on government funding to support infrastructure development and maintenance. Due to limited public funds, however, the government became increasingly motivated to support market-based financing for creditworthy water utilities.

To achieve this goal, the government of the Philippines supported the creation of the Philippine Water Revolving Fund (PWRF)—a program funded by USAID and Japan International Cooperation Agency. PWRF was designed to blend public funds, official development assistance, and private sector financing to expand access to clean water. Through this innovative mechanism funds are pooled and lent to water providers through the Development Bank of Philippines alongside commercial loans. The goals of PWRF are to extend loan tenors from 7–10 years to 15–20 years and offer more affordable pricing terms. Additionally, USAID leveraged its Development Credit Authority (guarantee) to crowd-in commercial finance.

By introducing private financing due diligence to the water sector, the projects selected to date have been thoroughly vetted and have helped utilities develop business plans for commercial success. PWRF has helped 16 water supply projects access US\$57 million in private finance and an additional US\$37 million in public funds (Paul 2011). Ten of the projects have been funded with 90–100 percent commercial finance. Partial credit guarantees, covering up to 50 percent of a loan value, have been utilized on 14 projects; one was able to extend a loan tenor from 10 to 15 years.

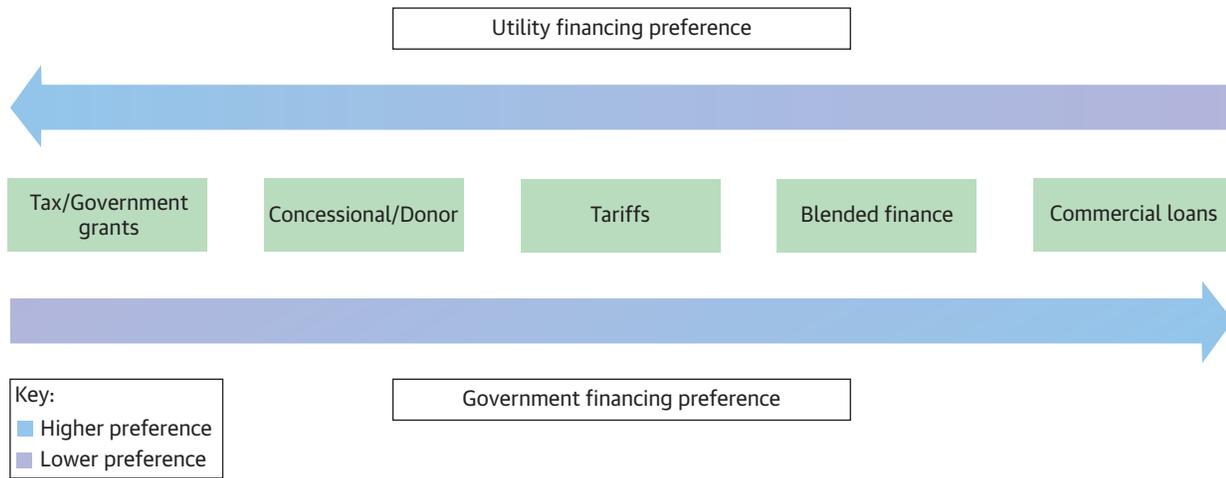
Lessons learned

- Blended finance leveraged over US\$1.5 dollars in private capital for each dollar funded through PWRF.
- Credit enhancements such as partial credit guarantees can improve the bankability of a water project and act as a substitute for traditional collateral for cash-flow-based lending.
- Financial mechanisms can be paired with technical assistance. The fund also assisted lenders with training on how to evaluate the technical, regulatory, and financial aspects unique to the water sector. This increased confidence in banks to measure project viability.
- Water sector reform is effective as a package: blended finance, water utilities strengthening, regulatory reform, and stakeholder coordination were used simultaneously to create impact.

commercial lenders. Governments must have a policy to allocate some budget funding and/or source donor funding to facilitate blending. Blending can greatly expand the use of commercial finance in the water sector, as blending facilitates the use of commercial finance for projects that are not fully commercially viable.

A blended finance model requires changes in the way the government provides financing for water, utilities access financing, and banks engage the water sector. Implementation of a sustainable blended finance model will happen only if government, utilities, and banks work in concert.

FIGURE 2.4. Spectrum of Financing Preferences by Stakeholder



However, government and service providers often have conflicting preferences for private and public funding (see figure 2.4). For example, a water company will not prefer to seek out difficult and expensive commercial financing unless it is incentivized to do so and would rightly go for the cheapest and most convenient option. A government, on the other hand, will want to utilize as much commercial finance as possible to preserve public finance for the most urgent needs and reduce public debt liability. However the sector must maximize the use of public, commercial, and blended financing. Therefore, in order to maximize benefit, governments must create and depend on sector financing plans to drive water companies to borrow whenever possible.

Use of a Sector Financing Plan to Incorporate Blended Finance and Maximize Financing

Government planning plays a key role in facilitating (and maximizing) the use of commercial financing in the water sector. Local and national governments may be actively involved in many components of commercial finance, such as approval of borrowing, sector strategy and financing plans, contributions of equity and grant investments, blending of public funds, and guarantee commitments. It is important to ensure that

governments have sufficient capacity to incorporate commercial financing into sector investment plans and create sector financing plans that identify and prioritize infrastructure projects based on the source of financing: public, commercial, or blending.

Sector financing plans allow the utility, ministry, and local government to identify the commercially viable (or partially commercially viable) projects and are critically important in protecting commercially viable projects from being financed by government or donor grants or financing and crowding out local banks. Donor and government funds, unlike commercial lenders, have higher risk tolerance and are able to incorporate social and economic benefits in the return profile.

The sector financing plan can identify the appropriate commercial tariff needed to help finance infrastructure needs and identify the potential for blending two or three financing sources to make

WATER FINANCE FUNDAMENTALS

Sector financing plans categorize projects in the sector investment plan by the source of financing, identifying which projects are commercially viable, which must be funded with public funds, and which can be partially financed with commercial funds with the support of public funds (blending).

projects partially commercially viable and partially commercially financed. Later this paper focuses on various financing mechanisms that enable blending of funding sources.

The sector financing plans must be created from the sector investment plan or capital investment plan. Therefore, the ministry should ensure that a detailed investment plan exists and has buy-in from all sector players (ministries, service providers, regulator, local governments, and so forth) before the sector financing plan is created. The investment plan should prioritize all projects in the investment plan and include high-level details and costing of all short-, medium-, and long-term projects.

In order to create a valid sector financing plan, the sector investment plan should include the following:

- High-level water and sanitation supply and demand forecast
- Assessment of operational efficiency
- Technical evaluation of current service provision and development needs
- Short- and medium-term investment plan, including costs
- Financial and economic analysis

In order to work properly, sector financing plans must

- Have buy-in from all public sector entities
- Identify commercially viable projects for commercially viable borrowers (utilities)
- Calculate and allow for required tariff increases
- Restrict public financing for commercially viable projects
- Target public financing to blended financed projects

Notes

1. See IBNET 2015; and WASREB's "Impact Reports," <http://wasreb.go.ke/impact-reports>.
2. See USAID, "Development Credit Authority," <http://www.usaid.gov/what-we-do/economic-growth-and-trade/development-credit-authority-putting-local-wealth-work>.
3. Two key documents for governments to read on risk mitigation products such as guarantees are *Governments Don't Have to go it Alone: Leveraging Public Funds To Attract Commercial Finance for Improved Water Services* (Bender 2015) and *Capital Subsidies Implicit In Concessional Finance: How to Make Them More Transparent and Better Targeted* (Kingdom, Baeumler, and Guzman 2012).
4. For a sample financial model from the Kenya regulator, see WASREB, "Is Water Production Capacity Sufficient for Project?" <http://www.wasreb.go.ke/images/Downloads/Financing%20Model%20for%20WSPs.xlsm>.

3. Phase III

Executing the Deal



Chapter Objectives

- To support proper pre-planning for a commercial finance loan by utilities, banks, and government
- To understand the steps in applying for a commercial loan and the roles of other stakeholders
- To grasp leading practices in commercial loan deal structuring to support a successful transaction
- To appreciate the dynamics of negotiating a commercial loan and the preferences of each stakeholder in the transaction

Phase II covered many of the planning strategies, risk mitigation products, and structures that are likely new to many stakeholders. This chapter, phase III, provides guidance on preparing for and executing a deal once all stakeholders have built capacity to participate in one or more transactions. The chapter also covers the recommended structure for a typical commercial bank loan to a water company.

3.1 Step One: Structuring the Debt Financing

Lending to the water sector often involves a new type of loan for lenders, based on cash flow controls as opposed to fixed-asset collateral and backed with risk mitigation products. Structuring of the loan is very important. The financial model explained in phase II estimates future cash flows and is the key tool in creating the structure.

The reason for debt structuring is to make a loan viable for all stakeholders. However, the stakeholders have different, often conflicting, agendas in structuring. Risk management is a key part of this process. Banks, government, and borrowers have

options to avoid, accept, or share risk via the loan structure. Technical assistance providers can play the role of the honest broker and influence the best allocation of risk and support. The following provides an overview of how each stakeholder will approach the debt structuring process to achieve the best outcomes for themselves.

Note that, due to a bank's familiarity and knowledge of structuring and financial risk products, lenders have an advantage in debt structuring. It is important to ensure other stakeholders have sufficient knowledge or have representation to assist them. In pilot transactions, borrowers will likely require the assistance of financial consultants in structuring and negotiations. This can also be accomplished, or expanded to market practice, via a technical assistance program.

Banks: Assess Risk and Accept It As Needed

Lenders will structure loans to maximize reduction of risk (that is, pass risk on to others) while keeping the cost of borrowing (both interest rate and fees) as high as possible. In addition, lenders will also attempt to pass on as much of the cost of structuring (risk tools and so forth) to another party. This is common and

acceptable practice. However, if the cost of risk mitigation is passed on, so should the benefit. For example, if a lender has established a partial credit guarantee for the loan, it may pass on that cost by making the borrower cover those costs via fees. This is acceptable practice as long as the borrower gets the benefit of the guarantee, such as a lower interest rate or a longer pay-back period.

Borrowers: Show Creditworthiness to Demonstrate Minimum Risk to Lender

Borrowers want to structure loans to minimize the cost of borrowing or extend the tenor of the loan to match the life of the asset. Borrowers should also look to pass on as much risk as possible to another party. However, the only likely party to take risk for a service provider is a government entity (or donor) looking to support the sector.

Governments: Share Risk and Optimize Funds

Governments want to structure loans to minimize their participation and costs. Governments will try to maximize the leverage of public funds, keeping their involvement and exposure as small as possible, in order to free up more public funds for noncommercial projects. However, governments calculate the economic and social benefit of the infrastructure project, not just the financial return as the lenders. Therefore, governments should be willing to play a bigger role in the debt structure to facilitate a larger social benefit. Also, governments are usually aware that overburdening a service provider with risk is not in their best interest.

3.2 Step Two: Optimizing Loan Structure and Risk Mitigation

As discussed, loans made in the water sector depend on risk mitigation mechanisms for security, because banks have limited ability to secure the loan with water infrastructure assets (collateral). This loan structure, which has components of collateral-based lending and

project finance, will likely be new to banks in developing economies. This section describes the structure for water service provider loans used in Kenya and presents the justification for using only revenues, instead of assets, to secure the loans. Figure 3.1 depicts the general structure of a commercial bank loan in the water sector supported by a 20 percent utility contribution (equity), 50 percent output-based aid (OBA) subsidy, and 50 percent default guarantee. Note that the coverage of the guarantee and the subsidy are not cumulative and do not provide a 100 percent guarantee.

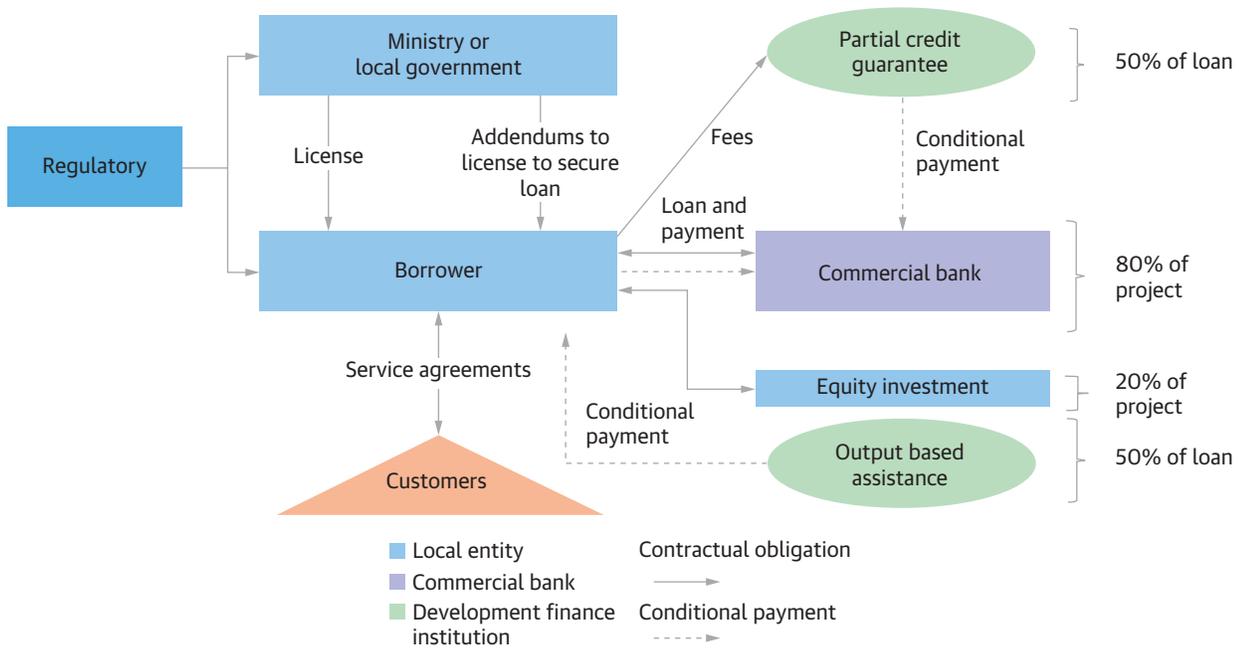
The recommended loan framework drops the asset charge requirement (collateral) and relies on legal control of water revenues to secure the debt. All available company revenues—not just revenues from the financed project—service the debt and/or provide security for debt-service payments. The critical measure banks use to determine their level of comfort is the debt-service coverage ratio (DSCR), which is described more in step six.

Capital Structure

Most often the lending institution will have requirements for how much of the project can be financed by borrowed funds. Usually banks require borrowers to finance 20 to 40 percent of the project costs (not from borrowed funds). Therefore the service provider will need access to other funding. This contribution, sometimes called *equity*, is difficult for water service providers to meet. Often local government or ministry funds are needed to cover this investment, as service providers operate on cost recovery tariffs and may not have surplus cash. However, banks are sometimes flexible on this contribution, often allowing for in-kind payments such as pipes or land to cover this commitment. This is an excellent place for governments to contribute to the project cost.

To assist in sourcing the up-front equity costs, OBA subsidy facilities can include an initial partial

FIGURE 3.1. Structure of a Commercial Finance Transaction in the Kenya Water Sector



Source: Adapted from Advani and Darche, 2011.

disbursement (that does not wait for output verification) to help service providers meet this cash requirement. For instance, the Kenya Urban Water and Sanitation OBA Fund for Low-Income Areas disburses 10 percent of the subsidy upon approval of the loan to help fulfill this requirement.

Subsidies

A subsidy can have a great effect on the commercial viability of a project. Up-front subsidies can significantly lower the overall cost of a project, reducing the amount needed to borrow and making a project affordable under the limited cash flows of the service provider. Subsidies, particularly when coming from governments, are a part of blended finance. There are multiple types of subsidies and multiple sources of financing.

Public grants can be ideal for facilitating commercial financing. Government grants might, for example, pay

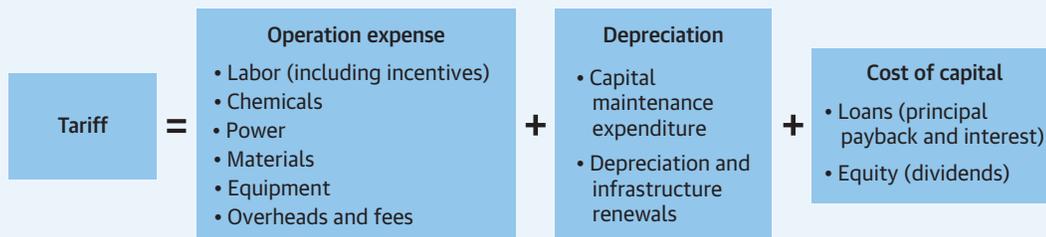
a portion of the project cost, so that financing costs are considered only for the remaining capital cost and tariffs do not need to cover 100 percent of the project. A discussion on cost recovery tariffs is found in box 3.1

Viability gap funding (VGF) is a form of subsidy, often found in public-private partnerships, used to cover cash shortfalls occurring during a portion of the financing term. For example, in the initial years, when construction is occurring, revenues are not able to cover fully the O&M costs and debt payments. Many other subsidies, however, are specifically targeted to a beneficiary or project and are not able to finance a viability gap. Subsidies often have a cap limiting the size of subsidy per household or beneficiary.

Results-based financing, such as OBA subsidies, work well with commercial financing as output-based payment requires a source of up-front financing.

BOX 3.1. Commercial Finance Toolkit: Setting a Cost Recovery Tariff

For commercial borrowing, tariffs must be set at a level sufficient to recover O&M costs plus full amortization (interest payments and repayment of principal) of the capital costs. Best practice would include a long-run marginal cost or average incremental cost method that considers future costs as the best indicator of what consumers should pay now. Economists believe that it is beneficial if the rates charged signal to the consumer the value of resources used in providing the services. The regulator should have or develop tariff guidelines for the recovery of justified costs. The tariffs charged are meant to accommodate cost recovery, cross subsidization, and, in the case of commercial financing, the interest and principal repayment cost of the expansion of infrastructure. Therefore, the tariff should be set to cover the costs of operating expenditure plus depreciation plus the cost of infrastructure financing.



OBA subsidies can also lower the overall annualized cost of project financing considerably, as once the subsidy is used to pay down the borrowed amount, it reduces the principal and therefore the interest charged. OBA payments can make projects viable, but they are not usually designed for viability gap financing. Unlike up-front subsidies, OBA incentivizes banks to push for successful completion of projects in a timely manner and reduces moral hazard. OBA greatly lowers the repayment risk of a large percentage of the loan. However, there is still considerable risk of default with OBA-supported borrowing. If projects are significantly delayed or not built to sufficient quality, the OBA payments may be reduced, delayed, or completely cancelled. Note, however, results-based subsidies hold extra risk as they are disbursed upon completion of pre-set targets. If these targets are not met and the subsidies not disbursed, the borrower will need to service debt obligations without the subsidy assistance.

It should also be noted that results-based subsidies, like many other subsidies, are often specifically targeted toward pro-poor projects and areas. Combining poverty eradication with commercial financing can be a big challenge, particularly in a sector unfamiliar with commercial finance. OBA might be best used to expand a commercially viable project into poor areas, diversifying the risk of repayment, as opposed to encouraging commercial financing of pro-poor projects. For more information on OBA structures in the water sector see *Applying Results-Based Financing in Water Investments* (Rodriguez et al. 2014) and *Partial Credit Guarantees for Subnational Transactions* (Darche and Gallo 2012).

Insurance/Construction Bond

Commercial lenders may insist the service provider outsource part or all of the construction work to a contractor if there is little information on the ability

of the service provider to successfully implement projects. This demand will be even more important if the work is subsidized with results-based financing. If a contractor can obtain a construction bond insuring the quality and timeliness of construction, then a lender knows they will either be paid by OBA or the construction bond policy, eliminating risk on a large component of payment. In this case, the borrower will likely incur increased cost as the construction bond cost will be passed on to the water service provider. However, the lowered risk to the lender should result in a lower cost of borrowing (interest rate on the loan).

Partial Credit Guarantee

A partial credit guarantee (PCG) is a promise of full and timely debt-service payment, usually up to a specified amount. A PCG provides cover to lenders in the event the borrower fails to make debt-service payments. PCGs are commonly arranged with banks and may be included in the structure despite demands or objections of borrowers. Therefore, the inclusion and arranging of a PCG in the debt structuring is usually decided solely by banks. PCGs often come at a cost to the bank via fees to the guarantor. It is important to ensure that this fee, if passed on to the borrower, (1) results in a lower interest rate on the loan, as the risk to the lender has reduced, and (2) is charged to the borrower at the cost the bank pays for the PCG and that the bank does not make a profit on the use of the PCG. Most arrangers of PCGs (donors) have transparent web-based information on the cost of their products and are easily approachable for information.

Banks decide on what type of PCG structure is needed. See details on credit guarantees in appendix A on risk mitigation tools. If the guarantee does not have a working capital drawdown option, the bank may want to consider establishing a working capital facility (line of credit) for the borrower to ensure that the borrower has access to emergency funds in time of stress.

Tenor

There are conflicting preferences on tenors (life of the loan). Commercial banks do not often lend beyond 5 to 7 years and prefer even shorter loans. Service providers prefer longer tenors, often of 7 to 15 years. Longer tenors match the financing life to the life of the asset and match financing payments to users of the infrastructure. As demonstrated in step six on tenor negotiations, longer tenors can be serviced with lower tariffs. Certain guarantees, called tenor extensions, are designed specifically to extend the tenor of the life of the loan.

Tariff

There is considerable information available on tariff structuring and pricing strategy (for example, Shugart and Alexander 2009). However, for commercial borrowing, the required tariff to meet debt service is calculated in the financial model. A good financial model will very clearly show what level of tariff is required in a base case scenario at the beginning and throughout the life of the project and/or loan. Models also allow for stress testing to see if additional tariff increases will be needed in a challenging financial or operational environment. However, models are based on subjective assumptions and require some interpretation.

Banks want to have assurances that any required immediate and future tariff increases can be facilitated in a timely manner. Approving future increases in tariffs may be a challenge for local governments and regulators and require technical assistance. Ideally, future tariffs would increase automatically to keep up with costs that increase with inflation and other variables. However, regulators and local governments may likely be more comfortable with setting preconditions that trigger an increase in the tariff (for example, the DSCR falling below 1.5 missed debt payment, and so forth).

Ring-Fencing

Ring-fencing is a legal and financial arrangement separating the activities, assets, liabilities, revenues, and

costs generated by a company from the general business of a separate entity (likely the local government). The water service provider's business and cash flows must be isolated or fenced-off from the government over the life of the loan. The idea of ring-fencing is to ensure that unexpected liabilities are not imposed on the water service provider during the payback period.

Ring-fencing can include the separation of financial accounts, internal physical or procedural division to contain information transfer (often known as “Chinese walls”), and the disclosure of information between internal entities. Ring-fencing can be achieved using a range of strategies and techniques, including the creation of a new entity (corporatization).

Local and national governments, regulatory bodies, and other entities can still charge licensing and other fees. However, all payment commitments by the water service provider must be agreed to prior to the loan and remain unchanged over the life of the loan.

Waterfall

A key component to facilitating commercial lending into the water sector is a legal establishment of a cash flow “waterfall” depicting the priority (and limitations) of the company's expense payments. In the waterfall, a water revenue collection account, which holds all revenues of the company, is usually housed in the lending bank and is subject to the bank's scrutiny. Figure 3.2 depicts the recommended order of the waterfall payments for a typical sector loan.

Debentures and Reserve Accounts

Water service providers have reliable and strong customer tariff payments, which should result in highly consistent cash flows, making non-collateral secured loans ideal for the sector. Future cash flows from both revenues and/or accounts receivable can be readily

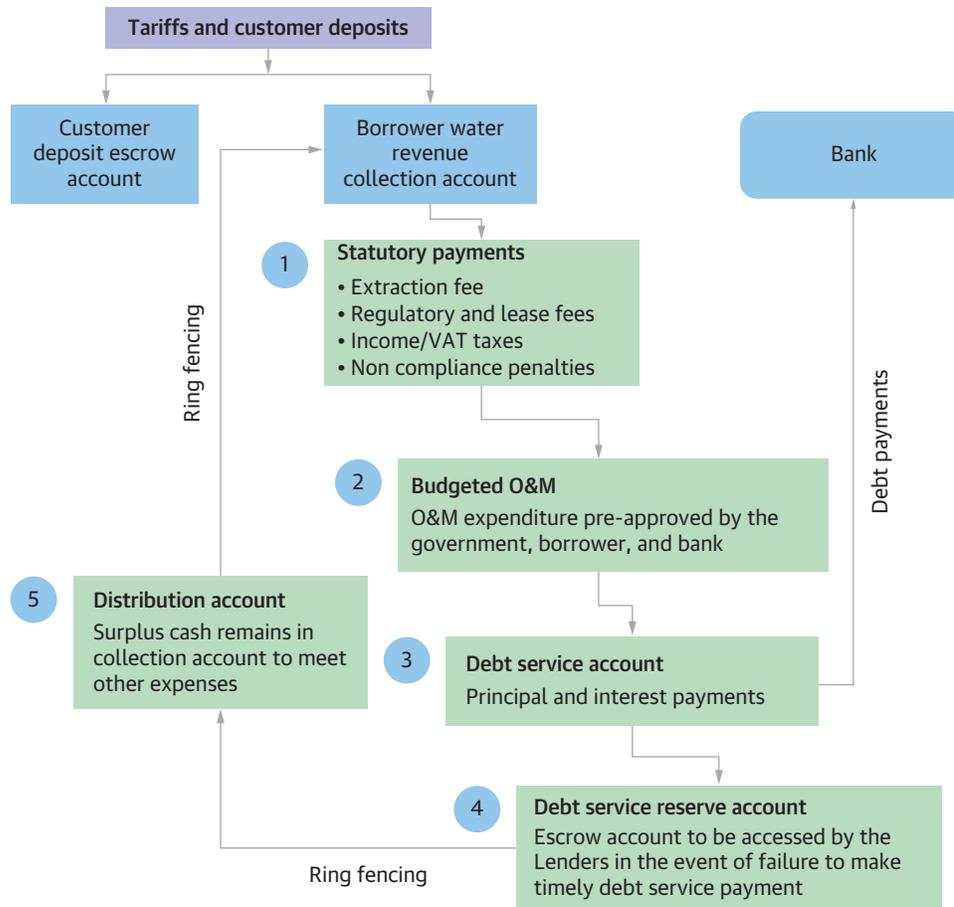
estimated from historical financial statements. Debentures, lending on the credit of the borrower and such cash flows (as opposed to collateral), require legal arrangements on the structure. Local lawyers or in-house bank council should be able to provide the structure and documentation. Lenders may also require security agreements such as a standing order to build up cash for payment of the loan from daily account surpluses. The surpluses are usually held in an escrow account in the lending bank and/or are automatically swept to a dedicated debt-service account. If the DSCR is not met, then those surpluses can be automatically withdrawn by the bank from the borrower's account.

Blending

When properly structured, blending can greatly reduce the overall project costs and extend the tenor of borrowing (likely resulting in lower tariff needed to service debt) of water and sanitation projects. As well, blending can make marginally non-commercially viable projects bankable by reducing the amount needed to finance. Blending strategies should be incorporated in the financial model to assess how much grant is required and presented to the commercial lender. For general information on blended finance see *Blended Finance Vol. 1: A Primer for Development Finance and Philanthropic Funders* (OECD 2015).

Blending can also result if the government provides the equity contribution at free or concessional rates. Subsidies coming from government, such as OBA, VGF, or grants, are a type of blended finance. These not only lower the project's financing cost but can make the project bankable due to equity requirements. Use of OBA is a type of blending; only the payment comes later (see “Output Based Aid Subsidies,” appendix A.1). Typical blending grants come at project commencement, thus lowering the amount of funding from commercial banks.

FIGURE 3.2. Illustrative Cash Waterfall



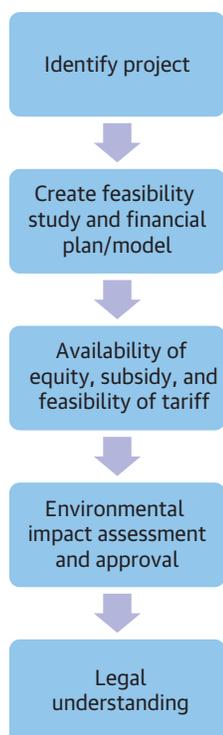
- 1 **Statutory payments.** The first priority payment is to cover statutory costs relating to licensing, regulation and income, and value-added taxes (VAT), if applicable. This is a superior legal obligation and must be paid before debt service.
- 2 **Operating and maintenance account.** The second priority payment is to meet commitments of *preapproved* annual budget expenditure obligations required for normal operating and maintenance. This is often held in a dedicated operating and maintenance account. Extraordinary or emergency operating expenditures are drawn down from either an operating and maintenance reserve or from a separate surplus fund.
- 3 **Debt-service account.** The waterfall ensures all remaining revenues are deposited in a debt-service account. This account holds all cash available for debt service. All debt is paid from this account. Banks may demand this account, if not all accounts, be held in their bank. Often banks automatically sweep the debt payment out of this account instead of waiting for payment
- 4 **Debt-service reserve account (DSRA).** This account holds the remaining surplus cash. The loan agreement may demand a dedicated escrow account. Banks may demand that this account balance automatically pay down outstanding principal or simply remain in the company to retain earnings to meet other needs or expansionary plans. Banks usually insist the balance of this account remains above an agreed DSCR, which is commonly equivalent to 1.2-2.0 times the amount of the next debt payment (interest plus principal). However, local requirements may be higher.
- 5 **Distribution account.** All remaining cash can go in a distribution account (or the DSRA can serve this purpose as long as it does not dip below the DSCR). In a private company, retained earnings could be paid to shareholders in the form of dividends from this account. However, banks and service providers without private shareholders should obtain documented approval from government to retain all excess cash in the company.

Source: Advani and Darche 2011.

3.3 Step Three: Preparing for the Deal

To apply for a loan from a commercial bank, a company must prepare a loan application that justifies the bankability of their business and the project. This section covers the preparation process for service providers prior to submitting a loan application. This phase builds a sufficient foundation for borrowing and ensures the project is viable and all support mechanisms (subsidy, equity, approvals, and so forth) are available. The application process is undertaken between the borrower and the lender. The government stakeholders are involved only in a minor role. This section starts with the pre-application process. The next section walks through the application process and the final section covers the negotiation between the bank and the service provider—and the government in some cases—prior to closing a loan.

Preapplication Process



Identifying the Project

Commercial borrowing starts with the identification of a needed and commercially viable project to develop. Service providers often conduct customer surveys to identify gaps in performance and provision.

A service provider must consider, often in consultation with government entities and social institutions, whether the project will address a current need. Careful consideration of alternative sources of financing is important to determine if commercial lending is the best option for the project.

Creating a Feasibility Study and a Financial Plan or Model

Once deciding on commercial financing, the service provider must create a project

feasibility report including an updated business plan on how the project fits within the business plan of the utility. In assessing the viability of a project, the

service provider often hires financial and technical consultants to assist in conducting a feasibility study and develop a business plan that may be used in the loan application process.

It is important for the feasibility study to comprehensively cover technical and operational soundness, cost analysis, financial sustainability, social and political soundness, environmental factors, and an implementation plan.

The feasibility study of the project includes the following:

- The project concept and justification
- Expected cost
- Technical, operational, social, and environmental analysis
- Implementation plan
- Financing strategy including subsidies or other support and capital structure (debt-equity ratio)
- Financial model
- Business plan

The project, as described in the financial plan, should have the following attributes:

1. It should be *time constrained* and demonstrate the company's ability to manage the implementation of the project. If required by the company or the lender, this can be accomplished via procurement of an outside project manager to ensure that during construction the work is carried out according to time and budget.
2. It should be *financially feasible* and generate a positive net present value via cash flows (which results from IRR project cash flows being greater than the loan interest rate) from the proposed revenue collection and subsidy assistance. The project should have positive economic impacts.
3. There should be *adequate demand* for paid water in target areas by customers who are able and willing to pay for the service.

The financial model should cover the total estimated cost of the project as well as the amount to be financed through the loan, projected cash flow, and profitability including meeting the DSCR (see table 3.1). It also should include sensitivity analysis of the company's ability to meet repayment requirements under stressed conditions: slowing of sales, cost overruns, rising interest rates, rising inflation, and so forth. Box 3.2 discusses ways that government can support the company's capacity to repay. See phase II for details on building a business plan and financial model.

Confirming the Availability of Equity and the Feasibility of Tariff

The service provider must ensure that any other required sources of funding, including required subsidies, are likely to be available. The equity component (the 20–40 percent of project costs not provided by the loan) must be available via company savings, local government contribution, subsidy assistance, or a combination of these. Any required immediate or

future increases in tariffs will be shown in the financial model and should be clearly identified and discussed in the plan. Ability to obtain approval of the tariff increase must be reasonably likely. The sponsor, typically the utility, is responsible for identifying who will provide the equity and other sources of financing.

Conducting the Environmental Impact Assessment

Governments often require environmental impact assessments (EIA) on any infrastructure project. Service providers are usually familiar with these reports. However, governments and banks may insist on the hiring of an independent qualified consultant to conduct an EIA of the project. The EIA report will usually be submitted to the government but included in the loan application once submitted.

Demonstrating Legal Understanding

Finally, prior to working on the loan application, the service provider—as well as the lender and government—should ensure it has a reasonable

TABLE 3.1. Key Performance Indicators that Commercial Banks Use to Assess Loans

Ratio	Formula	Indicator
Debt-service coverage ratio	$\text{EBITDA}/\text{annual debt amortization}$	Indicates how many times-over-cash-flow from operations covers obligations; measures the amount of "free cash" available from operations to cover debt-service payments
Debt-to-equity ratio	$\text{Total liability}/\text{total equity}$	Measures solvency; indicates the percentage of a company's assets provided by debt
Current ratio	$\text{Current assets}/\text{current liabilities}$	Indicator of short-term liquidity; evaluates the availability of cash and other liquid assets to meet short-term financial obligations such as operating and maintenance (A current ratio below 1.0 indicates substantial stress in a company's cash flow and signals to creditors that these providers may not make timely debt-service payments.)
Net profit margin	$\text{Net income}/\text{total revenue}$	Reflects an entity's tariff-pricing policies and its ability to control costs (It also measures the company's financial ability to sustain operations and invest in new projects.)
Return on equity	$\text{Net income}/\text{shareholders equity}$	Measures an entity's efficiency at generating profits from every currency of net assets
Operating cost coverage ratio	$\text{Total operating revenue}/\text{total O\&M costs}$	Measures a company's ability to recover operating costs with current operating revenues; critical in assessing debt capacity by measuring a company's ability to control costs
Debtor days	$\text{Net debtors}/\text{operating revenue per 365 days}$	Indicates how quickly cash is being collected from debtors (Uncollected receivables have the primary effect of reducing the available cash to meet day-to-day operating expenses and debt service payments.)
Collection efficiency	$\text{Total cash collections}/\text{total water and sewage billed}$	A measure of the efficiency with which a utility is able to realize cash from its billed revenue

Note: EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization.

BOX 3.2. Ways Government Can Support the Commercial Viability of the Deal

To assist the commercial viability of service providers, governments should, where applicable, arrange to clear any outstanding debts to the water company from public entities. Often past due bills for water companies are from larger public clients such as hospitals, prisons, and universities. Clearing these historical debts and arranging to avoid these debts in the future will strengthen the financial health of a service provider. In addition, any outstanding tax obligations could be paid and cleared to increase the creditworthiness of the service provider, as these obligations will be senior to debt service and have a negative credit effect on the borrower.

If the government has an official or unofficial practice of providing grant funding to utilities experiencing a cash shortfall (bailout), this procedure should be documented in official policy. Any government funding support to the service provider should be legally binding in order to benefit the borrowing negotiations of the service provider.

Any historical debt on the financial books of the service provider could stop commercial lending. Often this debt is nonperforming debt to the government and will not likely ever result in payment. Writing off (or legally removing) this debt could qualify the service provider to access new debt to improve the company's service and operations.

BOX 3.3. Commercial Finance Toolkit: Sample Loan Application Checklist for Water Service Provider

- Background and history of borrowing in the sector, to include:
 - Ownership (legal structure, public or private, shareholders)
 - Corporate strategy
 - Product range
 - Customer base composition
 - Competitive advantages
 - Location
 - How does the project fit into the 5- or 10-year strategy of the company?
 - Number of employees with breakdown on management, union, and casual
 - How diversified are the income streams for the company?
- Corporate governance: Members of the board with nonexecutive and executive management experience, subcommittees of the board, representation from community, NGOs, and industry

box continues next page

BOX 3.3. continued

- Licenses, permits, and alignment with regulatory requirements
- Senior management profile: Names, positions, and qualifications, including experience within and outside the company (Include an organizational chart and company's retention policy.)
- Financial information: Audited accounts for past three years plus latest management accounts (not older than six months) if last audited accounts are older than six months
 - Projected cash flow, balance sheet, and profit and loss statement—detailed description of assumptions and stress tested scenarios and base case scenario
 - Government grant assistance if applicable
 - Description of existing debt or planned future debt
 - Credibility index or rating
- Financing needs and strategy, an analysis of total banking needs that should explain the following:
 - Details of the proposed facilities and rationale with supporting documents (bills of quantities, necessary regulatory approvals)
 - Details of the business cycle (supplier credit, order to receipt cycle for raw material, credit to buyers versus cash buyers, gestation period between production and sale)
 - Profile of debtors and creditors
- Board resolution to borrow (The board needs to be involved with and approve the request to borrow.)
- Support: Collateral, equity, and grants
 - Description and ownership of any collateral (The company should give an indication of what it can offer as security toward the repayment of the loan.)
 - Board resolutions to pledge collateralized assets, if applicable
 - Equity contribution and source: Company, government, in cash or in-kind
 - Government or donor role in any guarantee or subsidy, if applicable

understanding of all the legal liabilities involved in borrowing as well as the legal procedures involved in any commitments involved in the loan and lending process. In most countries, there are law firms specializing in commercial borrowing who can prepare a brief for the company.

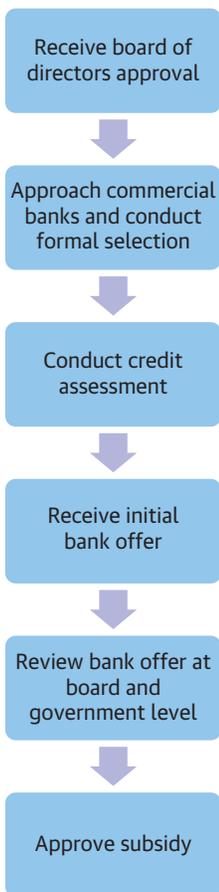
Gathering Required Loan Application Information

As shown in box 3.3, a significant amount of information is required for the loan application. It is important to start gathering this information as early as possible before submitting the loan application.

3.4 Step Four: Process for Applying for a Commercial Loan

Once the components of the pre-application process are met, the service provider can begin the loan application process.

Applying for the Loan



Receiving Board of Directors Approval

The board of directors or trustees legally represent the direction of the company and must approve any borrowing by the company. Therefore the water company must seek board of directors approval to borrow and have the approval documented, most commonly in board meeting minutes. Often ministry and/or local government representatives sit on or even play the role of a board of directors.

Approaching Commercial Banks and Conducting Formal Selection

The borrower must send the project description and company brief to a bank to gauge its appetite to lend. It is important to shop for the best term and relationship. Some water service providers prefer to borrow from the bank they currently use for their day-to-day business. A good reason for this is that lending banks usually demand a borrower move

all of their banking business into the lending bank. This can be quite burdensome for a company.

The borrower should provide an information memorandum to the bank with a high-level overview of the project, company, and any financial assistance mechanisms (equity, subsidy, and so forth). The bank should respond by providing a draft term sheet covering key variables such as the term, interest rate, switching costs, hedging options, and requirements. The bank should include clear evaluation criteria to facilitate a transparent process.

A formal request for proposal (RFP) puts the process in the control of the borrower (as opposed to the lender) and ensures constancy and comparability of offers. Without an RFP, lenders will likely structure the loan and fees in different ways, making comparison of the offers difficult for the service provider.

Conducting the Credit Assessment

The lender will be responsible for the due diligence and credit assessment, with the utility providing timely and sufficient information. Once the tender is awarded, the bank provides the application form and begins the credit assessment and due diligence process. If available, a shadow rating report will make the credit assessment move much faster if banks are familiar with the product. However, shadow ratings and credit ratings can be expensive. For more in-depth description of project appraisal by banks, see *Lender's Manual for Commercial Financing of the Water and Sanitation Sector in Kenya*.¹

The assessment process usually covers the following:

- The application form is reviewed, all approvals to borrow are verified, and commitments such as equity contribution and subsidies are validated.
- Company financials (balance sheet, income statement, statement of cash flows) are analyzed to verify the ability to pay interest and repay capital. The bank reviews financial statements from a number of preceding years to evaluate key performance indicators, as shown in table 3.1, on repayment. Banks may require financial statements audited by a private company.
- The loan amount is evaluated to determine how well the borrower revenues can service debt. This calculation is based on DSCR and stress testing the model. Key ratios such as profitability ratios, liquidity ratios, working capital ratios, and bankruptcy ratios are assessed.
- Corporate governance (power and independence of the board of directors), management structure and

quality of management, and employee retention policies are evaluated.

- The general commitment to the business and an ethical business practice are ensured.
- Risks associated with the project and company, and prices of such risks, are evaluated and requirements for mitigation products and insurance to cover on the loan are checked.
- The fallback position or strategy in the event of default is reviewed.

Receiving the Bank Offer

The bank will provide a term sheet to the borrower, which indicates key terms regarding tenor, pricing, grace period, and covenants. In addition to assessing the risk, the credit analysis gauges how the loan will impact the bank's profits and losses. This determines if the interest earned on the facility matches or exceeds the risk taken by the bank. The bank confirms that the loan is in line with the bank's policies and the central bank's prudential guidelines.

Reviewing the Bank Offer at the Board and Government Levels

The company board, and likely the overseeing local government, approves the terms of the loan offer, ensuring all requirements have been or will be met and all regulatory requirements are adhered to. This step will lead to negotiations with the bank.

Approving the Subsidy

The government, donor, or donor implementation unit will likely issue the approval of any subsidies, if available. Often subsidies, such as OBA, are preapproved and become officially approved once a loan offer is made. If not preapproved, at this time final approval should be obtained. In OBA projects, where social outputs are critical to the financing, the independent verification agents can begin their baseline assessment. However, often a visiting mission is

required to approve the project subsidy. This can be time consuming and logistically complicated.

3.5 Step Five: Lender Protections

In commercial financing of the water sector, the lenders want to ensure that the revenue stream of a borrower is stable and sufficient to cover the debt service and that the service provider does not default on its loan obligation. In other words, the project's financial performance must be consistent with the levels necessary to maintain operations and service the loan. Lenders will therefore require that there are practical control mechanisms in place allowing them to monitor project performance and secure claim to project cash flows. (See "Step Six: Conducting Negotiations.")

The water company will often provide certain representations and warranties to the bank to induce the lenders to make loans. A *representation* is an assertion of a fact, true on the date the representation is made, that is given to induce another party to enter into a contract or take some other action. A *warranty* is a promise of indemnity if the assertion is false. Representations and warranties are often divided into positive and negative types. See table 3.2.

To protect their interest, the lenders reserve discretion to allow the borrower to act on certain rights and powers without the lender's approval. Practical control mechanisms ensure that the borrower will not (among other things) change the following elements without the lender's consent: project plan, project contracts, capital expenditure program, and debt program. The lenders also will request the borrower to provide representations concerning the following: financial status of the company, legal status of the company, commercial status of the company and construction, and operation and performance of the works. Lenders may also insist on the right to object to any change in senior management.

TABLE 3.2. Typical Required Representations and Warranties

Positives	Negatives
<p>The borrower will:</p> <ul style="list-style-type: none"> • Comply with contractual obligations in project documents • Comply with legal obligations • Refrain from exercising certain rights and powers • Provide access to site and records to lenders • Take out required insurance • Complete construction by agreed date • Follow industry best practice • Have legal authority to provide the service (often under a monopolistic role) over the life of the loan 	<p>The borrower will not:</p> <ul style="list-style-type: none"> • Promise additional security to other lenders • Take on additional debt • Dispose of assets • Enter new business line • Enter into new contracts (of significant size) • Abandon project

Source: Adapted from WASREB and WSP (Water and Sanitation Program) 2015b.

3.6 Step Six: Conducting Negotiations

The final stage in the application process is for the lender and borrower, and sometimes government stakeholders, to negotiate the terms of the loan. As banks are more familiar with lending structures, service providers will likely need technical assistance to ensure they understand their rights and have the ability to negotiate terms. Similar to the conflicting goals of financing between the government and the service provider, borrowers and lenders have opposite goals in the negotiation. For instance, a borrower will negotiate to get the cost of borrowing (interest rate) as low as possible while the banks will attempt to keep the rate as high as possible. Banks may, however, need to be made aware of water-specific elements to negotiate such as tariff approvals, monopolistic licensing rights, and waterfall strategies. See figure 3.3.

The following are the key points of negotiation between the borrower and the lender.

Fees, Interest Rate, and Credit Spread

Fees, for instance application fees, are often more negotiable than the interest rate. The most common fees are arranging fees, charged to cover the bank's

costs to initiate a loan such as due diligence on the company and financial analysis. Another common fee is a commitment fee, which is designed to ensure the borrower borrows funds and pays interest or pays a penalty fee. If paying a fee for any risk mitigation products in the debt structure (such as a partial risk guarantee), the borrower should ensure this fee results in a lower interest rate.

The interest rate premium is determined by the borrower's creditworthiness. The service provider should use any credit rating or benchmarking (even operational benchmarking) available to demonstrate its lower risk level in order to lower the interest rate. For more information on how bank interest rates are set, see appendix B on commercial finance basics. A good strategy is to compare the rating of the service provider to similarly rated corporate entities and review those entities' interest rate. It is not likely that many corporate borrowers are rated, but the bank can do a mental exercise to think of similar borrowers in their portfolio.

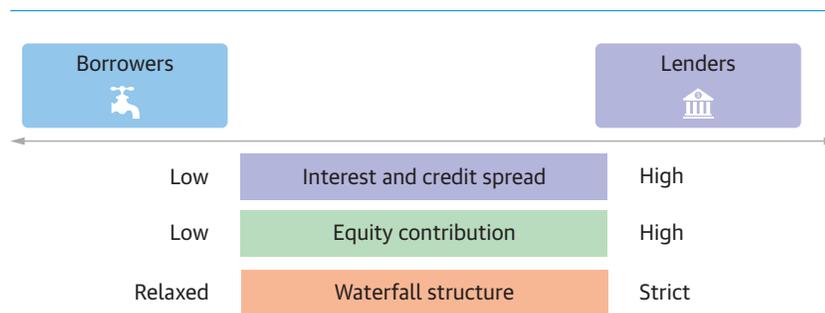
Usually commercial bank loans have floating interest rates that readjust every quarter or half year. However, if a fixed rate is available, water companies are better off

borrowing at predictable fixed rates. Sometimes donor-funded dedicated lines of credit provide fixed financing for banks to on-lend fixed-rate loans. Depending on the economic conditions, fixed rates are usually higher than floating rates, as fixed rates incur interest rate risk. However, floating rates pass the risk of increasing rates later in the loan life on to the borrower. If available, a borrower must decide if the risk-benefit balance of fixed-rate payments is worth the cost.

Since the revenues of water infrastructure do not begin immediately, it is in the interest of the borrower and bank to negotiate either a grace period or moratorium. A *grace period provision* allows the borrower to make a payment after the actual due date without incurring any late fees. Under some loan terms, payments outstanding during the grace period are interest free, but the majority of contracts provide for interest compounding during the grace period. It is important to keep in mind that longer grace periods of incurring interest will result in the higher total payment over the life of the loan. A *debt-service moratorium* permits the borrower to forgo principal payments, and sometimes interest, due in the early periods of a loan. These are common practice, because early in loan life projects take time to build and do not generate immediate cash flow. However, borrowers incur interest obligations and will be required to eventually pay all interest and principal payments to avoid default.

Another important provision of the loan the borrower should negotiate is debt prepayment without penalty. *Prepayment* is defined as either full or partial early payment prior to maturity date. Commercial financing is expensive. Commercial debt should be paid off early if cash is available. However, early termination is a benefit to the borrower, and banks often insist on charging for this benefit.

FIGURE 3.3. Negotiation Preferences of Borrowers and Lenders



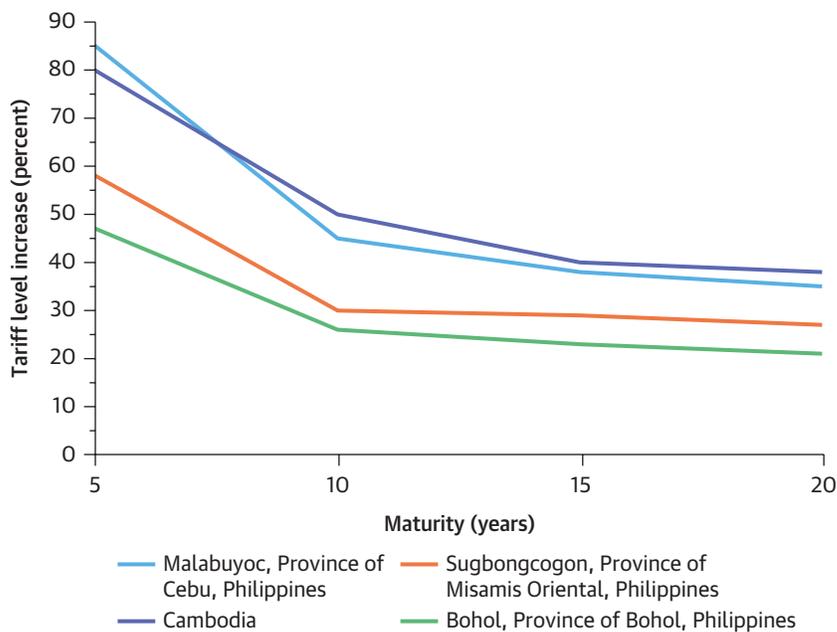
Loan Tenor

A major negotiation point between lenders and borrowers is the length of time the borrower has to pay off the outstanding principal, or the loan tenor. Debt payments are often serviced via tariff increases. Longer tenors, which decrease the amount of principal paid per year, can significantly decrease the required increase in tariffs. Figure 3.4 shows how shorter-term loans require higher tariff increases to repay the debt obligations. The graph demonstrates that longer-term maturities can help keep tariffs affordable. In these cases, extending the tenor from 5 to 8 years offers the highest tariff benefit. However, the beneficial impact of extending tenors beyond 15 years is marginal. This results from the benefits of longer principal amortization periods being offset by higher interest payments associated with loans having long-term maturities. For a deeper explanation, see *Financing Water Supply and Sanitation Investments: Utilizing Risk Mitigation Instruments to Bridge the Financing Gap* (Baietti and Raymond 2005).

Equity Amount and Type

Most banks have preset limits on the amount a project can be financed by a loan. As mentioned in section 3.2 “Step Two: Optimizing Loan Structure and Risk Mitigation,” this is usually between 60 and 80 percent. Banks may be flexible and allow more. In addition, service providers may need to negotiate approval of in-kind equity contribution. For example, if the government is providing the land in the

FIGURE 3.4. Effect of Loan Maturities on Tariff Level



Source: Baietti and Raymond 2005.

Note: This graph illustrates a simulation on the effects of loan tenures on tariff levels in four urban settings that were planning major system expansions.

project, the value of the land can be counted as part of the cost of the project and therefore count as equity contribution.

Subordination of Existing Debt

Any existing commercial debt on the books of the service provider will likely rank equal to (or *pari passu*) the new loan. However, government or donor development loans on the books of the company may be able to be serviced after the payments of the commercial loan. This is called *subordinate debt*. Banks may try to subordinate other debt in order to be the senior debt with the highest likelihood of getting repaid if the utility experiences cash flow shortages.

Tariff Approvals

Banks want assurances that immediate and future tariff increases can be facilitated in a timely manner. Banks also want to ensure the increases in tariff are sufficiently high to cover debt service and business costs

and may want an even higher increase to offer some cash flow cushion. Service providers will likely be bound by regulatory and local government limitations on tariff increases.

However, since tariff changes are often difficult and time consuming, lenders will need a certain level of comfort that an agreed upon and needed tariff increase will happen in a timely manner. Another option is for regulators to agree to an automatically adjusting tariff that adjusts at a fixed rate (for example, 5 percent per annum) or benchmarked to an index such as nationally reported inflation or a benchmark interest rate. These approvals may not be supported by the regulator and

require time to put in place. Regulators and local governments will likely be more comfortable with setting preconditions that automatically trigger an increase in the tariff (for example, DSCR falling below 1.5 or missed debt payment).

Waterfall

The structure and strictness of the waterfall benefits the lender. However, waterfalls usually limit funding available for O&M and capital expenditure and restrict the management of the firm. The borrower should check that benefit to the lender is reflected in the interest rate as well as ensure restrictive waterfalls do not put the company at risk.

Debt-Service Coverage Ratio

Usually included as a part of the rate covenant (see box 3.4), the DSCR is a set level of cash-on-hand a borrower needs to keep available to cover outstanding debt

BOX 3.4. Commercial Finance Toolkit: Potential Covenants in a Loan Agreement

Rate covenant. This is the critical covenant in a revenue loan security structure, in which the service provider pledges to maintain a water tariff that is sufficient to make interest and principal payments on the loan. This covenant will likely include any current and/or future increases in the tariff as well as any triggers that will force the company to raise a tariff. Triggers are usually preagreed operational or financial ratios that, once hit, force the company to increase the tariff. Banks may insist on the borrower obtaining preapproval for any potential tariff increases over the life of the loan.

Security on project assets. Although water company assets are not often used for collateral, due to the low resale value, project assets may have high resale value if purchased but not yet installed. Lenders may hold security of these liquid assets until they are no longer sellable.

Assignment of receivables, contracts, and deposits. The assignment of receivables (customer contracts, customer deposits, and any other borrower contract or deposits) to the lending bank. These assignments will depend on the lender's view of the service provider's ability to meet debt-service obligations. A legal opinion is needed to confirm whether assignment of receivables, contracts, and deposits is enforceable.

Right of set off. This gives the lender the right to take debt-service payments from other bank accounts held by the borrower.

Negative pledge: This is the loan agreement clause preventing additional indebtedness. A negative pledge allows for additional indebtedness only if the borrower complies with a coverage test—for example, a **net revenues to outstanding debt service ratio**. The ratio usually has the same value as the net debt service coverage test, for example, 1.5 to 2.0, but the definition of the denominator is different. It takes into account total outstanding senior debt to arrive at the debt-service amount, not just the current loan.

Operating and maintenance covenant. Similar to the rate covenant, this is a standard general statement that the water services provider will “operate the system properly and in a sound and economical manner and maintain, preserve, and keep the same preserved and kept with the appurtenances and every part and parcel thereof, in good repair, working order and condition, and from time to time make, or cause to be made, all necessary and proper repairs, replacements and renewals so that at all times the operation of the system may be properly and advantageously conducted.”

Acceleration. This is a legal agreement that requires the borrower to pay off the loan immediately if pre-agreed conditions, covenants, or warranties are not met. Often acceleration involves support of a third party, such as local government or the ministry, to support this payment.

Step-in rights. These rights allow lenders to take control of the infrastructure project, or even the company, if and when the company is not performing up to an agreed level and then **step out** when the company demonstrates that it can once again meet its contractual obligations. In some markets, local laws may prohibit lenders from having step-in rights. This will be an impediment to attracting private sector finance

box continues next page

BOX 3.4. continued

and may need to be addressed by the government. However, local banks should know the status of such laws. Step-in rights may be very difficult for quasi-public firms to commit to and may not be an attractive option to the lender. Step-in rights are generally for larger PPP projects and less likely to work for financing the last-mile connections.

One solution in markets with performance contracts in the water sector is to allow the lender to appoint a third party manager to step in. However, this is only an option in markets where performance contracts are already established. Regardless of how much interest there is in step-in rights by lenders, the parties should consider just how realistic is it that a lender can ever exercise those rights before spending too much time on them. After the negotiations and required conditions have been met and documented, the loan funding shall be disbursed.

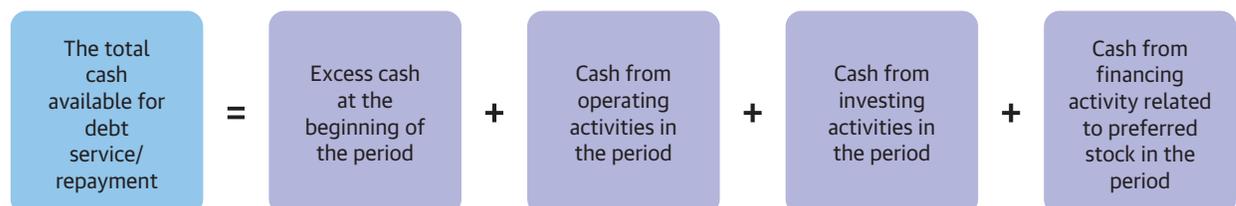
service—interest and principal. The DSCR is determined by the lender after financial due diligence, pending due diligence of other commercial, technical, regulatory, and legal risks associated with the loan. The DSCR is often, but not necessarily, held in a dedicated account in the lender bank. DSCRs are commonly between 1.2 and 2.0. A lower risk borrower or loan structure should result in a lower DSCR. It is important for the borrower to keep the DSCR low as possible to ensure the availability of sufficient cash for operations.

Cash Sweeps

Cash sweeps occur when a borrower has excess cash and the bank takes the cash for repayment of

the debt ahead of schedule. Early repayment can benefit the borrower. The borrower should ensure that it can pay down the principal of the loan if the company has excess cash reserves and not continue to pay interest on funds it does not need. This process must be negotiated or remain at the option of the borrower.

Excess cash is calculated as total cash less any minimum cash balance required for operation of the business. The minimum cash balance is a guess, absent further diligence. The total cash available for debt service/repayment is computed as follows:



From this total cash flow available for debt service, scheduled debt repayment is subtracted. If this difference is positive, there is extra cash to service the debt and the excess can be used to pay down the

balance or optionally repay other debt early. Negative difference means that there is insufficient cash to service the debt, hence the need to draw down more cash.

Covenants

Other details to negotiate are located in the covenants of the loan. Borrowers should be careful not to push back on covenants that can help them, as covenants are designed by banks to avoid defaults. These covenants are meant to guide the borrower to maintain a healthy balance sheet and cash flow that will allow the business to operate normally and give early signs to the lender in the event that the company may be

experiencing challenges as it tries to honor its legal obligations.

The rate covenant and DSCR are the primary financial covenants. Other financial related terms and conditions may also be required.

Note

1. WASREB and WSP 2015b.

4. Phase IV

Monitoring and Evaluating Deal Success



Chapter Objectives

- To understand proper debt service procedures and lender protections for debt servicing
- To determine the signs of financial distress of a company
- To understand the options and measures specific to a water utility in cases where a loan may default or has defaulted

Once all financing is in place and the loan is disbursed, the service provider can start the project and begin servicing the debt. Interest begins accruing on the day the loan is disbursed, while principal often is amortized over the life of the loan. Both principal and interest are due on the first payment date. However, since the revenue stream typically does not begin right away, through the negotiations in phase III, a debt-service moratorium period may be allowed. This section is focused on termination and default proceedings. Borrowers should be well-versed on these subjects prior to borrowing.

4.1 Construction

Once loan funds are disbursed, the service provider appoints contractors and hires consultants as stipulated by the loan agreement to begin construction. It is important that the project completion stays on schedule, particularly if the project is supported by performance-based payments, as any delay in completion will delay the subsidy disbursement. This will result in the borrower paying more in interest on the principal until the requirements for the output-based aid (OBA) payment are made.

Service providers must have a fair vetting process following national procurement and/or World Bank procurement rules (if using a World Bank subsidy) in order to appoint independent contractors.

4.2 Payouts and Debt Service

The most important aspect of debt service is to make timely payments. As mentioned, any delay in principal payment will increase the amount of interest paid on outstanding debt. In addition, any late interest or principal payments are likely to result in penalty fees, which can be highly punitive and should be avoided. If the borrower anticipates being unable to meet its debt obligation due, the borrower should immediately engage in renegotiation of the loan terms with the lender or seek additional financing to meet payment.

To make the debt repayment process more efficient and expedite principal repayment, performance-based transfers can go directly into the lending bank, as opposed to the service provider. Banks prefer this option as it prevents the borrower from using these funds to cover other expenses. Once the OBA funds enter the account in the lending bank, the principal

is reduced and interest no longer accrues on the repaid amount.

If debt prepayment was approved in negotiations and the borrower has reserve cash available, it should consider paying down outstanding debt to minimize its borrowing cost (unless these funds are used for more urgent needs). Otherwise, the borrower cannot pay down outstanding debt and is obligated to continue to pay interest on financing that is not needed. This obligation results in “negative carry” as the borrower invests the excess cash into safe investments (for example, bank deposits or T bills) that earn less than the cost paid on the loan.

As the borrower establishes a track record of full and timely debt service, the creditworthiness of the company improves and creditors become more willing to lend higher amounts at lower interest rates (lower credit spread) and longer tenors.

4.3 Ongoing Monitoring and Evaluation for Commercial Financing

Identifying the Deal in Trouble and Signs of Financial Distress

Loan covenants are often designed to help a lender, and borrower, notice early signs of financial weaknesses of

a borrower that could lead to a default (see table 4.1). The idea behind the loan covenants is to indicate to the lender when the probability of the borrower’s failure to make a payment increases and to allow action by the lender that could decrease the cost of the risk increase. The borrower in return should be compensated with a lower interest rate for consenting to a covenant in the contract.

In addition, lenders rely heavily on a set of financial ratios and indicators to monitor the financial health of the borrowers (table 4.2). Ratio analysis is primarily used to compare a company’s financial figures over a period of time, a method sometimes called *trend analysis*. Although ratios report mostly on past performances, they can be predictive, too, and provide lead indications of potential problem areas (Demerjian 2007). Financial ratio covenants, where the borrower is required to maintain certain levels of specified accounting ratios that are informative of the borrower’s credit risk, are a common provision of loan agreements.

4.4 Managing and/or Terminating the Deal in Trouble

Despite the best efforts of all stakeholders, the reality for some borrowers is that their current financial situation does not allow them to repay their commercial

TABLE 4.1. Signs of Financial Distress

• Not meeting minimum required amount in debt service reserve	• Insufficient cash to take trade discounts
• Steady or rapid decline in sales	• Inventory build-up with turnover slowing
• Frequent cash shortages	• Inadequate spending on critical activities
• Significant changes in net working capital	• Nonrenewal or cancellation of insurance
• Frequent revenue/earnings shortfalls	• Deficient billing practices
• Negative operational cash flow with net profits	• Unexpected changes in business
• Deteriorating accounts receivable	• Increasing dependence on fewer customers
• Increased credit to affiliated companies	• Repeated changes in suppliers
• Lengthening terms of settlement for payables	• Outmoded production or distribution system
• Failure to pay taxes	
• Shrinking cash margins and unexpected losses	

Source: Adapted from WASREB and WSP (Water and Sanitation Program) 2015b.

TABLE 4.2. Key Ratios for Monitoring Borrowers' Financial Health

Profitability ratios	Coverage ratios	Liquidity ratios	Leverage ratios
Gross profit margin	Debt-service coverage ratio	Current ratio	Debt ratio
Net profit margin	Times interest earned ratio	Quick ratio	Debt-to-equity ratio
Turnover ratio		Accounts receivable turnover	Total debt-to-tangible net worth ratio
		Inventory turnover	

debt or even make minimum installment payments. When a business is unable to make a required payment on its obligation, it is in default.

Both borrowers and lenders would prefer to avoid defaults. If a borrower is nearing loan default, there are options available to meet the company's needs. By renegotiating the terms of the loan and receiving concessions from the lender, such as reduction of principal and interest or a longer repayment period, the borrower can avoid termination proceedings.

If the borrower fails to maintain the ratio thresholds stipulated in the debt contract, the contract enters technical default and the lender has the option to take action. While these mechanisms are predetermined in the loan agreements at closing, they become available to the lender once the borrower is deemed to be approaching financial distress based on the monitoring indicators discussed earlier.

To obtain additional protection, in light of the lack of viable collateral in water companies, lenders often require some form of step-in clause allowing them to take over the project if the service provider has failed on its obligations and the grantor intends to terminate the agreement. The step-in right is intended to give the lender comfort that, in the event of borrower default, the bank can still have claim to the project revenues. As the lender is typically not experienced with the water utility sector, it is unlikely to take over the project or the business itself. The lender will likely want to appoint a third party with expertise to step into the water service provider's place to get the

project completed and then use the cash flow to service the debt.

Prior to lending, banks need to consider who is in the position to complete and run the project if they exercise their step-in right. Lenders need to know whether such an entity exists in the local or international markets and whether such a third party can legally take over the project. Note that the step-in can be project specific and does not necessarily entail a takeover of the entire water utility company. In a step-in process there are three different levels of lender intervention in the project, outlined in box 4.1.

Restructuring

Restructuring occurs when a borrower in financial distress is allowed to renegotiate delinquent obligations (debt) in order to improve its cash flow position and continue its operations. Restructuring can include operational and organizational measures that restructure the debtor's business and measures that restructure the company's finances.

Due to the public nature of water service providers, commercial banks may have limited avenues for restructuring the utilities and would likely require support from the local or national government to offset this risk. There is a spectrum of options for restructuring strategies (see figure 4.1). Regardless of what type of restructuring is attempted, both borrowers and lenders should seek professional advisory services (likely from a local law or consulting firm) that specialize in loan restructuring and workouts.

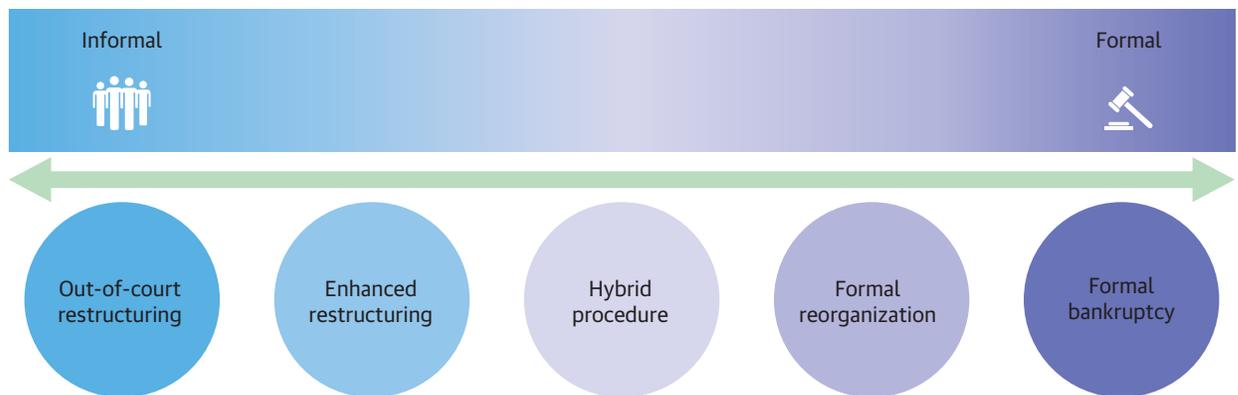
BOX 4.1. Levels of Lender Intervention

Cure rights allow the lenders to cure a breach of an obligation by the water service provider under one of the project documents, including the loan agreement. The project participants are required to notify the lender of the breach and let them cure the breach if they choose to. The lender is likely to exercise its right to cure in cases where the breach simply requires making a due payment and the project company is doing well otherwise. Lenders will likely want the opportunity to cure before having to decide whether to step in. In addition to protecting the lender, cure rights, or cure periods, can also be beneficial to the borrower in times of distress, as is detailed under "Restructuring."

Step-in rights arise when the water company breaches one of the agreements with one of the project participants, who then chooses to terminate. The lender can step-in to cure the breach and to get the project back on track. Other project participants will be required to continue their contractual relationships with the substitute entity. The lenders will be permitted to step out when they choose to do so, without incurring any continuing liabilities. In case of this intervention, the service provider is not released from its obligations and remains liable both during step-in and after step-out stages.

Substitution is a legal process that discharges the original loan agreement between the lender and the original borrower and substitutes it with a new contract between the lender and a third party that takes over the project. This substitute entity must perform debt-service obligations under the new loan (with the same terms as the original agreement) that were previously owed by the borrower who defaulted.

FIGURE 4.1. Spectrum of Informal to Formal Insolvency



Informal restructurings are an alternative to formal insolvency procedures, which can be too lengthy to address the immediate needs of the business and the customers it serves. In numerous insolvency systems, there is no clear dividing line between formal insolvency proceedings and informal restructuring processes.

In order for a company to restructure its debt, the following preconditions typically must be met:

- A situation of “financial difficulty” is present, generally illiquidity or insolvency.
- The viability of the debtor’s business must be ascertained through a complete analysis of the debtor’s finances and its business plan. If the business is not viable, it is better to liquidate it as soon as possible to maximize recovery for creditors.
- There must be a willingness to negotiate on the part of both the debtor and the financial creditors.
- Formal insolvency proceedings are unnecessary.
- There is an enabling legislative and regulatory framework.

Appendix A

Risk Mitigation Tools

A.1 Output-Based Aid Subsidies

Output-based aid (OBA) is a proven, incentive-based approach to catalyzing commercial finance. In an OBA model, a government or development partner provides a subsidy payment to the borrower only if a project achieves a pre-specified level of output (for example, connections made, water supplied, or public toilets built).

OBA gives lenders greater confidence in the cash flow of operators, enabling reductions in collateral, and can significantly reduce default risk and shorten the average life of loans. A common tool, *cross-subsidies*, or the off-setting of revenue shortfalls from low income, low volume consumption customers with revenues from high income, high volume consumption customers, can make water more affordable but often creates a disincentive to serve low-income communities, particularly when financed commercially. OBA subsidies can work better when accessing commercial finance for projects in poor areas than cross-subsidies within the tariff pricing.

There are five aspects to consider when determining the viability of using OBA:¹

1. The key stakeholders are willing to work with OBA.
2. The water service provider is capable of assuming additional risk.
3. The water service provider has access to finance to fund the project until the OBA payments are received.
4. The environment is suitable to the use of OBA.
5. The key stakeholders have the capacity and competencies to develop and implement the mechanism.

Many donors support the OBA model and have products available in the water sector and other sectors in many countries. The Global Partnership for Output

Based Aid, a multi-donor partnership administered by the World Bank, is a leading facilitator of OBA projects and has several documents guiding the establishment of OBA facilities (see www.GPOBA.org). In 2012, the World Bank also launched a results-based lending instrument called Program-for-Results. The International Finance Corporation (IFC) also has supported and funded several output-based instruments. Other donors have similar programs but with different approaches, such as KfW's Aid on Delivery program.

A.2 Credit Enhancement and Guarantee Facilities

In general, the objective of a guarantee should be to target specific risks that local lenders will not cover. See box A.1. A government or donor would offer the minimum guarantee to facilitate a transaction. However, many governments are increasingly concerned about the impact of these contingent liabilities on the nation's fiscal health (Jamora 2008). Therefore, governments should closely track the issuance of credit guarantees and play an active role in limiting contingent liabilities. Governments should plan to cover

WATER FINANCE FUNDAMENTALS

Output-based aid is a development strategy that links the delivery (payment) of the subsidy to targeted performance-related conditions, such as the building of infrastructure. Outputs are verified by independent verification agents who clear the payment of the subsidy.

WATER FINANCE FUNDAMENTALS

Credit guarantees encourage lending by reducing the losses a lender experiences when a borrower defaults or by reducing the risk of default on a loan. They are designed to give commercial lenders greater comfort in lending to new sectors and can encourage more lending, extend loan tenors, and reduce collateral requirements. Guarantees usually cover part of the risk (partial credit guarantee) and often require a fee and certain project requirements or commitments.

BOX A.1. Commercial Finance in Action: Examples of Credit Guarantees Offered

Guarantees vary and lenders may need guidance on selecting the best partial guarantee for their loans. Some guarantees are simple and often require less time to establish, such as the USAID Development Credit Authority (DCA). The DCA guarantees a percentage (usually 50 percent for new sectors) of principal at default/write-off.

IFC has a more complicated guarantee, which often takes longer to arrange. However, the IFC guarantee has a component that allows lenders to allow borrowers to reduce the principal guarantee and draw down funds to use for working capital. The idea of this feature is to assist borrowers in times of economic or managerial stress to keep the company solvent.

guarantee costs, at least in the initial stages of lending, or arrange with donors to facilitate a guarantee for the sector.

There are many variations of partial credit guarantees. Some are designed to cover a percentage of the loan in the event of default, while others are structured to reduce the probability of default, increase the recovery if default occurs, and/or extend loan maturity.

A partial credit guarantee can provide savings to the borrower compared to the cost of a debt obligation without the guarantee. The savings occurs if the guarantor (usually the government, donor, or insurance company) has a sufficiently higher credit rating (lower default risk) than the borrower. Therefore, a higher guarantor credit rating results in a lower interest rate for the borrower. However, for the guarantee to add savings, the net present value of the costs of the guarantee must be less than benefit of the lower interest rate payments over the life of the loan (Darche and Gallo 2012).

Ministries of finance are often highly concerned with contingent liabilities and implicit guarantees. The assumption of an implicit guarantee results when lenders inaccurately assume that the national or local government guarantees the debt of the

water service provider without the legal obligation to do so.

Implicit guarantees may lead lenders to make claims on local government, which may ultimately have to turn to the national government for financial support if those claims are upheld in the court. To prevent lenders (and borrowers) from making the assumption that debt carries an implicit guarantee, governments need to clearly establish a legal framework by doing one of the following:

1. Give lenders a legal document providing an explicit guarantee that spells out the requirements for claiming payment from the guarantor
2. Establish laws and regulations that create an insolvency framework for subnational authorities equivalent to a bankruptcy law for private enterprises

The existence of a credible insolvency framework creates a viable alternative to a bailout. National governments need to create and enact a subnational insolvency framework. See phase IV for more information on insolvency frameworks.

A.3 Construction Bond

A construction bond is a surety bond through which a contractor obtains a performance guarantee of the

quality and timing of the project construction. Construction bonds are usually backed by a bank or insurance company and often include collateral warranties from professionals and key consultants involved with the development. This tool is often available in developed markets and can be highly useful in ensuring payment on projects backed by output-based aid but might not be available in markets that do not have a record of commercially financing infrastructure projects.

A.4 Equity Capital Contribution

It is common that commercial lenders do not, by company policy, finance 100 percent of project costs. Banks may limit their financing exposure to 60–80 percent of the costs, leaving the company to finance the shortfall. This is often referred to as the *equity component* of project finance. As tariffs are often set at cost recovery, service providers do not usually have sufficient cash in the company to fulfill the equity requirement. Governments, national and/or local, can establish programs to finance this equity from public budgets. This is a basic form of blended finance. Note that equity contributions can often be paid in-kind (materials) or in other forms favorable to governments (such as land contribution).

A.5 Dedicated Credit Lines

Dedicated credit lines provide funding to financial institutions under the condition that funds be on-lent to water and sanitation infrastructure projects. The conditionality can restrict banks to make loans to projects designed specifically to increase water service to the poor. Governments can either provide funds directly to commercial banks or collaborate with donors to secure lending commitments. Dedicated lines of credit have been effective in facilitating lending-sector change, as the funds come at a cost (fee) and force banks to use these funds. This cost creates strong commitment from banks to dedicate human,

financial, and technical resources to facilitate on-lending to the sector.

The World Bank can lend directly to commercial banks for on-lending through its Financial Intermediary Lending (FIL) facility. However, this is not often used. In countries and operations in which the World Bank Group’s institutional advice and financial support can appropriately be provided without significant governmental involvement or any governmental guarantee of repayment, the IFC normally plays the lead role by creating direct lines with local banks. The World Bank creates FIL only in operations with important sector and policy reform objectives that are already in the bank’s country dialogue. Both institutions aim at enabling financial institutions and, final borrowers eventually, to raise funds from market sources rather than from donor or government lenders.²

A.6 Credit Assessments: Credit Ratings, Shadow Ratings, and Indexes

Credit ratings provide lenders with an independent transparent assessment of the financial strength of water service providers vis-à-vis other utilities and other corporate borrowers. The ratings or index can help water service providers establish credit histories and improve visibility with private lenders and development institutions. An example from the Philippines is provided in box A.2. Without a standard approach to rating water utilities, lenders have limited inputs and ability to assess the relative risk of water supply projects. In developed markets where credit ratings are widely used, a rating can often facilitate access to finance without the lender having to perform its own due diligence. However, in less developed markets and certainly with shadow ratings or indexing, lenders should always perform their own assessment based on due diligence.

WATER FINANCE FUNDAMENTALS

A credit rating is a formal assessment by an independent agency of a potential borrower’s relative creditworthiness that indicates the borrower’s ability, capacity, and willingness to repay its debt. A shadow rating is a nonpublic assessment rating that provides an internal estimate of what a company or company’s bond would be rated. Creditworthiness indexes depend only on ratio analysis to benchmark the financial strength and credit risk of the market players.

BOX A.2. Commercial Finance in Action: Philippines Credit Rating Assessment

Traditionally, water providers in the Philippines have obtained funds for their projects from local government and multilateral organizations. Commercial financing has been mostly out of reach. Commercial lenders typically have limited knowledge of the water sector and are hesitant to lend to service providers because they lack a track record of securing and paying off commercial loans. To address this issue, the government decided to establish a standard approach to rating water utilities, which would give commercial lenders a reliable system for assessing the creditworthiness of water supply projects. The new rating standard, called the Water District Credit Rating System, classifies districts as creditworthy, semicreditworthy, precreditworthy, or noncreditworthy, and the Local Water Utilities Administration serves as the official rating agency (Bender 2015). This classification system provides lenders with critical information needed to distinguish between creditworthy water districts ready for investment and those that are less financially viable and require technical assistance to improve their bankability. As traditional sources of funds for water projects continue to diminish, the credit rating system has proven to be a critical step in attracting commercial funds to the sector.

Lessons learned

- Governments can develop a uniform set of creditworthiness standards through partnerships with credit rating organizations.
- Credit rating systems enhance the flow of commercial funds available to the sector.

Credit ratings and creditworthiness indexation provide multiple benefits for all three stakeholders by doing the following:

- Providing an independent and objective evaluation of an institution's or utility's likelihood of default
- Providing a proven accurate predictor of the risk of default and the likely severity of a default, which helps financial institutions decide whether or not to consider lending to the entity
- Providing a comparison of relative creditworthiness of different utilities or institutions
- Assisting in pricing risk correctly—lower risk should result in higher rating, which should result in lower cost of borrowing (lower interest rate)

- Removing market knowledge asymmetry and improving the negotiating position of the borrower and the lender, especially with regard to finance costs
- Allowing regulators to monitor and assess financial and operational weakness in the sector
- Increasing government understanding of potential implicit or explicit guarantee risk as well as helping structure government grant assistance required to facilitate commercial finance

Table A.1 lists key criteria in rating creditworthiness. Each criterion is based on analysis of multiple ratios and subjective inputs (WASREB and WSP 2015a). There is an inherent challenge in rating the creditworthiness of service providers who have low

TABLE A.1. Criteria in Rating Creditworthiness

Internal Criteria	External Criteria
• Financial and credit management	• Support from government
• Management quality and capacity	• Autonomy and accountability
• Operational performance	• External risks
• Strategic planning and internal transformation	• Economic base
• Human resources and use of private sector	
• Customer relations	

control over the price of their product, the tariff. As regulators and often politicians have considerable control over the setting of tariffs, it is difficult to assess a water company's credit risk. A utility with an overpriced tariff will have surplus revenues, likely resulting in surplus profit and cash left over at the end of the year. A company with a cash surplus will receive a higher rating, making it a low credit risk.

Lenders will have a difficult time assessing whether a company's high rating is from strong management or simply a mispriced tariff. Therefore, rating reports and indexes should clearly explain any such shortcomings of the information.

A.7 Technical Assistance

Governments may need assistance in establishing policy, regulatory guidelines, and all aforementioned risk mitigation products. There are a number of examples in this guidance note of technical assistance partnerships that expanded access to finance. Technical assistance would likely be required to support the introduction and use of all market-catalyzing tools mentioned in this section.

Notes

1. For more information see *Applying Results-Based Financing in Water Investments* (Rodriguez 2014).
2. See World Bank 1999.

Appendix B

Commercial Finance Basics

Commercial finance refers to market-based repayable finance and can come in the form of loans, bonds, equity, or other hybrids. For water service providers, who depend heavily on public financing, commercial financing is often limited to commercial loans. Unlike typical public funds, commercial finance requires the water service provider to pay market costs and interest rates for the use of private capital. Such financing is provided by commercial banks, product suppliers (in cases of trade finance), and institutional investors via capital markets, among other entities.

B.1 Capitalization: Debt versus Equity

Market-based repayable finance used in capitalization of a company is divided into three main categories:

1. Equity finance
2. Mezzanine finance
3. Debt finance

In the event that a company cannot pay its obligations due to cash flow issues, or it defaults on its commitments to its equity and debt holders, debt holders will be repaid first, followed by those with a stake in mezzanine finance. Equity holders are last of the three to be repaid. Apart from these there is also subordinated debt, and, of course, interest payments are a part of any repayment scheme.

Equity Finance

Equity can be mobilized through either public or private markets. Public equity includes shares listed by a company on a public stock exchange, such as the New York Stock Exchange, where they can be traded by institutional and individual investors. Private equity, which is more likely to be a source of equity capital for water service providers, is nonlisted and comes from

individual investors, corporate investors, or private equity funds. The latter type is likely in public-private partnerships (PPPs). Private equity does not need to be mobilized through an exchange and is directly invested in the company that requires financing. The equity of the company is composed of the initial investment of equity shareholders, plus the cumulative retained earnings of the firm. Larger water utilities are often owned, sometimes partially, via listed shares.

Equity finance, of which water service providers often have very little, is the riskiest form of investment capital but gives the investor ownership of the firm and thus the highest upside potential for return. If there is additional cash available, a company can pay its equity investors dividends, periodic amounts of money that vary depending on profitability. Equity is often raised only to the minimum level to facilitate borrowing (debt finance). Therefore, equity investors expect the highest rate of return on their investment within the company's capital structure.

In the event that the company cannot repay its debt finance with its cash flow, equity cash will be used to pay interest and service other liabilities due. The company can either use equity cash available or call on existing investors to inject additional funds. In the event of a default, the debt investors will wipe out the equity investors and take ownership of the company.

Mezzanine Finance

This financing includes hybrid characteristics of both debt and equity and falls between equity and debt financing with regard to investor priority in the event of a default. Mezzanine finance is structured to meet specific risk-return needs of the company or investors. The most common are *preferred equity* (as opposed to the aforementioned equity, also known as “common equity”) and *subordinated debt*.

Preferred equity has characteristics of both debt and equity finance. It resembles debt in that preferred shareholders do not have voting rights, as common equity holders do. In addition, preferred shareholders are paid before common equity shareholders. Preferred equity is similar to common equity in that shareholders receive dividends rather than set interest and principal payments that debt holders receive.

Debt Finance

Debt can be sourced from various entities and includes loans from commercial banks, bonds issued through capital markets, and debt provided for project finance. This is also typically known as senior debt, which may be secured by collateral, which is the borrower's pledge of specific property or other assets that the lender can use to recoup its losses in the event of a default or missed payments.

Debt is a legal agreement whereby the lender provides the borrower money, which is paid back in full to the lender at a future date. Debt repayment has two components: *principal*, the amount borrowed, and *interest*,

the cost paid for using the funds. Principal can be paid back via one bullet payment, in which the entire principal is paid back in one lump sum at the end of the loan, or it can be amortized and be paid in pre-set installments over the life of the loan. The benefit of amortizing the principal is that interest is paid only on the amount of loan outstanding.

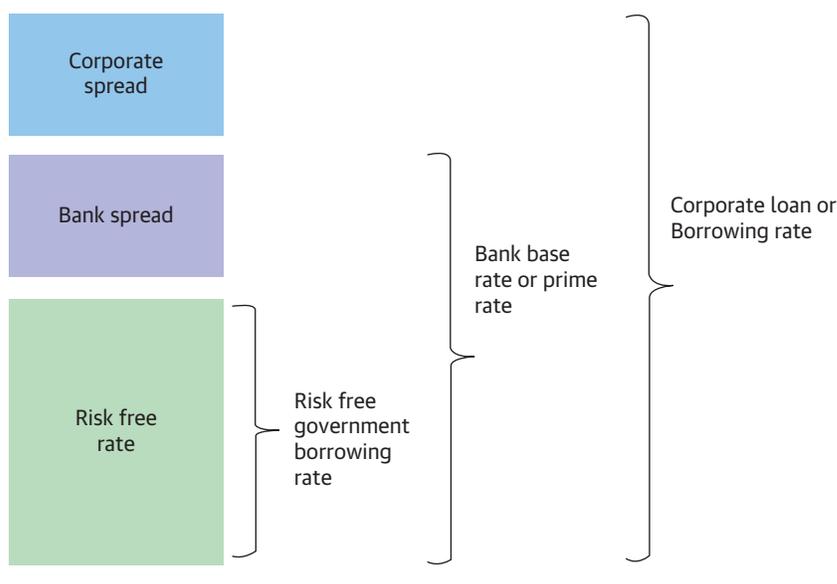
Subordinated Debt

This debt ranks below secured and senior debt and will get paid after other debt holders in the event of a default or liquidation of the company. Subordinated debt is often lent by parent companies or shareholders who know the company better than other investors and take on higher risk. Because subordinated debt is riskier, it pays higher interest and will have a lower credit rating than secured and senior debt. Subordinated debt can be important in the water sector if lenders, such as governments and donors, are willing to subordinate their debt in order to facilitate senior debt financing from local banks.

Interest

The interest rate is set at an agreed market rate, typically depending on the risk profile of the company as well as the market in which it operates. The interest obligation can be a fixed rate, which remains constant over the life of the loan (for example, 12 percent) or a floating rate, which adjusts regularly (for example, every quarter year) at a fixed spread above a benchmark rate—usually the government central bank rate. The typical formula that establishes an interest rate that will be used for a commercial loan or bond is presented in figure B.1.

FIGURE B.1. Composition and Calculation of the Interest Rate



$$\text{Total interest cost} = \text{risk-free rate} + \text{bank spread/prime rate} + \text{borrower/corporate spread}$$

Whether fixed or floating, interest comes in three types of rates:

1. *The risk-free rate*, or the return available on an asset that has no risk (for example, the interest rate on government debt in local currency)
2. The *bank spread/prime rate*, which is the cost the bank charges over the risk-free rate for all customers
3. *The borrower/corporate spread*, which is the return over and above the bank prime rate for which investors are compensated for taking risks of the borrower. The higher the risk, the higher the corporate spread, and the more expensive the borrowing

The only component the borrower can affect is the corporate spread. Therefore, all risk mitigation tools used by a water service provider seeking debt finance should be included in the pricing of the corporate spread.

To assess the value of the corporate spread, banks will typically look at risks intrinsic to the company as well as systemic risk for the area in which the company operates. *Intrinsic risk* factors may include whether the company has a history of operational and financial efficiency (often more difficult to document in emerging markets) and whether the company is in an industry whose demand for its product will remain constant or grow in future years. *Systemic risk*, meanwhile, evaluates the political and economic characteristics of the market in which the company operates. For example, the bank will look to see if the government has seized assets of similar companies in the past, or if there has been or is likely to be violence or political instability in the region, which would jeopardize the business's operations.

B.2 Borrower Expenditures

There are two main types of expenses used to run a company: *operation expenditure* and *capital expenditure*. Operating expenditures (OPEX) are typically short-term costs on nonphysical assets incurred

through normal business operations, including but not limited to wages, licensing fees, small repairs, office expenses, travel and distribution expenses, leasing commissions, insurance, and property taxes, and research and development. Capital expenditures (CAPEX) are usually longer-term costs related to fixed assets. CAPEX are incurred when a company invests in physical assets to improve future operations, such as plants, equipment, or other property. If an asset benefits the company for longer than one year, the cost is likely a CAPEX. Certain nonphysical assets, such as patents, are considered CAPEX, though the majority are physical assets.

Water tariffs are commonly set to cover OPEX, leaving utilities without surplus profits to cover CAPEX. Without the inclusion of CAPEX, water companies would not be able to service debt finance for capital projects. Therefore, it is imperative that regulators allow for the inclusion of the cost of CAPEX financing in setting cost recovery tariffs.

B.3 Bond Financing

Bond financing, issued via local capital markets, is ideal for the water sector, as capital markets often offer cheaper finance, longer terms, and less stringent collateral requirements than bank loans. In developed countries, the water sector is considered to have a very low risk profile with highly predictable cash flows, making it well suited to the bond investors.

The type of bonds issued often depends on the structure of the water sector. For example, in the United Kingdom, the water market is dominated by large private water and sewerage companies that issue corporate bonds. In the United States, water companies are municipally owned companies that can finance projects via municipal bonds. Countries with developed capital markets should consider bond financing for water infrastructure. The development of the local capital market will be a key limiting factor for raising bond finance.

B.4 Lengths of Bank Loans

Commercial banks offer loan products with different tenors:

Short-term Loans (less than one year)

They are typically used to cover working capital needs, and can involve the use of an overdraft facility. These are standby funds to help companies manage fluctuations in cash flow by allowing them to withdraw more than is available in their account; they often incur higher interest rates and commitment fees. Short-term facilities should not be used for capital expenditures.

Medium-term Loans (one to seven years)

These are commonly either asset finance or corporate loans. Asset finance involves the use of balance sheet assets, typically accounts receivable or plant, property, and equipment, to obtain a loan. One common type of asset finance is hire purchase, which is a rent-to-own agreement in which the borrower leases the asset until the full amount is paid, at which time it owns the asset. Corporate loans are lent against collateral of the owner. The preferred collateral is land and often must have value of 125-200 percent of the loan value.

B.5 Commercial Debt Financing Options

Bank loans for infrastructure projects fall into two main categories:

Corporate Finance

Corporate finance is a method of raising debt capital to fund a project through corporate loans lent to a public or private corporation based on the borrower's willingness and ability to repay the debt. Corporate loans leverage the company's balance sheet in addition to cash flow as a source of funds available for debt repayment. For corporate loans, recourse is not confined to the operation of a specific project, as these loans are often supported by a pledge on assets (collateral) to be sold for cash in the event of default.

Project Finance

Project finance is a method of raising medium- to long-term debt based on cash flows solely generated by a specific development of a project. The loan is made to a separate company called a *special purpose vehicle* undertaking the project, while the business and balance sheet of the borrower are protected from the lender in the event of a default. Legal recourse in case of the borrower's default is limited to just this special purpose entity. To provide the lender with additional protection, these nonrecourse loans are typically secured with some collateral that must be tied to the new project and credit enhancement instruments such as loan guaranteed and/or risk insurance. Projects rely on debt capital, and project finance is typically used for stand-alone items such as water and wastewater treatment plants and major pipelines and common in PPP transactions. The pros and cons of bank loans are summarized in table B.1

Due to the high risk profile and uncertainty of the project cash flows, project financing is often not readily available for most water utilities and is more likely used in PPP finance.

B.6 Unsecured versus Secured Corporate Loans

Commercial banks provide two general types of loans to corporate customers: unsecured and secured (figure B.2).

Unsecured Loans

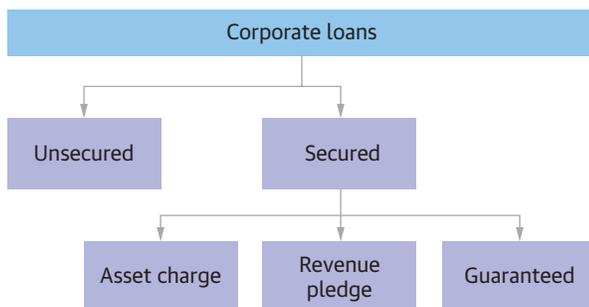
Unsecured loans are provided to the borrower without any specific collateral. Only company revenues provide the security for debt service. In case of default, the lender is able to sue the borrower for repayment but does not have a right to any specific piece of property. To limit risk, banks rely on due diligence to estimate the company's ability to repay the loan. Fully unsecured loans are rare and not likely for water service providers.

TABLE B.1. Advantages and Disadvantages of Corporate and Project Finance

Corporate finance	Project finance
<p>Advantages</p> <ul style="list-style-type: none"> • In most countries banks have ample funds for lending to credit-worthy borrowers. • The terms of the loan can be tailored to the needs of the borrower. <p>Disadvantages</p> <ul style="list-style-type: none"> • Banks normally need some form of security for their loans: water infrastructure is not ideal for collateral. • Interest rates may vary according to market conditions. • In most countries banks are unwilling to lend long term without guarantees. • Loans need to be repaid and many water undertakings don't generate enough cash flow. 	<p>Advantages</p> <ul style="list-style-type: none"> • This method can raise large sums for major infrastructure. • Security is on project revenues, with no resource to balance sheet. <p>Disadvantages</p> <ul style="list-style-type: none"> • High transaction fees (legal and due diligence) mean a high minimum size per deal (\$50 million–\$100 million). • Despite terms, risks are prone to “leak” onto balance sheet of sponsor. • Hard currency financing commonly entails high foreign exchange risk.

Source: Winpenny et al. 2011.

FIGURE B.2. Bank Loans to Corporate Customers



Secured Loans

Secured loans provide the lender with additional protection against loss in case of the borrower’s inability to repay the debt. The borrower pledges some asset as collateral for the loan. The debt is thus secured against the collateral. Due to this additional protection, secured loans usually offer lower rates, higher borrowing limits, and longer repayment terms than unsecured loans.

There are three major types of secured lending:

1. *Physical collateral.* Secured loans offer lenders legal control over an asset or collateral of some sort. If the borrower is unable to service its debt payments, the lender can take over the pledged asset and may sell it to recover some or all of the original loan amount.

2. *Receivables or revenue debenture.* As the market value of assets in the water sector (used water utility pipes, pumps, and so on) is usually very low, water service provider loans will not likely depend on physical assets or collateral. Instead, it is more common to secure lending in the water sector with a debenture on receivables or revenues. Water service providers’ reliable and strong customer tariff payments result in highly consistent cash flows from both revenue and/or accounts receivable, and these can be readily estimated based on historical financial statements.

3. *Guaranteed loans secured by a third party.* These parties are often a government agency, a development financial institution, or an insurance company. They promise that a loan will be paid in part or in full even if the original borrower defaults. National governments are rarely supportive of full guarantees, as they increase government risk exposure. However, this type of credit enhancement is offered when the borrower is an unattractive candidate for a loan, and this is a common strategy to help establish commercial financing in nascent markets. As the borrowers establish their creditworthiness and commercial lending in the sector increases, the guarantors are able to gradually decrease their level of guaranteed from full to partial to none.

B.7 Determining the Viability of a Project

To choose among capital investment projects, utilities should have clear priorities and criteria to help them value and compare projects.¹ Although it is widely accepted that political preferences drive the priority of projects, useful analytical tools and indicators are available that should be used in selecting or prioritizing capital projects.

Cost-Benefit Analysis (CBA)

CBA is a decision-making tool used to evaluate whether a proposed project, program, or policy is financially feasible or if another project should be pursued. Such an analysis compares the total expected benefits of the project with the total costs associated with it and determines whether the benefits outweigh the costs and by how much. This is a relatively simple tool used primarily for quick financial decisions.

Internal Rate of Return (IRR)

Calculating an IRR is a good approach to evaluating an investment. IRR is the discount rate at which the present value of all future cash flow of the project (both positive and negative) is equal to the initial investment (outlay of funds). In other words, the IRR is the rate at which the project breaks even. The higher the project's IRR, the more desirable is the investment. If the IRR is greater than the cost of capital (the available bank interest rate), the project is considered financially viable and should be financed with a bank loan.

Economic Rate of Return (ERR)

Similar to IRR, ERR is the rate of return at which the costs and benefits of the project discounted over its life are equal. However, ERR takes into account the effects of externalities and market imperfections such as price controls, subsidies, and tax breaks to compute the actual cost of the project to the economy and all the stakeholders. For more information see *The Economic Rate of Return of World Bank Projects* (Herrera 2005).

Net Present Value (NPV)

NPV is another method of calculating a rate of return on the project. NPV is the present value of all costs

(negative cash flows) and benefits (positive cash flows) over the active life of the project. The rate used to discount the future value of cash flows is the cost of borrowing money needed to finance the project, that is, the interest rate the bank charges on the loan. An NPV greater than zero demonstrates that the earning generated by the project over its lifetime exceeds the anticipated costs. A negative NPV means the project will result in a net loss and will not produce sufficient cash flows to meet the required debt service.

B.8 Calculating Cost of Capital

A key consideration for most CEOs is how to finance the company or what the ratio of equity to debt is or should be. However, as water companies do not often have significant equity or shareholder investors and often receive grant financing, this is a different process than in typical small and medium enterprises.

The common approach is to calculate the *weighted average cost of capital* (WACC). WACC is the minimum return that a company must earn on an existing asset base to satisfy its investors. Investors hold various securities representing components of the capital structure of the company, from debt securities to equity holders to government subsidies. Since these different securities are expected to generate different returns, WACC is simply the average rate a company expects to pay investors to finance assets.

This note, focusing on commercial borrowing, is restricted to debt financing and does not cover the calculation or cost of capital. For more information on WACC and its involvement in tariff calculations see *Tariff Setting Guidelines: A Reduced Discretion Approach for Regulators of Water and Sanitation Services* (Shugart and Alexander 2009), part 2, chapter 6.

Note

1. There are many publications explaining internal rate of return versus net present value. For example, see Ley and Nehru 2007.

Bibliography

- Advani, R., and B. Darche. 2014. *Urban Water Finance: Kenya Loan Structure Concept Note*. Washington, DC: World Bank.
- Baietti, Aldo, William Kingdom, and Meike von Ginneken. 2006. *Characteristics of Well-Performing Public Water Utilities*. Water Supply and Sanitation Working Notes 9, World Bank, Washington, DC.
- Baietti, Aldo, and Peter Raymond. 2005. *Financing Water Supply and Sanitation Investments: Utilizing Risk Mitigation Instruments to Bridge the Financing Gap*. Water Supply and Sanitation Sector Board Discussion Paper Series Paper 4, World Bank, Washington, DC.
- Bender, Kevin. 2015. *Governments Don't Have to Go It Alone: Leveraging Public Funds to Attract Commercial Finance for Improved Water Services*. Water and Sanitation Program Research Brief 98670, World Bank, Washington, DC.
- Canuto, Otaviano, and Lili Liu. 2013. *Until Debt Do Us Part: Subnational Debt, Insolvency, and Markets*. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/2013/01/17406420/until-debt-part-subnational-debt-insolvency-markets>.
- Darche, Benjamin, and Joshua Gallo. 2012. *Partial Credit Guarantees for Subnational Transaction*. SNTA Brief 5, Public-Private Infrastructure Advisory Facility, World Bank, Washington, DC. <http://www.ppiaf.org/sites/ppiaf.org/files/publication/SNTA-brief-5-partial-credit-guarantees.pdf>.
- Demerjian, Peter R. W. 2007. "Financial Ratios and Credit Risk: The Selection of Financial Ratio Covenants in Debt Contracts." Ann Arbor: Stephen M. Ross School of Business University of Michigan.
- Farvacque-Vitkovic, C., and Kopanyi M., eds. 2014. *Municipal Finances: A Handbook for Local Government*. Washington, DC: World Bank. <https://www.openknowledge.worldbank.org/handle/10986/18725?show=full>.
- Herrera, Santiago. 2005. *The Economic Rate of Return of World Bank Projects*. Washington, DC: World Bank.
- IBNET (International Benchmarking Network for Water and Sanitation Utilities). 2015. "Objectives of IBNET." https://www.ib-net.org/en/texts.php?folder_id=78.
- IFC (International Finance Corporation). 2012. "Uganda: Small-scale Water Infrastructure Program." *Handshake* no. 1. Washington, DC: IFC.
- . 2015. "Blended Climate Finance at IFC." Washington, DC: IFC. http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/cb_home/mobilizing+climate+finance/blendedfinance.
- Inderst, Georg, and Fiona Stewart. 2014. *Institutional Investment in Infrastructure in Emerging Markets and Development Economies*. Washington, DC: World Bank.
- Jamora, Lorenzo H. 2005. "Credit Rating System to Enhance Credit Flow for Water Supply Projects in the Philippines." *Technical Matters*. Quezon City, Philippines: Local Water Utilities Administration. http://www.lwua.gov.ph/tech_matters_08/credit_rating_jamora.htm.
- Kimani, Angela, Rajesh Advani, and Jemima Sy. 2011. *Financing Urban Water Services in Kenya: Utility Shadow Credit Ratings*. Nairobi and Washington, DC: Water Services Regulatory Board and World Bank Group Water and Sanitation Program. <https://www.wsp.org/sites/wsp.org/files/publications/WSP-Financing-Urban-Water-Services-Shadow-Ratings-Kenya.pdf>.
- Kingdom, William, Axel Baeumler, and Alfonso Guzman. 2012. *Capital Subsidies Implicit in Concessional Finance: How to Make Them More Transparent and Better Targeted*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/12977>.
- Ley, Eduardo, and Vikram Nehru. 2007. *Cost-Benefit Analysis: Evaluation Criteria (Or: "Stay Away from the IRR")*. Knowledge Brief 40619, World Bank, Washington, DC. <http://documents.worldbank.org/curated/en/859721468157771064/pdf/406190REVISED0irrr06122301PUBLIC1.pdf>.
- Limaye, Dilip, and William Derbyshire. 2014. *Financing Municipal Energy-Efficiency Projects: Energy Efficient Cities*. Mayoral Guidance Note 2, Energy Sector Management Assistance Program Knowledge Series 018/14, World Bank, Washington, DC.
- Malcotsis, George, Reinhard Behrens, Rene Gerber, Janos Fazekas, Dietmar Kuck, Andreas Ragaz, and Lukas Schärer. 2002. *How to Prepare Your Business Plan*. Geneva: United Nations Conference on Trade and Development. http://unctad.org/en/Docs/iteia5_en.pdf.
- The Nairobi City Water and Sewerage Company. 2012. "Nairobi Water Company Launches Innovative Social Connections Program to Serve Low-Income Settlements." Press Release, October 30. <https://www.wsp.org/sites/wsp.org/files/publications/wsp-Press-Release-Nairobi-Water-Company-launches-innovative-social-connections-program.pdf>.
- OECD (Organisation for Economic Co-operation and Development). 2008. "Public-Private Partnerships: In Pursuit of Risk Sharing and Value for Money." Paris: OECD.
- . 2010. *Innovative Financing Mechanisms for the Water Sector*. OECD Studies on Water. Paris: OECD.
- OECD and WEF (World Economic Forum). 2015. *Blended Finance*, vol. 1, *A Primer for Development Finance and Philanthropic Funders*. Paris: OECD. http://www3.weforum.org/docs/WEF_Blended_Finance_A_Primer_Development_Finance_Philanthropic_Funders_report_2015.pdf.
- Orda, Evelyn, Maribelita Cortez, Leila Elvas, Anna Maria Mendoza, and Stella Maris Salas. 2009. *Guide to Ring-Fencing of Local Government-Run Water Utilities*. Washington, DC: World Bank Water and Sanitation Program. <http://www.ppiaf.org/sites/ppiaf.org/files/publication/WSP%20-%20Ring%20Fencing%202010.pdf>.

- Paul, Jeremias. 2011. *Making Water Reform Happen: The Experience of the Philippine Water Revolving Fund*. Paper presented at “OECD Global Forum on Environment: Making Water Reform Happen,” Paris, October 25-26.
- Public-Private Infrastructure Advisory Facility. CREDITWORTHINESS BRIEF #6: *The Importance of Avoiding Implicit Guarantees In Sub-National Finance*. Washington, DC: World Bank Group, December 2013.
- Rodríguez, Diego J., Mario Suardi, Marcel Ham, Luisa Mimmi, and Amanda Goksu. 2014. *Applying Results-Based Financing in Water Investments*. Water Partnership Program Papers, World Bank, Washington, DC. <http://documents.worldbank.org/curated/en/2014/05/19770307/applying-results-based-financing-water-investments>.
- Shugart, Chris, and Ian Alexander. 2009. *Tariff Setting Guidelines: A Reduced Discretion Approach for Regulators of Water and Sanitation Services*. Working Paper 8, World Bank, Washington, DC. <http://documents.worldbank.org/curated/en/2009/01/10201002/tariff-setting-guidelines-reduced-discretion-approach-regulators-water-sanitation-services-technical-guide>.
- USAID (U.S. Agency for International Development). 2016. “Economic Growth and Trade: Development Credit Authority.” Updated September 8. Washington, DC: USAID. <https://www.usaid.gov/what-we-do/economic-growth-and-trade/development-credit-authority-putting-local-wealth-work>.
- USAID (U.S. Agency for International Development). n.d. *Manual of Credit Rating for Water Districts in the Philippines*. Washington, DC: USAID. http://pdf.usaid.gov/pdf_docs/PNADL938.pdf.
- Virjee, Kameel. 2008. *Leveraging Market Finance for Water Utilities Experience from Africa*. Washington, DC: World Bank Water and Sanitation Program.
- Wang, Xiaodong, Richard Stern, Dilip Limaye, Wolfgang Mostert, and Yabei Zhang. *Unlocking Commercial Financing for Clean Energy in East Asia*. Directions in Development: Energy and Mining 81112. Washington, DC: World Bank. <http://elibrary.worldbank.org/doi/book/10.1596/978-1-4648-0020-7>.
- WASREB (Water Services Regulatory Board). *Impact Reports*. Nairobi: WASREB. <http://wasreb.go.ke/impact-reports>.
- WASREB. 2011. *Cost-Reflective Tariffs: A Prerequisite for Financial Sustainability of a Water Utility*. Nairobi: WASREB.
- WASREB and WSP (Water and Sanitation Program). 2015a. *Kenya Water Service Provider Creditworthiness Index Report*. Nairobi and Washington, DC: World Bank and WASREB. <http://wsp.org/sites/wsp.org/files/publications/WSP-Water-Service-Provider-Creditworthiness-Index-Report-Kenya.pdf>.
- . 2015b. *Lender’s Manual for Commercial Financing of the Water and Sanitation Sector in Kenya*. Nairobi and Washington, DC: World Bank and WASREB.
- . 2015c. *Water Service Provider Toolkit for Commercial Financing of the Water and Sanitation Sector in Kenya*. Nairobi and Washington, DC: World Bank and WASREB.
- WSP (Water Sanitation Program). 2011. *Maji ni Maisha: Innovative Finance for Community Water Schemes in Kenya*. Washington, DC: World Bank.
- Winpenny, James. 2011. *Financing for Water and Sanitation: A Primer for Practitioners and Students in Developing Countries*. Stockholm: EU Water Initiative Finance Working Group.
- World Bank. 1999. *Operational Policy 8.30, Financial Intermediary Lending*. Washington, DC: World Bank.
- World Bank. 2011. *PPIAF Supports Small-Scale Water Providers in Uganda*. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/688181468108859023/PPIAF-supports-small-scale-water-providers-in-Uganda>.

